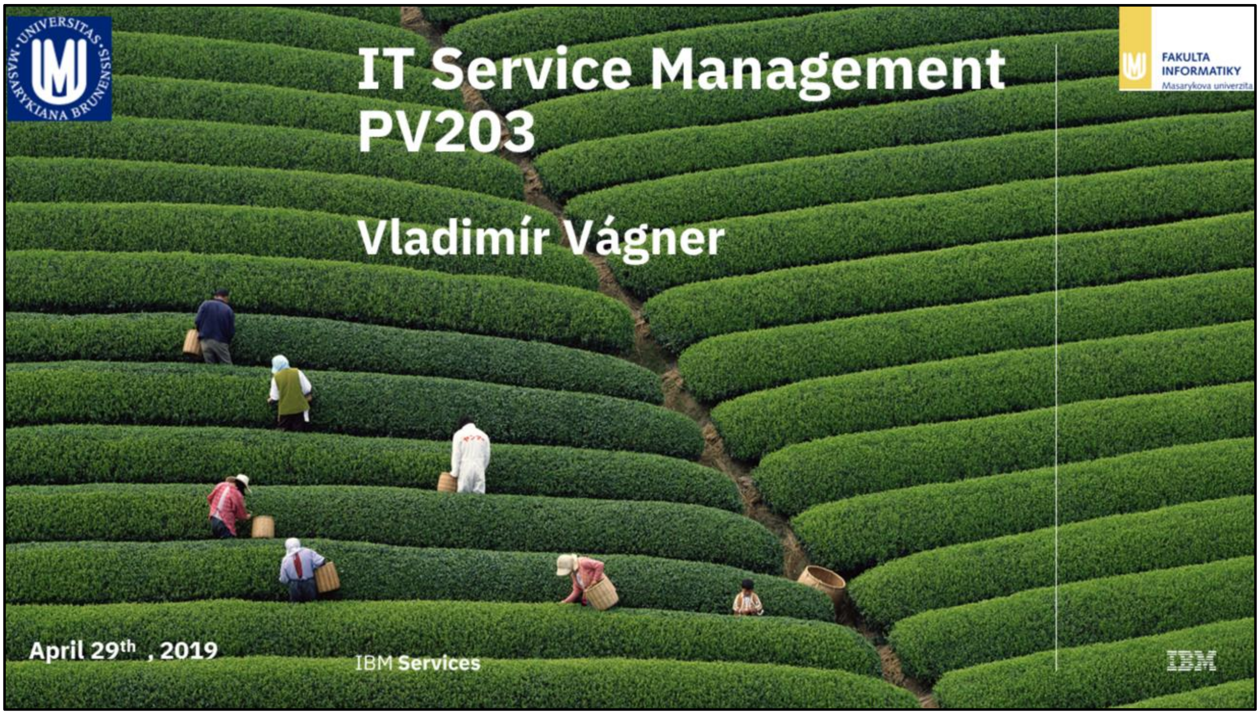

UNIVERSITAS MASARYKIANA BRUNENSIS
FAKULTA INFORMATIKY
Masarykova univerzita

IT Service Management
PV203

Vladimír Vágner

April 29th , 2019

IBM Services

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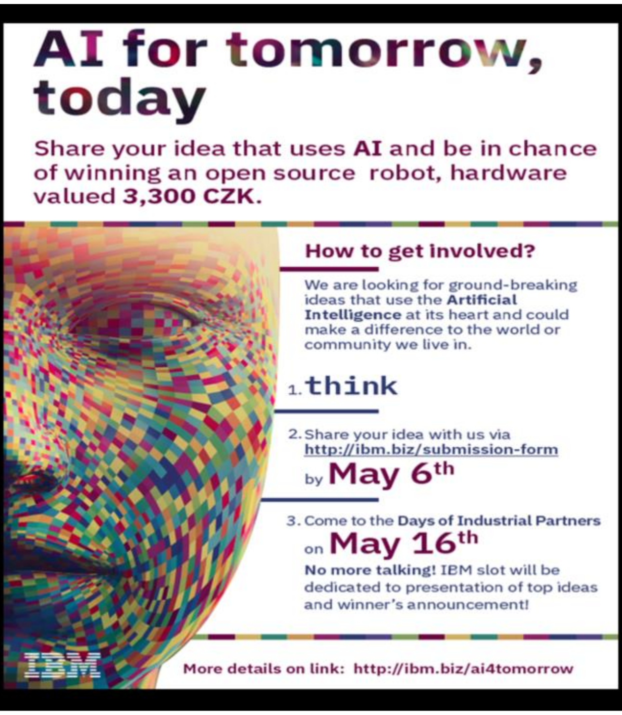


AI for tomorrow, today

Share your idea that uses **AI** and be in chance of winning an open source robot, hardware valued **3,300 CZK.**

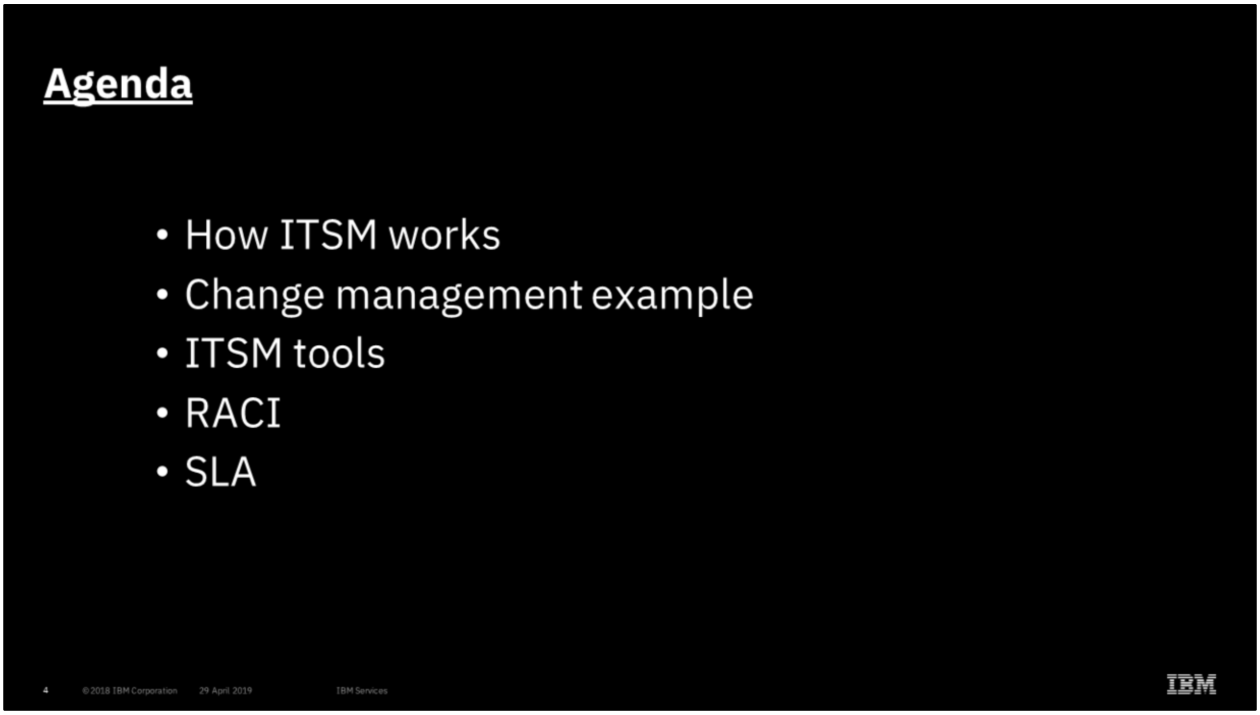
How to get involved?

We are looking for ground-breaking ideas that use the **Artificial Intelligence** at its heart and could make a difference to the world or community we live in.

1. **think**
2. Share your idea with us via http://ibm.biz/submission-form by **May 6th**
3. Come to the **Days of Industrial Partners** on **May 16th**
   No more talking! IBM slot will be dedicated to presentation of top ideas and winner's announcement!

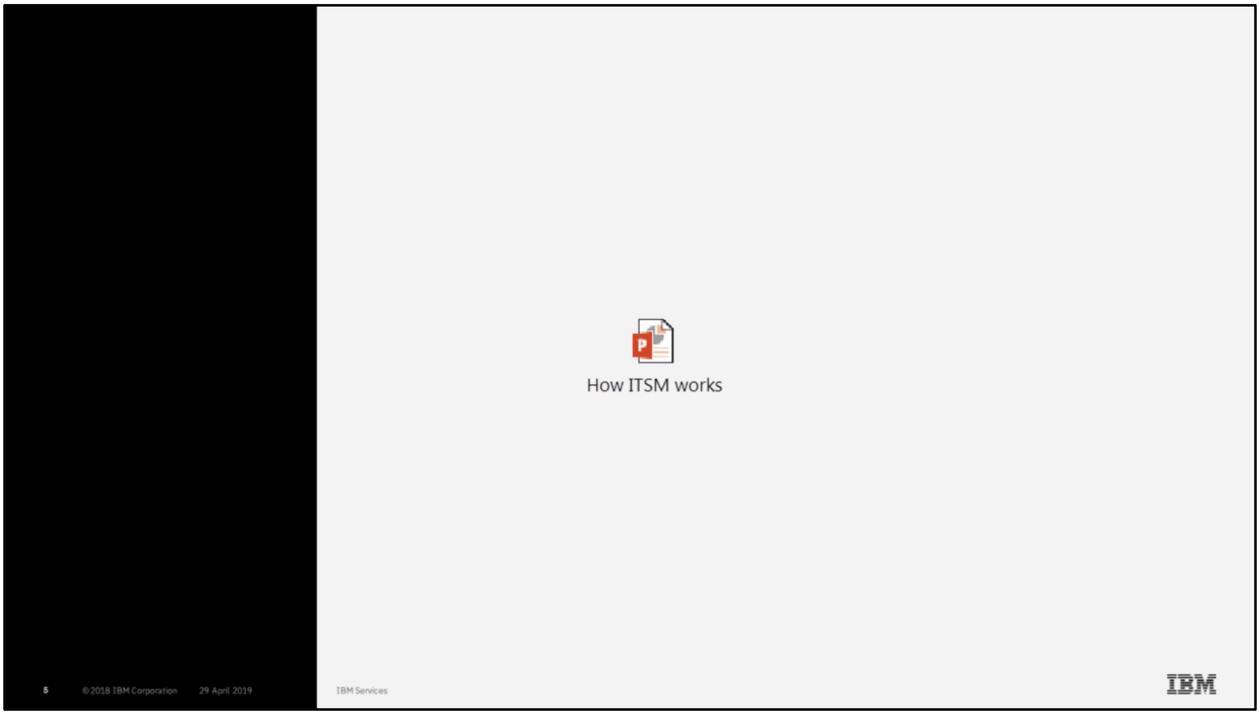
More details on link: http://ibm.biz/ai4tomorrow

ITSM in practice
-
tools, roles, process

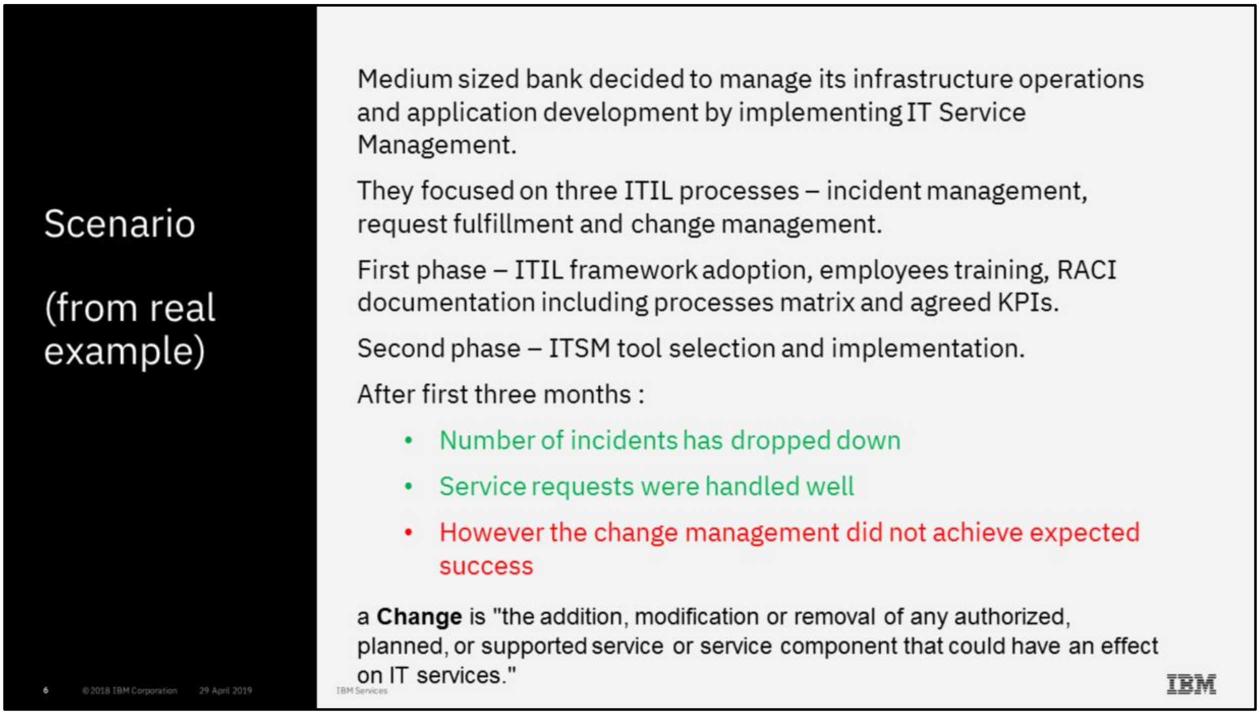


Agenda

- How ITSM works
- Change management example
- ITSM tools
- RACI
- SLA



How ITSM works



Scenario

(from real example)

Medium sized bank decided to manage its infrastructure operations and application development by implementing IT Service Management.

They focused on three ITIL processes – incident management, request fulfillment and change management.

First phase – ITIL framework adoption, employees training, RACI documentation including processes matrix and agreed KPIs.

Second phase – ITSM tool selection and implementation.

After first three months :

- Number of incidents has dropped down
- Service requests were handled well
- However the change management did not achieve expected success

a **Change** is "the addition, modification or removal of any authorized, planned, or supported service or service component that could have an effect on IT services."

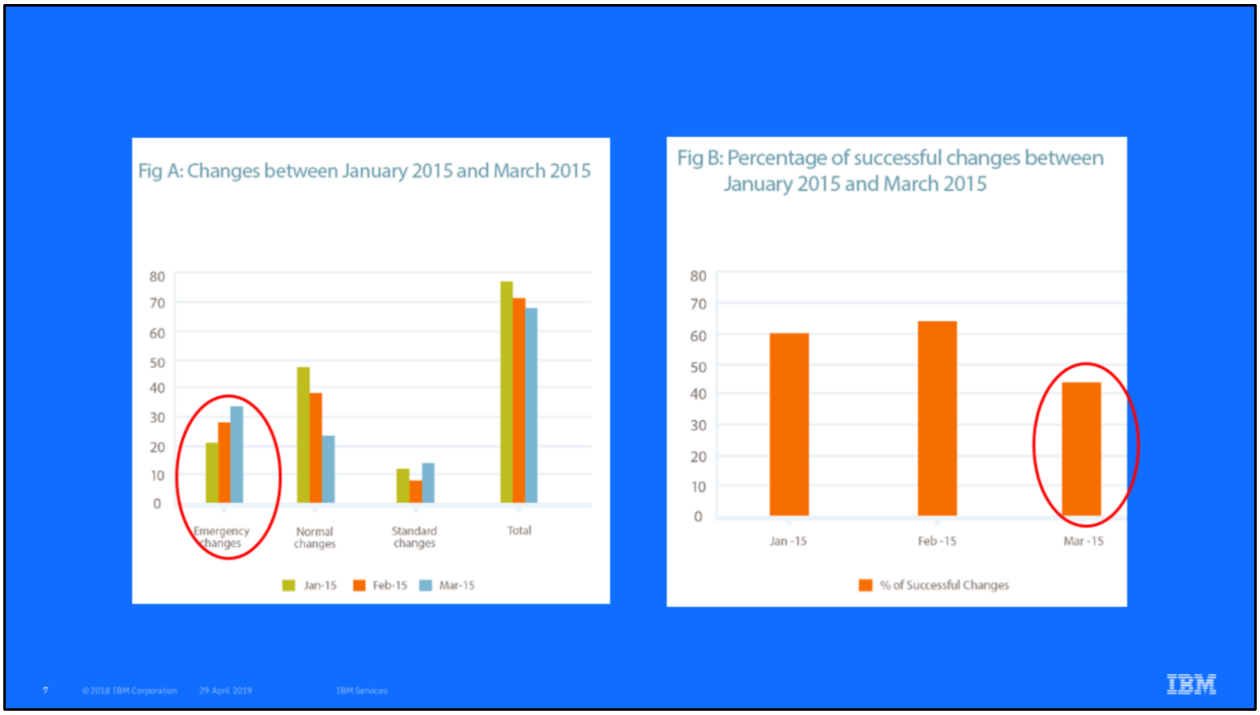
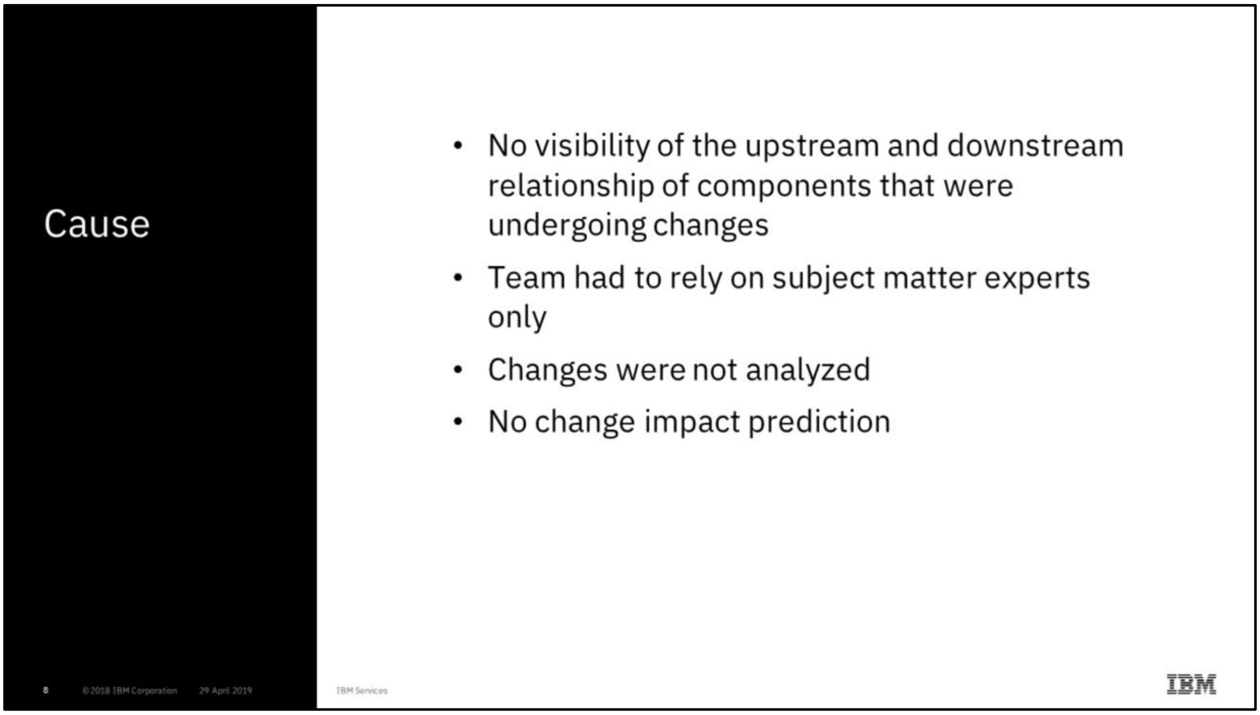


Fig A: Changes between January 2015 and March 2015

Fig B: Percentage of successful changes between January 2015 and March 2015

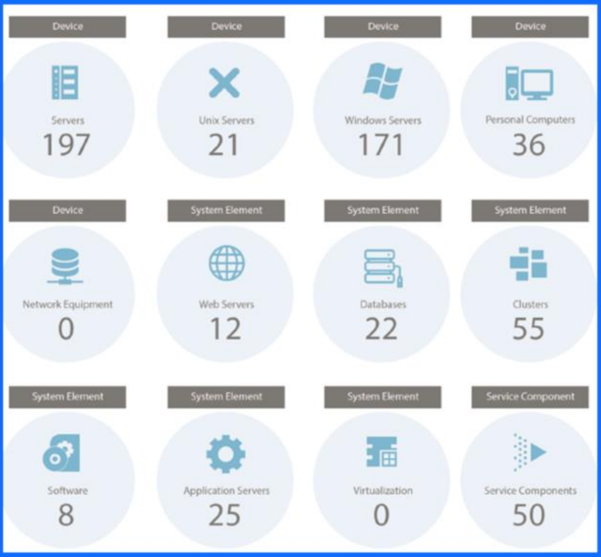


Cause

- No visibility of the upstream and downstream relationship of components that were undergoing changes
- Team had to rely on subject matter experts only
- Changes were not analyzed
- No change impact prediction

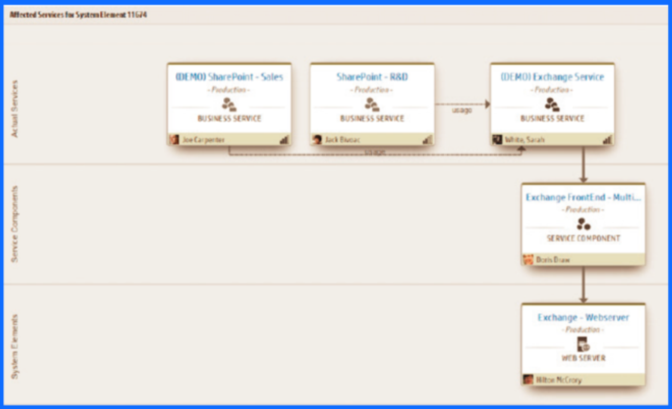
ACTIONS

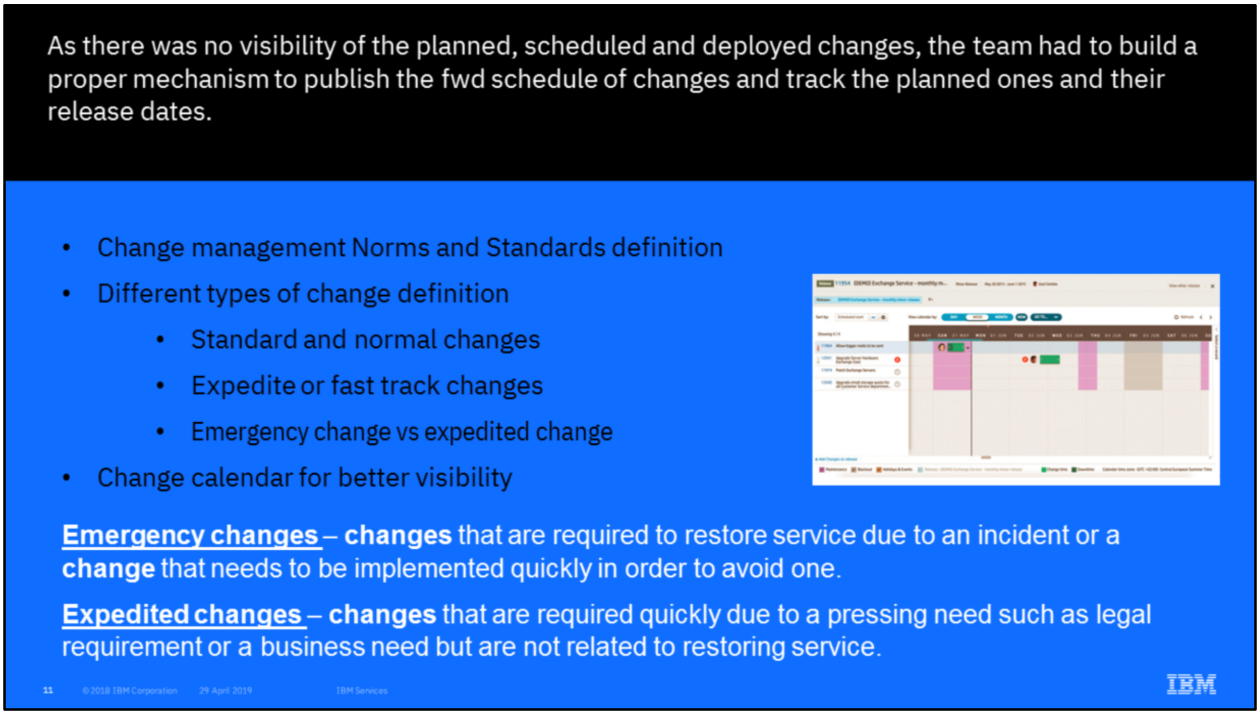
The Configuration Management System based on CMDB



Device Servers 197	Device Unix Servers 21	Device Windows Servers 171	Device Personal Computers 36
Device Network Equipment 0	System Element Web Servers 12	System Element Databases 22	System Element Clusters 55
System Element Software 8	System Element Application Servers 25	System Element Virtualization 0	Service Component Service Components 50

- List of critical business services
- The service tree structure build with embedded attributes for various devices
- Complete topology identification
- Import of technology tree with all devices attributes into the ITSM tool


Affected Services for System Element 11674
Actual Services
(DEMO) SharePoint - Sales
- Production -
BUSINESS SERVICE
Joe Carpenter
SharePoint - R&D
- Production -
BUSINESS SERVICE
Jack Buoac
usage
(DEMO) Exchange Service
- Production -
BUSINESS SERVICE
White, Sarah
usage
Service Components
Exchange FrontEnd - Multi...
- Production -
SERVICE COMPONENT
Doris Draw
System Elements
Exchange - Webserver
- Production -
WEB SERVER
Hilton McCrory



As there was no visibility of the planned, scheduled and deployed changes, the team had to build a proper mechanism to publish the fwd schedule of changes and track the planned ones and their release dates.

- Change management Norms and Standards definition
- Different types of change definition
  - Standard and normal changes
  - Expedite or fast track changes
  - Emergency change vs expedited change
- Change calendar for better visibility

Emergency changes – **changes** that are required to restore service due to an incident or a **change** that needs to be implemented quickly in order to avoid one.

Expedited changes – **changes** that are required quickly due to a pressing need such as legal requirement or a business need but are not related to restoring service.

Standard changes are low-risk, pre-approved changes that happen frequently and have a quick
turnaround time. Standard changes can be implemented quickly and help manage risks.

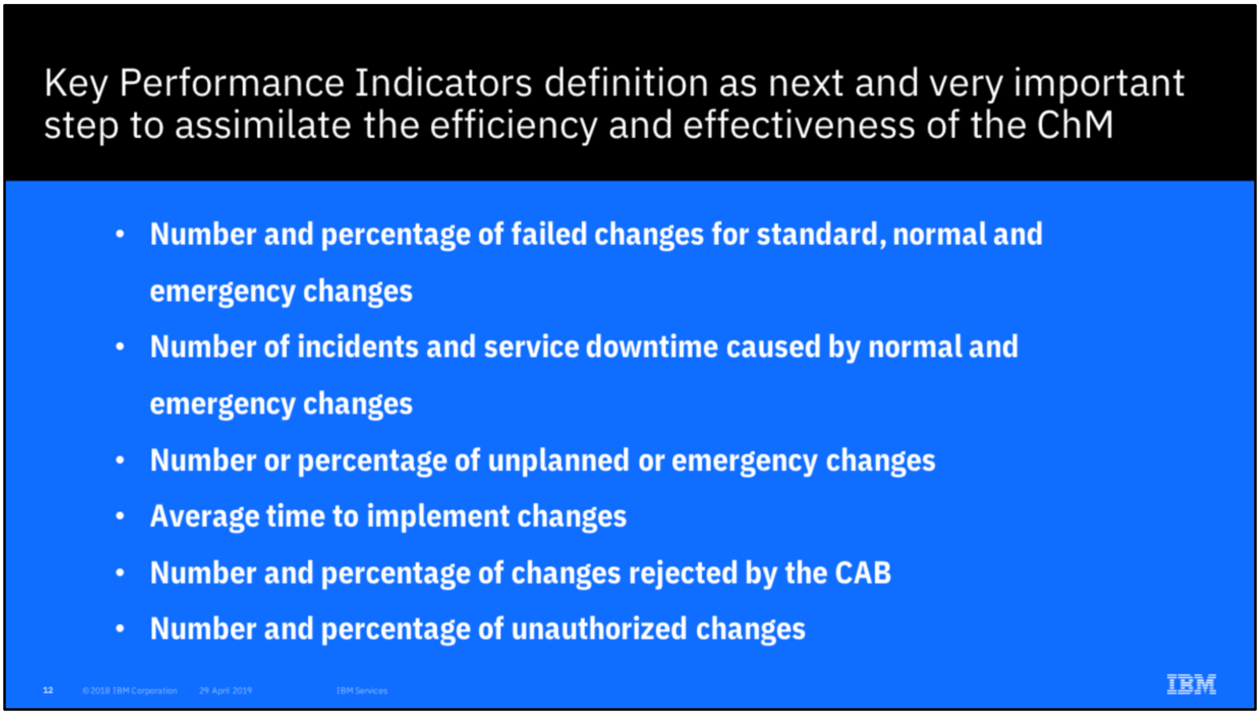
Examples of a standard change:
- Desktop or standalone equipment movement.
- A standard patch that is applied to the servers once a month during the agreed maintenance
window.

What is a standard change?
When a normal change is successfully implemented a few times, the associated processes like
planning, scheduling, and implementation are established and become predictable and controlled.
That is, the change becomes a routine task and therefore standard.
A few examples of normal changes:
• Upgrading the exchange server or any other hardware
• Setting up high availability or cluster for vital business functions (VBF)

- Roll out of a new release to address the reported issues

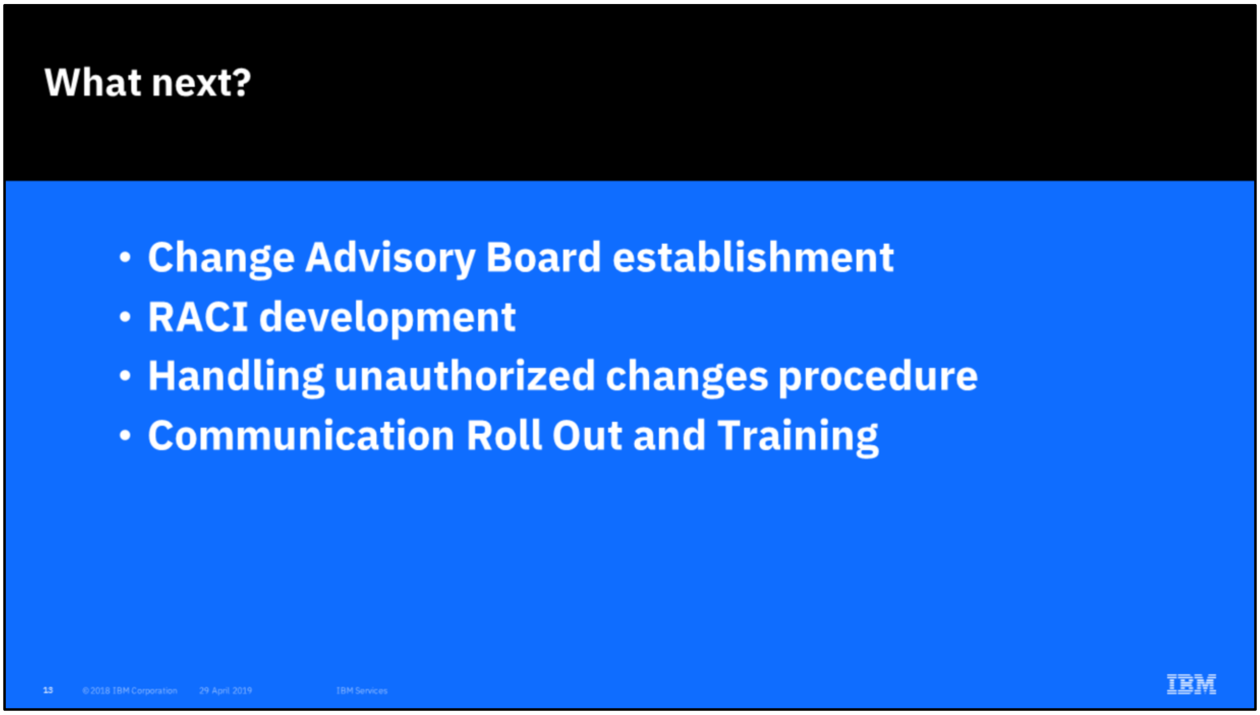
Expedite changes are raised due to a pressing need such as a legal or a business requirement.
These changes are not related to restoring a service.

The change advisory board (CAB) defined clear rules and regulations to qualify emergency and
expedited changes and communicated these rules across the organization.



Key Performance Indicators definition as next and very important step to assimilate the efficiency and effectiveness of the ChM

- **Number and percentage of failed changes for standard, normal and emergency changes**
- **Number of incidents and service downtime caused by normal and emergency changes**
- **Number or percentage of unplanned or emergency changes**
- **Average time to implement changes**
- **Number and percentage of changes rejected by the CAB**
- **Number and percentage of unauthorized changes**



What next?

- Change Advisory Board establishment
- RACI development
- Handling unauthorized changes procedure
- Communication Roll Out and Training

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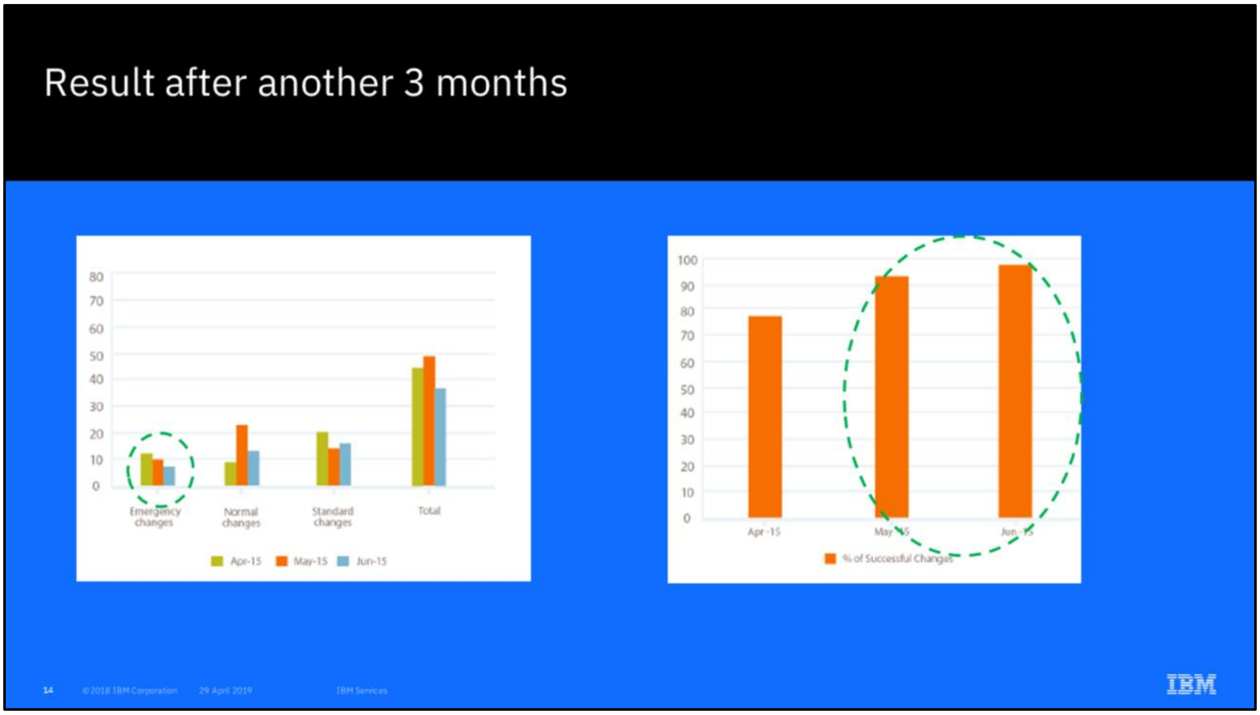
During its discussion with stakeholders, the core team observed that about 20% of the changes were completed without authorization, mainly because the infrastructure team was under pressure to get the changes done quickly. As a result, many changes were done without a request for change or going through the review and approval processes.

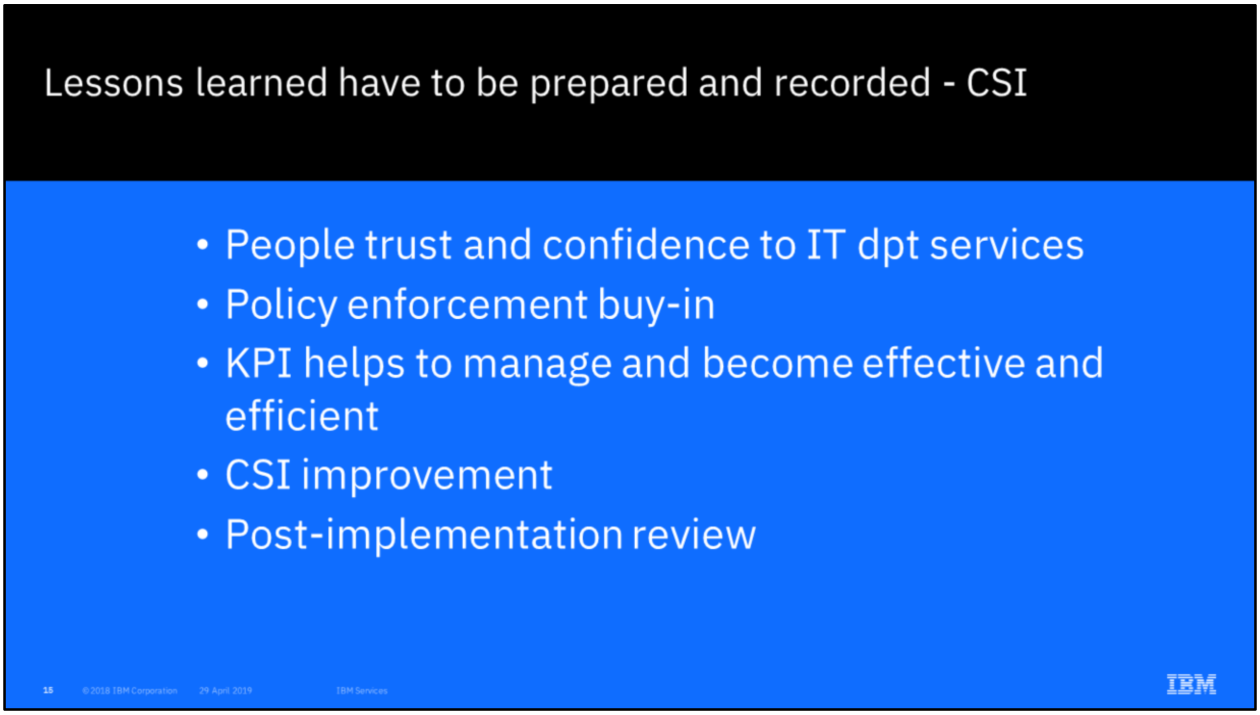
To deal with this situation, stage gatekeepers were appointed for infrastructure, application, and database teams to ensure that the steps were not skipped when a change is made. The stage keepers had a go-ready list that comprised the test results, approvals, signatures from all the concerned teams, and a back-out plan. In case of violation, the stage gatekeepers owned responsibility that affected their appraisal and performance measures.

Another reason for the unauthorized changes was because the application teams updated the CMDB or CMS after the roll out of the release.

The core team ensured that audits were performed every week to compare the current state of CMS with the associated RFC and any deviation was highlighted to the CI owner and service owner for immediate action. In turn, the service owner closed the loop and took firm action. This process went on for four to six weeks, and the team made it a habit to follow the rule without exceptions.



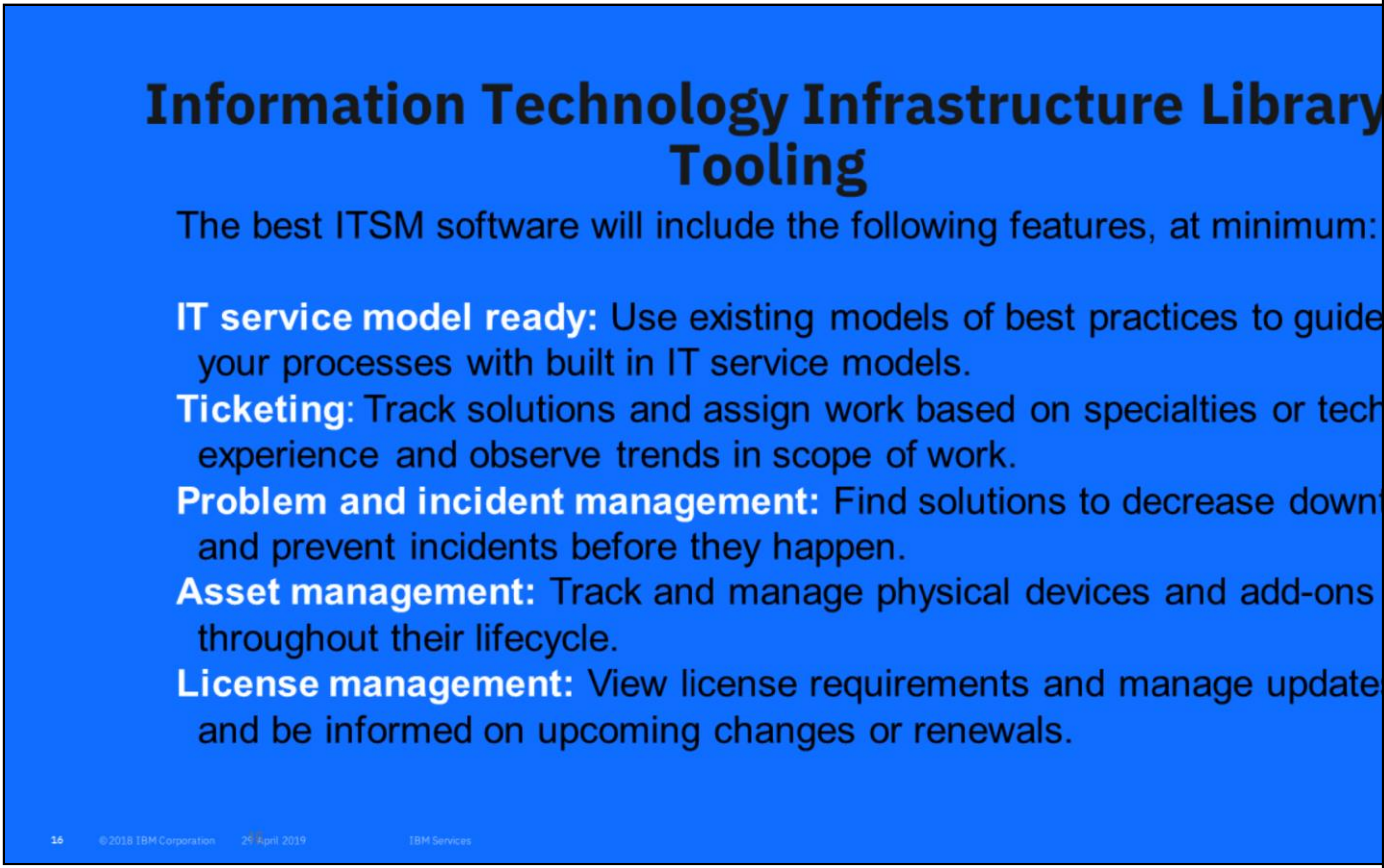
Result after another 3 months



Lessons learned have to be prepared and recorded - CSI

- People trust and confidence to IT dpt services
- Policy enforcement buy-in
- KPI helps to manage and become effective and efficient
- CSI improvement
- Post-implementation review

- The bank’s IT team understood that building a robust configuration management system with up-to-date information of all IT components is essential for a successful change and release management process.
- Forward schedule of changes, planned maintenance window, and release plans are critical to manage the volume and duration of changes and to ensure smooth deployment.
- Enforcing a policy requires practicality, diligence, and buy-in. The new policies were fewer in number but were important for the success of the change management process (for example: CAB, unauthorized changes, and PIR).
- Relevant and practical KPIs help teams become efficient and effective.
- Process and tools have to work in tandem and absence of one or the other will severely impact continual service improvement (CSI).
- Post-implementation review of key changes and implications provided valuable insight on potential areas to improve and control changes.



Information Technology Infrastructure Library Tooling

The best ITSM software will include the following features, at minimum:

IT service model ready: Use existing models of best practices to guide your processes with built in IT service models.

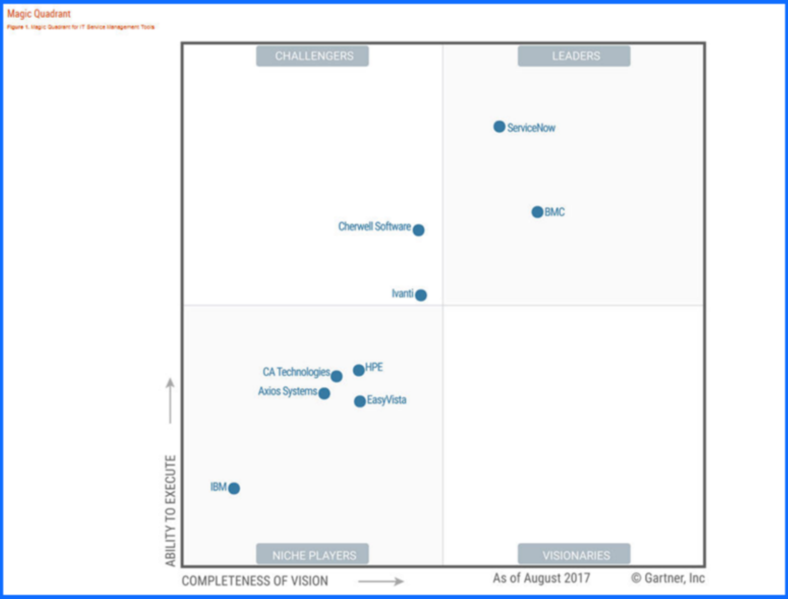
Ticketing: Track solutions and assign work based on specialties or tech experience and observe trends in scope of work.

Problem and incident management: Find solutions to decrease down and prevent incidents before they happen.

Asset management: Track and manage physical devices and add-ons throughout their lifecycle.

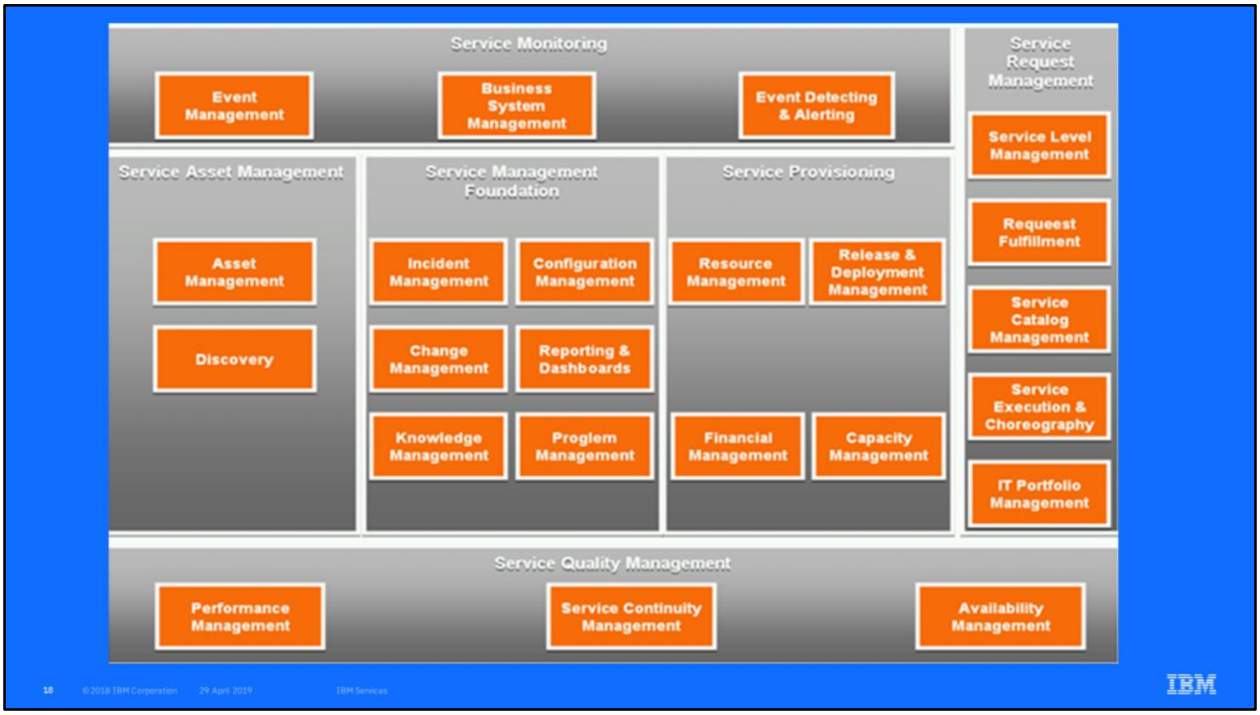
License management: View license requirements and manage update and be informed on upcoming changes or renewals.

Gartner's Magic Quadrant for ITSM tools



Magic Quadrant

Figure 1. Magic Quadrant for IT Service Management Tools



Service Monitoring

Event Management

Business System Management

Event Detecting & Alerting

Service Request Management

Service Level Management

Requeest Fulfillment

Service Catalog Management

Service Execution & Choreography

IT Portfolio Management

Service Asset Management

Asset Management

Discovery

Service Management Foundation

Incident Management

Configuration Management

Change Management

Reporting & Dashboards

Knowledge Management

Proglem Management

Service Provisioning

Resource Management

Release & Deployment Management

Financial Management

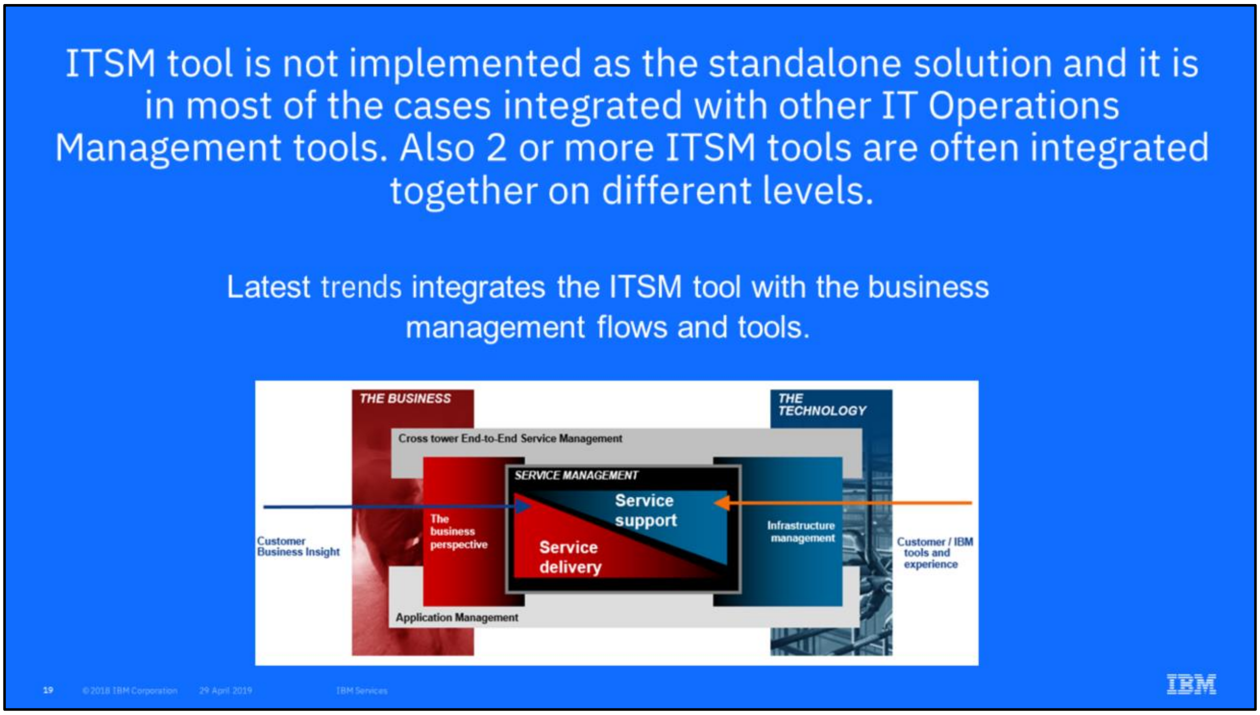
Capacity Management

Service Quality Management

Performance Management

Service Continuity Management

Availability Management

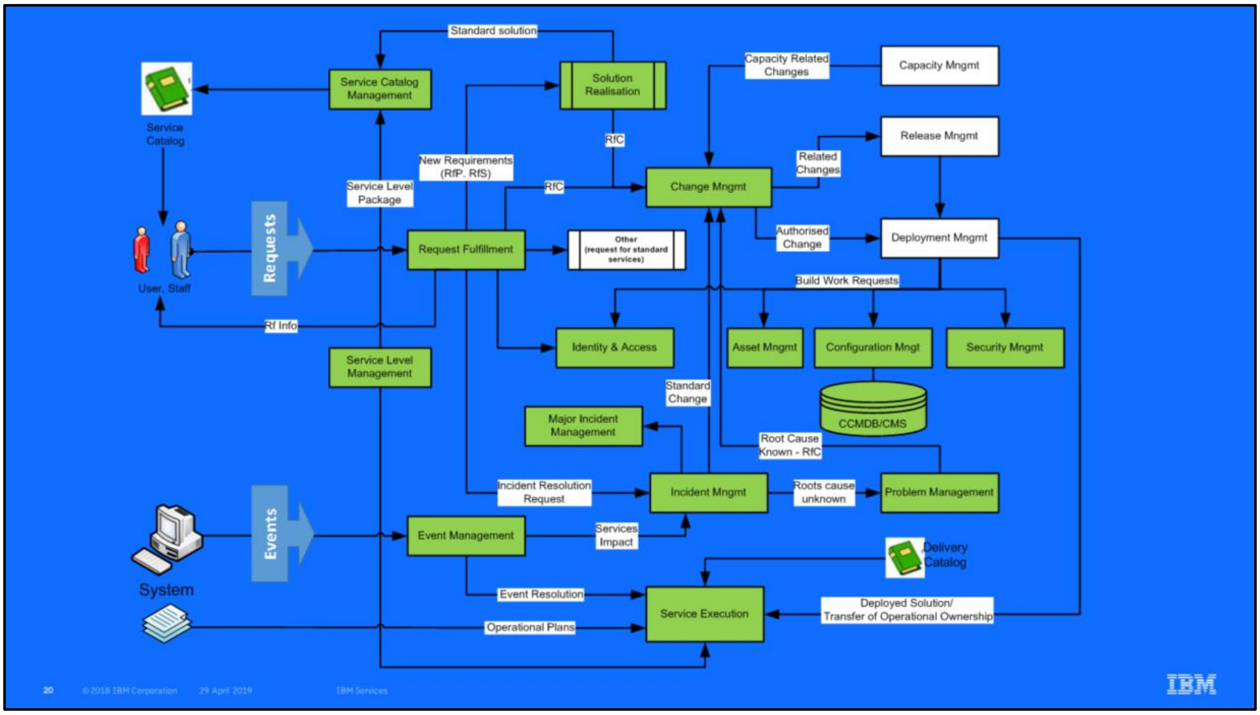


ITSM tool is not implemented as the standalone solution and it is in most of the cases integrated with other IT Operations Management tools. Also 2 or more ITSM tools are often integrated together on different levels.

Latest trends integrates the ITSM tool with the business management flows and tools.

THE BUSINESS
THE TECHNOLOGY
Cross tower End-to-End Service Management
SERVICE MANAGEMENT
Service support
Service delivery
The business perspective
Infrastructure management
Customer Business Insight
Customer / IBM tools and experience
Application Management

IBM



Standard solution

Service Catalog Management

Solution Realisation

Capacity Related Changes

Capacity Mngmt

Service Catalog

RfC

Release Mngmt

New Requirements (RfP. RfS)

Service Level Package

RfC

Change Mngmt

Related Changes

Authorised Change

Deployment Mngmt

User, Staff

Requests

Request Fulfillment

Other (request for standard services)

Build Work Requests

Rf Info

Identity & Access

Asset Mngmt

Configuration Mngt

Security Mngmt

Service Level Management

Standard Change

CCMDB/CMS

Major Incident Management

Root Cause Known - RfC

Incident Resolution Request

Incident Mngmt

Roots cause unknown

Problem Management

Events

Event Management

Services Impact

Delivery Catalog

System

Event Resolution

Service Execution

Deployed Solution/ Transfer of Operational Ownership

Operational Plans

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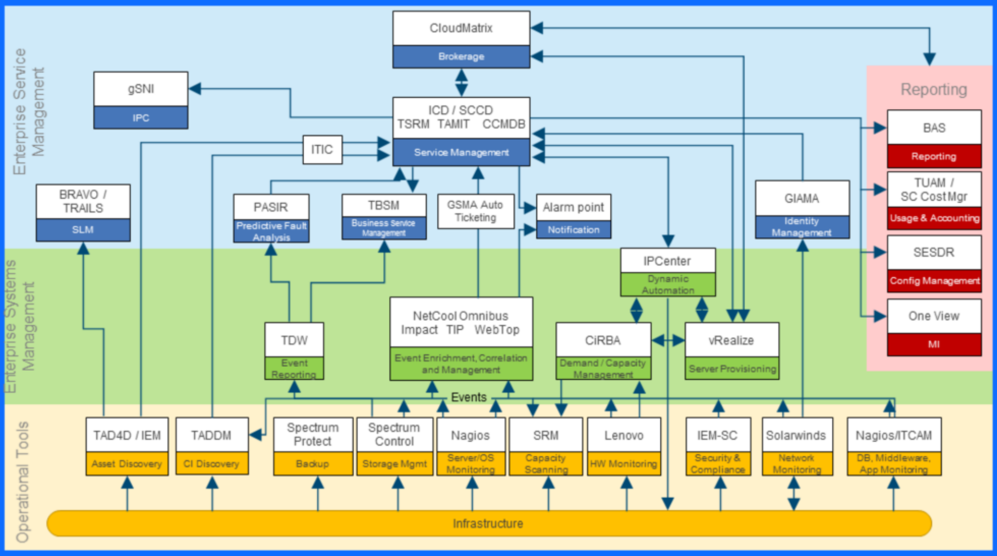
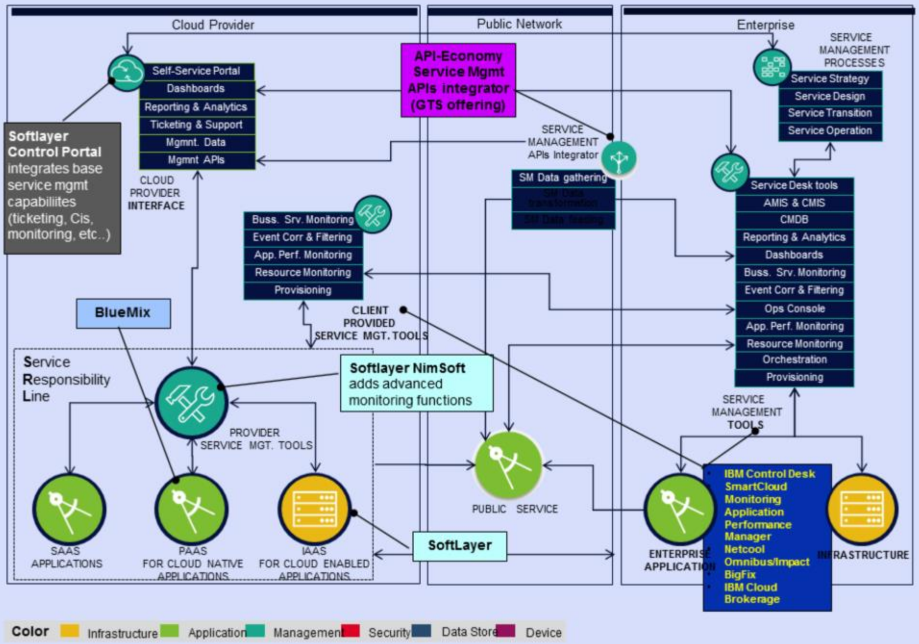
Integrated Service management Tooling - example


Enterprise Service Management
Enterprise Systems Management
Operational Tools
CloudMatrix
Brokerage
gSNI
IPC
ICD / SCCD
TSRM TAMIT CCMDB
Service Management
ITIC
BRAVO / TRAILS
SLM
PASIR
Predictive Fault Analysis
TBSM
Business Service Management
GSMA Auto Ticketing
Alarm point
Notification
GIAMA
Identity Management
Reporting
BAS
Reporting
TUAM / SC Cost Mgr
Usage & Accounting
SESDR
Config Management
One View
MI
IPCenter
Dynamic Automation
TDW
Event Reporting
NetCool Omnibus
Impact TIP WebTop
Event Enrichment, Correlation and Management
CiRBA
Demand / Capacity Management
vRealize
Server Provisioning
Events
TAD4D / IEM
Asset Discovery
TADDM
CI Discovery
Spectrum Protect
Backup
Spectrum Control
Storage Mgmt
Nagios
Server/OS Monitoring
SRM
Capacity Scanning
Lenovo
HW Monitoring
IEM-SC
Security & Compliance
Solarwinds
Network Monitoring
Nagios/ITCAM
DB, Middleware, App Monitoring
Infrastructure

Architecture overview
-
Example i.



Cloud Provider

Public Network

Enterprise

Self-Service Portal
Dashboards
Reporting & Analytics
Ticketing & Support
Mgmnt. Data
Mgmnt APIs

CLOUD PROVIDER INTERFACE

Softlayer Control Portal integrates base service mgmt capabiliites (ticketing, Cis, monitoring, etc..)

API-Economy Service Mgmt APIs integrator (GTS offering)

SERVICE MANAGEMENT APIs Integrator

SM Data gathering
SM Data transformation
SM Data feeding

SERVICE MANAGEMENT PROCESSES

Service Strategy
Service Design
Service Transition
Service Operation

Buss. Srv. Monitoring
Event Corr & Filtering
App. Perf. Monitoring
Resource Monitoring
Provisioning

CLIENT PROVIDED SERVICE MGT. TOOLS

Service Desk tools
AMIS & CMIS
CMDB
Reporting & Analytics
Dashboards
Buss. Srv. Monitoring
Event Corr & Filtering
Ops Console
App. Perf. Monitoring
Resource Monitoring
Orchestration
Provisioning

BlueMix

Service **R**esponsibility **L**ine

Softlayer NimSoft adds advanced monitoring functions

PROVIDER SERVICE MGT. TOOLS

SERVICE MANAGEMENT TOOLS

SAAS APPLICATIONS

PAAS FOR CLOUD NATIVE APPLICATIONS

IAAS FOR CLOUD ENABLED APPLICATIONS

SoftLayer

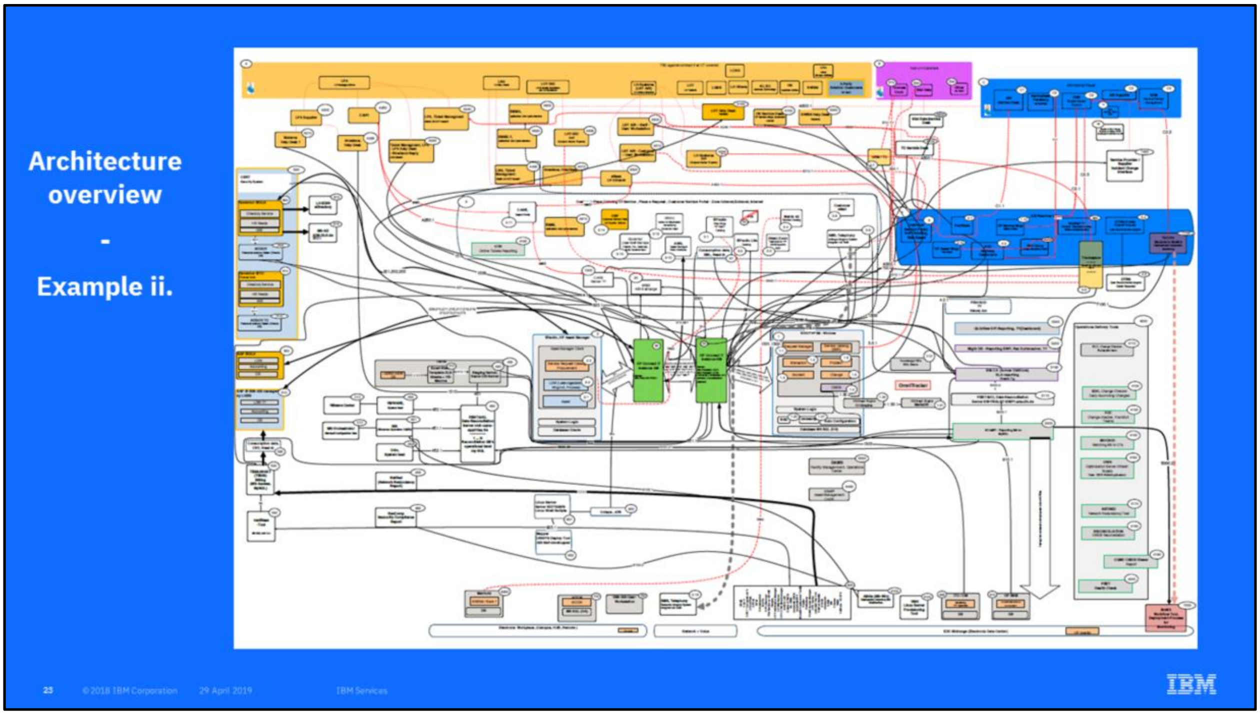
PUBLIC SERVICE

ENTERPRISE APPLICATION

- IBM Control Desk
- SmartCloud Monitoring Application Performance Manager
- Netcool Omnibus/Impact
- BigFix
- IBM Cloud Brokerage

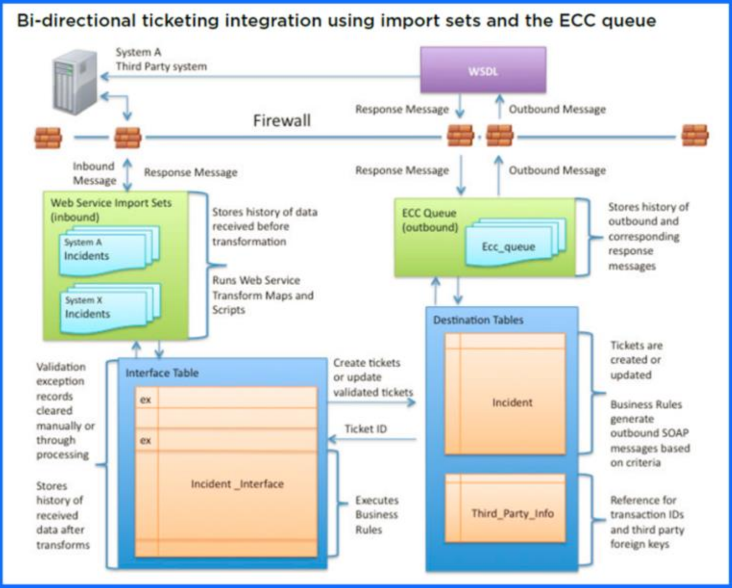
INFRASTRUCTURE

Color 🟨 Infrastructure 🟩 Application 🟩 Management 🟥 Security 🟦 Data Store 🟪 Device



Architecture overview
-
Example ii.

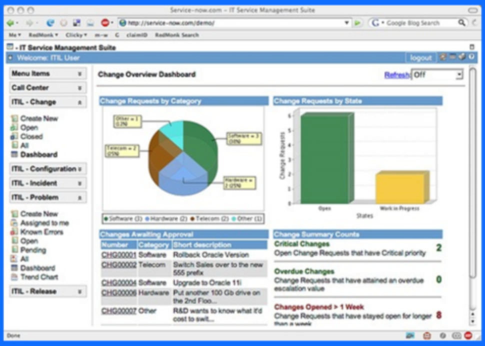
General example of the tooling integration – ticketing



Bi-directional ticketing integration using import sets and the ECC queue

System A
Third Party system
WSDL
Firewall
Response Message
Outbound Message
Inbound Message
Response Message
Response Message
Outbound Message
Web Service Import Sets (inbound)
System A Incidents
System X Incidents
Stores history of data received before transformation
Runs Web Service Transform Maps and Scripts
ECC Queue (outbound)
Ecc_queue
Stores history of outbound and corresponding response messages
Destination Tables
Incident
Third_Party_Info
Tickets are created or updated
Business Rules generate outbound SOAP messages based on criteria
Reference for transaction IDs and third party foreign keys
Interface Table
ex
ex
Incident _Interface
Create tickets or update validated tickets
Ticket ID
Executes Business Rules
Validation exception records cleared manually or through processing
Stores history of received data after transforms

ITSM Tools example – BMC Remedy


Service-now.com – IT Service Management Suite
http://service-now.com/demo/
Google Blog Search
Me ▾ RedMonk ▾ Clicky ▾ m-w C claimID RedMonk Search
- IT Service Management Suite
Welcome: ITIL User
logout
Menu Items
Call Center
ITIL - Change
Create New
Open
Closed
All
Dashboard
ITIL - Configuration
ITIL - Incident
ITIL - Problem
Create New
Assigned to me
Known Errors
Open
Pending
All
Dashboard
Trend Chart
ITIL - Release
Refresh: Off
Other = 1 (12%)
Software = 3 (38%)
Telecom = 2 (25%)
Hardware = 2 (25%)
Software (3) Hardware (2) Telecom (2) Other (1)
Change Requests
0
1
2
3
4
5
6
Open
Work in Progress
States
Done

Change Overview Dashboard

Change Requests by Category

Change Requests by State

Changes Awaiting Approval

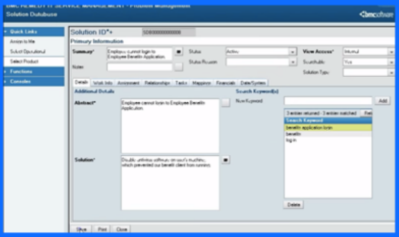
Number	Category	Short description
CHG00001	Software	Rollback Oracle Version
CHG00002	Telecom	Switch Sales over to the new 555 prefix
CHG00004	Software	Upgrade to Oracle 11i
CHG00006	Hardware	Put another 100 Gb drive on the 2nd Floo...
CHG00007	Other	R&D wants to know what it'd cost to swit...

Change Summary Counts

Critical Changes
Open Change Requests that have Critical priority 2

Overdue Changes
Change Requests that have attained an overdue escalation value 0

Changes Opened > 1 Week
Change Requests that have stayed open for longer than a week 8


bmcsoftware
Quick Links
Assign to Me
Select Product
Functions
Consoles
Details
Work Info
Assessment
Relationships
Tasks
Financials
Date/System
Add
Delete
Save
Print
Close

Solution Database

Solution ID*+

Primary Information

Summary* Employee cannot login to Employee Benefits Application

Status Active

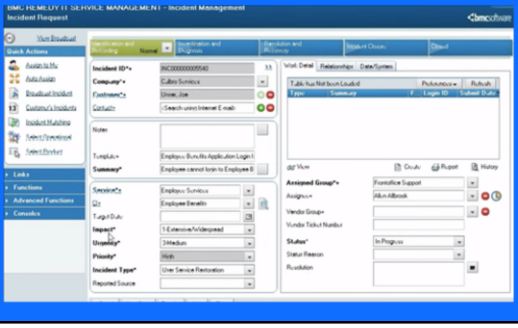
Searchable Yes

Additional Details

Abstract* Employee cannot login to Employee Benefits Application.

Search Keyword(s)

Search Keyword
benefits application login
benefits
log in


BMC REMEDY IT SERVICE MANAGEMENT – Incident Management
bmcsoftware
View Broadcast
Quick Actions
Assign to Me
Auto Assign
Broadcast Incident
Customer's Incidents
Incident Matching
Select Operational
Select Product
Links
Functions
Advanced Functions
Consoles
Identification and Recording
Investigation and Diagnosis
Resolution and Recovery
Incident Closure
Closed
Work Detail
Relationships
Date/System
Type
Summary
Login ID
Submit Date
Refresh
View
Report
History

Incident Request

Incident ID*+ INC000000005540

Company*+

Customer*+

Contact+

Notes

Summary* Employee cannot login to Employee B

Service*+

Target Date

Impact* 1-Extensive/Widespread

Urgency* 3-Medium

Priority* High

Incident Type* User Service Restoration

Reported Source

Assigned Group*+ Frontoffice Support

Assignee+

Vendor Group+

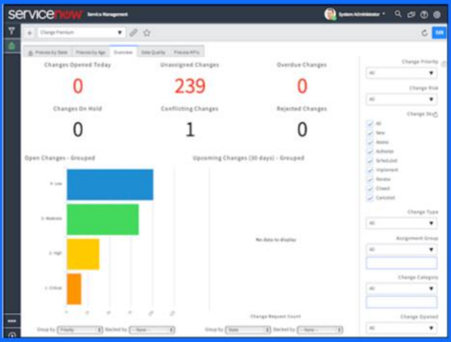
Vendor Ticket Number

Status* In Progress

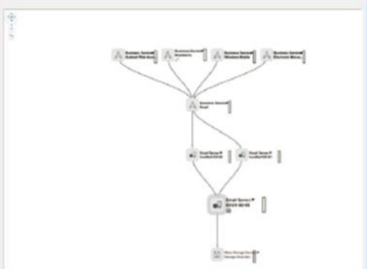
Status Reason

Resolution

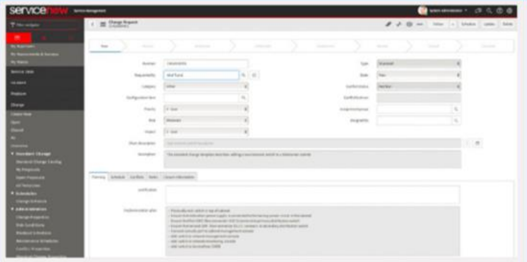
ITSM Tools example – Service Now


servicenow Service Management
Open Changes - Grouped
Upcoming Changes (30 days) - Grouped
Change Priority
Change Risk
Change Type
Assignment Group
Change Category
Change Opened

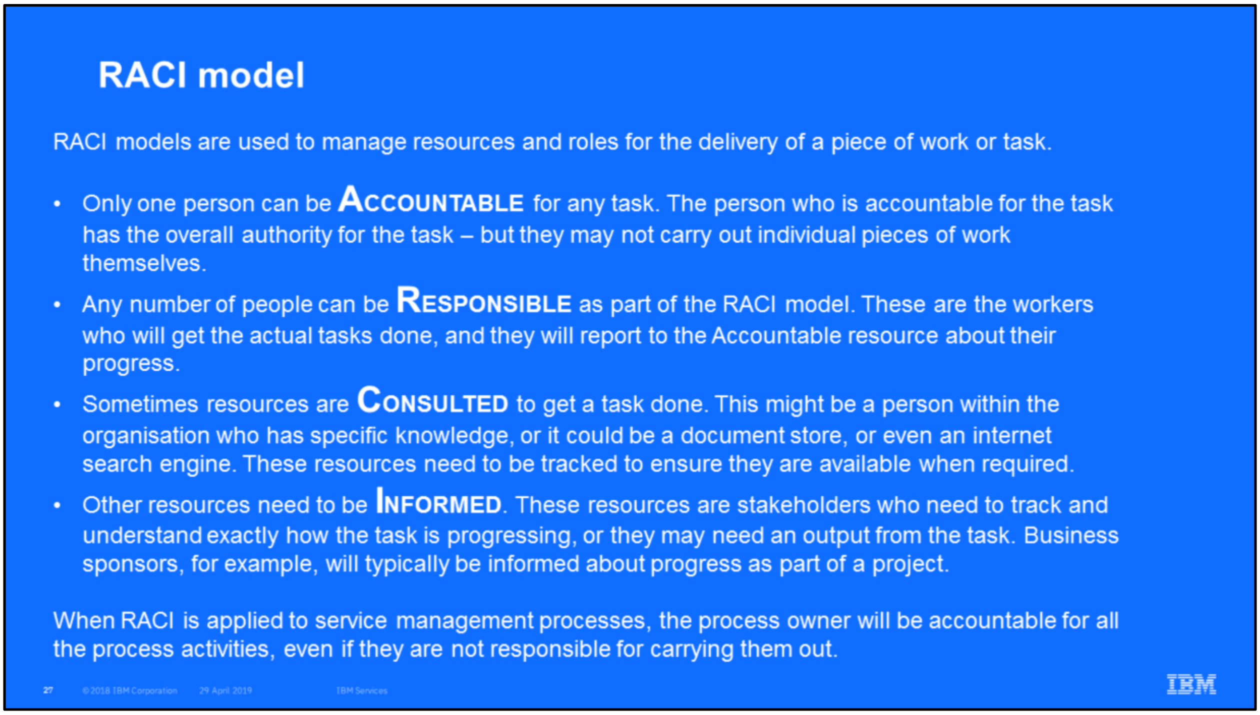
Changes Opened Today 0
Unassigned Changes 239
Overdue Changes 0
Changes On Hold 0
Conflicting Changes 1
Rejected Changes 0



Business Service Management Map shows how proposed change impacts related CIs


servicenow

Proposing a standard change with approved procedures and information pre-fille



RACI model

RACI models are used to manage resources and roles for the delivery of a piece of work or task.

- Only one person can be **ACCOUNTABLE** for any task. The person who is accountable for the task has the overall authority for the task – but they may not carry out individual pieces of work themselves.
- Any number of people can be **RESPONSIBLE** as part of the RACI model. These are the workers who will get the actual tasks done, and they will report to the Accountable resource about their progress.
- Sometimes resources are **CONSULTED** to get a task done. This might be a person within the organisation who has specific knowledge, or it could be a document store, or even an internet search engine. These resources need to be tracked to ensure they are available when required.
- Other resources need to be **INFORMED**. These resources are stakeholders who need to track and understand exactly how the task is progressing, or they may need an output from the task. Business sponsors, for example, will typically be informed about progress as part of a project.

When RACI is applied to service management processes, the process owner will be accountable for all the process activities, even if they are not responsible for carrying them out.

A RACI matrix is a very important tool that can help in the implementation and correct functioning of a process. The RACI matrix is mostly used to align the human elements in the process. Usually there are many different people involved in any process and they have differing responsibilities. A RACI matrix makes an explicit documentation of this and keeps as a ready reference to be used at different stages in the process. Here is how the RACI matrix can be utilized.

Responsible: This is the class of people who are ultimately responsible for getting the work done. This may refer to the individual workers that perform the given task or it could refer to the system in case the task is automated.

Accountable: This is the class of people that are accountable to oversee that the work gets done. This usually means the immediate manager overseeing the work.

Consulted: These may be subject matter exerts who need to be consulted at the time of an exception. There is a possibility that am unanticipated scenario arises in a process. These are the people who will do the thinking and suggest any deviations from the Standard Operating Procedure (SOP).

Informed: This is the class of people who have some interest in the performance of a given task. This may be a manager trying to control the execution of the task at hand. Also this could be an input signal to the other process.

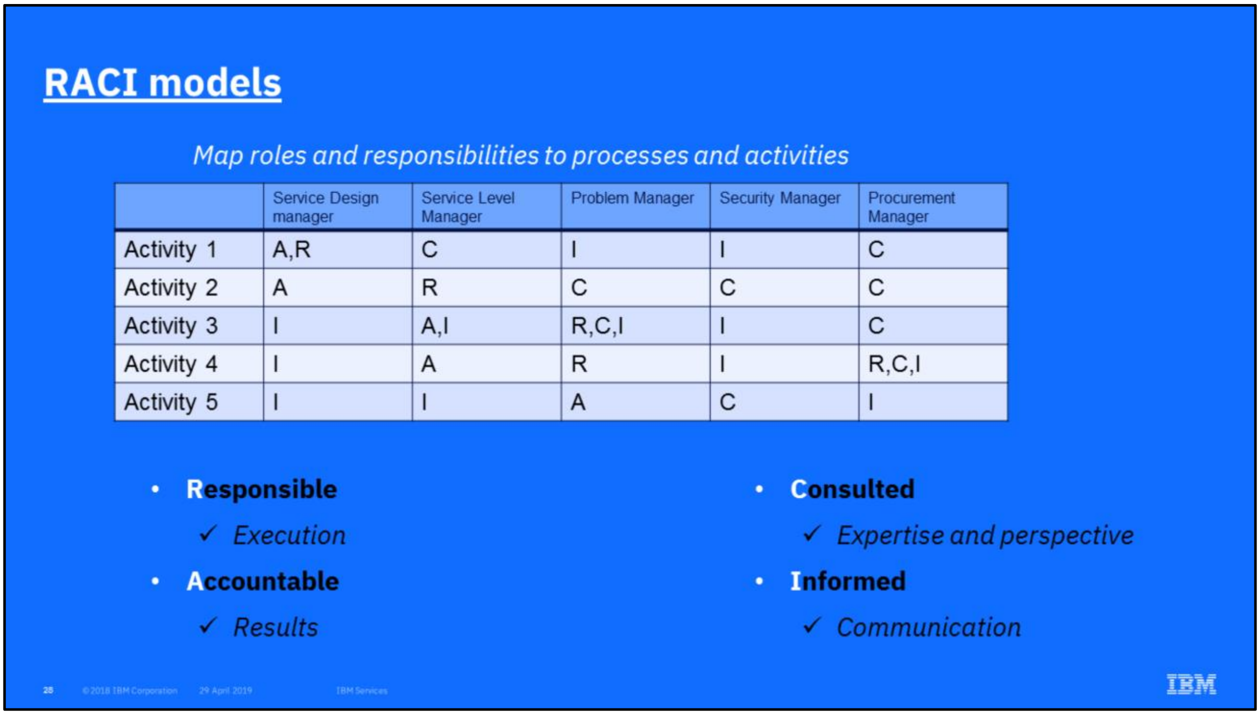
Rules for using RACI Matrix

Only One Responsible and Accountable Person: It is essential that only one person be assigned the R/A roles. Having more than one person responsible for the same task increases ambiguity and the chances of the work not being performed. It could also lead to duplication of work and wastage of efforts and costs. Having more than one accountable person again leads to the same problem. However, having only one person accountable also leads to a problem. If the assigned person is incompetent, the whole process may go for a toss. It is for this reason that there is often a hierarchy of accountable people in place.

Responsible-Accountable is Mandatory: The consult or inform roles are not mandatory for every activity. It is possible that some activities may not require them at all. But the responsible accountable roles must be assigned. Even if the system is performing the tasks automatically, someone must be made accountable to see that it does get done.

Communication with the Consultant: There must be a two way channel of communication with the consultant. This communication is itself a task and must be explicitly listed having its own responsible accountable persons. The important aspect is that the communication should be two-way. Hence one has to ensure that adequate follow-up is done and there is minimum time lag to complete the communication.

Inform the Required Stakeholders: This is a one way channel of communication. It is usually meant to be a signal for some other process to begin or as a control metric to ensure smooth functioning of the same process. Usually this is automated but needs accountability like other automated tasks.

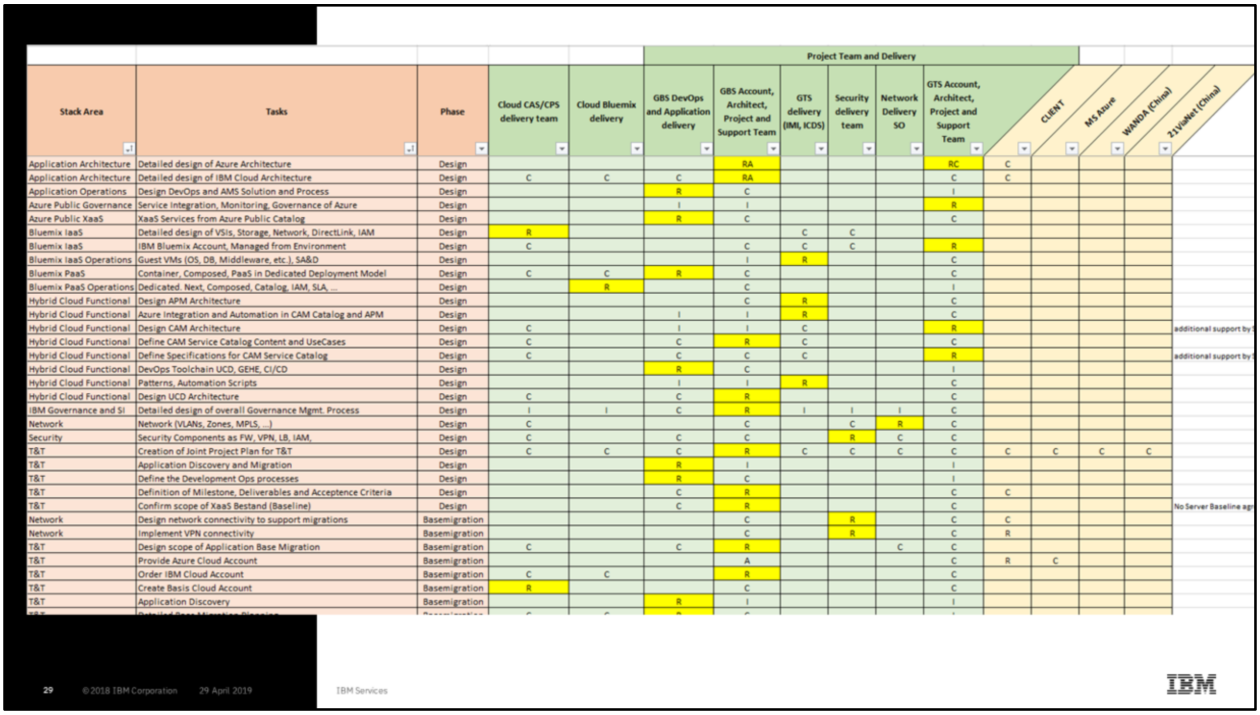


RACI models

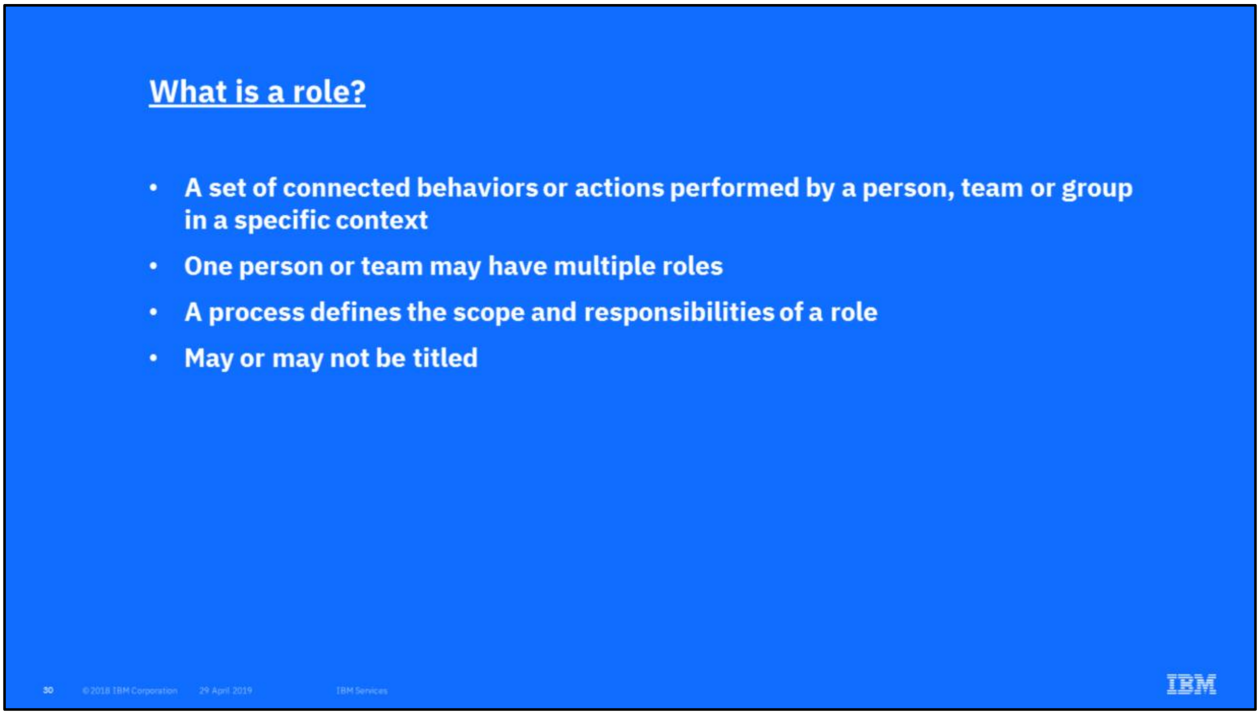
Map roles and responsibilities to processes and activities

	Service Design manager	Service Level Manager	Problem Manager	Security Manager	Procurement Manager
Activity 1	A,R	C	I	I	C
Activity 2	A	R	C	C	C
Activity 3	I	A,I	R,C,I	I	C
Activity 4	I	A	R	I	R,C,I
Activity 5	I	I	A	C	I

- **Responsible**
  - ✓ *Execution*
- **Accountable**
  - ✓ *Results*
- **Consulted**
  - ✓ *Expertise and perspective*
- **Informed**
  - ✓ *Communication*

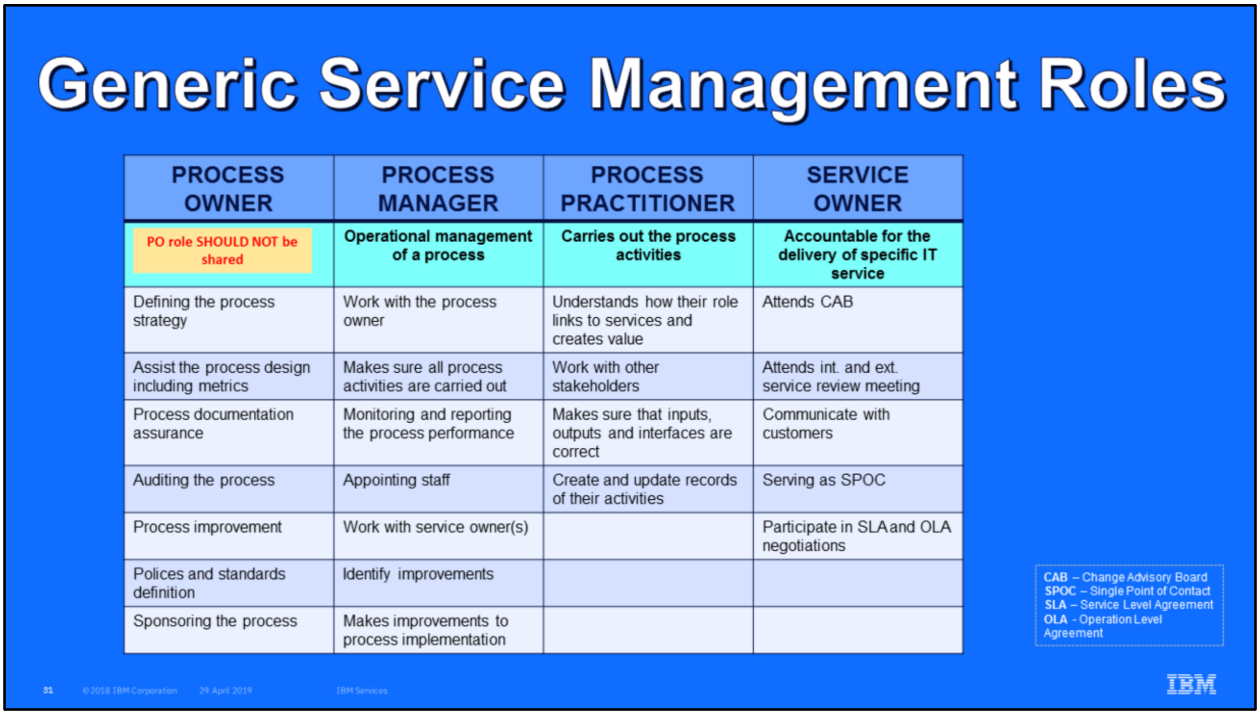


Stack Area	Tasks	Phase	Cloud CAS/CPS delivery team	Cloud Bluemix delivery	Project Team and Delivery										
					GBS DevOps and Application delivery	GBS Account, Architect, Project and Support Team	GTS delivery (IMI, ICDS)	Security delivery team	Network Delivery SO	GTS Account, Architect, Project and Support Team	CLIENT	MS Azure	WANDA (China)	21ViaNet (China)	
Application Architecture	Detailed design of Azure Architecture	Design				RA				RC	C				
Application Architecture	Detailed design of IBM Cloud Architecture	Design	C	C	C	RA				C	C				
Application Operations	Design DevOps and AMS Solution and Process	Design			R	C				I					
Azure Public Governance	Service Integration, Monitoring, Governance of Azure	Design			I	I				R					
Azure Public XaaS	XaaS Services from Azure Public Catalog	Design			R	C				C					
Bluemix IaaS	Detailed design of VSIs, Storage, Network, DirectLink, IAM	Design	R				C	C							
Bluemix IaaS	IBM Bluemix Account, Managed from Environment	Design	C			C	C	C		R					
Bluemix IaaS Operations	Guest VMs (OS, DB, Middleware, etc.), SA&D	Design				I	R			C					
Bluemix PaaS	Container, Composed, PaaS in Dedicated Deployment Model	Design	C	C	R	C				C					
Bluemix PaaS Operations	Dedicated. Next, Composed, Catalog, IAM, SLA, ...	Design		R		C				I					
Hybrid Cloud Functional	Design APM Architecture	Design				C	R			C					
Hybrid Cloud Functional	Azure Integration and Automation in CAM Catalog and APM	Design			I	I	R			C					
Hybrid Cloud Functional	Design CAM Architecture	Design	C		I	I	C			R					additional support by
Hybrid Cloud Functional	Define CAM Service Catalog Content and UseCases	Design	C		C	R	C			C					
Hybrid Cloud Functional	Define Specifications for CAM Service Catalog	Design	C		C	C	C			R					additional support by
Hybrid Cloud Functional	DevOps Toolchain UCD, GEHE, CI/CD	Design			R	C				I					
Hybrid Cloud Functional	Patterns, Automation Scripts	Design			I	I	R			C					
Hybrid Cloud Functional	Design UCD Architecture	Design	C		C	R				C					
IBM Governance and SI	Detailed design of overall Governance Mgmt. Process	Design	I	I	C	R	I	I	I	C					
Network	Network (VLANs, Zones, MPLS, ...)	Design	C			C		C	R	C					
Security	Security Components as FW, VPN, LB, IAM,	Design	C		C	C		R	C	C					
T&T	Creation of Joint Project Plan for T&T	Design	C	C	C	R	C	C	C	C	C	C	C	C	
T&T	Application Discovery and Migration	Design			R	I				I					
T&T	Define the Development Ops processes	Design			R	C				I					
T&T	Definition of Milestone, Deliverables and Acceptence Criteria	Design			C	R				C	C				
T&T	Confirm scope of XaaS Bestand (Baseline)	Design			C	R				C					No Server Baseline agr
Network	Design network connectivity to support migrations	Basemigration				C		R		C	C				
Network	Implement VPN connectivity	Basemigration				C		R		C	R				
T&T	Design scope of Application Base Migration	Basemigration	C		C	R			C	C					
T&T	Provide Azure Cloud Account	Basemigration				A				C	R	C			
T&T	Order IBM Cloud Account	Basemigration	C	C		R				C					
T&T	Create Basis Cloud Account	Basemigration	R			C				C					
T&T	Application Discovery	Basemigration			R	I				I					



What is a role?

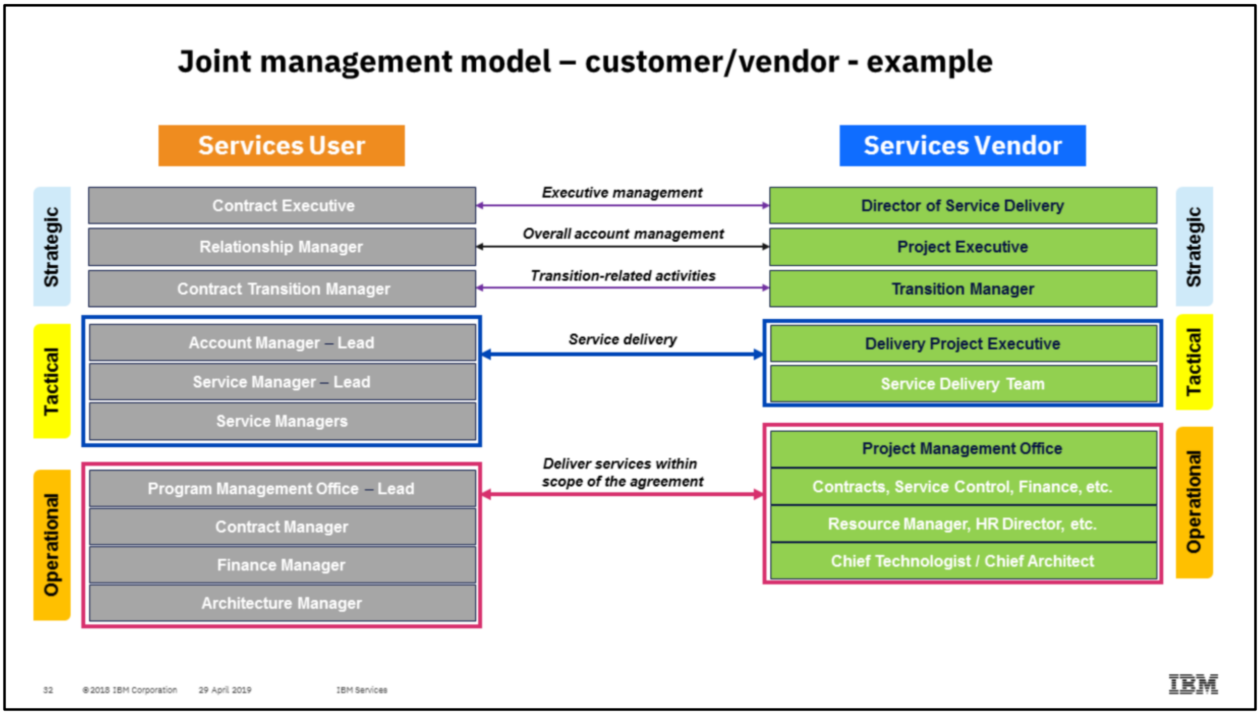
- A set of connected behaviors or actions performed by a person, team or group in a specific context
- One person or team may have multiple roles
- A process defines the scope and responsibilities of a role
- May or may not be titled



Generic Service Management Roles

PROCESS OWNER	PROCESS MANAGER	PROCESS PRACTITIONER	SERVICE OWNER
PO role SHOULD NOT be shared	**Operational management of a process**	**Carries out the process activities**	**Accountable for the delivery of specific IT service**
Defining the process strategy	Work with the process owner	Understands how their role links to services and creates value	Attends CAB
Assist the process design including metrics	Makes sure all process activities are carried out	Work with other stakeholders	Attends int. and ext. service review meeting
Process documentation assurance	Monitoring and reporting the process performance	Makes sure that inputs, outputs and interfaces are correct	Communicate with customers
Auditing the process	Appointing staff	Create and update records of their activities	Serving as SPOC
Process improvement	Work with service owner(s)		Participate in SLA and OLA negotiations
Polices and standards definition	Identify improvements		
Sponsoring the process	Makes improvements to process implementation		

CAB – Change Advisory Board
SPOC – Single Point of Contact
SLA – Service Level Agreement
OLA - Operation Level Agreement



Joint management model – customer/vendor - example

Services User

Services Vendor

	Services User		Services Vendor	
Strategic	Contract Executive	*Executive management*	Director of Service Delivery	Strategic
	Relationship Manager	*Overall account management*	Project Executive	
	Contract Transition Manager	*Transition-related activities*	Transition Manager	
Tactical	Account Manager – Lead Service Manager – Lead Service Managers	*Service delivery*	Delivery Project Executive Service Delivery Team	Tactical
Operational	Program Management Office – Lead Contract Manager Finance Manager Architecture Manager	*Deliver services within scope of the agreement*	Project Management Office Contracts, Service Control, Finance, etc. Resource Manager, HR Director, etc. Chief Technologist / Chief Architect	Operational

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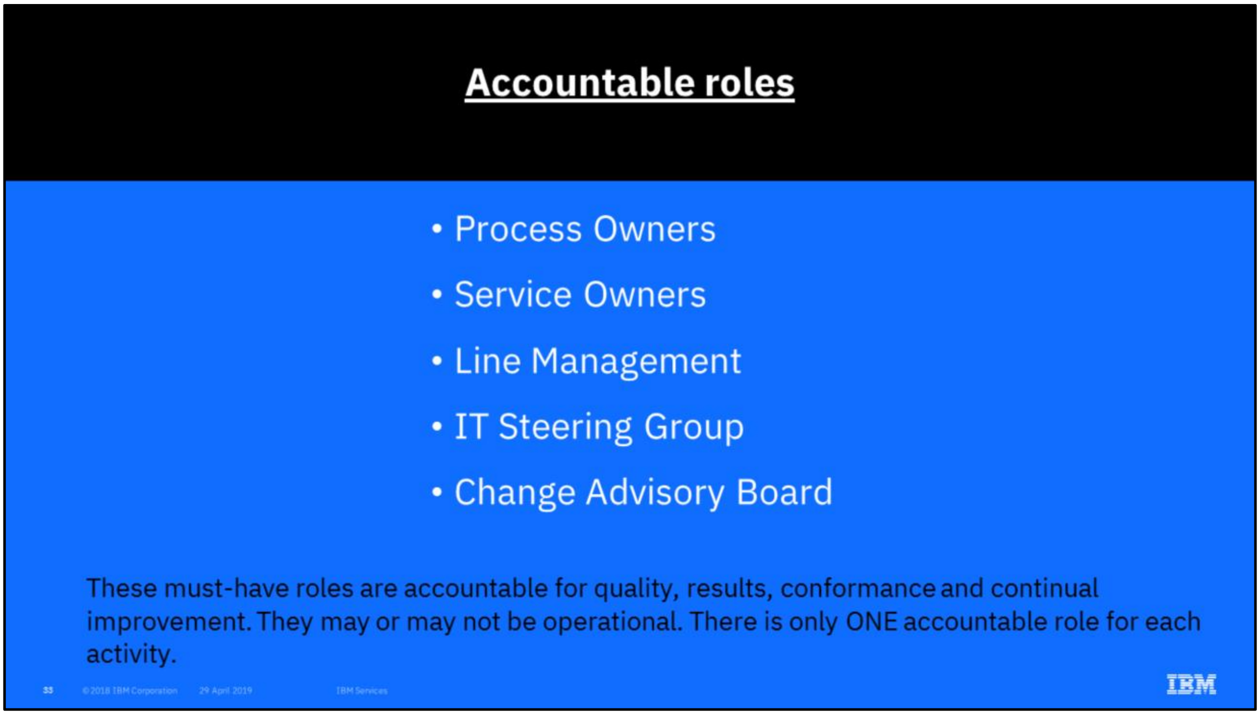
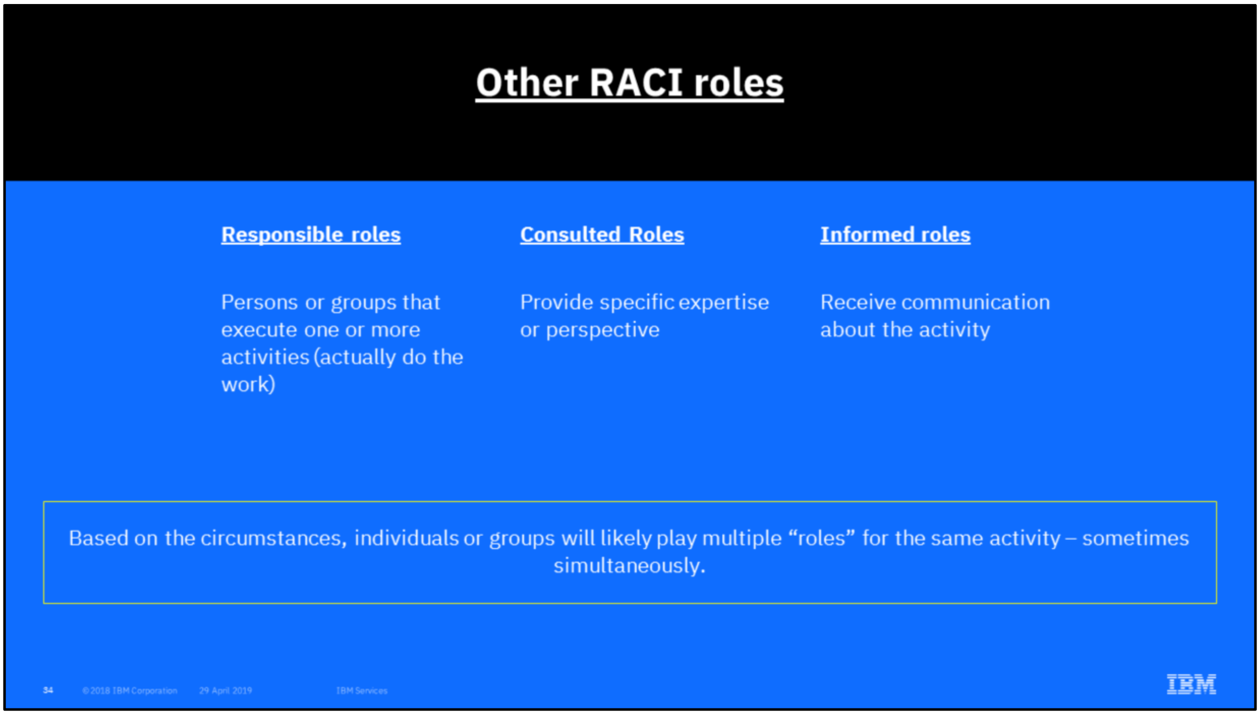


Accountable roles

- Process Owners
- Service Owners
- Line Management
- IT Steering Group
- Change Advisory Board

These must-have roles are accountable for quality, results, conformance and continual improvement. They may or may not be operational. There is only ONE accountable role for each activity.



Other RACI roles

Responsible roles

Persons or groups that execute one or more activities (actually do the work)

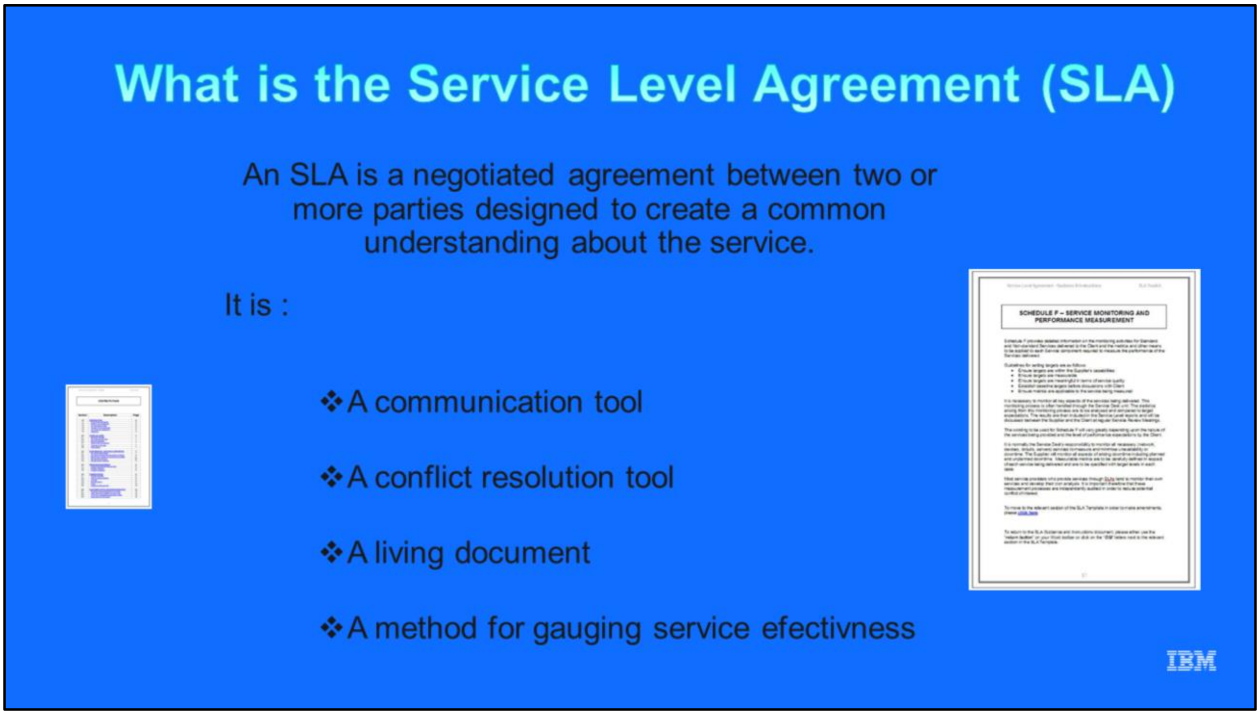
Consulted Roles

Provide specific expertise or perspective

Informed roles

Receive communication about the activity

Based on the circumstances, individuals or groups will likely play multiple “roles” for the same activity – sometimes simultaneously.



What is the Service Level Agreement (SLA)

An SLA is a negotiated agreement between two or more parties designed to create a common understanding about the service.

It is :

- ❖A communication tool
- ❖A conflict resolution tool
- ❖A living document
- ❖A method for gauging service efectivness

SCHEDULE F – SERVICE MONITORING AND PERFORMANCE MEASUREMENT

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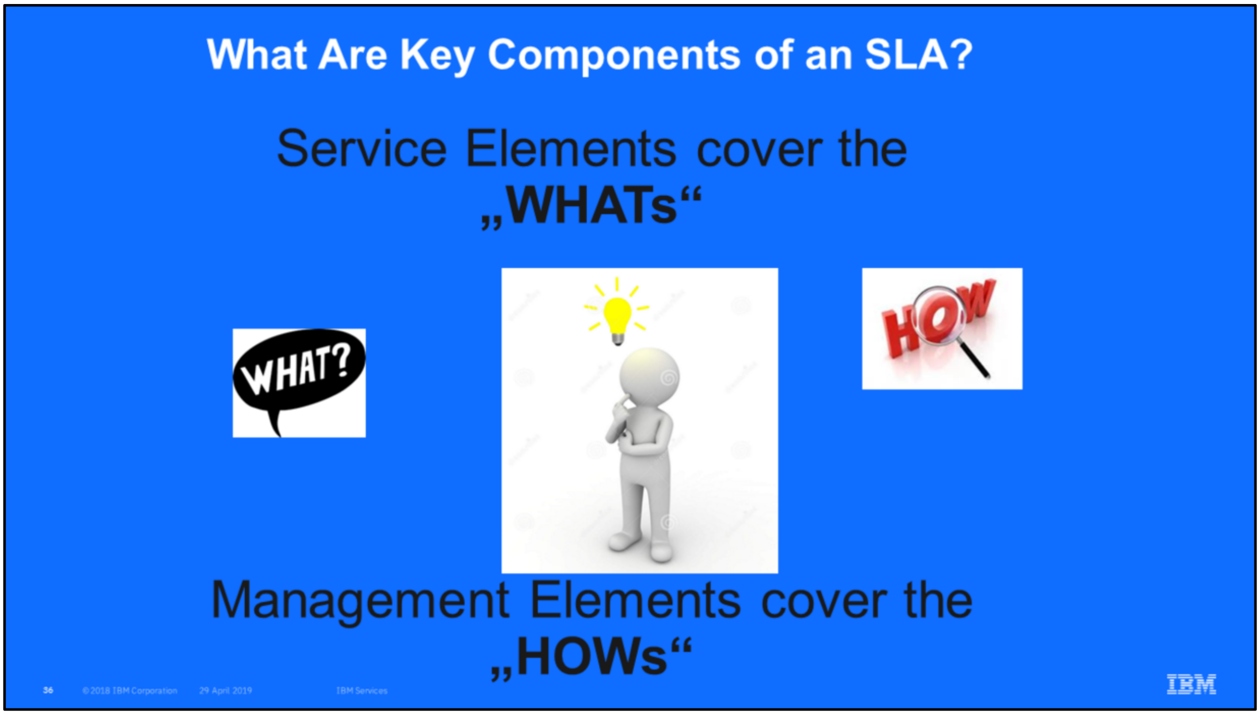

What Are Key Components of an SLA?

Service Elements cover the
„WHATs“

Management Elements cover the
„HOWs“

What Are Key Components of an SLA?
The SLA should include components in two areas: services and management.
Service elements include specifics of services provided (and what's excluded, if there's room for doubt), conditions of service availability, standards such as time window for each level of service (prime time and non-prime time may have different service levels, for example), responsibilities of each party, escalation procedures, and cost/service tradeoffs.
Management elements should include definitions of measurement standards and methods, reporting process, contents and frequency, a dispute resolution process, an indemnification clause protecting the customer from third-party litigation resulting from service level breaches (this should already be covered in the contract, however), and a mechanism for updating the agreement as required.
This last item is critical; service requirements and vendor capabilities change, so there must be a way to make sure the SLA is kept up-to-date.

Service Elements

Quality of service report

Service Elements communicates :

- ✓ What services will be provided
- ✓ What are the conditions of service availability
- ✓ What are the service standards
- ✓ What are the responsibilities of both parties

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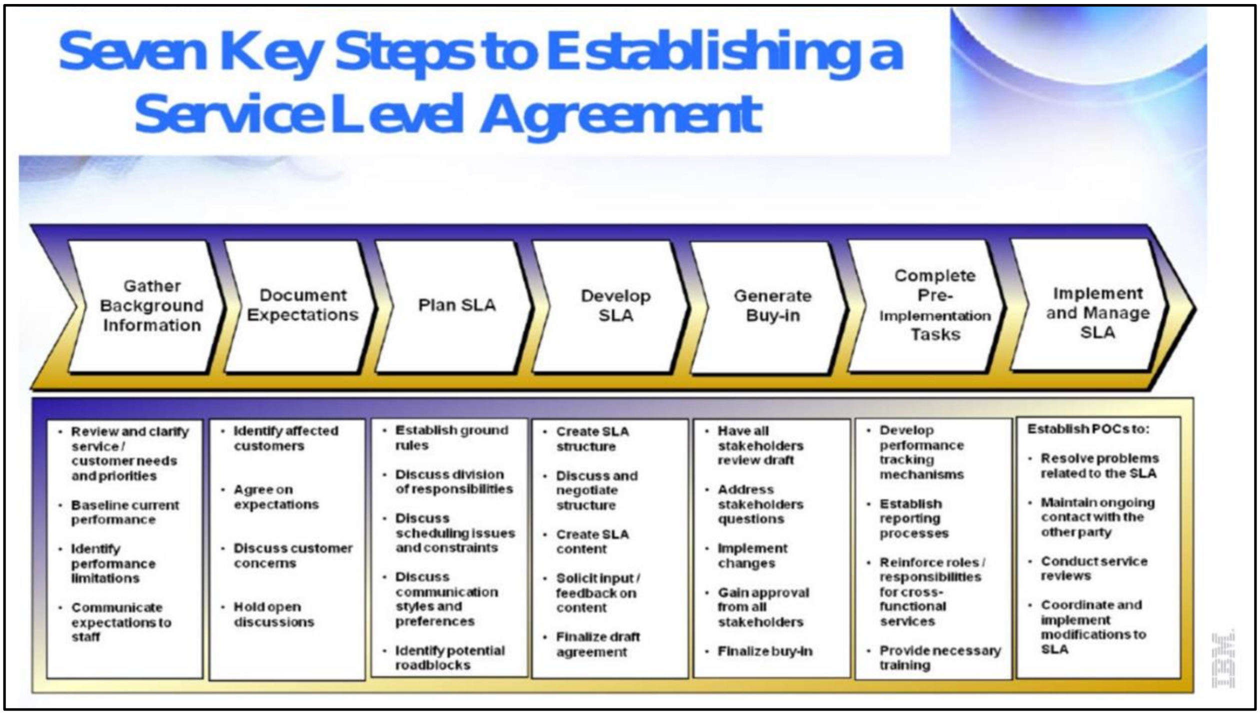
Management Elements

Management Elements communicates:

- ✓ How service effectiveness will be tracked
- ✓ How information about service effectiveness will be reported and addressed
- ✓ How service-related disagreements will be resolved
- ✓ How the parties will review and revise the agreement



Seven Key Steps to Establishing a Service Level Agreement

Gather Background Information
- Review and clarify service / customer needs and priorities
- Baseline current performance
- Identify performance limitations
- Communicate expectations to staff

Document Expectations
- Identify affected customers
- Agree on expectations
- Discuss customer concerns
- Hold open discussions

Plan SLA
- Establish ground rules
- Discuss division of responsibilities
- Discuss scheduling issues and constraints
- Discuss communication styles and preferences
- Identify potential roadblocks

Develop SLA
- Create SLA structure
- Discuss and negotiate structure
- Create SLA content
- Solicit input / feedback on content
- Finalize draft agreement

Generate Buy-in
- Have all stakeholders review draft
- Address stakeholders questions
- Implement changes
- Gain approval from all stakeholders
- Finalize buy-in

Complete Pre-Implementation Tasks
- Develop performance tracking mechanisms
- Establish reporting processes
- Reinforce roles / responsibilities for cross-functional services
- Provide necessary training

Implement and Manage SLA

Establish POCs to:
- Resolve problems related to the SLA
- Maintain ongoing contact with the other party
- Conduct service reviews
- Coordinate and implement modifications to SLA

What should I consider when selecting metrics for my SLA?

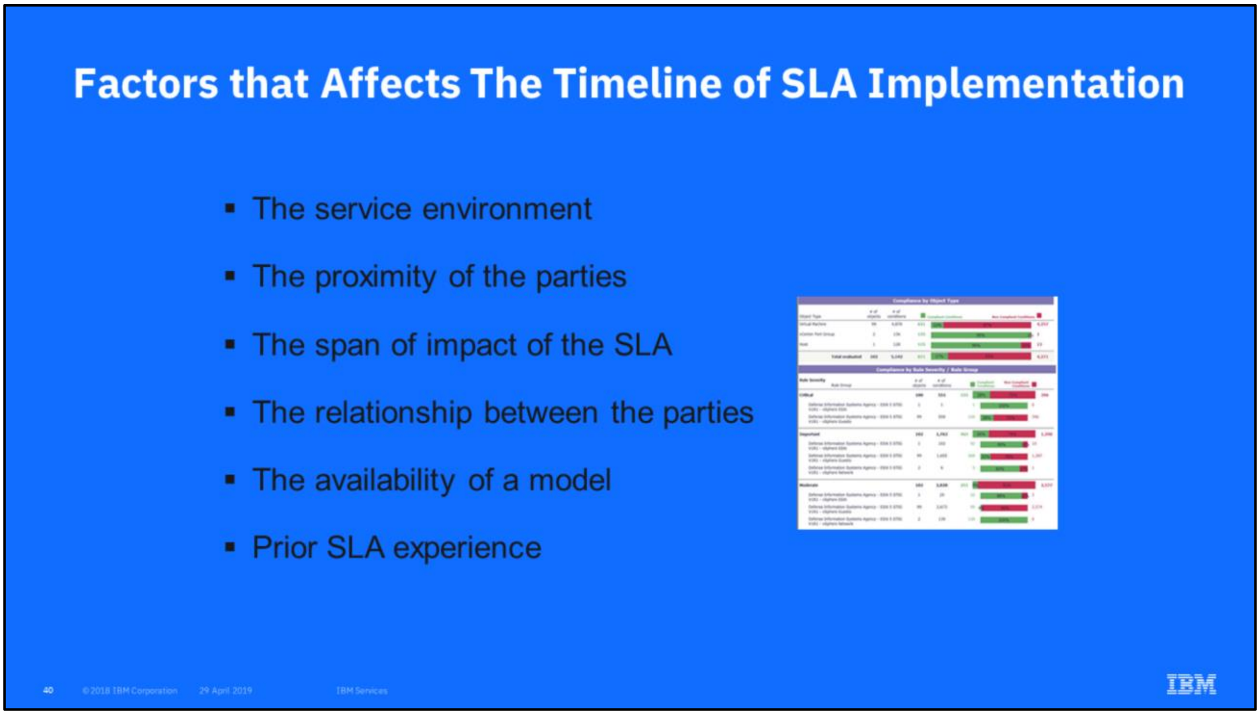
Choose measurements that motivate the right behavior. The first goal of any metric is to motivate the appropriate behavior on behalf of the client and the service provider. Each side of the relationship will attempt to optimize its actions to meet the performance objectives defined by the metrics. First, focus on the behavior that you want to motivate. Then, test your metrics by putting yourself in the place of the other side. How would you optimize your performance? Does that optimization support the originally desired results?

Ensure that metrics reflect factors within the service provider's control. To motivate the right behavior, SLA metrics have to reflect factors within the outsourcer's control. A typical mistake is to penalize the service provider for delays caused by the client's lack of performance. For example, if the client provides change specifications for application code several weeks late, it is unfair and demotivating to hold the service provider to a prespecified delivery date. Making the SLA two-sided by measuring the client's performance on mutually dependent actions is a good way to focus on the intended results.

Choose measurements that are easily collected. Balance the power of a desired metric against its ease of collection. Ideally, the SLA metrics will be captured automatically, in the background, with minimal overhead, but this objective may not be possible for all desired metrics. When in doubt, compromise in favor of easy collection; no one is going to invest the effort to collect metrics manually.

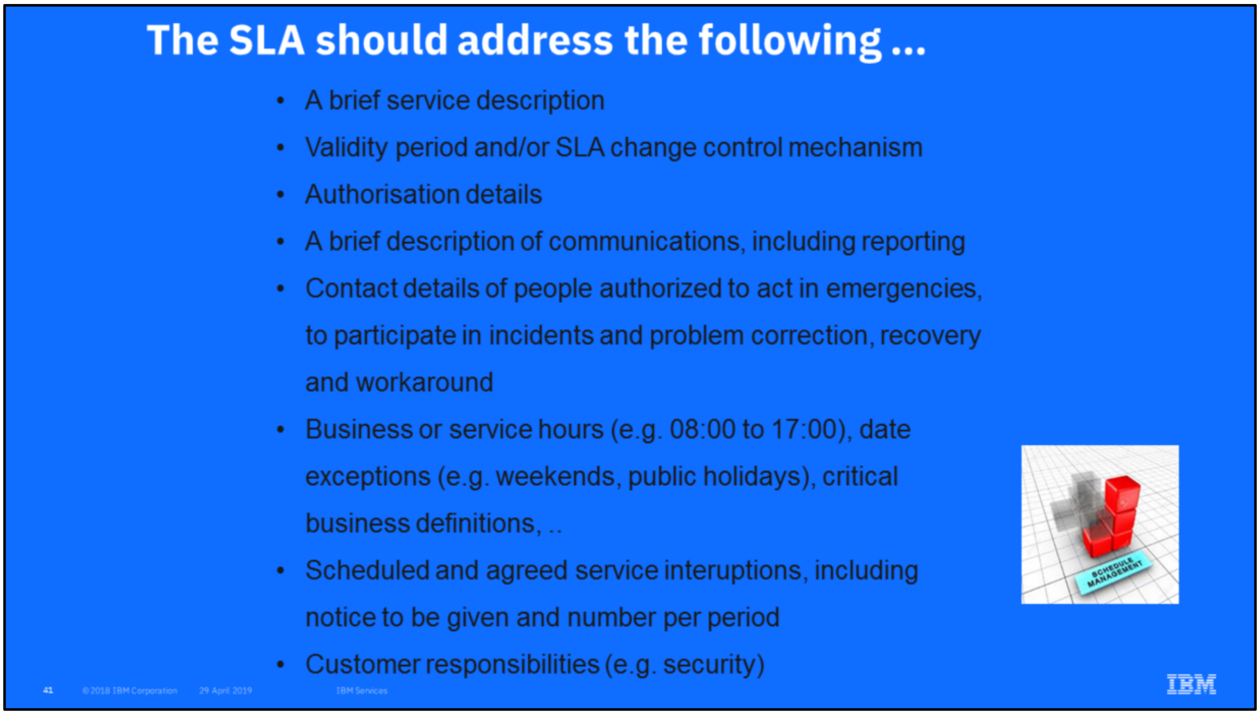
Less is more. Despite the temptation to control as many factors as possible, avoid choosing an excessive number of metrics or metrics that produce a voluminous amount of data that no one will have time to analyze.

Set a proper baseline. Defining the right metrics is only half of the battle. To be useful, the metrics must be set to reasonable, attainable performance levels. Unless strong historical measurement data is available, be prepared to revisit and readjust the settings at a future date through a predefined process specified in the SLA.



Factors that Affects The Timeline of SLA Implementation

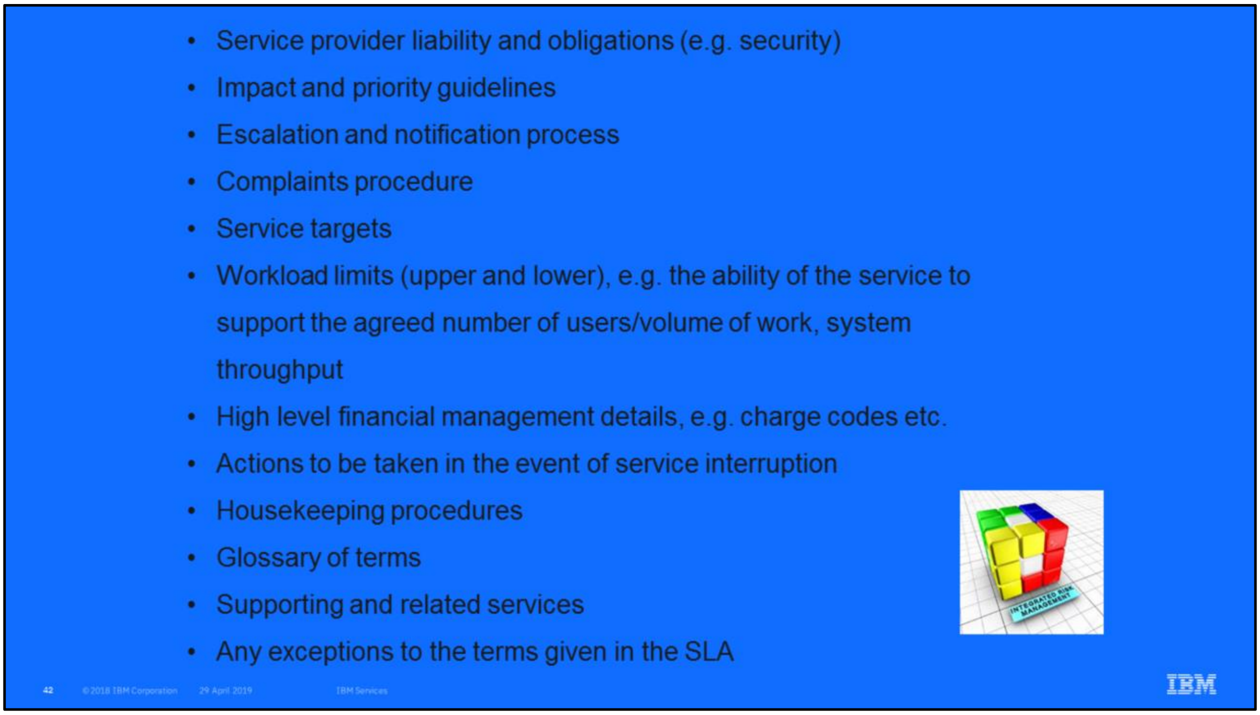
- The service environment
- The proximity of the parties
- The span of impact of the SLA
- The relationship between the parties
- The availability of a model
- Prior SLA experience



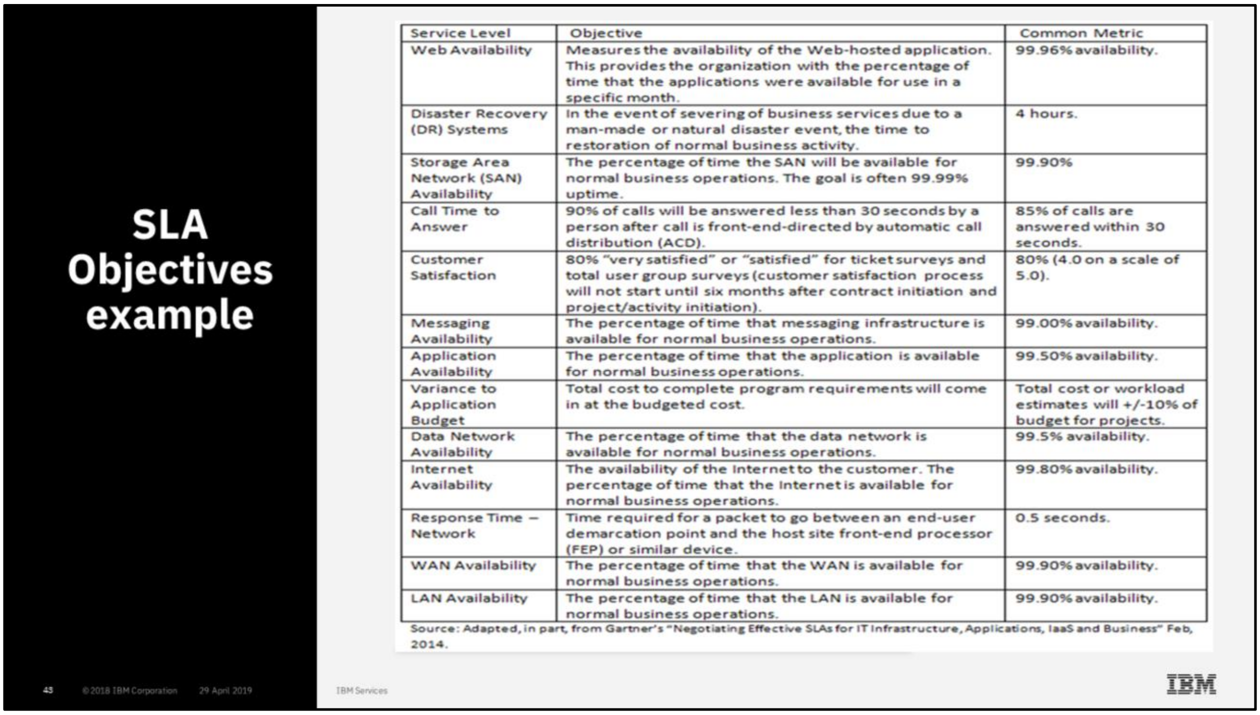
SCHEDULE
MANAGEMENT

The SLA should address the following ...

- A brief service description
- Validity period and/or SLA change control mechanism
- Authorisation details
- A brief description of communications, including reporting
- Contact details of people authorized to act in emergencies, to participate in incidents and problem correction, recovery and workaround
- Business or service hours (e.g. 08:00 to 17:00), date exceptions (e.g. weekends, public holidays), critical business definitions, ..
- Scheduled and agreed service interuptions, including notice to be given and number per period
- Customer responsibilities (e.g. security)


INTEGRATED RISK MANAGEMENT

- Service provider liability and obligations (e.g. security)
- Impact and priority guidelines
- Escalation and notification process
- Complaints procedure
- Service targets
- Workload limits (upper and lower), e.g. the ability of the service to support the agreed number of users/volume of work, system throughput
- High level financial management details, e.g. charge codes etc.
- Actions to be taken in the event of service interruption
- Housekeeping procedures
- Glossary of terms
- Supporting and related services
- Any exceptions to the terms given in the SLA



SLA Objectives example

Service Level	Objective	Common Metric
Web Availability	Measures the availability of the Web-hosted application. This provides the organization with the percentage of time that the applications were available for use in a specific month.	99.96% availability.
Disaster Recovery (DR) Systems	In the event of severing of business services due to a man-made or natural disaster event, the time to restoration of normal business activity.	4 hours.
Storage Area Network (SAN) Availability	The percentage of time the SAN will be available for normal business operations. The goal is often 99.99% uptime.	99.90%
Call Time to Answer	90% of calls will be answered less than 30 seconds by a person after call is front-end-directed by automatic call distribution (ACD).	85% of calls are answered within 30 seconds.
Customer Satisfaction	80% "very satisfied" or "satisfied" for ticket surveys and total user group surveys (customer satisfaction process will not start until six months after contract initiation and project/activity initiation).	80% (4.0 on a scale of 5.0).
Messaging Availability	The percentage of time that messaging infrastructure is available for normal business operations.	99.00% availability.
Application Availability	The percentage of time that the application is available for normal business operations.	99.50% availability.
Variance to Application Budget	Total cost to complete program requirements will come in at the budgeted cost.	Total cost or workload estimates will +/-10% of budget for projects.
Data Network Availability	The percentage of time that the data network is available for normal business operations.	99.5% availability.
Internet Availability	The availability of the Internet to the customer. The percentage of time that the Internet is available for normal business operations.	99.80% availability.
Response Time – Network	Time required for a packet to go between an end-user demarcation point and the host site front-end processor (FEP) or similar device.	0.5 seconds.
WAN Availability	The percentage of time that the WAN is available for normal business operations.	99.90% availability.
LAN Availability	The percentage of time that the LAN is available for normal business operations.	99.90% availability.

Source: Adapted, in part, from Gartner's "Negotiating Effective SLAs for IT Infrastructure, Applications, IaaS and Business" Feb, 2014.

What Kind of Metrics Should be Monitored?

Many items can be monitored as part of an SLA, but the scheme should be kept as simple as possible to avoid confusion and excessive cost on either side. In choosing metrics, examine your operation and decide what is most important. The more complex the monitoring (and associated remedy) scheme, the less likely it is to be effective, since no-one will have time to properly analyze the data. When in doubt, opt for ease of collection of metric data; automated systems are best, since it is unlikely that costly manual collection of metrics will be reliable.

Depending on the service, the types of metric to monitor may include:

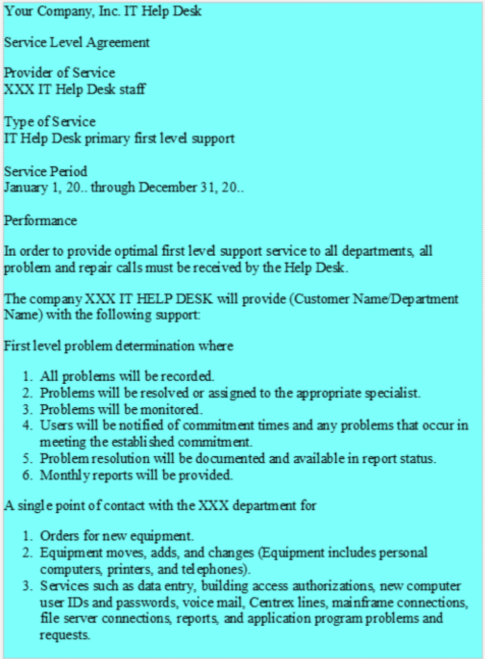
Service availability: the amount of time the service is available for use. This may be measured by time slot, with, for example, 99.5 percent availability required between the hours of 8 am and 6 pm, and more or less availability specified during other times. E-commerce operations typically have extremely aggressive SLAs at all times; 99.999 percent uptime is a not uncommon requirement for a site that generates millions of dollars an hour.

Defect rates: Counts or percentages of errors in major deliverables. Production failures such as incomplete backups and restores, coding errors/rework, and missed deadlines may be included in this category.

Technical quality: in outsourced application development, measurement of technical quality by commercial analysis tools that examine factors such as program size and coding defects.

Security: In these hyper-regulated times, application and network security breaches can be costly. Measuring controllable security measures such as anti-virus updates and patching is key in proving all reasonable preventive measures were taken, in the event of an incident.

Example : IT Help Desk SLA



Your Company, Inc. IT Help Desk

Service Level Agreement

Provider of Service
XXX IT Help Desk staff

Type of Service
IT Help Desk primary first level support

Service Period
January 1, 20.. through December 31, 20..

Performance

In order to provide optimal first level support service to all departments, all problem and repair calls must be received by the Help Desk.

The company XXX IT HELP DESK will provide (Customer Name/Department Name) with the following support:

First level problem determination where

1. All problems will be recorded.
2. Problems will be resolved or assigned to the appropriate specialist.
3. Problems will be monitored.
4. Users will be notified of commitment times and any problems that occur in meeting the established commitment.
5. Problem resolution will be documented and available in report status.
6. Monthly reports will be provided.

A single point of contact with the XXX department for

1. Orders for new equipment.
2. Equipment moves, adds, and changes (Equipment includes personal computers, printers, and telephones).
3. Services such as data entry, building access authorizations, new computer user IDs and passwords, voice mail, Centrex lines, mainframe connections, file server connections, reports, and application program problems and requests.

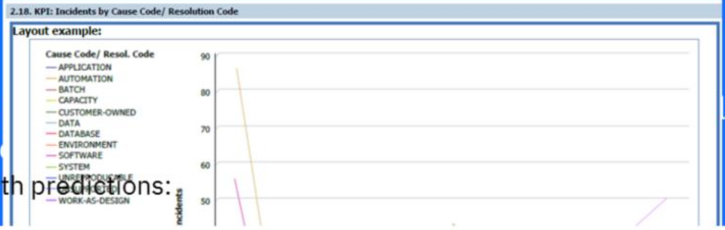
Results have to be reported – information is crucial for the overall success

The modern ITSM tools lso

online dashboard functi

To complex analysis even with predictions:

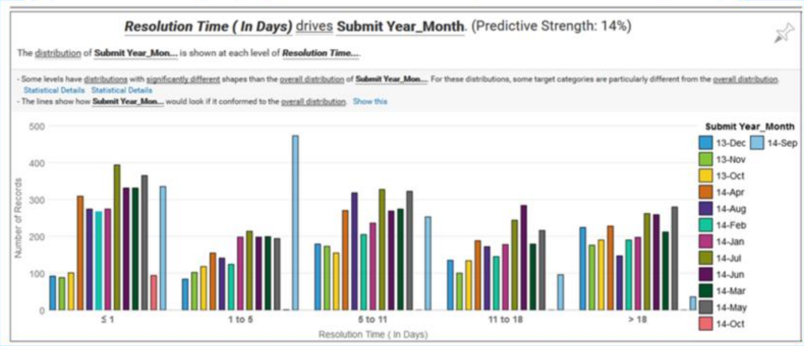
From basic reports :



2.18. KPI: Incidents by Cause Code/ Resolution Code

Layout example:

Cause Code/ Resol. Code
APPLICATION
AUTOMATION
BATCH
CAPACITY
CUSTOMER-OWNED
DATA
DATABASE
ENVIRONMENT
SOFTWARE
SYSTEM
UNREPRODUCIBLE
WORK-AS-DESIGN
ncidents
90
80
70
60
50



Resolution Time (In Days) drives **Submit Year_Month**. (Predictive Strength: 14%)

The distribution of **Submit Year_Mon...** is shown at each level of **_Resolution Time..._**

- Some levels have distributions with significantly different shapes than the overall distribution of **Submit Year_Mon...** For these distributions, some target categories are particularly different from the overall distribution.

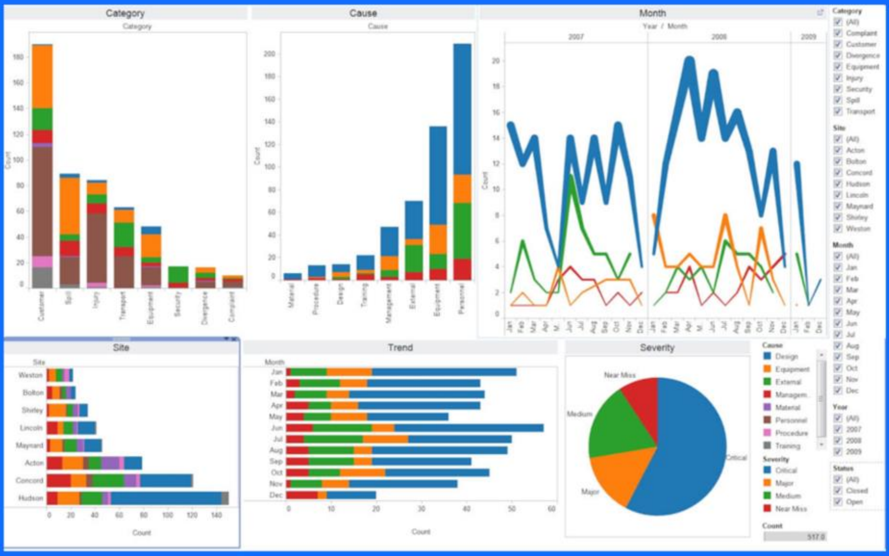
Statistical Details Statistical Details

- The lines show how **Submit Year_Mon...** would look if it conformed to the overall distribution. Show this

500
400
300
200
100
0
Number of Records
≤ 1
1 to 5
5 to 11
11 to 18
> 18
Resolution Time (In Days)
Submit Year_Month
13-Dec
14-Sep
13-Nov
13-Oct
14-Apr
14-Aug
14-Feb
14-Jan
14-Jul
14-Jun
14-Mar
14-May
14-Oct

KPI and SLA results visualization and “dashboarding” specific SW

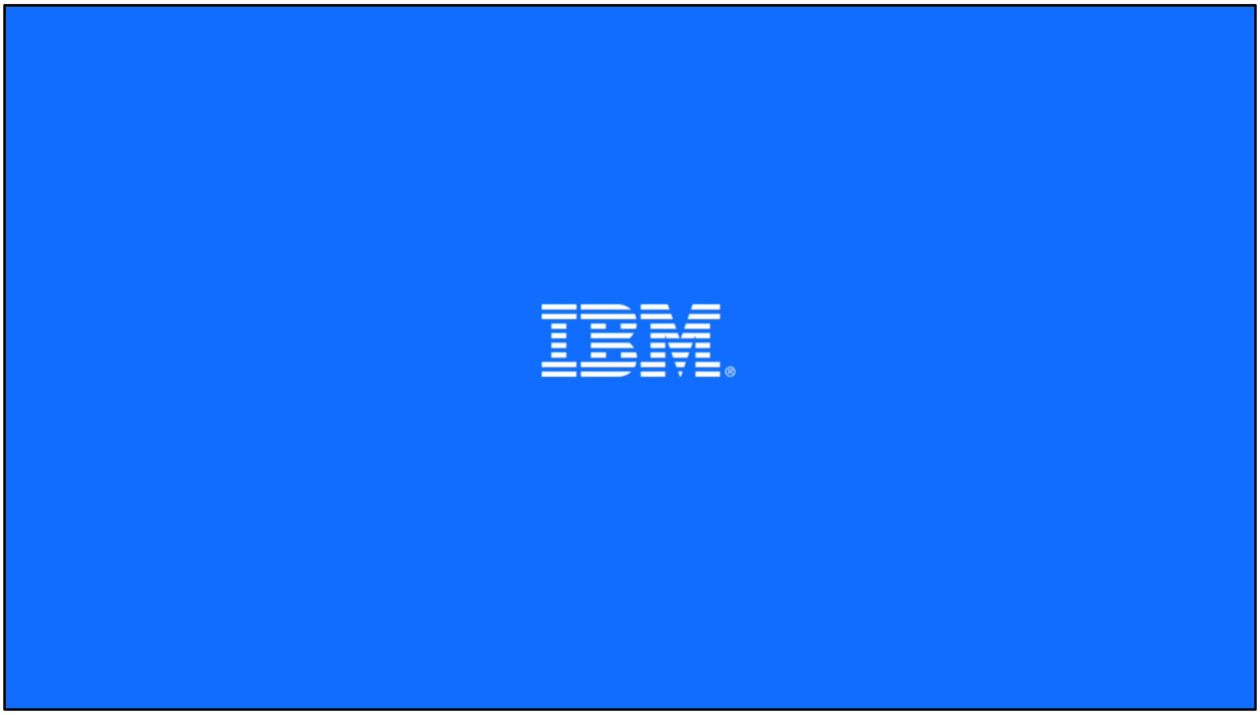
Example – Tableau SW


Category
Customer
Spill
Injury
Transport
Equipment
Security
Divergence
Complaint
Count
Cause
Material
Procedure
Design
Training
Management
External
Equipment
Personnel
Month
Year / Month
2007
2008
2009
Category
(All)
Complaint
Customer
Divergence
Equipment
Injury
Security
Spill
Transport
Site
(All)
Acton
Bolton
Concord
Hudson
Lincoln
Maynard
Shirley
Weston
Month
(All)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Year
(All)
2007
2008
2009
Status
(All)
Closed
Open
Site
Weston
Bolton
Shirley
Lincoln
Maynard
Acton
Concord
Hudson
Count
Trend
Month
Count
Severity
Near Miss
Medium
Major
Critical
Cause
Design
Equipment
External
Managem..
Material
Personnel
Procedure
Training
Severity
Critical
Major
Medium
Near Miss
Count
517.0

What shall we talk about next?

ITSM future directions

IBM Services



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