ITSM future directions

Agenda

- ITSM trends
- Major change enabler
- Cognitive and ITSM
- SIAM
- New horizon

When I started my IT Service Management career, ITIL version 2 was king and we didn't really question 'how' we did service management. The companies I was working with were busy trying to get change management in place, improve their Service Desk functionality and decide how much Configuration management they really needed.

The arrival of ITIL version 3 felt at the time like a huge disruption. Service management people started to look outside of operations, and to understand how true service management operates across the entire service lifecycle.

Fast-forward a few years, and ITIL version 3 looks like a minor event compared to the current state of IT service management (ITSM). DevOps, Agile, Lean, SIAM, IT4IT – there's so many new things bursting onto the scene.

ITSM future perspectives

PROCESS PERSPECTIVE

ITIL as only ITSM framework is no longer sufficient to design a future process map

COLLABORATIVE PERSPECTIVE

ITIL in combination with DevOps leads to better results in digital operating models

INTEGRATION PERSPECTIVE

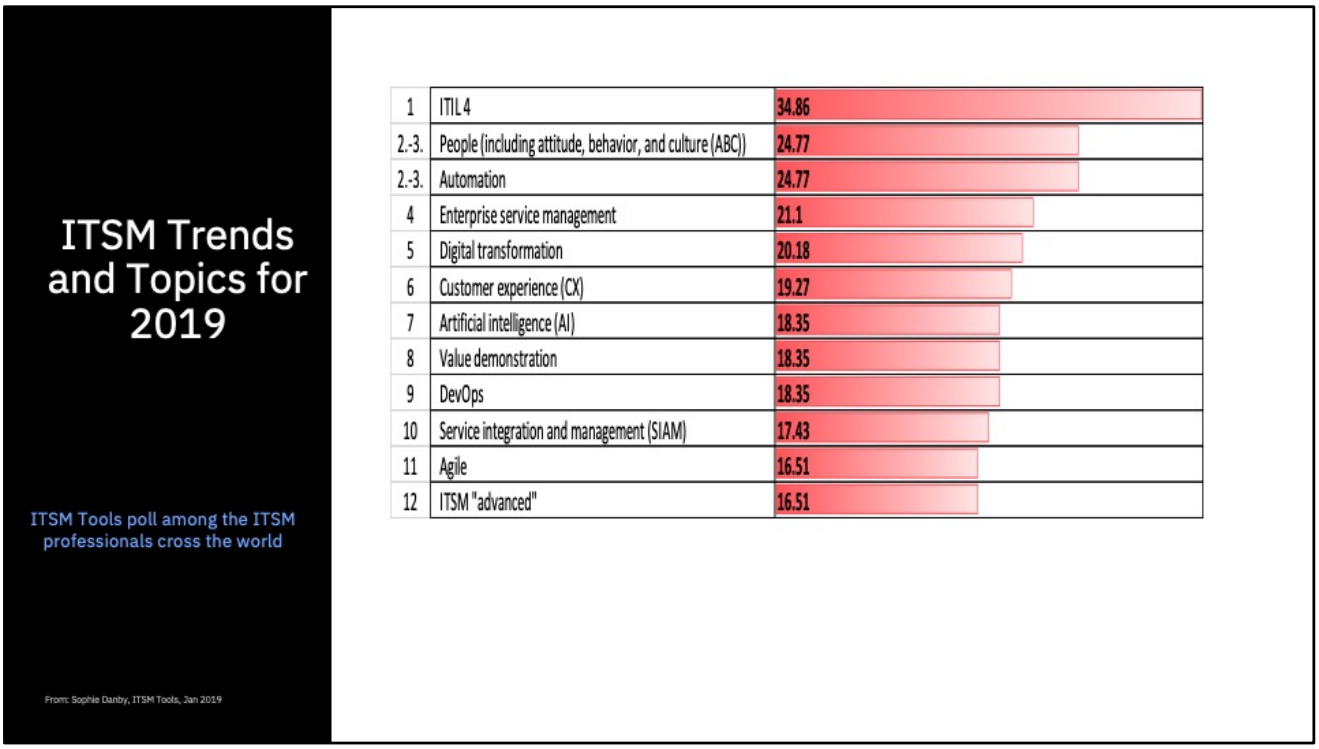
Agile frameworks are helpful to facilitate an enterprise adoption

The Top hottest ITSM trends for 2018 and beyond

2018 predictions

1. **Most Computers Will Be Invisible** – to reference the Internet of Things (IoT) and the critical need to control such devices in light of security in particular.
2. **There Will Be More Major Security Breaches** – and if security wasn't at the top of corporate IT's agenda it surely is now.
3. **Greater Adoption of DevOps, with More Focus on Culture** – and the concepts of DevOps have definitely continued to make headway into the mainstream at pace.
4. **Increased Use of AI and Automation in ITSM** – AI was probably the most talked-about ITSM (and IT) topic in 2018 (although not necessarily the most acted-upon).
5. **More Focus on Value and Customer Experience** – it has been great to see the increased focus on both of these areas in 2018, and I expect there's a lot more to come.
6. **More Enterprise Service Management** – statistics from HDI show the growth in the use of ITSM principles, best practices, and technologies outside of IT. I share some of these below.

From : **5 ITSM Trends and Predictions for 2019, Sarah Lahav, Nov20, 2018, SysAid Blog**



HOT TOPIC #1 – ITIL 4

ITIL 4 placing at number one across the 30 topic areas is a surprise and yet unsurprising. There has been so little information made available about what it will entail that there's probably pent-up demand from those people who have spent potentially their whole careers studying and then working with ITIL best practice. For many people, and organizations, AXELOS can't afford to underdeliver with ITIL 4. Thankfully the wait will soon be over – with the first ITIL update publication launch happening mid-February. We'll be creating content on what ITIL 4 means for the ITSM industry, and the people and organizations within it, once the first publication is released.

HOT TOPIC #2 (JOINT) – AUTOMATION

As I wrote when automation topped last year's poll:

"Automation is nothing new. IT management and ITSM solutions have been sold for decades based on the ability to automate previously manual activities for speedier and better outcomes, plus lower costs.

And now, in addition to traditional IT automation capabilities – such as scripts, process-workflow automation, and third-party system orchestration – AI, and in particular machine learning, is capable of extending and enhancing automation capabilities."

There's no doubt of its importance to ITSM and other business functions, with it playing a vital part in transforming business operations to meet the needs of digital transformation and the opportunities and challenges this transformation addresses.

HOT TOPIC #2 (JOINT) – PEOPLE

Well isn't this a pleasant surprise. I think few people would have predicted that people would be a top-3 topic area for ITSM pros. Paul Wilkinson and his pointy finger will likely be doing a little jig of joy right now.

Its importance makes so much sense though – there's little in ITSM that goes right (or wrong) without the influence of people. And the possible coverage areas are wide – from the required skills and capabilities for particular ITSM jobs, through effective leadership and management, to the need for organizational change management when driving change. And let's not forget wellbeing!

Hopefully, 2019 will be the year when the ITSM community finally wakes up to realize the importance of people – and everything that makes them the best they can possibly be – to the success of IT service delivery and support.

HOT TOPIC #4 – ENTERPRISE SERVICE MANAGEMENT

Again, as with automation, enterprise service management is nothing new. In fact, much of ITSM.tools' enterprise service management content was written 2-3 years ago when its profile was rising rapidly within the ITSM community.

Recent ITSM industry surveys, such as HDI's 2018 "The State of Enterprise Service Management" report (registration required), show just how far enterprise service management has come in terms of adoption and the proof of benefits. Plus, the connection of enterprise service management to the third element of digital transformation – back-office transformation – is another driver for interest and adoption.

HOT TOPIC #5 – DIGITAL TRANSFORMATION

Digital transformation is another top-5 holdover from 2018, albeit with a minor drop. And the words from my 2018 article still hold true:

"There's no doubt that a key ITSM challenge for <<this year>> will be delivering against the business need for "digital transformation" – from generating new revenues (driven by technology and data), providing better customer engagement capabilities, and the need to bring corporate back-office operations into the 21st century."

And I've still not seen anything that contradicts the point of view that enterprise service management (and thus ITSM) can be a great platform for digital transformation – from better designing, delivering, managing, supporting, and improving IT/business services to helping to improve business back-office capabilities using ITSM principles, thinking, capabilities, and technologies.

2019
"predictions"

AI will move beyond the hype to help with specific ITSM, and especially IT support, tasks.

Words and phrases such as "value," "customer/employee experience," and "business outcomes" will be a bigger part of the ITSM lexicon (and approaches). The latest HDI enterprise service management statistics show that 62% or organizations already use their ITSM tool outside of IT and another 21% plan to do so.

ITIL 4 has one shot to get it right.

The hesitancy is more about whether the ITSM community is finally able to embrace the concepts and successes of DevOps (and, after all, they're part of the Ops of DevOps). And whether the App Dev – now DevOps – community wants or needs the ITSM community to play too.

IT as a Transformation - What companies are doing now is transforming ITSM to meet their digital transformation efforts, and even looking to expand the principles and benefits of Service Management into other business areas – HR, Finance, Legal and more.

2019 "predictions" (cont.)

People (including attitude, behavior, and culture (ABC))

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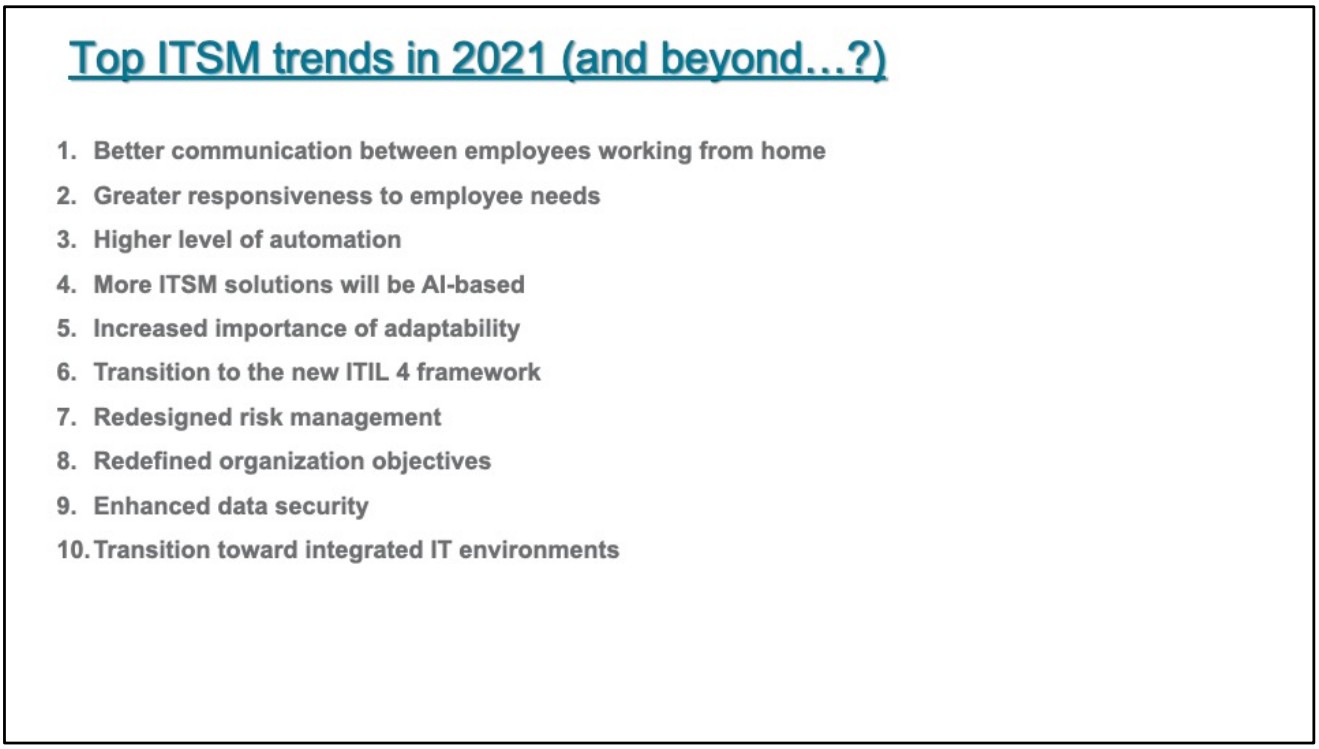


Here are the top 10 ITSM trends in 2021.

1 – Better communication between employees working from home

Companies and work teams will find a balance between working from home and meeting in a central location (which may not be an "office" in the traditional sense). Many organizations and managers are beginning to recognize the need for face-to-face interactions (whether professional or social) and will need to find creative ways to bring teams together.

2 – Greater responsiveness to employee needs

If there is one lesson to be learned from the COVID-19 pandemic, it is that circumstances can change quickly and dramatically, just like the needs of end users. For ITSM departments, the importance of understanding employee needs will continue to grow in the hybrid (work from home + office) work environment.
The end-user experience should be regularly assessed to quickly change and adapt strategies and services when necessary.

3 – Higher level of automation

ITSM's levels of automation and integration will increase significantly in 2021, especially due to the implementation of software solutions that promote this, such as iTop Professional.
Nevertheless, IT service management departments will need to ensure that they have the technical skills to manage this new complexity to avoid failures that they

cannot resolve and trigger a decline in employee confidence.

4 – More ITSM solutions will be AI-based

Artificial intelligence will play a huge role in the future of ITSM and IT operations, providing efficiency, ease of use and new features.

As a result, an increasing number of organizations will rely on solutions that involve AI, such as chatbots, AI-assisted data analysis and intelligent automation.

5 – Increased importance of adaptability

In 2021, IT service management departments will need to be able to adapt. For example, they will have to adapt to the increasing volume of requests, consider replacing outdated ITSM solutions, and deal with new data protection regulations. Managers need to have excellent leadership and organizational skills to be able to manage so many changes within a department.

6 – Transition to the new ITIL 4 framework

Unlike its predecessor, ITIL 4 facilitates the shift from cascading management to agile process management and places greater emphasis on continuous value creation for end users. As a result, more and more organizations will be adopting ITIL 4 in 2021. The new Service Value System (SVS) introduced in version 4 of the framework has defined 34 management practices. These provide closer alignment between IT service management, development, operations, business relationships and governance functions so that organizations can manage leaner IT services.

7 – Redesigned risk management

The coronavirus pandemic will cause many organizations to rethink their risk management and business continuity practices. This could help them be better prepared the next time an incident threatens their operations.

However, these organizations will need to avoid over-protecting themselves against unlikely risks, otherwise they could invest large sums of money for no reason.

8 – Redefined organization objectives

The global pandemic has forced many organizations to revisit their business objectives. Some have put themselves in survival mode while others are preparing for a huge attack.

When a company's objectives change, they must be reflected at the operational level. This is why some IT support departments will probably be eliminated while the tasks of others will be changed.

9 – Enhanced data security

Cyberattacks no longer only affect large companies, but also SMEs. This is driving companies to be more focused than ever on the security of their confidential data stored in their IT systems.

It is not surprising that increased information security will be an important trend in 2021 in information and communication technology management. This is especially the case in contexts where data needs to be accessible to employees remotely.

10 – Transition toward integrated IT environments

A few years ago, companies had no choice but to use different providers for their IT needs: a help desk solution, cloud storage provider, telephony system, email providers, etc. This increases costs and reduces productivity.

The transition to integrated environments and software with more integration capabilities will therefore accelerate in 2021, as companies seek the stability and

lower costs associated with versatile ITSM solutions.

Let's look at a few trends that will shape the evolution of this field in the years ahead:

1. Artificial intelligence (AI)

Artificial intelligence (AI) has received a lot of press and hype in recent years, promising exponential gains in productivity and performance. Some even expect this technology to completely transform the way we live and work.

Unsurprisingly, a profound technology will exert a massive influence upon the field of ITSM.

In the near-term, AI security will become a top concern for many CIOs, since AI can be used both offensively and defensively in the cybersecurity arena.

Another use case for AI in ITSM is performance improvement.

There are several applications of AI to ITSM, including:

Composable IT infrastructure, which uses AI-driven algorithms to dynamically compose IT infrastructure as needed

Robotic process automation (RPA) can automate many repetitive tasks within ITSM, increasing productivity and improving efficiency

AI-powered customer care improves the customer experience, slashes customer service costs, and simplifies many aspects of ITSM, such as incident management

Since AI can deliver significant performance gains – if not a competitive advantage – it is important to watch this technology closely.

2. Enterprise service management (ESM)

Enterprise service management (ESM) is an acronym that represents both a new approach to service governance and management, as well as new IT platforms.

This new approach to service management applies ITSM approaches, such as ITIL, to enterprise services.

ESM is designed to integrate IT with other business functions such as:

Finance

Human resources

Customer service

Legal

Marketing

In short, ESM can be applied to virtually any area of the organization.

This new approach, however, doesn't just represent a change to business areas such as those listed here, it also represents a shift in ITSM's core practices. As IT becomes increasingly central to the organization, the more important it will be to integrate ITSM with enterprise service governance and enterprise architecture.

3. DevOps

As ITSM evolves, DevOps will become increasingly popular within ITSM.

DevOps, which combines both development and operation teams, focuses on principles such as:

Incremental change

Automation

A production pipeline built around continuous improvement

Regular feedback and input

Since DevOps aligns well with business approaches such as agile, adopting this approach in ITSM can help organizations' IT programs stay adaptable, innovative, and fast.

4. Low-code and no-code platforms

Another software trend that is influencing the entire enterprise is the no-code and low-code movements.

Low-code platforms streamline and automate app development and only require a small amount of programming in order to finalize an app's creation.

No-code platforms, on the other hand, require zero coding and can be used by anyone, regardless of their technical skill level. Digital adoption platforms (DAPs) are examples of no-code tools that can be used to develop apps, automate workflows, and more.

As ITSM grows more complex, platforms such as these will significantly streamline the approach to app development and they can save ITSM teams time and money.

5. Remote ITSM

As we all know, 2020 was a tumultuous year that brought about many difficulties on a global scale.

At the same time, that crisis accelerated innovation in many areas of business.

Remote working is one example – since employees were forced to work from home, many companies were compelled to adopt new workflows and new software.

Migration to the cloud, for instance, became commonplace and many organizations can now operate effectively either online or offline.

While many workers will return to the office, the transition to the cloud and a remote working paradigm foreshadows a future where ITSM will also be more remote.

Future of ITSM and IT operations

We believe the following ITSM trends and predictions will help companies continually innovate and will make IT easy.

1. A Shift to Proactive and Predictive Capabilities

2020 brought us the reactive and abrupt shift to remote work and digital transformation. 2021 created the movement to proactive support. In 2022, this movement will continue to grow and bring predictive capabilities to take proactive IT support to the next level of self-healing. The future of service delivery means going beyond shift-left and self-help and into proactive and predictive capabilities.

Proactive and predictive service management means moving your focus from reacting to solving tickets to actively searching for problems and incidents before they happen in an effort to reduce downtime.

Moving to proactive and predictive support takes a few additional puzzle pieces in the ITSM toolbox. You'll need to implement process automation and remote support, which we will discuss in greater detail in our next prediction. But that's not the end of what you'll need, as you'll also benefit from IT infrastructure monitoring. With these pieces together, you can focus on process automation for proactive and predictive support.

2. Improved Remote Access Experience

In 2022, we expect to see the rise of proactive and predictive support but that means improving the remote access experience for both agents and customers. That's it will also help agents to resolve issues without interrupting the customer or their workflow.

Remote access should be seamless and allow the service desk to access the user's desktop without causing a major disruption. Process automation technology and remote support access solutions should enable support agents to have a comprehensive and exhaustive end-to-end view of all IT services from infrastructure to endpoints while providing the ability to fix issues proactively before they have a chance to impact the business. For example, you can identify that a user is not running the latest software release that will generate performance issues, and in turn you can push the update remotely.

To learn more about EasyVista's remote access solution, click here.

3. Greater Focus on IT Infrastructure Monitoring

Earlier we mentioned IT infrastructure monitoring as part of proactive and predictive support, but it bears mentioning that 2022 will bring an overall greater focus on organization which goes hand-in-hand with IT infrastructure monitoring.

In other words, IT infrastructure is the collective set of all IT software, services, devices, and supporting equipment.

Why does IT infrastructure matter so much? Think of IT infrastructure as a map, with IT infrastructure monitoring working as the weather radar on that map. If one aspect of IT infrastructure, like an external software that is integrated into another app used to complete a job, stops working or goes down, it can have a ripple effect and

negatively impact the rest of the IT operations and integrations. Not to mention the negative business impact and loss of revenue caused by system outages.

4. Increased in Persona-Based Interactions

As more of Gen Z enters the workforce, the demand for personalized service increases – especially in those who work from home and might otherwise feel disconnected from the business. Customers expect the same level of support and customization that they receive in their personal lives. With that in mind, it is our prediction that persona-based interactions will increase in the coming year.

Creating personas takes time and focus, but the best place to start is to understand the unique needs of your customers based on their business unit, hardware and software they use, and even their preferred methods of accessing support. From there, create fictional users to represent your customers and work to provide service geared toward those personas. Then, once you've created those personas, you can shift to a more customer centric experience.

We're already seeing more IT service desks shift to this more customer-focused and tailored support experience, which we predict will only grow.

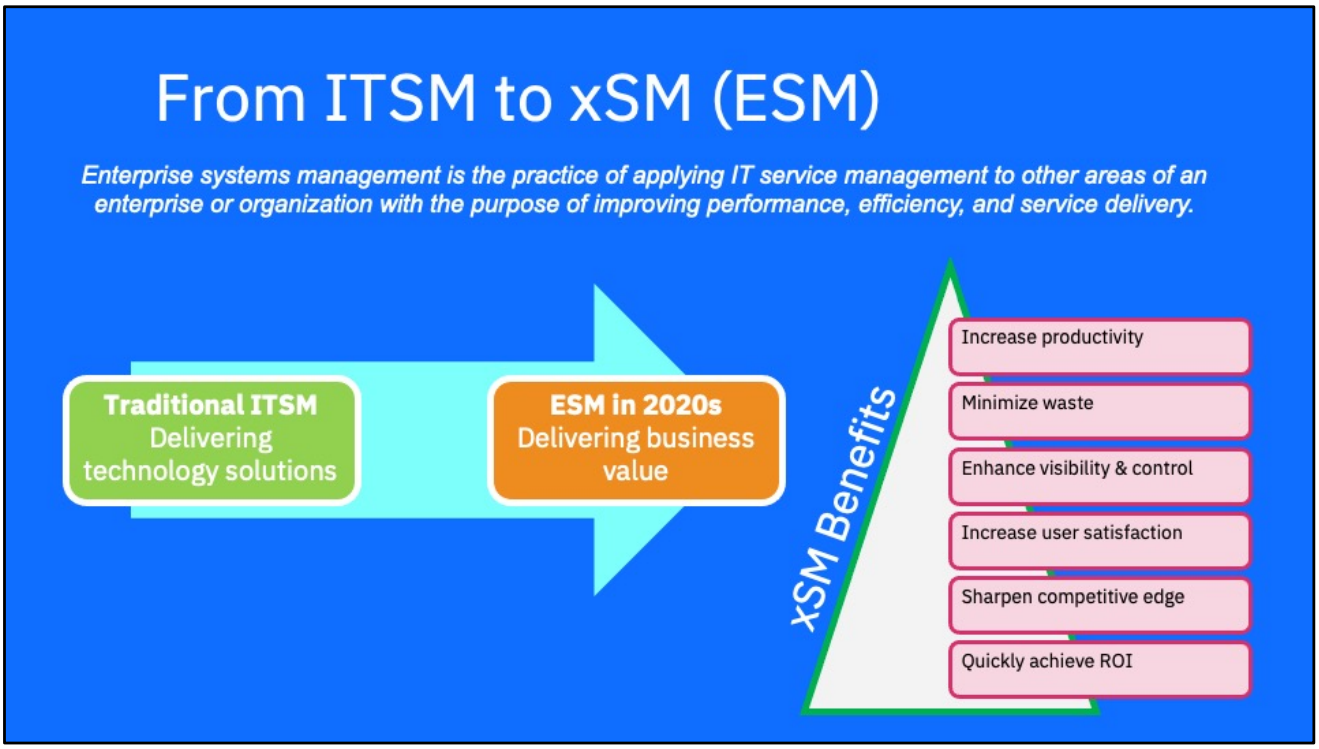
You can learn more about how to create business user personas by downloading this Gartner report.

5. Simplified Processes through Expanded AI and Automation

AI and automation have already been popular in ITSM and the IT service desk generally, however we can expect to see a greater focus on simplifying processes through automation in the future.

Artificial intelligence (AI) and machine learning (ML) are major drivers in modern service management. AI on its own can power automation and AITSM but paired with machine learning it can create an intuitive experience that continues to improve over time. By analyzing user data, incident patterns, and search habits which are continually being input, the software will better understand user intent, predict future issues, provide relevant search results, and even interact via intelligent automation like AI powered chatbots.

However, automation doesn't have to be as complicated as that, and we can expect to see an increase in automating the most simple processes like password resets and equipment ordering. This will help lower costs and improve the employee experience.



The 'x' in xSM represents every department in the organization that demands more features and functionality than "mature" Service Management (SM) solution is configured to deliver. Each department 'x' in the organization wants (perhaps, more likely, needs) its own unique solution. E.g. Marketing department, for example, needs a solution capable of tracking advertising campaigns, dollars spent, and changes made to datasheets. The Facilities department needs a system that can handle requests for everything from setting up a new data center to relocating printers, granting access to rooms and buildings, controlling air temperatures, and performing hundreds (or thousands) of other tasks. Simply taking the existing ITSM system and duplicating it in each department without customizing fields, labels, forms, and workflows would create a very poor user experience. A more efficient and effective solution is to apply a unique self-service portal to every department 'x' within the organization, which results in a specialized portal for everyone.

xSM Benefits:

Increasing productivity. Using an easy ticket tracking process enables teams to respond to requests quickly, all in one place, leaving inboxes (and employees' minds)

less cluttered.
Minimizing waste. Mapping processes helps define activities, resources, and more by how much value they add. Eliminate the activities that add no value. When you know exactly what is needed, you avoid redundant surpluses. As you mature this process, you can evolve into a continuous improvement workplace, for long-term improvement and optimization.
Enhancing visibility and control. Once you establish reporting techniques, reliable metrics offer a high level of visibility, so you can easily identify problem areas.
Increasing user satisfaction. As processes help define roles and responsibilities, internal users will become more satisfied with request expectations. (Satisfied internal users will spill into your external customers, who will also see this improvement.)
Sharpening your competitive edge. By 2025, companies will need to embrace intelligent, tech-enabled systems in order to thrive during unforeseen changes.
Increasing ROI on ITSM solutions. With more business units using the same or similar ITSM and ESM solutions, the ROI increases drastically.

ESM vs ITSM: What's the difference?
ITSM is a deliberate way of managing and delivering IT services to your customers—which might include both internal and external customers. But ITSM strategy does not inherently apply to organizational processes beyond IT. That's a key difference between ITSM and ESM.
You might incorporate one or several ITSM frameworks into your ITSM practice. The most recognized is ITIL®, a worldwide standard of best practices. Organizations can use these best practices to integrate IT to their overall business goals in a way that:
Delivers and co-creates value
Maintains a standard level of competency
Meets customer expectations
Beats competitor offerings
Aligns with legal and regulatory requirements
The latest iteration, ITIL 4 demonstrates the importance of planning, implementing, and measuring in a way that supports continuous improvement (CI). ITIL 4 coined the Service Value System and 4 Dimensions in order to evolve established ITSM practices for the wider, modern contexts of:
The customer experience
Value streams
Digital transformation, incorporating DevOps, cloud, and agile approaches, among others
Inspired by the deliberate approach of ITSM strategy, ESM broadly brings these service management strategies to the rest of the business, applying them to enterprise teams beyond IT. ESM takes the same goals of ITSM, improving efficiency within service design, transition, and efficiency, to support business needs and increase user satisfaction.
ESM encourages the company to think of everything as a resource or work that has some status. That's why ESM-based systems solutions track:

Business resources, including people, parts, and assets
The status of service requests, orders, repairs, and more
OK, so ESM has a lot in common with ITSM. But there are some differences. A key one is that ESM encompasses the processes or mandates that may not be necessary within IT service management.
For instance, some departments, like human resources (HR) or accounting, may require a minimum level of data privacy or added flexibility in their templated answers to requests. Depending on your industry, external mandates could come into play as well, requiring service management solutions meet safety and compliance regulations, such as legal protection or medical privacy as associated with HIPAA.
And, with the advent of GDPR, countries around the world are instituting minimum levels of data privacy, regardless of industry.

Major change influencer - Cloud technologies adoption

CLOUD

13

What's driving the move to Cloud computing?

- Greater than 70% of businesses are considering or using private clouds (1)
- Business drivers – speed, flexibility and economics
  - Business is adopting cloud 5x faster than IT operations (2)
- IT challenges – sprawl, control and integration
  - 70% of IT resources is captive in maintenance and operations (3)

(1) IDC, datacenter ad]nd Cloud Computing Survey
(2) "You are not ready for Internal Cloud", Forrester
(3) Information Week Analytics survey

14

Why an IT "Amazon-like" experience WINs

Traditional Service Model

- Inflexible and slow
- Too many manual processes
- Inconsistent User Experience
- Wasted OPEX in overhead
- Multiple portals
- Data disaggregated
- Assets not always recovered
- Software Licenses underutilized
- Low customer satisfactions
- IT Perceived as a "NO" organization

Services Led Model

- Consumers self service
- Lower OPEX
- Increased competitive edge
- Enable new revenue streams
- Slows "shadow" IT initiatives
- Reduce CapEx
- Consistent and accurate view of deployed assets
- Automatic recovery of unused or expired assets
- Accurate record of assets for audit

INNOVATION transforms IT to a Business Asset

15

OPEX – Operating Expenses

CapEX– Capital Expenses

…as-a-Service

refers to something being made available to a customer as a service, always in the context of cloud computing.

16

Software-as a Service (SaaS)

is a model of software deployment whereby an application is licensed for use as a service provided to customers on demand.

Platform as a Service (PaaS)

is the set of well defined APIs that a cloud provider offers developers to implement applications in the cloud provider's environment. PaaS also refers to the provisioning of a development and testing environment via cloud for a group of developers.

Infrastructure as a Service (IaaS)

is the delivery of computer infrastructure (CPU, storage, backup and network) as a service.

Monitoring as a Service (MaaS)

Business Process as a Service (BPaaS)

Analytics as a Service (AaaS)

Backup as a Service (BaaS)

API – Application Programming Interface

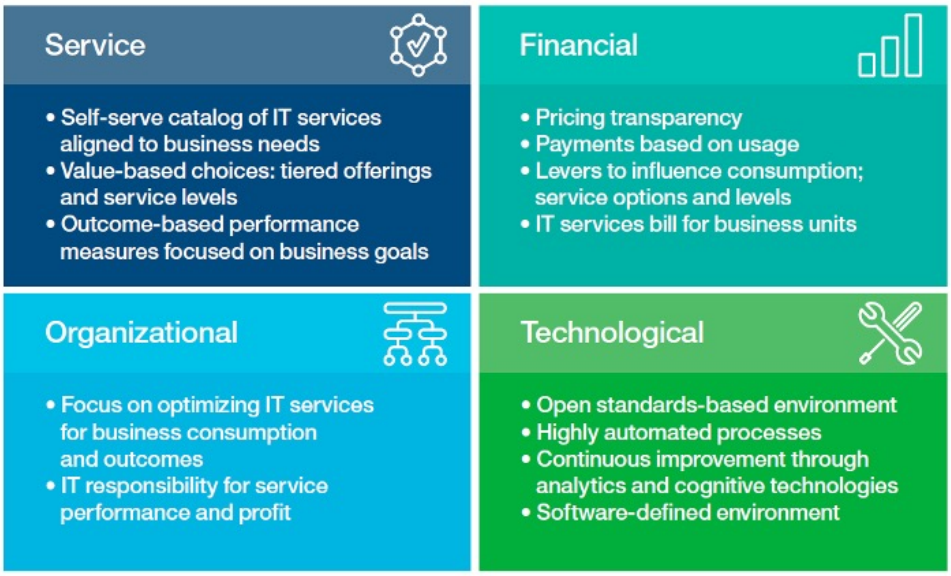
ITaaS = IT-as-a-Service

IT as a Service (ITaaS) is a technology-delivery method that treats IT (information technology) as a commodity, providing an enterprise with exactly the amount of hardware, software, and support that it needs for an agreed-on monthly fee. In this context, IT encompasses all of the technologies for creating, storing, exchanging, and using business data.

IT as a service (ITaaS) is an operational model where the information technology (IT) service provider delivers an information technology service to a business. *(Wikipedia)*

18

Four dimensions of ITaaS



19

Service Strategy in the Cloud

- Portfolio management, Demand management, and Financial management:
  - Portfolio management describes the cloud candidate
  - Demand management for workload calculation
  - Financial management for costs calculation to meet workload demand
- Not done or done inaccurately: inefficient service delivery, and/or ineffective charging algorithm
- Service strategy is critical for cloud computing

20

Service Design in the Cloud

- Services are designed based on what will best deliver on Service Strategy
- Services in the Cloud are:
  - Delivered remotely
  - It is critical to be specified and designing accurately
  - Errors can negatively impact cost and difficult to correct
  - Focus is typically on service level contracts
- SLAs are required:
  - Service deliverables are understood by all parties
  - Expectations are set
- Suppliers have to be identified and selected
- In practice, external cloud supplier may be directed to meet the SLA targets but IT is accountable for failed or poor SLAs
- Availability and capacity to ensure services described in the portfolio and specified in the SLAs can be delivered by cloud computing suppliers
- IT service continuity management and information security management must be in place before the service goes "live"

21

If not done or done inaccurately can have serious impact on cloud effectiveness.

Service Transition in the Cloud

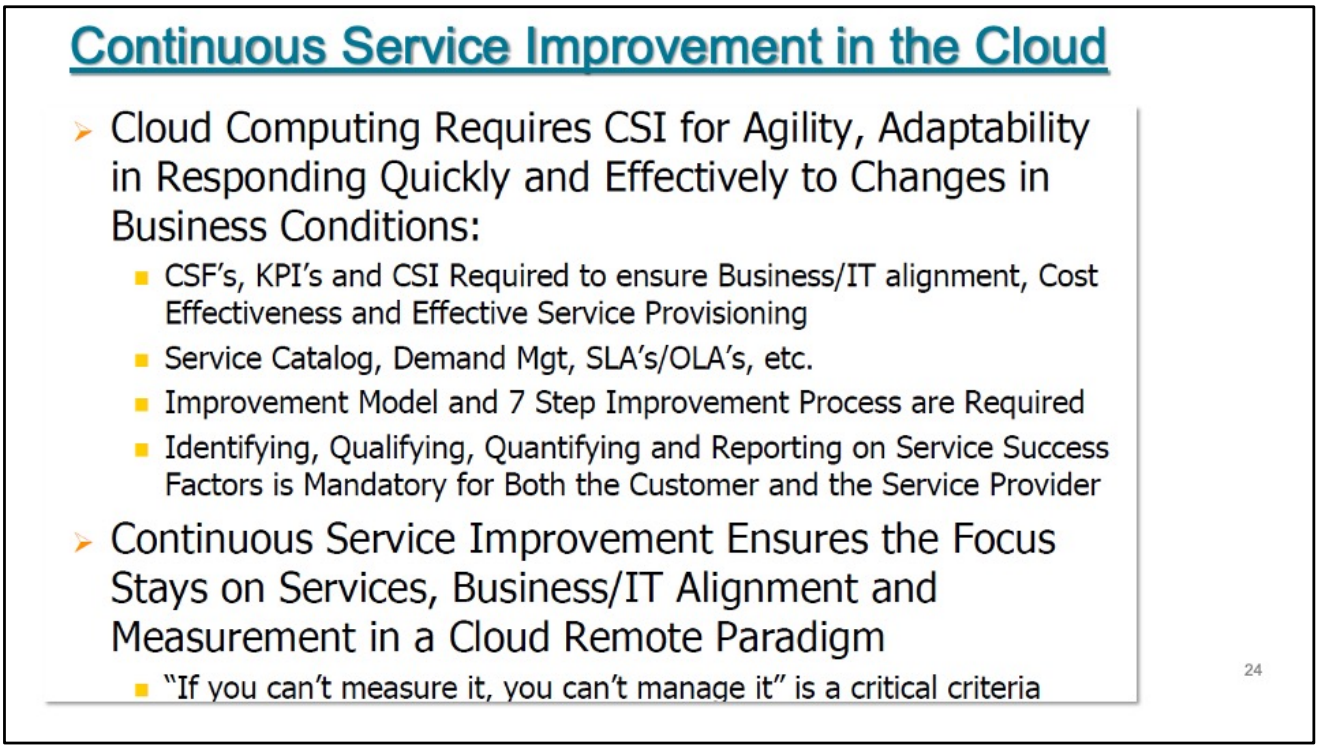
- Service transition encompasses more than just change management
- Cloud computing needs to find synergy between existing in-house technologies and cloud technologies fuse through change management within Service Transition
- Governance issues may need to be dealt with concerning who owns change mgt:
  - Internal IT or the cloud suppliers
  - who will own and manage changes in the future
  - Change ownership and relationships are vital to establish before transition into production status
- Release and deployment management is required as Service is rolled out to ensure it is successful and well managed
  - Managing in-house and cloud technologies release versions of software and the updating of remote technologies
- Underpinning service transition are service asset and configuration management, which will detail exactly who owns the responsibility for the devices and software required to provide the new service, as well as the configuration management system where those assets reside.
- Service transition is the last-chance saloon because errors here can be extremely difficult and expensive to resolve once in production

22

Service Operation in the Cloud

- Service Operation requires service monitoring
  - Ensures the delivery of defined and agreed to service levels specified in SLAs
- Role/ownership of Service Operation processes or support points must be clearly defined and monitored
  - Service desks may share primary focus from incident resolution and rapid responsive to root causes analysis and Problem Management
  - Use of workarounds could impact long term benefits of cloud
- Access management is critical to maintain security and satisfy any customer trust requirements
- External cloud consumers may need access to cloud data collected by the supplier

23



CSF – Critical Success Factor, KPI – Key Performance Indicator

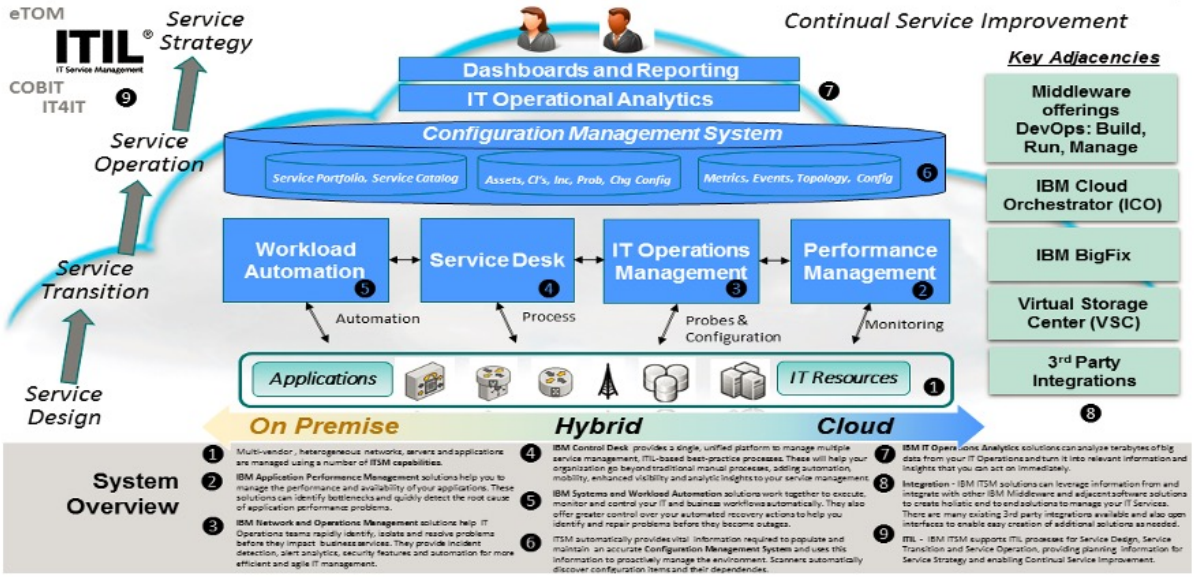
SLA – Service Level Agreemnt, OLA – Operation Level Agreement

In Summary…Cloud Changes Everything!

ITSM Reference Architecture

In today's complex environments clients are challenged with the need to maximize existing on-premises assets while utilizing the Cloud for speed and innovation. With IBM IT Service Management clients can build, run, and manage applications, IT, and assets running either on-premises, in the cloud, or across both (hybrid). Collaboration is enabled across Development and Operations to automate business and IT processes, to achieve performance insights with analytics and to optimize inventory.

ITSM solutions help IT Operations teams to effectively manage increasingly complex, hybrid environments and accelerate Cloud services delivery. These solutions deliver advanced automation, performance management and orchestration capabilities. IBM has provided thought leadership to improve the 'state of the art' in IT Service Management for the past 30 years and continues to do so, whilst effectively delivering solutions and successfully managing client environments.



System Overview

1. Multi-vendor, heterogeneous networks, servers and applications are managed using a number of ITSM capabilities.
2. **IBM Application Performance Management** solutions help you to manage the performance and availability of your applications. These solutions can identify bottlenecks and quickly detect the root cause of application performance problems.
3. **IBM Network and Operations Management** solutions help IT Operations teams rapidly identify, isolate and resolve problems before they impact business services. They provide incident detection, alert analytics, security features and automation for more efficient and agile IT management.
4. **IBM Control Desk** provides a single, unified platform to manage multiple service management, ITIL-based best-practice processes. These will help your organization go beyond traditional manual processes, adding automation, mobility, enhanced visibility and analytic insights to your service management.
5. **IBM Systems and Workload Automation** solutions work together to execute, monitor and control your IT and business workflows automatically. They also offer greater control over your automated recovery actions to help you identify and repair problems before they become outages.
6. ITSM automatically provides vital information required to populate and maintain an accurate **Configuration Management System** and uses this information to proactively manage the environment. Scanners automatically discover configuration items and their dependencies.
7. **IBM IT Operations Analytics** solutions can analyze terabytes of big data from your IT Operations and turn it into relevant information and insights that you can act on immediately.
8. **Integration** - IBM ITSM solutions can leverage information from and integrate with other IBM Middleware and adjacent software solutions to create holistic end to end solutions to manage your IT Services. There are many existing 3rd party integrations available and also open interfaces to enable easy creation of additional solutions as needed.
9. **ITIL** - IBM ITSM supports ITIL processes for Service Design, Service Transition and Service Operation, providing planning information for Service Strategy and enabling Continual Service Improvement.

IT Management moving to *aaS too

Online Backup/Recovery

30 Vendors, 18% share of total 2014 I-SaaS revenue. 2014-2019 CAGR 21%

Cloud Archiving

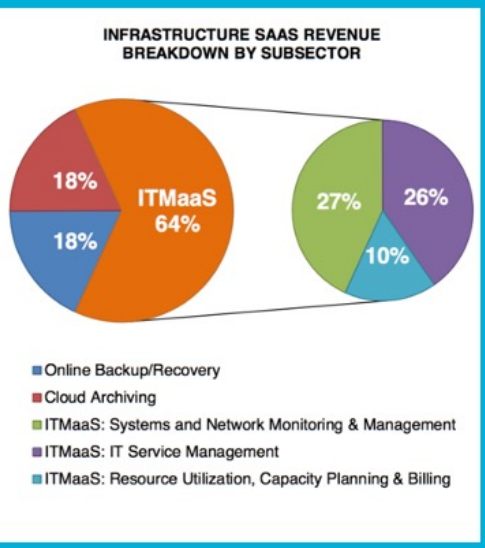
15 Vendors, 18% share of total 2014 I-SaaS revenue. 2014-2019 CAGR 20%

IT Management as a Service

ITSM: 18 Vendors, 26% share of total 2014 I-SaaS revenue. 2014-2019 CAGR 34%.

SNMM: 75 Vendors, 27% share of total 2014 I-SaaS revenue. 2014-2019 CAGR 26%.

RUCPB: 29 Vendors, 10% share of total 2014 I-SaaS revenue. 2014-2019 CAGR 24%.



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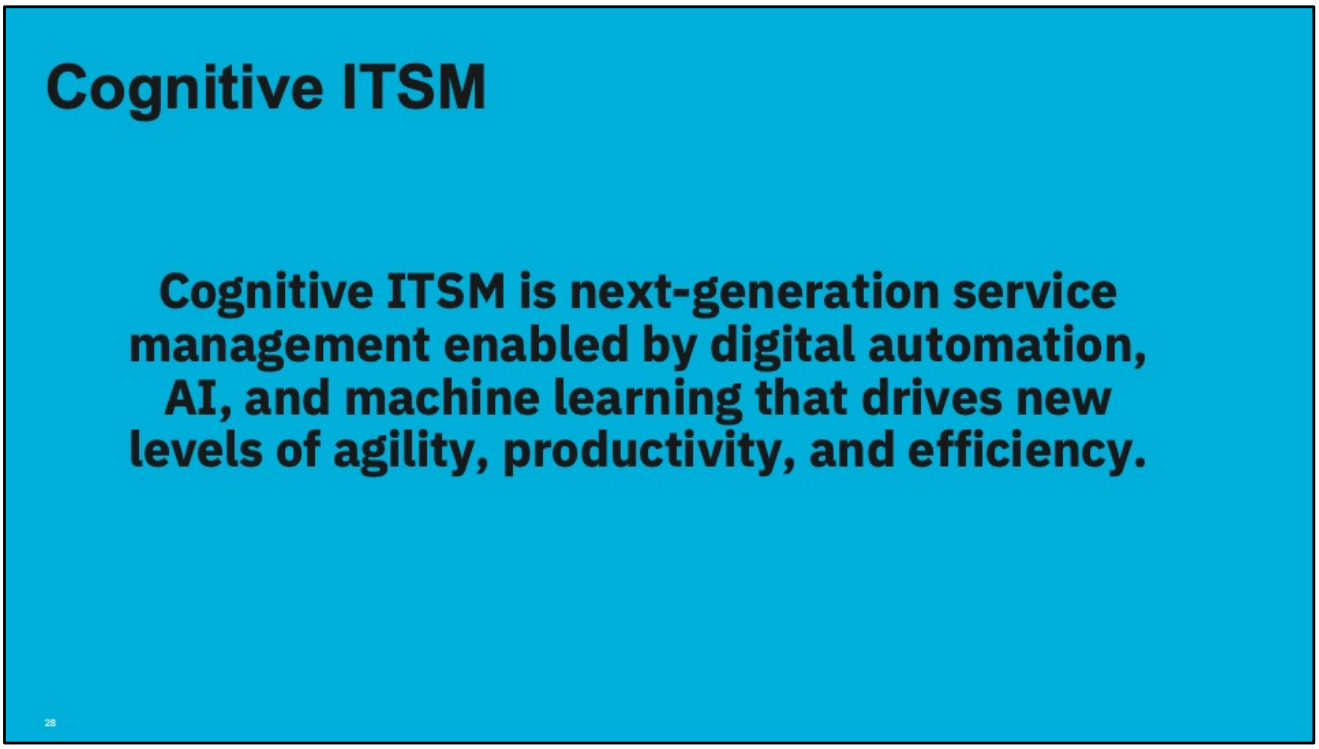
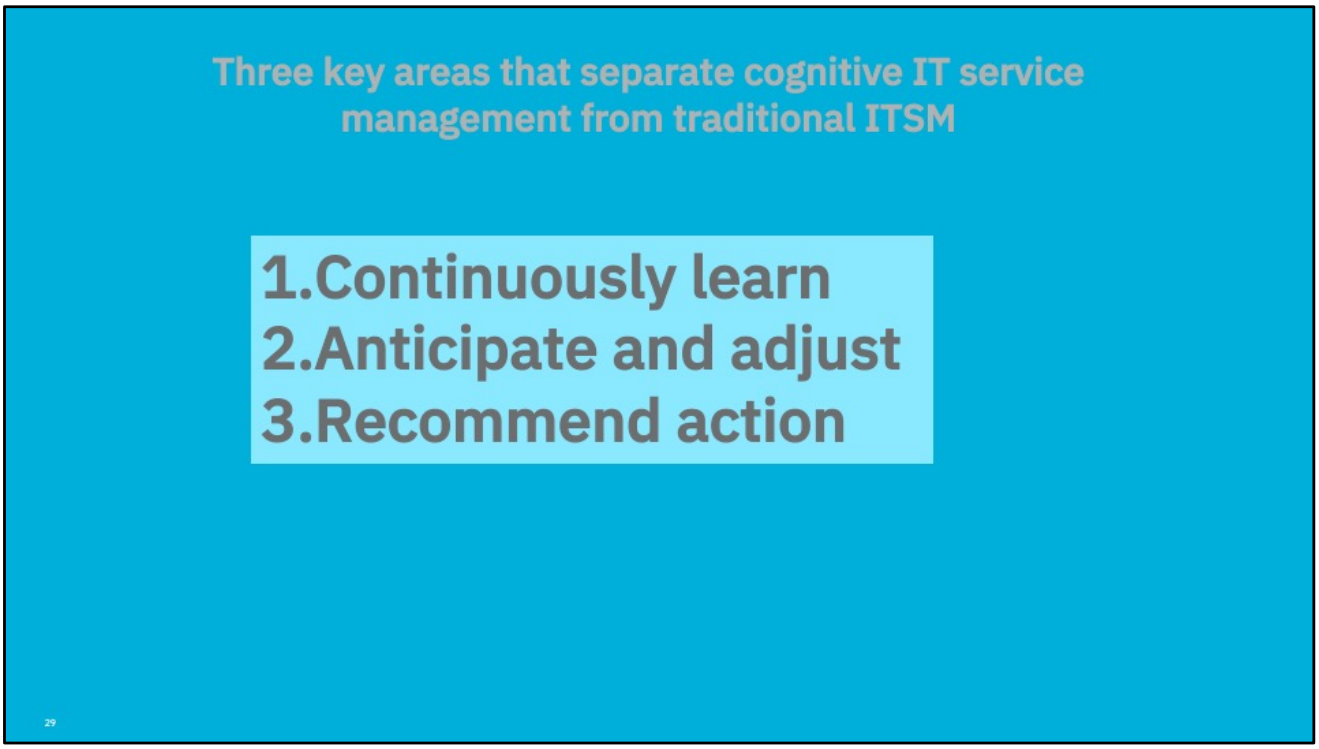


What is cognitive IT service management?

Moving to a **more proactive operations** posture can enable organizations to get in front of problems before they become an urgent fire-fight. But without the deep expertise needed to match the rise of IT operations complexity, diagnosing and fixing an issue can be time consuming and frustrating. Applying cognitive computing capabilities to service management can help accelerate diagnosis of events and patterns. The ability to extract deep insights from IT systems can provide early warnings of abnormal behavior that could cause service impact or poor performance.



There are three key areas that separate cognitive IT service management from traditional service management. Together, these capabilities form the foundation of a proactive, user-focused experience.

Continuously learn Cognitive service management uses machine learning to learn the behavior of applications and resources and get a true understanding of normal across the enterprise. While traditional service management capabilities might enable you to identify seasonal activity, applying cognitive capabilities allows you to go deeper to identify *patterns* of seasonal activity — and then use those insights to set and manage thresholds for monitoring data. Cognitive goes beyond a single comprehensive view to monitor logs, metrics, events, support docs and tickets to understand the relationships across applications and resources to anticipate service impacts. With these deeper insights, organizations can more quickly and efficiently resolve problems, resulting in significant savings in operational costs and improved staff efficiency.

Anticipate and adjust
Behind every anomaly is a potential service disruption, which is precisely what monitoring solutions are designed to detect. Adding operations analytics can help

uncover metrics to identify anomalies that recur *with regularity*. That information in turn can provide better forecasting for potential service degradations. And as environments continue to deepen in complexity, changes can occur faster than manual resources can keep pace. Cognitive capabilities can help organizations adjust to rapidly changing environments and intelligently prioritize problems.

Recommend action

While teams continuously strive to operate as efficiently as possible, efficiency is even more crucial when it comes to finding and fixing application and systems problems. Applying cognitive capabilities can accelerate the ability to find issues by rapidly searching across terabytes of structured and un-structured data in multiple detailed modes and views. This information can reveal previously undetectable patterns, along with intelligent recommendations for corrective repair actions.

Partnering humans with a cognitive 'brain' and automation on an integrated platform enables you to accelerate innovation and deliver unmatched performance by:

Augmenting human intelligence with cognitive insights to enable practitioners to make data-driven decisions.

Autonomously managing your IT operations to deliver higher service quality through error reduction and faster incident resolution.

Autonomously governing your IT to continuously optimize IT usage and cost.

30

Cognitive capabilities are rapidly becoming mainstream

80%

80% of IT leaders rate cognitive technology as important to digital transformation success

66%

66% of IT leaders are using cognitive technology today for one or more purposes

63%

63% of IT leaders are investing in cognitive technologies such as chatbots, virtual assistants, and robotic process automation

$60B

By 2020, $60 billion expected in cost savings through productivity improvements annually

[1,3]IDG MARKETPULSE Research: Digital Transformation On Behalf of BMC Software

[2]IDG Blog: The Outlook for Big Data and Artificial Intelligence (AI)

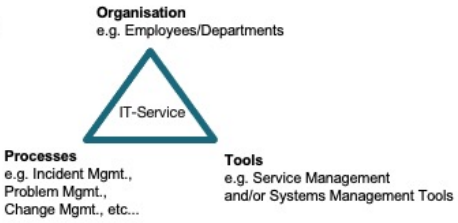
Service Integration and Management

SIAM

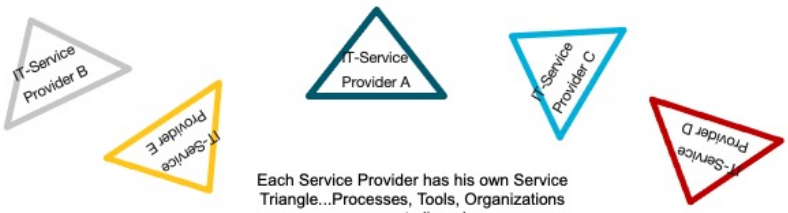
32

Services Integration - What do I need ?

When providing a basic service, I need:



When providing services in a Multi-Sourcing / Hybrid Cloud environment, I'm stuck with:



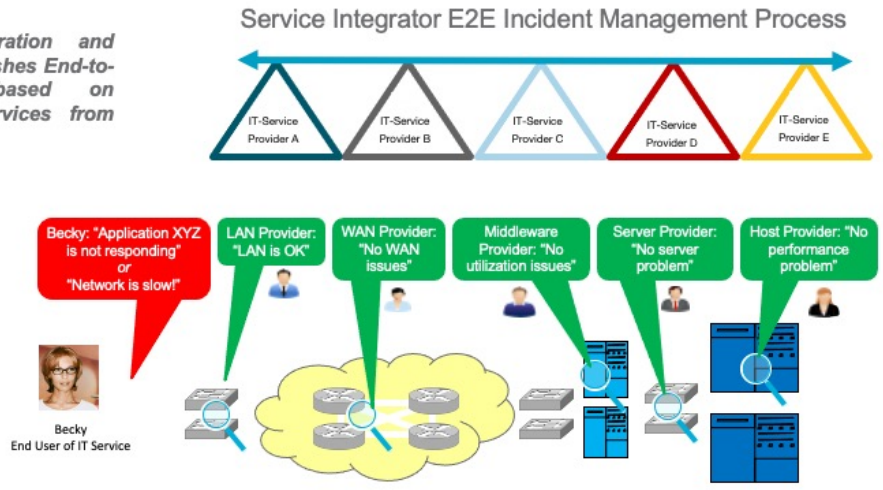
Each Service Provider has his own Service Triangle...Processes, Tools, Organizations are not aligned

33

Services Integration - What is the key ?

Alignment of Processes: The different Providers align or connect their processes E2E as defined by the Service Integrator

"IT Service Integration and Management establishes End-to-End services based on independent IT services from various sources"



Service Integration and Management (SIAM) is an approach to managing multiple suppliers of services and integrating them to provide a single business-facing IT organization.

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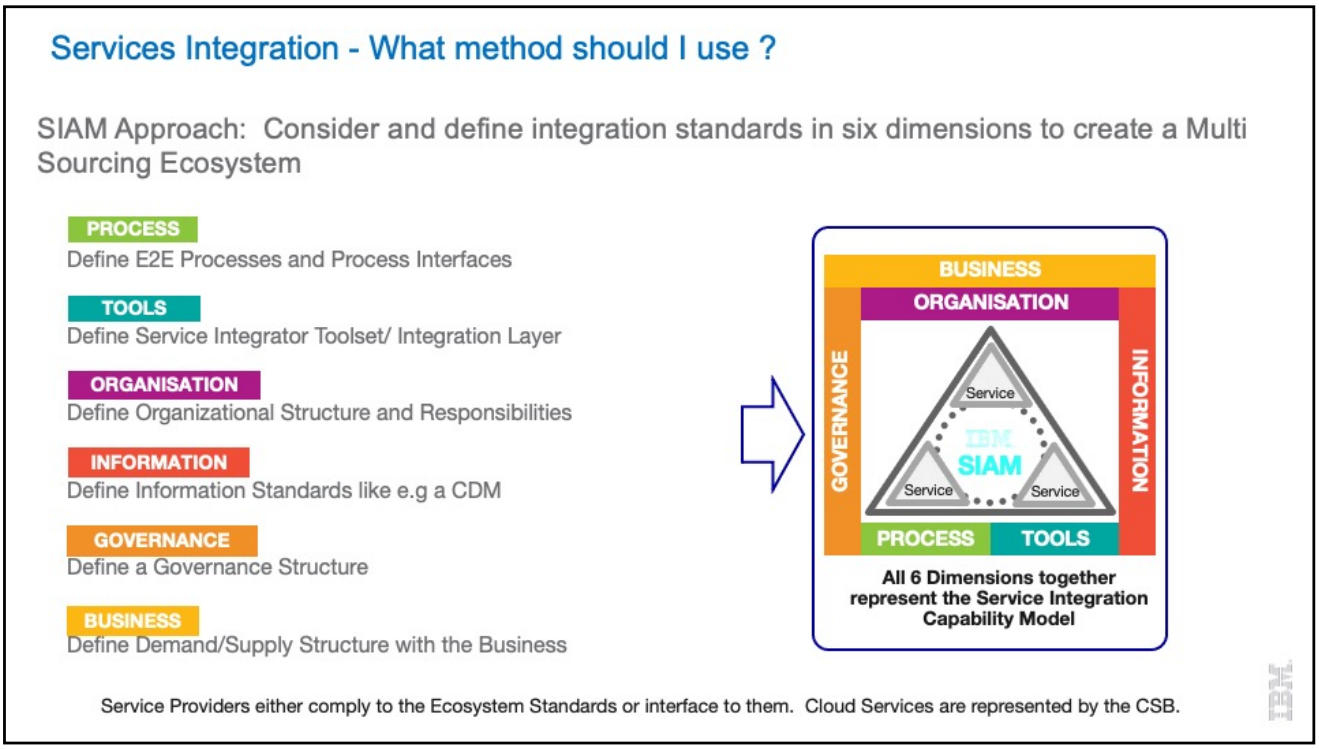


The SIAM framework covers the 6 major dimensions of Service Integration and Management. It sets out different levels of maturity for the service integration function and the corresponding capabilities required. It provides a structure to understand capabilities needed and to plan their development, implementation and continuous improvement.

1. Process: The set of common processes that define the interactions among the Client Agents in the ecosystem.
In any Multi-Sourcing Ecosystem, the need for clearly defined interfaces is critically important.
Two key aspects to consider are:
- The interfaces between different processes
- Process interfaces are the items of information which relate different processes;
- Typically they are defined as inputs, outputs or controls within each individual process definition document; and
- It is also of high value to illustrate such interfaces in an overall “process context diagram”.
- Organizational interfaces:
- Organizational interfaces indicate who is responsible for doing what;

and

- Typically they are defined as process-specific roles, each with a list of associated responsibilities.

2. Tooling: The tools, which support the execution of the operating model.

The SIAM Tools Domain has three major components:

- A SIAM ITSM toolset;
- An Integration Layer to enable integration to the ITSM Toolsets of the different Client Agents; and
- A SIAM Reporting Engine and Dashboard.

3. Organization: The structures, enablers and behaviors that are put in place so that each Client Agent knows its contribution and is properly equipped to deliver it.

A key enabler for the alignment of the SIAM and the Client Agents is the Operational Level Agreement, which is described in more detail later.

4. Governance: The definition of the decision-making and control structure in the ecosystem.

The governance model is based on the agreed principles of vested sourcing: Customer will retain overall control and gain relationship, technology innovation and cost advantages through Customer's and Supplier's joint organizational and governance approach.

The proper governance model includes:

- A clearly articulated decision framework on how and by whom decisions will be made and clear responsibility for executing against decisions; and
- A shared vision for the type of relationship the parties aspire to have and how they will manage the relationship.

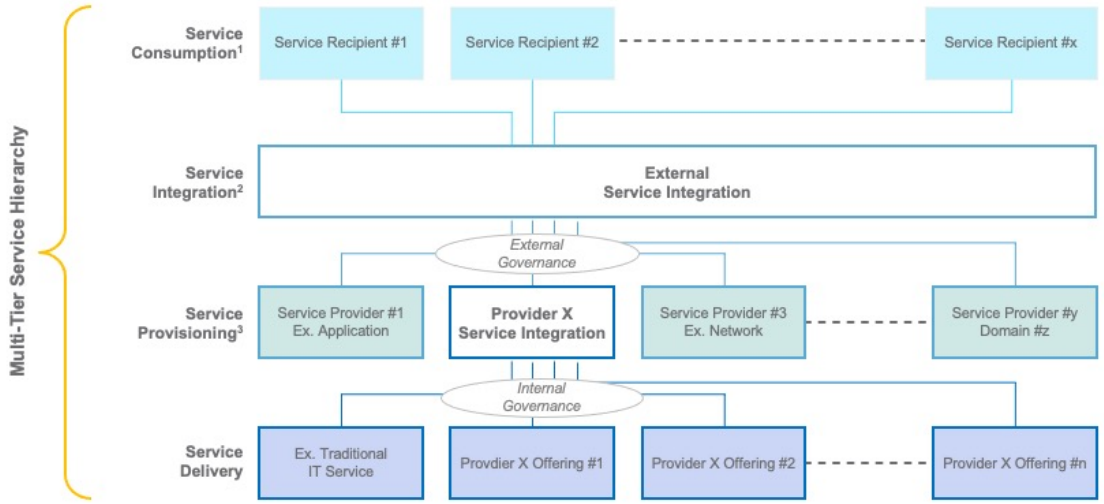
Next to this governance model which will be implemented between Supplier and Customer we will also respect the existing outsourcing governance commitments, which are in place for the external business contracts. We will review these commitments and optimize where possible, without jeopardizing the existing relationships.

5. Information: The collection of data with regard to measuring service quality and process performance that is needed to control and report on the performance of the ecosystem.

6. Business: Positioning Service Integration as a 'business within a business' aligns business demand with the service catalog and capacity.

This capability defines the way the service delivery is structured. In what way demand for service is captured and how the scope of service delivery is divided between Customer's retained groups, SIAM and the Client Agents.

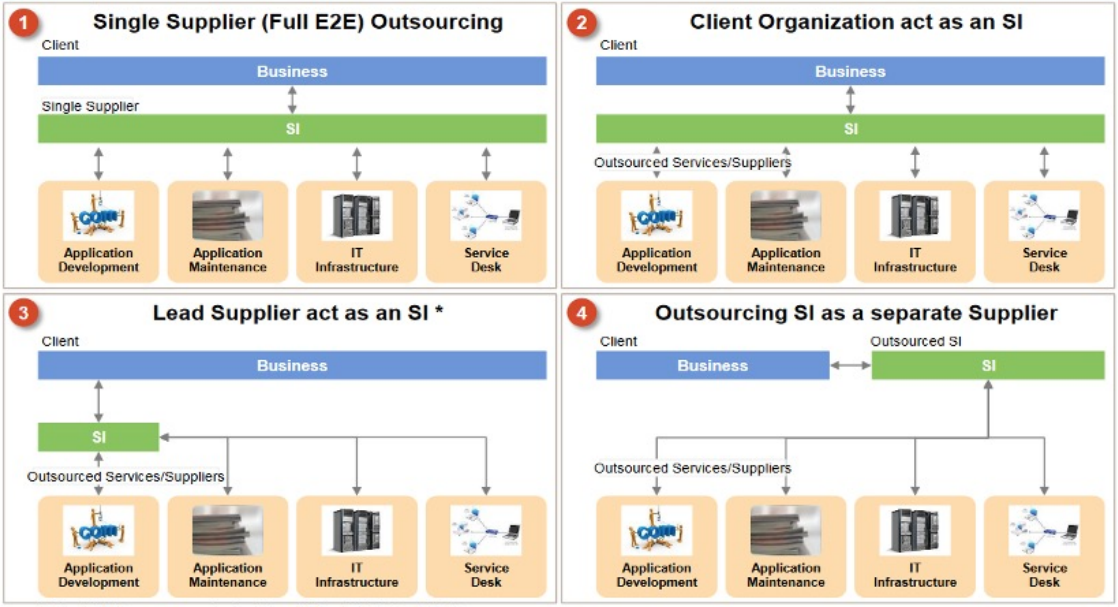
Services Integration and Management - What does it look like when implemented ?



[1] Service Recipients will likely be a mix of the client's Lines of Business, retained IT, and may also include customers of the client
[2] External Service Integration can either be performed by the Client Retained IT Department, one of Service Providers or by a 3rd party Service Integrator
[3] Service Providers can be internal or external to the client enterprise

Service Integration and Management

Understanding SIAM Models – Who Can be SI



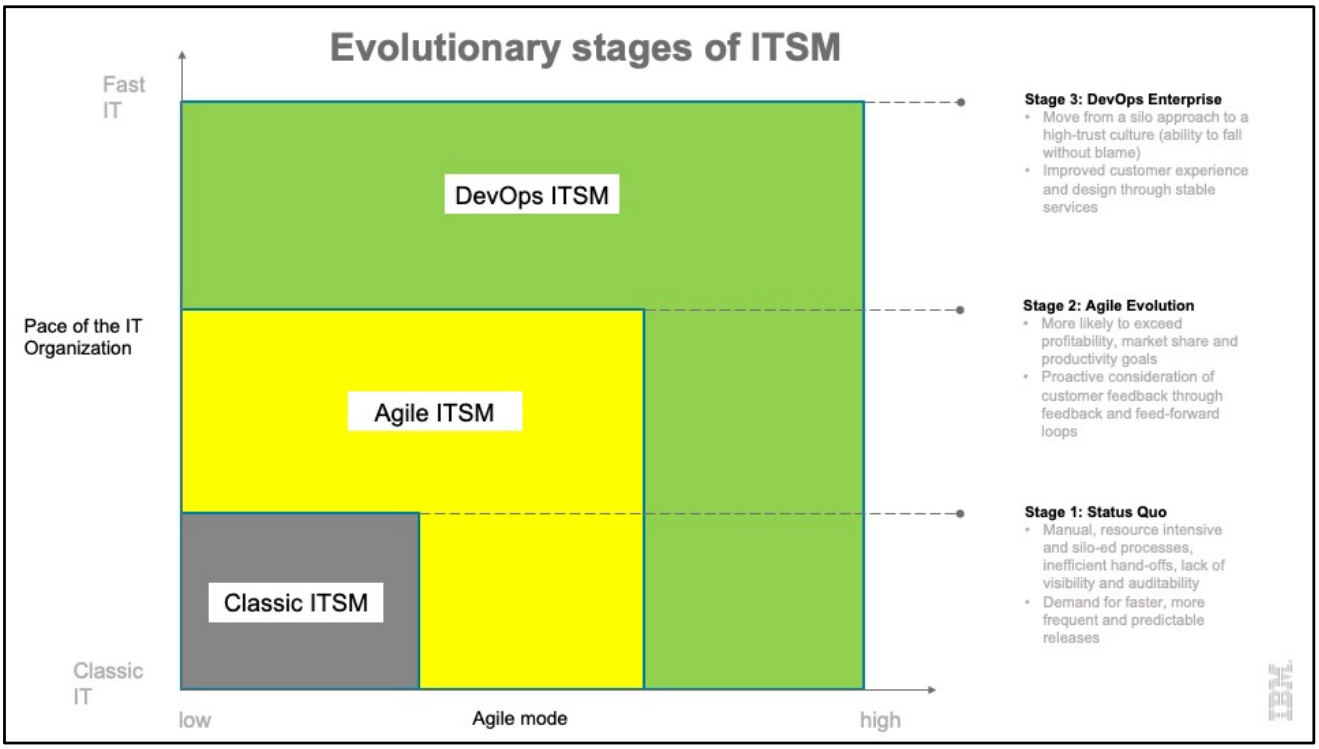
Note: This has many variants. E.g., ADM+ SI, IS+SI, SD+SI,...

Is ITIL still the “best” available ITSM framework with the rise of Agile, Dev-Ops etc. adoption?

ITIL and ITSM still are best codifications of the business processes that underpin IT Operations, and actually describe many of the capabilities needed in order for to support a work stream.

ITSM/ITIL shouldn't be pigeonholed as an administrative burden, but rather used in an agile way. ITIL in particular isn’t perfect and needs a more modern veneer -- but the core practices are sound and proven.

39



Let's be clear: ITIL is important. Around two million people have been trained in it, and as the closest thing to an industry standard for IT management that currently exists, it has global reach. Lots of people *read* the ITIL volumes as guidance to their IT organizations. Throughout all its versions, ITIL has been framed as a complete approach to managing the IT function, with the specific exceptions of project methodology and systems architecture. Plus, it's worth noting that ITIL also informs the product directions of vendors selling IT management tools; in fact, they often market their IT service management tools as "supporting" the ITIL processes.

DevOps is the combination of cultural philosophies, practices, and tools that increases an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. This speed enables organizations to better serve their customers and compete more effectively in the market.

DevOps is a set of software development practices that combines software development (Dev) and information technology operations (Ops) to shorten the systems development life cycle while delivering features, fixes, and

updates frequently in close alignment with business objectives. [1]

Agile was seen as a set of management practices relevant to software development. That's because Agile's initial advocates were software developers and its foundational document was the Manifesto for Software Development of 2001. Fifteen years later in 2016, following recognition by Harvard Business Review, McKinsey & Company and the 2015 Learning Consortium Project, Agile is now spreading rapidly to all parts and all types of organizations.

Agile's emergence as a huge global movement extending beyond software is driven by the discovery that the only way for organizations to cope with today's turbulent customer-driven marketplace is to become Agile. Agile enables organizations to master continuous change. It permits firms to flourish in a world that is increasingly volatile, uncertain, complex and ambiguous.

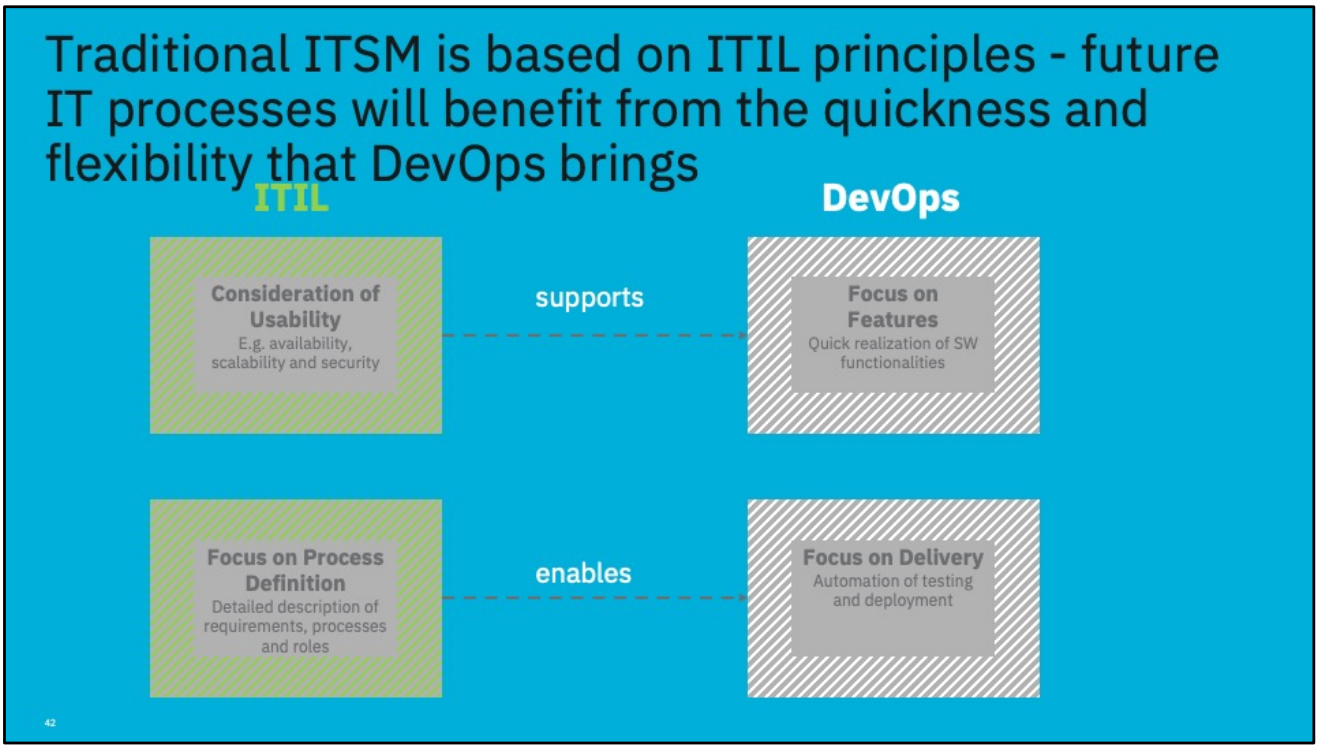
The Future - DevOps

- DevOps = Development & Operations
  - We used to say “Integrating ITSM into the SW Development Life Cycle”
  - Faster time to value removes the middleman
  - Continuous release, new platforms in minutes
- Legacy Ops Processes “a problem”
  - The structure of IT process must change
  - The approach to RACI for process must change
  - Consistent process must remain (that means ITIL)

ITSM should change – control must devolve & processes must automate

SDLC – System Development Life Cycle

41

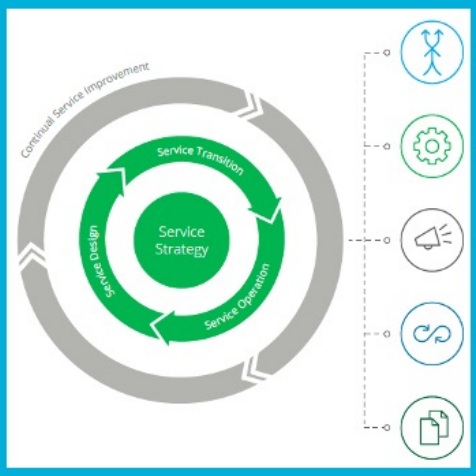


The common perceptions of ITIL and DevOps seem to contradict each other on the first glance rather than illustrate a perfect match: DevOps is agile, quick and collaborative while ITIL's strength lies within the rigid and detailed definition of processes, services and roles to manage and avoid risks rather than to learn from them. However, if evaluated carefully, both frameworks complement each other.

••While executing DevOps which focuses on the realization of functional requirements ("features"), ITIL also ensures that requirements like availability, scalability and security are met by following proven processes and using well established metrics and KPIs. The almost rigid and in detail described processes in ITIL even create the basis for automation – you cannot automate what has not been well described previously.

•• It is important to note that ITIL grants a degree of flexibility too. The framework often solely describes what shall be done, but not how (example: KPIs). This flexibility can be leveraged to make ITIL more agile, customer-centric and even customer-led by applying tools and methods from DevOps.

DevOps complements ITIL with proven approaches and modern collaboration tools to enable a more agile ITSM organization

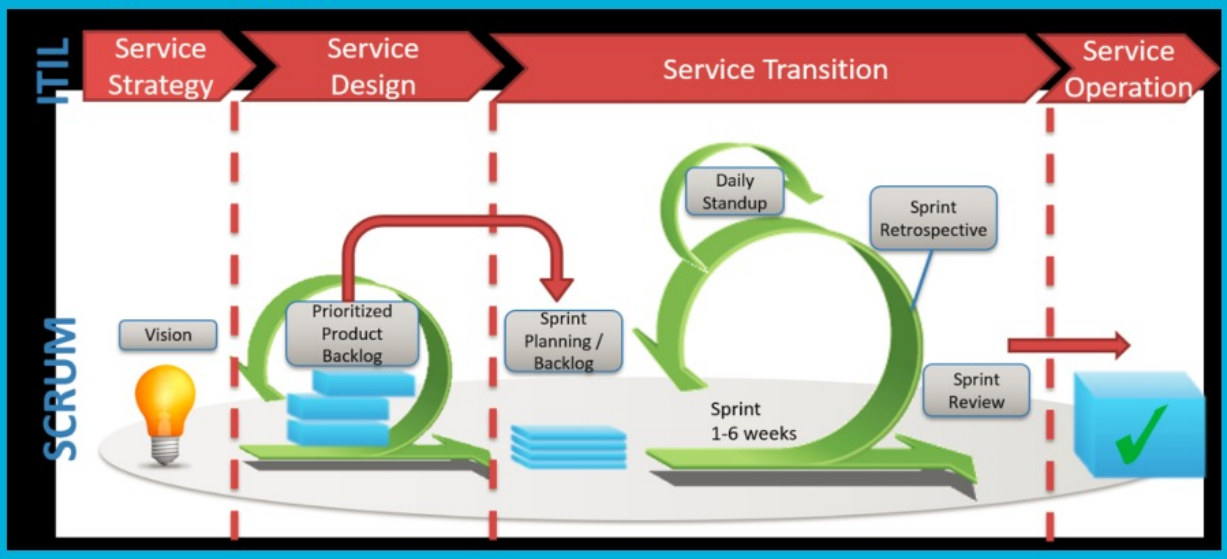


DevOps Tools

- Cross Functional KPIs
- Standardization and Automation
- Dynamic and Interactive Monitoring
- Operational Feedback Loops
- New Idea of Ticketing Systems

43

Integrating Agile and ITSM



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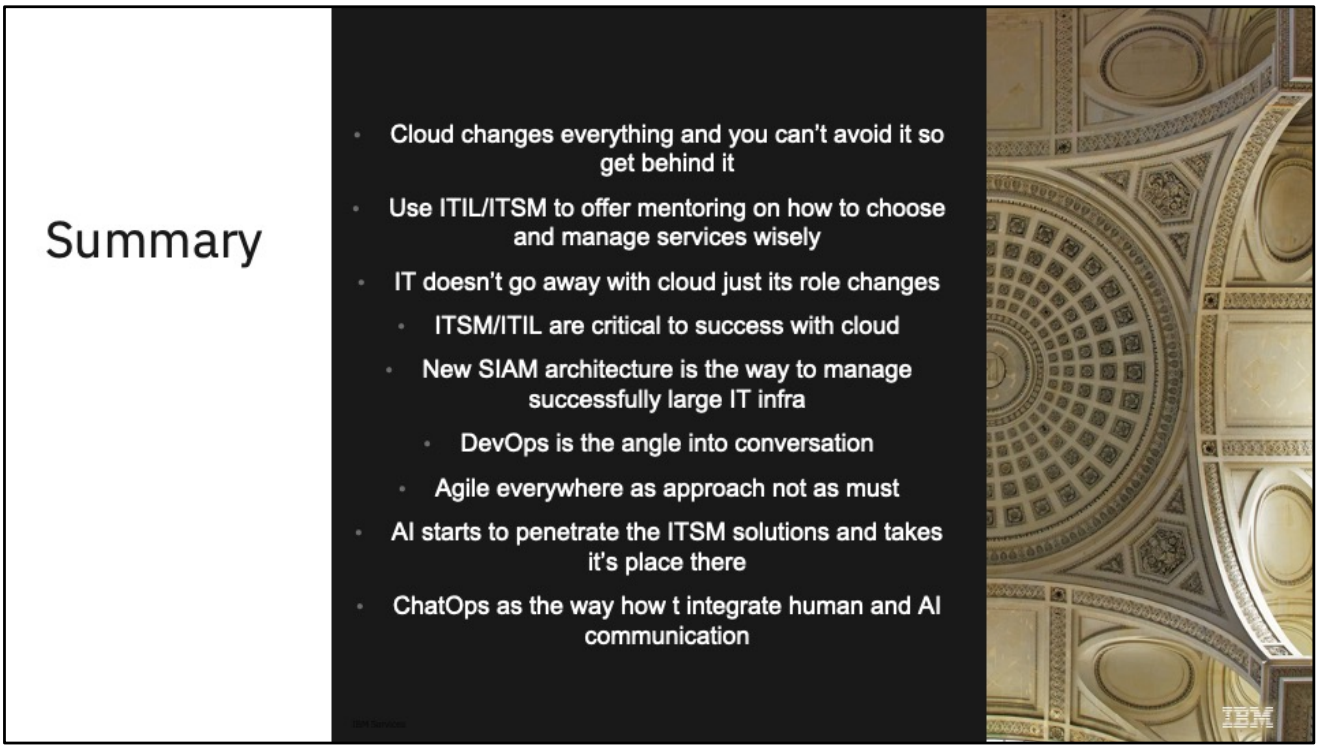

- ITSM is still seen by many as purely ITIL-focused or relevant only to internal IT operations.
- ITSM needs to grow up. In the past this has been too narrowly focussed on internal IT functions, projects and costs.
- ITIL has been the 'de facto' training and development approach for the last 10 to 15 years, yet those involved in delivering it know that ITIL is not enough – success requires much more than knowledge of a process framework. In reality ITIL currently offers little in terms of practical guidance around successful 'implementation'. IT and ITSM also need to be viewed and appreciated more in a business broker role, more able to react quickly and be a solution provider rather than a 'blocker' - or the guys who always say 'no'. Without a significant change in speed of delivery, quality and perception of service and demonstrable value, many IT internal departments and external IT companies will become more and more exposed as obsolete and, ultimately, redundant. The ITSM industry itself also needs a make-over, with fresh and accessible content, some new and contemporary framing and messaging, in order to remain attractive and relevant.
- There is a large gap in the body of knowledge around ITSM – ITIL is primarily focussed on process, whereas successful ITSM requires a much wider portfolio of skills and capabilities. ITIL does not define organisational change, human interaction or customer experience, all essential for success. Many organisations have expected

ITIL to deliver results way beyond its capability or remit, seeing ITIL itself as the solution and ignoring these other factors. The result has been a lot of failed or incomplete 'ITIL projects' – these have burned cash and resources with few positive results, leaving the brand names associated with ITIL and ITSM damaged. Without a central body to manage these issues, each area of the industry has continued unilaterally to deliver point solutions with limited success and restricted commercial penetration. ITSM is therefore not a properly codified discipline. In its current form it will not be sustainable, and the industry needs a new and wider definition, vision and structure. This should include, for example, a broader definition and portfolio of skills and capabilities, body of knowledge, and organisational standards, plus clear career development paths, higher education qualifications and a code of conduct. ITSM needs to be clearly positioned and presented as a business approach both within and beyond IT organisations. This is a growth area as many organisations are now using ITSM processes and tools to deliver wider collaboration and work management functions. C-level value propositions must be universally promoted around ITSM as an enabler, broker, orchestrator, rather than administrator. All stakeholders need to engage and play their part in the delivery of Service Management - it's a team game. We need to move away from thinking that ITSM is 'just what the Service Desk do.' In other words, in order to survive, the IT and ITSM industry has to move to the next level of maturity - we collectively need to grow up.