

# ITIL & ITSM: How IT is becoming more service- oriented



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## In this e-guide

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- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

---

## In this e-guide:

According to analyst Gartner, the combined impact of innovations such as low-code tools, machine-learning-assisted development and self-service consumption models is leading to a redefinition of the role of central IT. The IT function is shifting away from being organised as a “factory” to deliver software products towards a service provider approach.

“What we see is that central IT starts to provide the business organisation with enablement services such as platforms, training, consulting and support. They are also in charge of overall governance.” says Yefim Natis, distinguished research vice president at Gartner.

The IT Infrastructure Library (ITIL), which provides a framework to help IT leaders manage IT departments for the business, is evolving to support this. The ITIL framework is managed by Axelos, a joint venture between the UK’s Cabinet Office and Capita. In a blog post on the Axelos site, looking at how the framework is evolving to support new working practices in IT,

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## In this e-guide

---

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- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

**Christian Nissen, owner and senior consultant of CFN Consult wrote: “In truly service-oriented organisations, best practices such as ITIL are there to help customers co-create value in IT products and services. And this is about looking at service outcome and experiences – ‘How do I create true business value and how do I design for the best interaction between the service provider and the consumer/user?’”**

**By optimising the service interaction between provider and customer, Nissen believes it is possible to create more value.**

**According to Axelos, IT service management (ITSM) is a concept that enables an organisation to maximise business value from the use of IT. ITSM includes all the discrete activities and processes that support a service throughout its lifecycle, from service management to change management, problem and incident management, asset management and knowledge management.**

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## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

ITIL effectively provides ITSM with a framework for continuous improvement. With the advent of artificial intelligence (AI), some ITSM tasks can be automated. For instance, a chatbot could be deployed instead of using human IT support staff to solve common IT support issues.

Tendring district council is an example of a local authority using IT service management to support digital transformation and become more customer focused. The council provides a full range of services to 145,000 residents in the north east of Essex. Covering rural districts, the holiday resorts of Clacton, Frinton and Walton, along with the port of Harwich, its population grows significantly in the summer due to tourism. The service desk supports over 750 staff, including 60 councillors, located across 20 sites. The council has a transformation programme, which includes the implementation of new unified messaging services via Skype for Business and supporting greater mobile and remote working. An effective IT service desk is key to underpinning the transformation.

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## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

“We see the service desk as IT’s shop window, as it can often be the only direct contact that end-users have with our team,” says Judy Barker, information governance & IT services manager at Tendring District Council.

She says that the council implemented Sunrise ITSM when returning to an in-house delivery model, after outsourcing IT services for 23 years. “We wanted to provide an efficient, effective and proactive service when we moved back to an in-house model. Sunrise enables us to successfully deliver a good quality of service to our customers, helping the council to achieve its objectives and in turn deliver the best possible service to Tendring’s citizens and visitors.”

**Cliff Saran**, technology editor

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## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

---

## Prepare for ITIL framework updates in version 4

Stephen Bigelow, guest contributor

Various ITSM frameworks guide IT operations practices around governance, methodology, system design and software lifecycles. The IT Infrastructure Library -- known as ITIL -- is a well-established framework, and in the first quarter of 2019, it received long-awaited updates that account for the growing use of DevOps, microservices, multi-cloud and other emerging technologies and IT practices.

### What is the ITIL framework?

**ITIL** is a standardized set of guidelines to create and manage IT services within the business. It clarifies capabilities and aligns IT services -- and the providers of those services -- with the business and its customers' needs. ITIL focuses on **IT service management (ITSM) issues**, specifically, rather than broad business operations.

As with other frameworks, ITIL is not a discrete product or tool, but rather a cohesive set of concepts and practices to guide practitioners in IT service development, deployment and support. Since its introduction in the 1980s, ITIL

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## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

has become bound to international ITSM standards, as it is outlined in the [ISO 20000 Part 11](#) standard.

The ITIL framework is traditionally composed of five core publications that cover the entire IT service lifecycle. These publications include ITIL Service Strategy, ITIL Service Design, ITIL Service Transition, ITIL Service Operation and ITIL Continual Service Improvement. ITIL is updated periodically to acknowledge the changing demands of businesses on IT and the availability and capability of enterprise technologies, both locally and globally. Release ITIL v4, also dubbed ITIL 2019, replaces the [existing ITIL v3 framework](#) released in 2007 and updated in 2011. The core concepts expressed in these publications, however, are expected to remain in place, and ITIL v3 certifications are not currently set to expire.

ITIL is sponsored and driven by Axelos, a joint venture company created in the U.K. to develop best practices in ITSM, project and program management, and cyber-resilience. Axelos offers ITIL certifications, but its practices also expand beyond the ITIL framework.

## Compare COBIT and ITIL

COBIT and ITIL are both regarded as key ways to shape ITSM but are radically different frameworks, in terms of purpose and scope.

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## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

ITIL describes a method to manage IT services across an entire service lifecycle and outlines the processes and activities that enable service management. By comparison, [COBIT, also updated in 2019](#), describes how to govern enterprise IT to maximize business value yet manage resources and risks. The COBIT framework outlines processes and activities related to assets and resources across enterprise IT. From this standpoint, ITIL is regarded as a more focused ITSM approach, whereas the COBIT framework is a broader and more general approach that's applicable to almost any area of the business -- including ITSM.

There is overlap between the two frameworks. ITIL generally covers about a quarter of the practices, mostly those related to service management, found in COBIT. But COBIT has other strengths, including auditability -- which simplifies organizational compliance obligations -- from ISACA [Certified Information Systems Auditor](#)-certified auditors. ITIL relies on benchmarks such as [Tudor IT Process Assessment](#).

Ultimately, ITIL and COBIT are not mutually exclusive. Businesses can use them together to govern and manage IT services.

### What has changed in ITIL v4?

ITIL v4 makes additions to the framework, broadens the view of IT service and refocuses on service relationships and business value creation. This



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## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

reconceptualization of the ITIL framework slightly changes the format and supporting certifications for ITIL practitioners.

Version 4 of the ITIL framework [expands the scope](#) of ITSM and updates content and concepts to better embrace technological advances. It brings software development schemes, such as Agile, DevOps and Lean, into the ITIL practices discussion and will make ITIL more applicable to IT workload deployment options, such as containers, microservices, [serverless computing](#) and multi-cloud.

ITIL v3 offered five levels of professional certification: Foundation, Practitioner, Intermediate, Expert and Master. Each level addressed different aspects of ITIL, in both depth and scope. ITIL v4 still aligns with v3 but makes substantial changes to certification levels and terminology. For example, ITIL v4 offers only four certification levels: Foundation, Managing Professional, Strategic Leader and Master. Each level reflects the practical ITIL roles within a business.

Axelos released material for the ITIL v4 Foundation certification in February 2019. Materials for the remaining three levels are expected within the second half of 2019. Advanced certifications past the Foundation level focus on IT service creation, delivery and support; IT services direction, plans and improvements; IT strategy development; stakeholder value; and high-velocity IT management.

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---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

---

## IT service managers see a role for ITIL in digital business transformation

Cliff Saran, managing editor

The role of [IT service management \(ITSM\)](#) is set to become increasingly important as CEOs look to digitise their businesses.

A survey of 330 [IT service management professionals](#) conducted in September and October 2016 found that ITSM is becoming more collaborative across the business.

The research from Axelos, [the organisation that manages ITIL](#), looked ahead at 2030 to find out what practitioners thought the ITSM profession would look like.

According to the survey, future concerns among [ITSM practitioners](#) are primarily about keeping up with technology as it develops at an exponentially fast pace in all directions.

Some 90% agree that [new technologies will generate risks](#) that will need to be managed carefully, while 92% agree that [ITSM professionals](#) will need a much stronger strategic vision, aligned with the wider business.

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## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

Peter Hepworth, CEO of Axelos, said: “The fundamental principles of ITIL is about adapting to your culture and your organisations. Change is the only constant.”

In Hepworth’s experience, leading organisations are adapting the way IT is managed to support digital initiatives. “Not everyone has adapted to the future, but we see numerous successes where service management is being adapted. There is a lot to learn.”

He said ITIL practitioners are drawing on methodologies such as [lean, agile and DevOps](#) to enable them to adapt and [operate best practices for ITSM](#).

The survey reported that 77% of ITSM practitioners agreed that non-technical business units will be more involved in service governance, service strategy and service design.

Hepworth said ITIL will be a core requirement for organisations as they scale their internal IT capabilities to support digital initiatives beyond internal customers.

“What if there is a new Airbnb in our industry? ITIL has scale. A good idea may work, but only the right level of processes can enable it to scale,” he said.

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## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

[Bring your own device \(BYOD\)](#) proved that the IT service management desk cannot remain static. As people working in companies become more technology savvy, the role of IT service management is set to change.

According to the Axelos survey, 70% of ITSM practitioners believe user interactions with IT will become simpler, lighter-touch and less complex.

Self-service IT and [artificial intelligence](#) will have a role to play in reducing the first-line support workload, according to Hepworth.

In fact, 89% said they thought that an increase in automation would take over the repetitive tasks of IT, creating more time for service managers to focus on delivering more value to their organisations.

In the survey, 77% of respondents said they believed artificial intelligence and [machine learning](#) would have a profound impact on the IT workforce, liberating ITSM professionals from routine tasks and free up time for responding to demands for more creativity and “human” input.

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## ➤ Next Article

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

---

## ■ Don't let datacentres be a waste of space

Valdis Filks and Santhosh Rao, guest contributors

It is estimated that about 30% of storage within a datacentre is wasted due to under-utilisation caused largely by the lack of enforcement of routine storage management policies and best practices. Research has found that [storage utilisation in datacentres](#) decreased from 67% in 2011 to 56% in 2017, equating to an effective cost increase of 11%.

A skills challenge is also affecting storage utilisation. Fewer, less-skilled general IT staff are administering more storage, which is increasingly resulting in systems administrators who lack core storage management competencies managing critical storage infrastructures. This is compounded by the fact that new storage offerings often use old, inefficient storage management technologies and techniques as a result of product re-engineering.

### Save on storage costs

Faced with constant pressure to reduce datacentre costs, most IT professionals concentrate on getting the biggest discount or best price when buying new storage. However, it is often simpler and faster to save on storage costs by improving the utilisation of existing storage infrastructures.

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

**Storage utilisation** is the percentage of used storage capacity relative to the amount of available or configured capacity – and it has been consistently declining in datacentres over the past six years. Over the past several years, the utilisation of storage in the datacentre has dropped from 67%, to an all-time low of 54% in 2016, before slightly improving to 56% in 2017.

For every 10% of unused storage or reduced storage utilisation in a typical 300TB array, the cost of wasted space is about \$12,000 for a hybrid array and \$60,000 for a solid-state array, including software, support and maintenance. These cost inefficiencies effectively double if storage utilisation is at only 60%, and so on for every 10% reduction in capacity utilisation. Purchase costs for storage within integrated systems are close to those of hybrid storage arrays, although they can be higher. Costs for object storage systems, which are often used for analytics workloads, are about the same as low-cost all-disk (hard-disk drive) arrays.

IT administration costs or staff costs can also be reduced when the storage utilisation rates are increased, as reducing the total amount of raw capacity requires fewer storage administrators. This, in turn, will lead to an increase in storage administrator or even generalist administrator productivity.

### Inefficient storage utilisation

The amount of purchased storage array capacity has increased by 15% a year for the past five years, but this extra storage is not being used efficiently. This

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

additional storage capacity is being administered by fewer staff, many of whom have less storage management expertise.

Certainly, storage array administration has become simpler, and provisioning has become automated because of application programming interfaces (APIs) and software integration between hypervisors and storage arrays. At the same time, more internal server or direct-attached storage is being used in integrated or hyper-converged systems. However, despite the relative ease of storage provisioning, the reduction in specialist storage administrators and lack of storage management practices are already having negative effects on storage utilisation and IT costs.

For example, the ongoing decrease in [storage utilisation](#) and increased waste could also be due to server, network and storage administration tasks becoming combined into the responsibility of one “integrated systems administrator”.

Because many organisations no longer have a dedicated storage group or specialty, storage best practices may not be implemented. In worst-case scenarios, the systems administrators may even lack any agreed, documented or enforced storage best practices. Also, there may be no agreed target for storage utilisation.

In some environments, such as those where Docker containers are created and deleted quickly, leftover persistent storage from retired containers may be left

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

behind. Over time, this can become a problem as the quantity of wasted unused container storage increases.

Storage or general administrators must manage this leftover storage using container management or tracking software, which can inform the storage system or the storage administrator when the retired container storage can be deleted and reused for other applications or containers. The process for managing containers and the data lifecycle for temporary data – creation, usage and deletion – is the same as that for any applications.

### Most efficient options

This is why administrators should use the most efficient or up-to-date Raid protection algorithms or erasure codes to optimise storage utilisation. Similarly, when using hypervisors, IT leaders and hypervisor administrators need to check periodically that they are using the most efficient storage options.

Additionally, they must review and analyse software-defined storage (SDS) products at the time of purchase before they can be used to replace the system's inbuilt storage services.

In fact, it is not recommended that storage utilisation should be 100%, because that would leave no space for expansion. However, there is no reason why storage utilisation should be as low as 56%. Instead, IT leaders are



---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

recommended to aim for a storage utilisation rate of about 80%, which has been a best-practice target for decades.

This 80% utilisation rate allows the 20% of free storage space to be used for peaks in demand and short-term growth.

However, any calculation on storage utilisation is compounded by the growth in unstructured data used in analytics, and by the amount of internal storage used with hyper-converged infrastructure (HCI) and/or integrated systems, which now comprise an increasingly large proportion of storage within datacentres.

IT leaders must therefore prioritise these systems for monitoring and reporting on storage utilisation, because there may be no established best practices or storage management processes. This is especially important in large HCI and data analytics infrastructures, measuring from hundreds of terabytes to petabytes.

This article is based on an excerpt from the Gartner report “[Storage utilisation is decreasing, stop wasting money](#)” by Valdis Filks and Santhosh Rao.

---

## ➤ Next Article

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

---

## ITSM in the cloud: Using ITSM best practices to optimize cloud usage

Linda Tucci, guest contributor

*Enterprises have embraced the cloud's flexibility and scalability, but that doesn't mean the developers and employees who take advantage of cloud-based services are using them wisely.*

*Indeed, at many companies, the [cost of cloud-based services](#) undermines the business case made to justify their use, explains Andy Sealock, managing director at sourcing advisory Pace Harmon. CIOs need to implement a [cloud governance framework](#) that will optimize spending and mitigate cloud [security and compliance risks](#).*

*In part one of this expert tip, Sealock explains the ways in which companies often misspend in the cloud and builds a case for applying ITSM in the cloud.*

**Editor's note:** *The following has been edited for clarity and brevity.*

### Why do companies need to apply IT service management (ITSM) in the cloud?

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

[Andy Sealock](#): A cloud governance framework is what is going to make cloud business cases work over the long term. And we think ITSM is essential to implementing that cloud governance framework for metered cloud services -- in particular, [infrastructure as a service](#) and [platform as a service](#).

What's attractive about those cloud services -- and is probably the leading cause for adoption -- is their scalability, their flexibility and the ability for users to quickly and easily provision a complete development environment. It's hugely enabling, especially as more enterprises [adopt DevOps](#).

But unfortunately, we are starting to see some unhappy surprises in terms of [companies'] business cases blowing up over time. The spending ends up much higher than they anticipated -- higher than the business case justification that they used to say, 'Let's get out of this traditional data center and into the cloud.'

The main reason for that is the lack of a governance framework, which is largely a way to purchase intelligently and exercise demand management -- to do spend optimization in the cloud. [Implementing ITSM in the cloud](#) can help.

### How are companies failing to optimize their spending on cloud-based services?

Sealock: There are a lot of ways that you can spend inefficiently in the cloud -- things like not matching your purchase options with the way that you actually use the cloud.

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

One of the main things we see is not having the right mix of three-year [reserved instances](#) versus one-year reserved instances versus on-demand instances.

The unit cost for an on-demand instance is the highest one you can get. If I do a reserved instance and commit to use it for a year, I get a lower unit price; if I commit to using it for three years, I get an even lower unit price.

The way you get the deepest discounts, generally, on your cloud-based services usage is to figure out whether you can commit to a reserved instance, or not, and if you can commit to a reserved instance, then can you commit to one year or three years?

The way companies tend to waste money is they buy on-demand instances at the highest price possible and then use it constantly for the next year or the next three years. Had they bought a one-year or three-year reserved instance, they would have gotten much lower price.

But it can also go the other way. If you buy an instance at the lower cost for three years, but after a year the application goes away, you're stuck -- you pay for the three years. So, it is a balancing act.

It's hard, but there are some pretty sophisticated [automation tools](#) out there that help you do this. Not everybody uses them and not everybody uses them properly, but a market has emerged.

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

A second lever you can pull to optimize cloud-based services concerns the type of computers you reserve. Another is storage tiering -- do you need really fast, high-performance storage that costs \$200 per gigabyte, or do you need archive storage that costs \$4 a gigabyte?

There is also a risk component. When employees can set up all these cloud instances, they might not comply with all the company's security standards, its privacy standards, redundancy standards. There's a lot that goes into setting up your cloud environment, so that the spend is optimized and also so that you're doing the right thing in terms of security and privacy. This is where ITSM comes in.

*In part two of this tip, "[Benefits of ITSM: Use an ITSM portal as gateway to cloud services](#)," Sealock talks about how to use ITSM in the cloud as an interface between users and cloud portals.*

---

## Next Article

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

---

## IT service management effectiveness hampered by lack of metrics

Cliff Saran, managing editor

An [IT service management](#) (ITSM) benchmarking study from Axelos has warned that the biggest challenge facing the profession is a lack of visibility and inefficient processes.

The research, based on a survey of 667 [Information Technology Infrastructure Library \(ITIL\)](#) professionals, reported that 60% of those asked said they did not use effective measurements and metrics.

The survey found that 68% of managers believe they have a good understanding of their organisation's overall objective, but fewer than half (41%) see a clear [alignment between their current goals and the overall direction](#) of the business.

According to the study, the increasing demand placed on IT operations is resulting in teams taking on more work than they can handle.

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

Axelos found that this could be having a negative effect on their reputation. “Despite struggling to keep up with demand and working beyond realistic expectations, they are still perceived as delivering poor performance,” the report stated.

IT operations and development teams said they wanted to eliminate inefficient practices. The study found that 55% of ITSM professionals who took part in the survey showed an interest in identifying and eliminating wasteful work through the use of [continuous service improvement](#), [DevOps](#) and [agile practices](#).

Axelos found that larger organisations tend to recognise lack of visibility as a problem, while smaller organisations struggle more with inefficient processes and understanding customer needs.

“[Digital transformation](#) introduces new types and levels of risk into organisations, and ITSM is essential to managing that risk,” said Margo Leach, chief product officer of Axelos.

“Using evidence to support improvement and innovation will help [ITSM teams](#) demonstrate their understanding of an organisation’s goals as it undergoes digital change to deliver value for end customers.

“This requires more than reporting just process-based statistics, such as service desk traffic, without providing any business insight into the significance of the data. Our benchmarking study suggests that, currently, ITSM teams are too

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

---

focused on operational processes and are not doing enough to use evaluation tools, metrics and measurement as part of their working practices in delivering value to the wider business.”

---

## Next Article



---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

---

## ■ How machine learning is changing IT service management

Cliff Saran, managing editor

BMC is in early discussions to fund the acquisition of its rival, CA, according to reports on Bloomberg. Rumours of the deal come at a time when BMC is shifting from its role in IT operations to an enabler of the so-called digital workplace.

The company is moving from being a provider of back-office IT support technologies to an enabler for new, digitally enabled services, powered by [artificial intelligence](#) (AI) and machine learning.

BMC has been busy trying to make its products appeal to business leaders who are responsible for digital strategies.

In [a blog post following last year's BMC Engage conference](#), Forrester principal analyst Nigel Fenwick wrote that the company had positioned many of its current raft of products to help tech leaders deliver a more efficient and agile tech capability for the business.

---

## In this e-guide

---

- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

“One of the biggest challenges for many large technology teams is their lack of agility,” he said. “In the age of the customer, tech teams need to tap into every opportunity (and automation capability) to drive greater agility and efficiency throughout their technology delivery capabilities.”

Fenwick said that over the past three years, BMC has been refocusing its products and strategy to partner with customers around digital enablement and has been undergoing its own digital transformation in an effort to bring a “solutions-oriented approach to customers”.

BMC recently introduced the Digital Workplace, a cloud-based service that it said redefines the future of work by transforming the digital workplace experience with employees at the centre.

The idea is to provide employee self-service, according to one of BMC’s customers, Tyler Lowe, vice-president, senior service delivery manager at the Bank of America. “Creating a successful digital workplace requires not thinking about a workplace at all, but rather how employees have access to the information, apps and services they need without being dependent on someone else,” said Lowe.

Nayaki Nayyar, president, digital service management at BMC, said of the new initiative: “The future of work will be built on transformative digital workplaces that engage and empower employees by placing them at the centre of an increasingly cognitive enterprise.”

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## In this e-guide

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- Prepare for ITIL framework updates in version 4
- IT service managers see a role for ITIL in digital business transformation
- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

## Digitalising IT as an enabler

BMC's digital workplace appears to be an attempt by the company to align itself with the digitisation trend. In [a recent article, Barclay Rae, CEO of the IT Service Management Forum \(ITSMF\)](#), noted that digital requires a rethink of IT and business. "Going 'digital' really means finally joining up the dots of how technology can be made to work for business and not against or as a separate part of it," he said. "This approach calls on various new or refreshed ideas.

"What is new is that this is driven totally by business expectations and not simply financial or technical constraints. The driver, more often than not, is now very much around collaboration and working to shared goals."

One example of this joined up-thinking is Aylesbury Vale District Council, which recently won digital transformation project of the year at the Professional Service Management Awards. Its Right Here Right Now digital transformation programme started with a simple website refresh, but soon turned into a complete overhaul of council services. It went beyond deploying new digital technologies towards creating a more commercially minded, customer-centric council, and pushing channel shift as the most sustainable option.

The council has begun breaking down the silos between departments and restructuring and joining up how services are run in line with a new customer-centric approach. In the second phase, the council said it will be looking at

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## In this e-guide

---

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- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

further integration for back-end transactions and the development of artificial intelligence processes.

### Joined-up access is essential

For true employee self-service, business systems need to be interconnected in a way that provides managed access. When Computer Weekly spoke to ticket booking company Ticketmaster in March, [the company's senior vice-president for technical operations, Justin Dean](#), said: "Over the years, we have been adding APIs [application programming interfaces] to modernise the interface to our ticketing engines and platforms." In doing so, the company has enabled developers in other parts of the business to access some of its core legacy systems.

In [BMC's vision](#) for the digital workplace, given the right security constraints, employees should be able to access any system they need to complete their job. Both CA and BMC offer a suite of tools to support mainframe systems, DevOps, compliance, API management, IT operations and IT service management.

At the start of this year, CA bought Autonomic, a company specialising in automating business processes.

According to Gartner's Magic Quadrant for [IT service support management tools](#), BMC's nearest rival in the IT service management market is ServiceNow.

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---

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In January, ServiceNow acquired DxContinuum, a company that it said would provide machine learning for its customers.

Last year, BMC introduced a tool called TrueSight Intelligence, which it said could automatically learn behaviour from machine data, service desk data, business data or even external sources of data, such as social sentiment, traffic and weather. This data is then aggregated and contextualised to show relationships and patterns among metrics, among events and between metrics and events, Shayne Higdon, vice-president of product management, wrote in a blog last year.

Arguably, with Autonomic, CA already has a product engineered to understand certain IT workloads, while BMC TrueSight Intelligence is a more general-purpose tool.

Such technologies are expected to be key enablers of business growth. The [McKinsey Global Institute recently estimated that automation](#) could raise productivity growth globally by 0.8 to 1.4% a year.

IT service management is one of the business areas that could benefit from this, and the ITSMF is beginning to see [machine learning and AI](#) used to [improve IT service management](#). "Toolsets have become better and you can link to something like Amazon Alexa, but many people are quite sceptical," said the ITSMF's Rae.

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The real [value of IT service management](#) is in stopping failure, said Rae. In the past, the IT department relied on IT expertise, but Rae said he expects machine learning to be applied to software and server logs to identify when corrective actions need to be put in place to avoid downtime.

If BMC does indeed buy CA, it would acquire the Autonomic automation tool plus a suite of rival API management, IT operations and mainframe tools. Clearly, there will be product overlap, but with its Digital Workplace strategy, BMC is looking to raise the bar and start conversations with business executives. How CA fits in with this remains to be seen, but whatever the outcome, BMC is determined to become a digital enabler for businesses.

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- Don't let datacentres be a waste of space
- ITSM in the cloud: Using ITSM best practices to optimise cloud usage
- IT service management effectiveness hampered by lack of metrics
- How machine learning is changing IT service management

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