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# serviceTALK



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The enduring myth of CMDB

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Supporting the  
Internet of Things

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Focus on the ITIL Practitioner

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Bringing ITSM to a  
new generation

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A culture  
of service  
improvement



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# New initiatives and member feedback

It's now 5 months since I began my role as CEO of ITSMF UK. It's been an exciting time, getting to grips with what needs to be done and setting out plans for future development. Most of my activity to date has been 'behind the scenes' work, although I have made a point of getting out and talking directly to a variety of members as well as some potential partners.

Here's a quick summary of where we are as an organisation.

Membership organisations currently face many challenges thrown up by the proliferation of information and forums available online, so our biggest challenge is around how we deliver value to our members and customers.

We have done some great work around building the 'value proposition' and how that helps to define the services that we offer. ITSMF UK will continue to be the voice of the service management community, focussing on professionalism for organisations and individuals. This will involve a wide definition of what is involved in 'service management', not being limited to individual frameworks or methodologies.

Our major initial development will be to provide a Competence Framework – the PSMF (Professional Service Management Framework).

This is a holistic approach to career development that defines the key elements

required to be a service management professional. It goes well beyond the traditional process- or technology-based models and will encompass industry competencies as well as organisational and HR-based CPD programmes. The demand for this has come from our members and our Leadership Council in particular, where members have articulated the need for a career path model and high level set of personal capabilities for service management.

The PSMF content will be a free member benefit and will be launched in the next couple of months. We are very excited about this as it offers our members a significant new membership benefit. The feedback on initial work to date has been fantastic and we look forward to launching this to the industry – look out for more details shortly!

ITSMF UK will also be developing a 'light touch' assessment and accreditation scheme around this framework – we are trialling this with some early adopters and will continue to develop it over the coming months. The framework itself will be free to all members and available for your use simply as a clear industry benchmark.

We are also going to provide more masterclasses and events around new and emerging industry topics like DevOps, SIAM and IT4IT, as well as a new set of 'classic' short industry workshops on popular topics like problem management and service catalogue. These will all deliver ITSMF UK-

created content and we'll make this available for other organisations to deliver as required. We've set up a small team to develop this content and we're currently working on creating this in a fresh and memorable delivery format.

Our 2015 conference was a great success at many levels and we've made the decision to stay with the same venue for 2016, on 21st and 22nd November. We look forward to your participation – please look out for our forthcoming announcements around bookings and the call for presentations. We are looking at a number of new ideas and features for the Conference, whilst not tinkering too much with what was a very successful format last year.

There's much more going on around events, SIGs, briefings, partnerships and membership that you can read about in this publication and via our website, social media and email communications. We also want to hear from you with any feedback and requests regarding how we provide value to you, our members. Please contact us at the office or me directly if you would like to talk.

Finally I'm very pleased to confirm that my tenure in this role will be extended for at least another year, to ensure that the transformation process runs with some continuity. It's a great time to be involved with ITSMF UK and I look forward to delivering more value and services to our members over the coming year.



**Barclay Rae**  
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## IoT adoption is driving the use of Platform as a Service

The widespread adoption of the Internet of Things (IoT) is driving Platform as a Service (PaaS) utilisation, according to industry analyst Gartner, Inc. Gartner predicts that, by 2020, more than 50 per cent of all new applications developed on PaaS will be IoT-centric, disrupting conventional architecture practices.

"IoT adoption will drive additional use of PaaS to implement IoT-centric business applications built around event-driven architecture and IoT data, instead of business applications built around traditional master data," said Benoit Lheureux, research vice president at Gartner. "New IoT-centric business applications will drive a transformation

in application design practices that focus on real-time contextually rich decisions, event-analysis, lightweight workflow, and broad access to Web-scale data."

Most new IoT-centric solutions will be implemented on IoT platforms, a form of multifunctional comprehensive PaaS that is a hybrid, architecturally coherent integration of application platform as a service (aPaaS), integration platform as a service (iPaaS), IoT device management, orchestration and business process management services as a platform (bpmPaaS), database PaaS (dbPaaS) and analytics services.

## Just 1 in 7 security chiefs reports to CEO despite critical risks

According to a study by ISACA and RSA Conference, 82 per cent of cybersecurity and information security professionals polled report that their board of directors is concerned or very concerned about cybersecurity, but only 1 in 7 (14 per cent) CISOs reports to the CEO.

This gap between belief and actions at the highest levels of management is playing out in an environment where 74 per cent of security professionals expect a cyberattack in 2016 and 30 per cent experience phishing attacks every day, according to the study.

"While there are signs that C-level executives increasingly understand the importance of cybersecurity, there are still opportunities for improvement," said Jennifer Lawinski, Editor-in-Chief, RSA Conference. "The majority of CISOs still report to CIOs, which shows cybersecurity is viewed as a technical rather than business issue. This survey highlights the discrepancy to provide an opportunity for growth for the infosec community in the future."

The cybersecurity skills gap poses its own threat to keeping an enterprise safe. The past year saw a 12-point drop in the percentage of security professionals who are confident in their team's ability to detect and respond to incidents, dipping from 87 per cent in 2014 to 75 per cent in 2015. Among those 75 per cent, 6 in 10 do not believe their staff can handle anything beyond simple cybersecurity incidents. In addition, the number who say that fewer than half of job candidates were considered "qualified upon hire" has risen from 50 per cent to 59 per cent in a year. Twenty-seven per cent need six months to fill a cybersecurity position, up three points from 2014.

"The lack of confidence in current cybersecurity skill levels shows that conventional approaches to training are lacking," said Ron Hale, Chief Knowledge Officer of ISACA. "Hands-on, skills-based training is critical to closing the cybersecurity skills gap and effectively developing a strong cyber workforce."

## Study reveals significant gaps in enterprise security

A detailed industry survey commissioned by HEAT Software has revealed some worrying concerns regarding enterprise security. Conducted by Ultimate Windows Security, the report provides visibility into the uses, concerns and challenges that IT departments face in respect to endpoint security, patching, cloud applications and mobile management.

Specifically, the survey highlights the fact that:

- endpoints have shifted from securely existing within four physical walls to connecting from anywhere in the world, often over insecure Wi-Fi. With IT managers reporting that negligent employees are the biggest threat to endpoint security, the process of ensuring every endpoint is securely configured, patched and protected from external threats is more critical than ever. When IT professionals were asked to rank their top security concerns, three of the top four answers revolved around endpoints.
- Vulnerability protection plays a key role in overall threat protection. External hackers who seek to exploit vulnerabilities oftentimes continue to do so more than a year after a common vulnerability has been published, making it critical to ensure that every single patch—for both operating systems and applications—is applied as soon as it's available. Respondents underscored this importance by citing the need to stop endpoint-based intrusions as the fourth highest security priority.
- When it comes to mobility, organisations cannot address security, stability and performance without centralising mobile access to data, application updates and device security. Enterprise mobility management (EMM) solutions offer this, but a shocking 37 per cent of respondents do not use EMM services.

"In conducting this research, we've identified significant security gaps in the current solutions that IT departments are leveraging to mitigate risks," said Russ Ernst, Sr. Director of Product Management at HEAT. "It's our hope that these findings will encourage IT departments to implement flexible, scalable, secure service management and endpoint management solutions, so that they can operate effectively in today's harsh cybersecurity climate."



## Masterclasses and Workshops from ITSMF UK

### **DEVOPS IN AN ITIL WORLD** - 11th April 2016 - Wokingham

DevOps has attracted a great deal of attention in the ITSM world, but it's important to understand the strengths and limitations of the approach. This masterclass helps delegates to embrace DevOps principles in the most effective ways.

### **MAJOR INCIDENT MANAGEMENT** - 21st April 2016, - Bracknell

This Masterclass offers a mature approach to major incidents, explaining why it's important to integrate several different approaches. We'll touch on minor incidents, too, since the way these are routinely handled will shape users' and IT professionals' view of what needs to happen, and in what order.

**Masterclass attendance price: Members £395+VAT / Non-members £795+VAT**

## COMING SHORTLY... OUR NEW WORKSHOPS

From next month, we'll be rolling out a new series of workshops, specially devised by ITSMF UK's Content Development Team, which provide a grounding in key areas of service management. Covering the essential elements of the subject in a relaxed, interactive format, the workshops will be available for licensing and on-site runnings as well as appearing in our member events programme:

- \* Debunking the hype - separating the hard facts from the myths
- \* Ten things you should know - based on our members' first-hand knowledge rather than the textbook theory
- \* Practical case study and knowledge sharing - a chance to examine our detailed case-study and share experiences and war-stories
- \* Resources and information to share back at your organisation.

**Look out for the first two titles in this series, 'Service Catalogue' and 'Shift Left', or check the website for details.**



## Make a Wish charity benefits from ITSMF UK Awards Raffle

ITSMF UK Chair Rosemary Gurney recently handed over a cheque for £2500 for the Make A Wish charity – the proceeds of our Annual Awards Raffle in November – to Cllr Dee Hamilton, Mayor of Bracknell Forest Council, our local authority at the office. Make A Wish, which exists to grant magical wishes to enrich the lives of children and young people fighting life-threatening conditions, is the Mayor's chosen charity this year, and Rosemary thanked ITSMF members for their generosity in helping us to support such a deserving cause.



## Focusing on student members

We're delighted to announce that Sandra Whittleston will be joining the ITSMF UK Board at the beginning of April. A long-standing ITSMF UK member and Senior Lecturer in Service Management at the University of Northampton, Sandra is passionate about promoting and embedding ITSM in both Higher and Further Education. She will be joining us to help develop our student membership offering and other services relevant to younger members.



## Barclay Rae takes ITSMF UK to the next stage

The ITSMF UK Board are pleased to announce that, following an internal review of requirements, Barclay Rae has been offered an extension to his original contract and will stay on as CEO of the organisation for a further year to ensure that our current transformation process continues to deliver against our strategy.

Board Chair Rosemary Gurney commented, "In the few months Barclay has been part of the team, he's made a very positive impact on the internal operation and in establishing more collaborative relationships with other organisations. He has guided the development of exciting new opportunities which are intended to provide benefits to our members and we look forward to working with him as these are launched throughout the coming year."



## Farewell to Natalie

We're sad to be saying au revoir to Natalie Pinner, who is moving on to a new role in marketing at the end of March.

Natalie joined the office team last year as Marketing Exec, and has been instrumental in raising our profile as an organisation, improving our use of social media, supporting our very active SIAM special interest group, and other things too numerous to mention.

We wish her all the best in her career – she will certainly be missed.



ITSMF UK's annual conference  
and exhibition

*itsmf UK*

# ITSM



Sofitel London Heathrow  
21<sup>st</sup> - 22<sup>nd</sup> November 2016



## Countdown to Conference

**ITSM16, our Annual Conference and Exhibition, is celebrating its 25th Anniversary by returning to the Sofitel London Heathrow (T5) on 21st and 22nd November. Please put the date in your diary or book your place now!**

Our Conference offers four dedicated tracks of educational presentations, interactive sessions and case studies, numerous networking opportunities, an ITSM exhibition featuring all the key players in ITSM, and our celebrated ITSM awards dinner.

For those interested in speaking at ITSM16, the Call for Presentations is now open and closes very shortly. The over-arching theme this year is 'Professionalism in ITSM', reflecting ITSMF UK's current drive to develop and advance ITSM as a professional discipline and sector. We are calling for presentations that help attendees to develop their ideas in the following areas:

- **ITSM Fundamentals** - classic ITSM topics and case studies based around well-known themes and processes – e.g problem, change, CSI, service catalogue, service desk

- **Leading-edge ITSM** - new and emerging ideas and approaches: DevOps, SIAM, IT4IT, CX, Cynefin, IT supply/value chains, cloud and hybrid commercial models
- **People make ITSM** - sessions focussing on the human elements that make ITSM successful – communications, leadership, people development, change management, new IT skills, competency
- **Enterprise Service Management** - how to integrate and manage ITSM with non-IT areas, as well as using service management exclusively beyond IT, in areas such as business resilience.



**Full details of ITSM16 can be found on the ITSMF UK website**



# ITSM16 Stop Press

We're delighted to announce that Dr Sue Black will be the opening keynote speaker at Conference this year, while Alan Dedicoat will be hosting the Awards Dinner. Named one of the top 50 women in tech in Europe in 2015, Dr Black is an award-winning computer scientist, radical thinker and passionate social entrepreneur. She has regular tech columns in both The Guardian and The Daily Mirror, the latter

being a tech agony aunt column called "Ask Dr Black". Her first book, Saving Bletchley Park, about the successful campaign that she started to save Bletchley Park, set new records in crowd-funded publication. Alan Dedicoat, the voice of the Lottery and Strictly Come Dancing, needs no introduction as a TV and radio personality, and will add his own personal touch to the awards proceedings.

**Alan Dedicoat**  
Awards Host



**Dr Sue Black OBE**  
Keynote Speaker



## Introducing the Professional Service Management Framework

## PROFESSIONAL SERVICE MANAGEMENT FRAMEWORK



In the next few weeks we will be rolling out ITSMF UK's Professional Service Management Framework (PSMF), the culmination of months of engagement with member organisations and with our Leadership Council. The model is designed to help members recognise and develop professionalism across the enterprise, identifying key personal capabilities and competencies in six professional areas: Organisation and Marketplace; Wider IT/Technical Knowledge; Core ITSM Practical Areas; Interpersonal and Relationship Skills; Self-Management and Leadership Skills; and General Business and Management Skills.

The PSMF content, including a detailed competency model and learning & development guides for Service Management Professional and Associate levels, will be accessible to all members through the website.

**Watch out for further details, coming very shortly!**



## Are you listed in the ITSM Directory?

Check out our new directory of organisations and individuals offering services and products to the IT service management industry.

ITSMF UK members are entitled to a FREE basic listing – contact us for details.

**[www.itsmdirectory.co.uk](http://www.itsmdirectory.co.uk)**

# And the winner... ...could be you!

The ITSM Industry Awards offer a great opportunity to highlight the achievements of those around you – IT service management individuals and teams – whose skills, commitment and imagination have marked them out for special recognition. Check out the list of winners and finalists from last year's Awards evening in November and decide whether you would like to take part in 2016. Could this be the year to give your team the kudos they deserve or to share your special service management story with your industry peers? If so, we would love to hear from you – check out the website for details of this year's award nomination process!

## LAST YEAR'S WINNERS



**Service Management Project of the Year**  
**WINNER - Sungard Availability Services**  
FINALISTS - EE; Scottish Government



**ITSM Senior Leader of the Year**  
**WINNER - Paul Pattinson, Telefonica**  
FINALISTS - Ian MacDonald, the Co-operative Group; Damian Bowen, NTT Data



**Thought Leadership Award**  
**WINNER - Ian Macdonald, the Co-operative Group (now Independent)**  
FINALISTS - Mike Simpson, CIH Solutions; Priscilla Smith, BP



**Service Innovation of the Year**  
**WINNER - Aviva IT Care**  
FINALISTS - EE; Knutsford Academy



**Young ITSM Professional of the Year**  
**WINNER - Ashleigh Morgan, LV=**  
FINALISTS - Michael Bailey, CGI; Mark Curry, PwC; Matt Austin, LV=



**Training Provider of the Year**  
**WINNER - Pink Elephant**  
FINALISTS - Fox IT, BSMimpact and Smatra



**IT Service Management Team of the Year**  
**WINNER - Yorkshire Building Society**  
FINALISTS - NTT Data; EE



**Ashley Hanna Contributor of the Year**  
**WINNER - Anna Leyland, Sopra Steria**  
FINALISTS - Steve Morgan, Syniad IT; Rob Stroud, Forrester Research; Matt Hoey, Grant Thornton



**Paul Rappaport Award for Outstanding Contribution to ITSM**  
**WINNER - Tony Price, Hewlett Packard Enterprise**



# View from the Chair...

## ITSMF UK Chair Rosemary Gurney reflects on the re-emergence of silos within the organisation and suggests how we should combat them.

Those of us who have been around IT for a number of years will probably have had the misfortune and felt the frustration of working with silos. Networks, tech support, service desk, desktop, etc - a world where reciprocal operation just means blaming each other, and common goals are no more than a pipe-dream.

As part of my 'day job' I see a number of people undertaking training and education towards ITSM qualifications. I recently had a small group looking at the Service Operation stage of the ITIL lifecycle and one person introduced himself as a technical support analyst. "I do IT, not process," he said. "Actually I'm not sure what I'm doing here." He was absolutely convinced he had no need to talk to his colleagues at the service desk, to provide advice and guidance to them which in turn would result in a more efficient, beneficial service to their customers.

So how did we let ourselves get into this position in the first place? Silos are patently ineffective and can only bring about a negative end game. IT's historic role as 'the tail wagging the business dog' partly explains it and the lack of coherent management systems also contribute. Then along came the rise of the service provider, increased business focus on technology, ITIL, PRINCE, SDI, etc. to change the culture and give us the glue to join our disjointed department together. Is it perfect? No. Is it better? Yes.

But my "IT not process" student started me thinking: do silos like this really still exist? Sadly, I believe they do. There's a real risk that our changing IT landscape might return us to the Dark Ages. Today, instead of the challenge of plugging two pieces of infrastructure together, IT service providers are increasingly required to plug two services together and manage multiple suppliers. We are expected to provide seamless end-to-end solutions in a 'bring your own device' environment where customers turn up expecting the technical equivalent of running SAP on their dishwasher.

Today we embrace best practices in areas such as project management, programme management, service management and business analysis to help implement business solutions provided and hosted by a plethora of suppliers. However, I'm beginning to think that maybe we've seen it all before. Where we struggled to integrate the old technical silos, are we now wrestling with functional silos – with business analysts, service managers, customer relationship managers and project managers working in isolation and blaming

their colleagues and suppliers for service failures and project over-runs in a grotesque throw-back to the IT departments of the 1980s?

The effects of the new silos could be far worse than in the past. Global markets, increased reliance on technology, frenetic M&A activity and reduced margins are all factors that mean that one mishandled implementation can cost us the organisation, quite literally. You've probably seen something like it. Business analysts think they've provided the right information to deliver a new service; project managers have preached their time, cost and quality mantra; and service managers have implemented what they were told the customer wanted. Perfect? Well no, not exactly! It was needed six months ago but nobody bothered to check whether it was what the customer still wanted.

When communication between the new silos breaks down, they can easily descend into a tail spin of blame and finger pointing. Same old, same old? It doesn't have to be.

I think the answer is really so simple. We don't have to reinvent service management best practice or project management methodologies as some might advocate. We don't have to redefine how our business analysts perform requirements gathering. Awareness, governance and communication are the real keys to success.

It's disheartening how many professionals in their respective sectors know so little about the roles of the people they rely on so much, how uninformed business analysts or project managers are about ITIL and service managers' roles, and vice versa. Education is key. Global organisations should now be building awareness of other areas into education programmes. For example, service managers should be sitting business analysis exams, not to take over the role but to better understand where the vital interfaces might be. An appreciation of the issues their colleagues face is worth its weight in gold. With the right knowledge they can begin to discuss issues with a common language and frame of reference. Is a project worth risking for the sake of a £500 ITIL or BA course and exam?

Good governance will always be associated with the values and objectives of the organisation. It is shaped by organisational visions, traditions and - most importantly for our silos - by the people and the relationships



between them. Good governance is not just about slavish devotion to the rules; the benefits of good direction, evaluation, feedback and monitoring go much further. Good governance leads to a number of positive consequences that help to eradicate silos: increased trust both within and external to the organisation; more accountable and less detached directors and leaders; and the development of a strong core that gives you the ability to cope with the bad times. Put simply there is indisputable evidence linking governance and overall increased organisational performance.

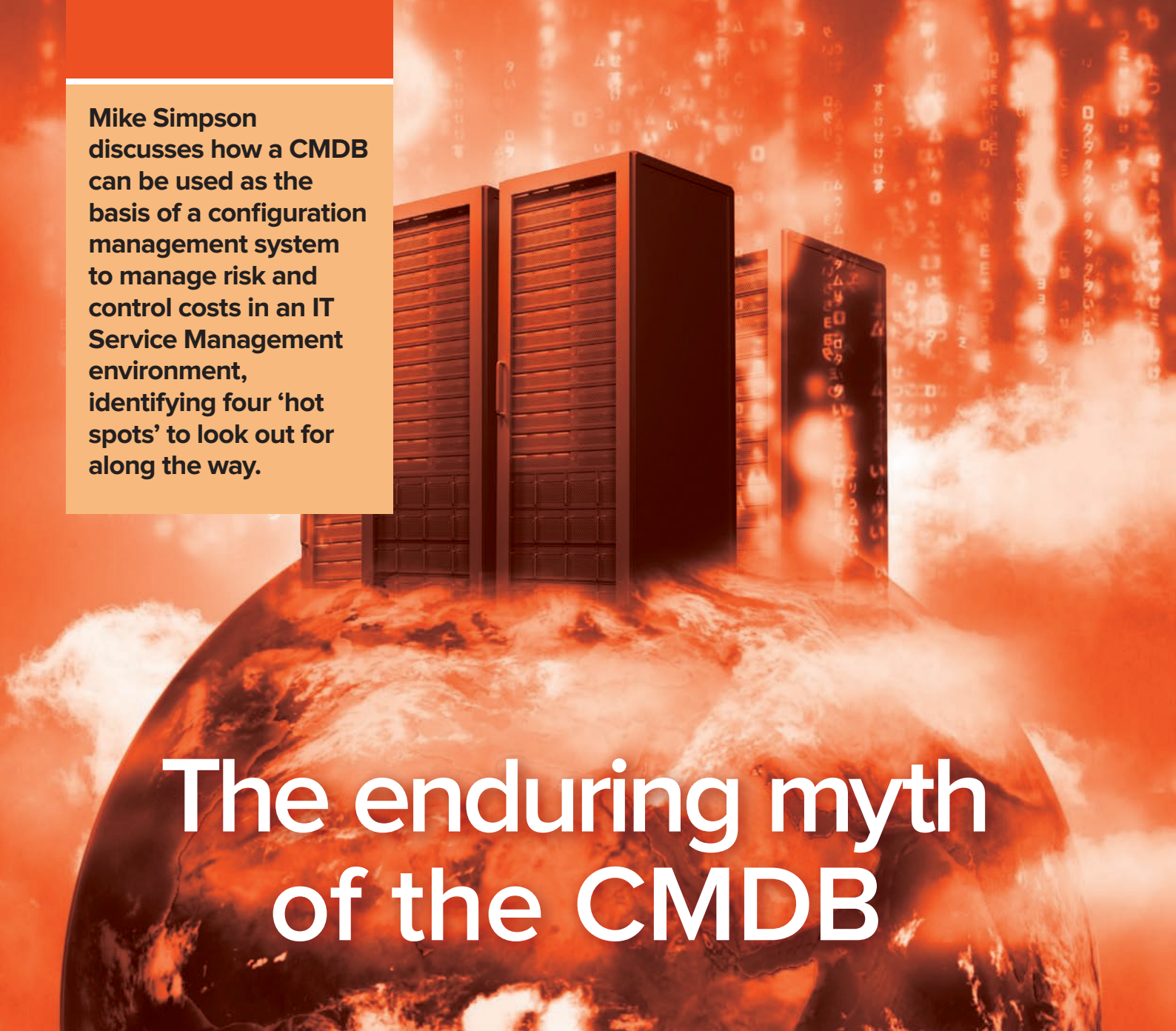
In today's world where all our services and projects need to be undertaken in partnership with our business, we are absolutely reliant on solid and effective communication. Many of the problems that surface are actually the result of poor communication. Following simple communication rules ensures that everyone has a common set of expectations in terms of what is to be delivered, when and at what cost, and what is expected of them.

Just being a good business analyst, service or project manager isn't enough. In any organisation, it's not just a case of doing what you do in isolation; you need to understand the skills and motivation of those in other roles and want to work with them. Don't let a new silo mentality take over in your organisation. Recognise that you are all responsible for each other's work and if one fails, you all fail.

So, are new silos creeping into the workplace? I would be interested in your experiences.

Best regards

Rosemary Gurney



**Mike Simpson discusses how a CMDB can be used as the basis of a configuration management system to manage risk and control costs in an IT Service Management environment, identifying four 'hot spots' to look out for along the way.**

# The enduring myth of the CMDB

Although entitled 'The enduring myth of CMDB' this article is actually about configuration management.

My aim is to show that although a CMDB (Configuration Management Data Base) is an essential component of a robust Configuration Management System (CMS), there are other key components that drive best practice, namely people and processes. The article will look at a definition of CMDB, how to select a CMDB solution, how to populate it and especially how to make it work within a CMS. It will also look at the role of a CMDB in two key ITIL processes – change and incident management.

But what exactly do I mean by 'myth' in this instance? Well, I'll come to that shortly but first we need to consider what is actually meant by a CMDB.

Let's be clear at the outset - configuration management is nothing new. Whatever construct of IT system you have, the IT operational staff will need to record all the building blocks - known as Configuration Items

(CIs) - and record where the CIs are located, how they are configured and - critically - how they work together.

Basically, a CMDB provides a central repository for all CIs in the form of CI records and make it available to the IT organisation and to the ITSM team to support change management and other ITSM processes.

So, is a CMDB needed? Actually yes it is, but what type of CMDB? In fact, is there more than one type? As our starting point I want to look at what ITIL says on the subject, and work back from there. A quick look at the ITIL v3.0 schematic diagram for the Service Asset and Configuration Management (SCAM) function shows an integrated CMDB at the core of the SCAM. For convenience, I will just call this i-CMDB. To be honest, when I first encountered the ITIL i-CMDB concept my immediate reaction was - this can't be done.

As yet, I'm not aware of any IT organisation that has fully implemented the SCAM as defined by ITIL, but there are some very useful guidelines on what is actually required

to implement an i-CMDB in a Gartner report titled Critical Capabilities for Configuration Management Database, published in 2014<sup>1</sup>.

## ITIL and the i-CMDB

Basically, the design of an i-CMDB is more than just a repository for configuration data. It is in fact a meta-database that does not store the CI data but connects to several different data sources associated with the CIs. This is known as federation. The i-CMDB also manages issues around CI reconciliation and synchronisation; and also models and maps logical CI configurations as a visible graphic for the end users.

It's worth taking a closer look at four of the critical capabilities to see what is involved. The graphic shown in Figure 1 is a simple representation of how the i-CMDB is at the core of the ITIL SCAM and 'integrates' all the IT Asset Management (ITAM) CI landscape with the ITSM processes to create an end-to-end CMS.



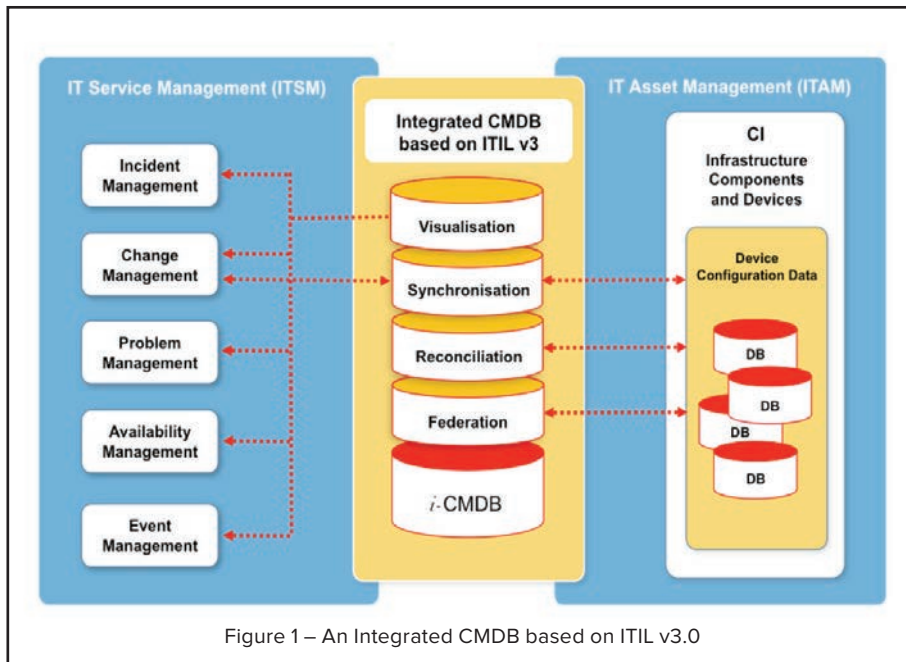


Figure 1 – An Integrated CMDB based on ITIL v3.0

The four capabilities shown in Figure 1 are:

- **Federation** - this is the capability to pull configuration data from several different CI database sources. This is not as easy as it might appear. The big issue here is that a mechanism is needed to ensure that two CI configuration data sources reference the same data. Which of the data sources is the one to use? Which one is the authoritative source? This is why reconciliation is needed.
- **Reconciliation** - this is the capability that ensures there are no duplicate CI data. This is achieved by reconciling the location and attributes of the CIs. Reconciliation must also adjust data extracted from more than one CI data source to eliminate duplication and maintain consistency of CI data. However, this presents something of a conflict. If the reconciliation engine creates a change in one of the CI data sources then this change needs to be identified as an approved or a non-approved change. This is done by synchronisation between the federated CI databases.
- **Synchronisation** - this is the capability to maintain synchronisation with all the CI databases. The i-CMDB will need to identify changes made to the infrastructure and then distinguish between approved changes and non-approved changes. Approved changes will be made via the change management process, for which a Request for Change (RFC) has already been raised. The synchronisation engine will compare the detected change against an approved list of changes and then raise an alert if an unauthorised change is detected.
- **Visualisation** - this is the capability to model and map all the CI configurations that form the IT infrastructure landscape and present these as a set of logical diagrams that show CI relationships and interconnections in a graphical form that aids ITSM change management personnel with assessing the impact of a proposed change.

So, why do I think the ITIL approach to a CMDB won't work? There are a number of reasons that come to mind. Is it really possible to automate reconciliation and synchronisation and be certain that what you finally see is in fact an accurate snap shot of the current system configuration? One example is the recommended use of auto-discovery tools for regular daily updates to configuration. Whilst these tools have some useful features, what happens when an unauthorised change is made? The discovery tool will certainly pick this change up and suddenly you have a corruption to the configuration. This is where my term 'enduring myth' comes in.

The 'myth' in this case relates to the widely held belief that once an i-CMDB is designed, populated, deployed and then automatically updated, this becomes the single authority at the core of a CMS. Also, this belief has been around for some years now – hence the term 'enduring'. I believe this approach introduces a major problem - one of over dependence on a technical solution. In viewing a federated CMDB as basically an automated solution at the core of a CMS there is a risk of supplanting the local knowledge and investigative experience of staff. This has obvious risks to service delivery.

Imagine, for a minute, that you are chairing a Change Approval Board (CAB) meeting where the i-CMDB impact report states that the proposed change has no impact on a business critical system and hence no further impact analysis is needed as the i-CMDB report is definitive and authoritative. Well, good luck with that and I might suggest you keep your CV up-to-date.

This appears cynical, but in the real world are we really going to hand over the key decisions for releasing a change based solely on an i-CMDB auto-generated report? If not, then why invest vast amounts of annual budget on attempting to do so? There is a

paradox here and the way to solve it is to step back from attempting to implement an ITIL v3 compliant i-CMDB and look at the overall configuration management process and how we can improve on what we have by implementing a CMDB as part of a revised end-to-end CM process, but not necessarily the core.

## A question of scale

Of course, in IT you can achieve almost any solution as long as you have deep pockets. In the real world most businesses are under pressure on budgets. The exception here may be large organisations that have extensive IT dependency; for example a global investment bank with a complex infrastructure.

Indeed, you can find some very good case studies on the IEEE Xplore Digital Library<sup>2</sup> about large-scale CMDB installations that encompass 10,000 to 20,000 servers and a million plus CIs. Clearly, with this degree of scale there must be significant investment in an integrated CMDB along the design of ITIL SACM. However, in my view these are exceptions and not the rule.

So, what are the options for a small to medium size IT organisation that wants to enhance their CMS to drive better service delivery but have budgetary constraints? Well, here is my list.

- **Option 1** - live without a CMDB
- **Option 2** - leverage existing service desk CMDB functionality
- **Option 3** - design and build your own CMDB
- **Option 4** - buy a third party off-the-shelf product and do the implementation yourself
- **Option 5** - commission a vendor to design and implement the CMDB as a project

### Option 1 - Live without a CMDB

It is possible to operate a configuration management process without a CMDB, particularly if you are running a very small IT operation - and many organisations do. However, it really makes sense to capture and maintain all relevant CIs in one location, particularly if you are planning to build a Configuration Management System that is based on industry best practice.

### Option 2 - Leverage existing service desk CMDB functionality

This is more promising. Until quite recently, stand-alone service desk applications rarely included a CMDB as part of the functionality. However, most service desk software these days come as part of an ITSM tool set, and there is usually a CMDB included. This is sometime labelled a configuration management module, which may or may not be the same thing. There may also be an asset register that purports to be a CMDB as well, and so on. As there are dozens of ITSM tool sets available, it is difficult to be

prescriptive here but you might be fortunate to have a service desk application that is part of an ITSM tool set and that also has CMDB built-in. As often as not, this part of the ITSM functionality is left disabled or only part implemented. More on this later.

## Option 3 - Design and build your own CMDB

I have already assumed that a multi-dimensional i-CMDB with all the associated interfacing will be difficult to implement so I would suggest that this is not even attempted by in-house design personnel. That said, if the CMDB is going to be a relational database design as previously described, then this is feasible as an in-house project. However, the downside means diverting key personnel for a design and build project that could take several months to implement. But it is a possible option.

## Option 4 - Buy a third party off-the-shelf product and do the implementation yourself

This is a minefield. There are numerous vendors that claim to offer CMDB solutions. Some explicitly state that their CMDB is a dimensional database and can be connected to your IT systems to provide all the federation, reconciliation, synchronisation and modelling needed to reach ITIL compliance. This may be so, but that is not our preferred approach, as discussed previously.

There are also vendors who offer a CMDB relational database off-the-shelf and ready for inputting your CIs. This could work but a word of caution. Out-of-the-box products often require third party consultancy to get them working correctly and the billable hours can clock up at an alarming rate. However, that said, it is a valid option and worth considering.

## Option 5 - Commission a vendor to design and implement the CMDB as a project

Some vendors offer a bespoke CMDB but of course these will require a lot of expensive consultancy to implement fully and few, if any, are that successful. The budget will be blown well before full implementation is achieved. This is my least favourite option as it has a high risk of failure.

So, which option(s) to choose? My first preference would be for Option 2. Look at what you already have included in your service desk software in the way of a relational database that will hold CIs. If it doesn't, then check with your service desk supplier in case there is a CMDB add-on module available.

Failing that, I would look closely at Option 3 - build something yourself, and then Option 4, buy an off-the-shelf product.

Note: Should you be considering an upgrade to your service desk, this would present an ideal opportunity to factor in a CMDB as one of the core functions of the new service desk.

## Selecting a CMDB

So, in summary, we are looking at a monolithic, rather than a federated CMDB. It is also likely to be a relational database model rather than a multi-dimensional CMDB. At this point I don't want to delve into the merits of relational databases versus multi-dimensional as this is outside of the scope of this paper. The key point I wish to make is that a relational database with multiple data tables built as sets of CI records will provide a good working solution that combines semi-automatic and manual methods of controlling data changes to the CMDB.

This approach will depend on the database model of the service desk provider in Option

3 and the CMDB vendor in Option 4. If you choose Option 2, then you have the opportunity to research alternatives to the relational model approach. For the purpose of this paper I am assuming a relational database model.

## The asset register

Before I look at the steps for setting up of a CMDB, I want to touch on asset registers. These databases are often bundled with service desk software and sometimes vendors call them a CMDB. This is not true and an asset register is simply an inventory of hardware and software assets so that the ownership, purchase order history and licence management of assets can be tracked over the asset life-cycle - procurement to disposal. True, there will be some correlation with the CIs held in the CMDB and they will need to be kept synchronised.

## Selecting the Configuration Items (CI)

So, what CIs do we need to capture to populate the CMDB? There are three main considerations and these are:

- the scope of the CIs under control;
- the attributes that need to be captured to create a CI record;
- the relationship and dependencies between the various CIs.

## Consideration 1

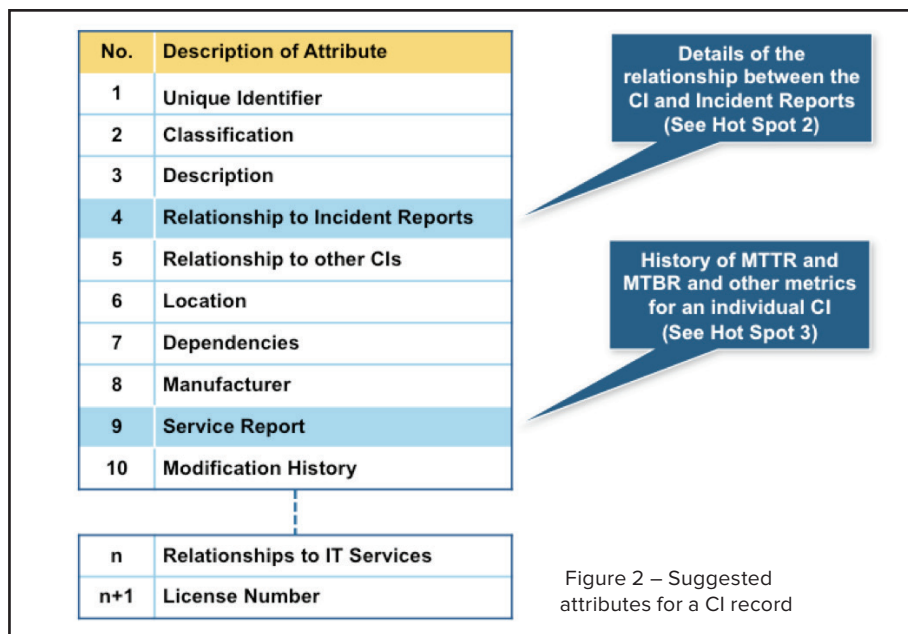
What CIs do you actually want to control? If you can't control a CI then you can't change it and so it has no place in the CMDB. I believe it is best to start top down and start small.

As your Configuration Management System (CMS) starts to stabilise and mature, add more CIs. Also, you should only be identifying CIs that are critical to the IT services you are providing. This might mean you leave out personnel (ideally located in an HR system), documentation (ideally located in a KM system) and peripheral assets (ideally located in the asset register).

One possible way to restrict the number of CIs in your CMDB is to limit the CIs to those associated with business-critical systems and some non-critical-systems. I would agree that this is not always possible as a lot of services are shared, but it is worth exploring. A possible sub-division might be made according to severity:

1. All business-critical and some non-business-critical systems usually covered by Severity 1 and Severity 2 - locate in the CMDB;
2. All the remainder of non-business-critical and also legacy systems usually covered by Severity 3 and 4 - locate in a KM database.

Note: For more information on how a knowledge management system can be used





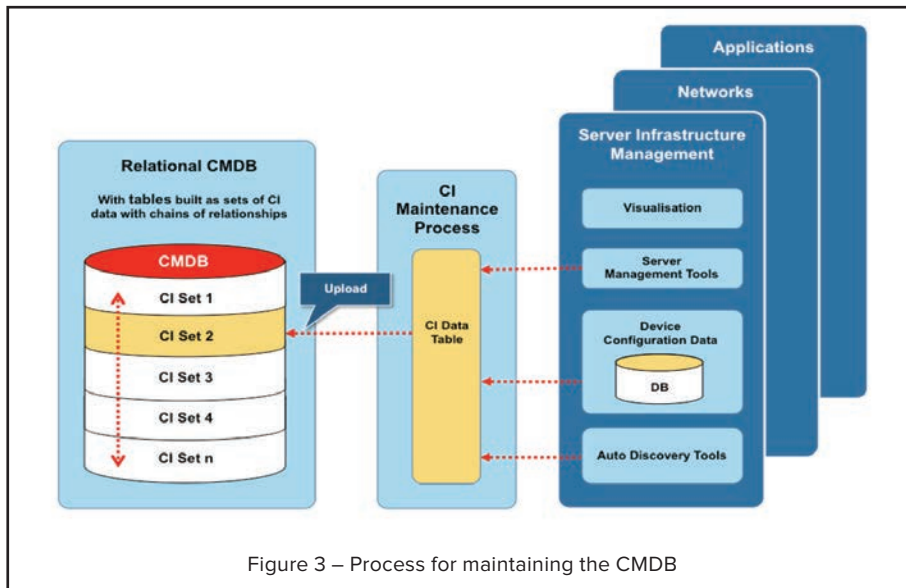


Figure 3 – Process for maintaining the CMDB

The CI change data is compiled as part of the normal change management process. The data is collected part manually (by SMEs) and part automatically (by configuration tools) to create a consolidated CI data table of changes that can be uploaded to the relevant CI records within the CMDB, once the changes have been approved. This upload is initiated manually once the change is approved by the CM team. This method might appear a shade cumbersome but it has the advantage of ensuring a final 'human' decision to change the CMDB, as opposed to a fully automated one. The process is shown in Figure 3.

As mentioned, there will be a number of sources used for making a CI record change:

**System management tools** - this is a very broad category and vendor products will vary considerably in functionality. Most, however, will provide data on device location, identification and status. Plus, of course, there are Software Application Management (SAM) tools.

These sources will be monitored by the change management team.

**Device configuration databases** - this is usually a set of predefined databases containing configuration data for all configurable devices in the system. A record is kept of each device currently connected to a system and will be updated by an internal device configuration manager as changes are made.

**Auto-discovery tools** – as mentioned previously, auto-discovery tools are best used for the initial population of the CI records. For CMDB maintenance, auto-discovery tools cannot replace the manual and structured monitoring and control activities of experience staff. For example, auto-discovery tools are not good at detecting relationship changes between CIs. This must be done manually.

**Visualisation** - most management tools have some form of feature to visualise the relationship of components and dependencies. Although not a CI data source as such, this ability to map the devices will assist the configuration manager in making decisions on impact analysis, particularly when communicating with other configuration managers.

## Designing the CMS

In the previous sections we looked at the two main types of CMDB - relational and multi-dimensional. I've suggested that a relational CMDB will work, but with some constraints. I've also looked at the various options for sourcing a CMDB and, once sourced, populating it with a selection of critical CIs, together with the appropriate attributes.

This will create a baseline configuration against which all future system and service changes can be made and recorded.

as a repository for system configuration, please see Knowledge Management within ITSM in the Autumn 2015 issue of ServiceTalk.

## Consideration 2

The second consideration is the number of attributes that you want associated with each CI record. Some common attributes are listed in Figure 2. Clearly, this is not exhaustive and a good source reference for identifying CI attributes can be found in the ITIL templates<sup>4</sup>.

Note that CIs can be linked by relationship to ITIL processes, for example in incident reports where the CI in question is associated to a particular service failure; and also in service reports where metrics can be collected about CI performance and reliability. More on that later under Hot Spot scenarios.

Remember, the fewer attributes you have the easier it is going to be to maintain the CMDB. However, the attributes must be relevant enough to ensure that the CIs are identified correctly during the change management process. This trade off can only be resolved by the configuration management build team during the CMDB design phase.

## Consideration 3

The third consideration is the relationship between the CIs. You need to know how the CIs are related to each other. Some typical questions about CIs are:

- Is it stand-alone?
- Is it an over-arching CI that has sub-ordinate CIs?
- Is it a component of something else – another CI?
- Is it a new version of an existing CI?
- Is it a replacement for an existing CI?
- Is it now redundant due to a change to the IT environment?

This is a critical piece of work in identifying the dependencies between the CIs and building up a picture of the network of relationships that underpin the IT systems.

## Populating the CMDB

Once the CIs have been collected as a set of CI records we need to start to populate the CMDB. This is not a trivial exercise and must be managed as a joint project between the change management and configuration management teams. Basically, the steps needed for the CI record population are:

1. Freeze all current change requests (whilst a difficult task this will ensure that what you populate is an actual baseline configuration);
2. Create sets of CI records that are divided into layers that relate to domain responsibility (this reduces the chance of erroneous updates to non-impacted CIs).
3. Perform one-time population of some CI attributes using agentless auto-discovery tools (this will help speed the process);
4. Perform manual data uploads of the other CI attributes using pre-defined templates (these will have been compiled during the CI selection activity);
5. Perform a verification and audit on CMDB to ensure that everything has been captured.

## Maintaining the CMDB

Now we have the baseline configuration it needs to be maintained and so monitoring and control of the CIs is critical. This must be the responsibility of the configuration managers, supported by SMEs for the IT domains of server infrastructure, network infrastructure and application management. Each domain is supported by various system monitoring and configuration tools, together with device management tools to extract the changes to the configuration data.

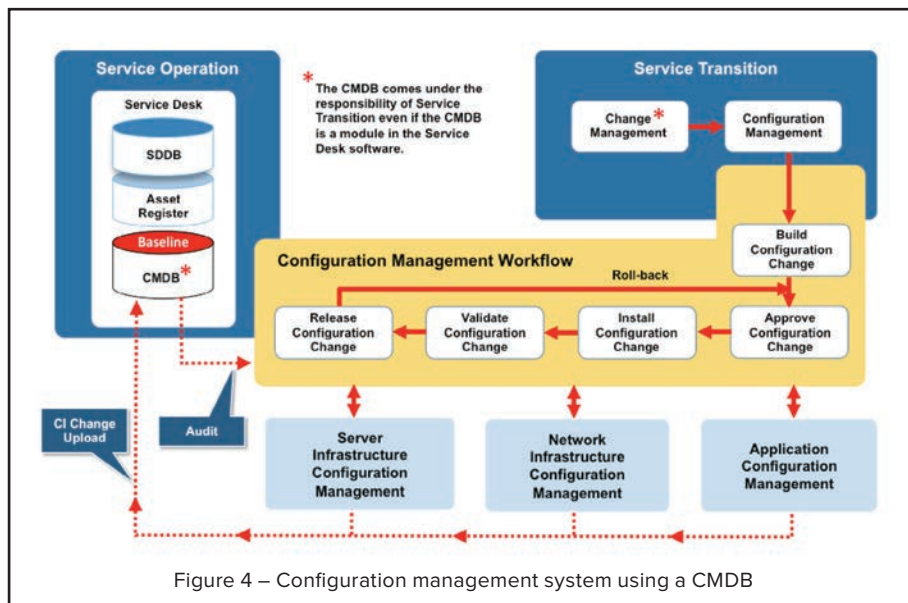


Figure 4 – Configuration management system using a CMDB

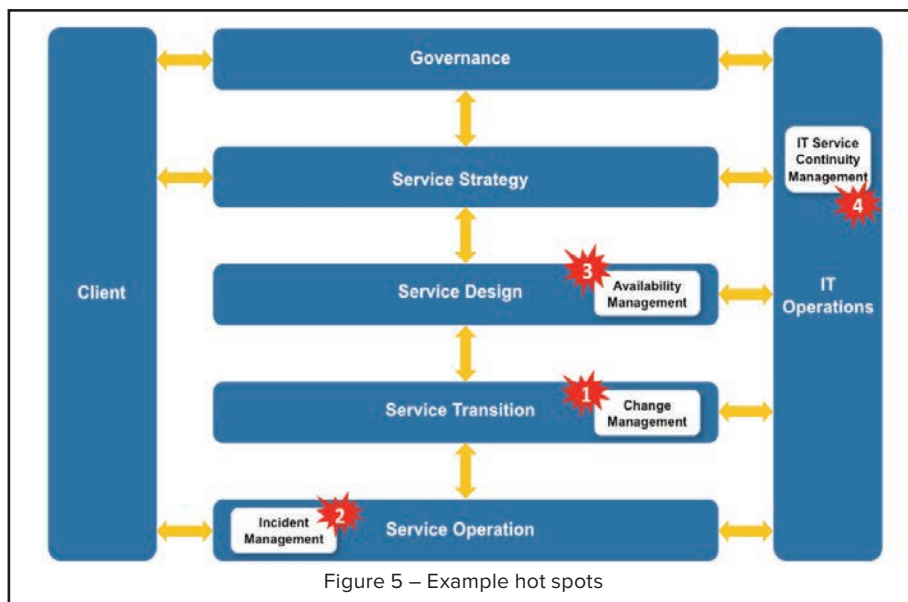


Figure 5 – Example hot spots

We now move on to designing our re-engineered CMS. Our next step is to put in place a CMS management team. A suggested list of key positions is:

- Lead Configuration Manager
- Server infrastructure Configuration Manager
- Network Infrastructure Configuration Manager
- Applications Management Configuration Manager

We are now ready to construct a CMS that uses the CMDB as a single source of reference for CIs. I'm only going to touch on the high-level process and our starting point must be a configuration management workflow that connects all the functions involved with a configuration change.

It's possible that a CM workflow feature already exists within your service desk functionality. This may come bundled with the incident, problem, or request fulfilment

processes. If not, then it should either be possible to adapt one of the service desk other workflows to do the job, or alternatively there are a number of third party off-the-shelf workflow packages available.

Figure 4 shows how the CM workflow will integrate all the various processes with the technical teams responsible for building a configuration change. The configuration management process is part of Service Transition and is closely aligned with change management.

Once a change has been authorised, the CM workflow will take the required change and trigger the actual technical build of the change to the CI (or groups of CIs). There then follows an approval by the owners of the infrastructure which is impacted. Once this is granted the technical teams will install and then validate the change, ready for release. A roll-back step is included should the change create a problem and the change needs to be reversed.

This is a normal CMS practice. However, as we now have a CMDB in place then once the change has been released the CMDB will need instant updating. In my view this is a red flag step. As explained under the Maintaining the CMDB heading, each of the server, network and application teams must have a dedicated configuration manager who will be responsible for collating, reconciling and the uploading the change to the CI Layers in the CMDB. This must be done formally as part of the change release, not as an administration task to be sorted at a later date.

Maintenance of the integrity of the CMDB is the cornerstone of the CMS. Once the CI data becomes out of sync with the actual systems then the CMDB will become useless and give false impact reports. To drive this function there must also be an overall configuration manager (with authority) to oversee the whole end-to-end process and facilitate communication between the change manager and the technical teams. This is one of the most important roles to drive good CMS practice.

A regular audit of the CMDB must be conducted by the configuration management team to ensure that the integrity of the configuration is maintained and reconcile any differences that might have occurred between the CIs as a result of the changes introduced since the last audit.

## Example 'hot spots'

I've identified four typical 'hot spots' based on personal observations of real life events involving inadequate or erroneous system configuration data that have been the cause of major service outage.

These are shown in Figure 5. Clearly, there will be others depending on the set-up of a particular ITSM organisation and the types of client it supports.

Figure 5 is based on a simplified ITSM organisation that could be either a MSP dedicated to external clients, or an ITSM organisation providing IT services to an internal client. The IT operations can be either internal or external hosting with or without applications support. It assumes that all key components are under the control of the IT organisation.

For the purpose of this paper it is assumed that the IT operations is in-house and provides hosting, communications and applications support - within an overall governance framework. There are four example 'hot 'spots' shown in Figure 5.

- Change management – risk to service delivery due to poor change control
- Incident management – risk of service failure due to poor incident resolution time
- Availability management – risk to service recovery due to extended CI repair times
- Service continuity – risk to service continuity due to lack of data on current system configuration.



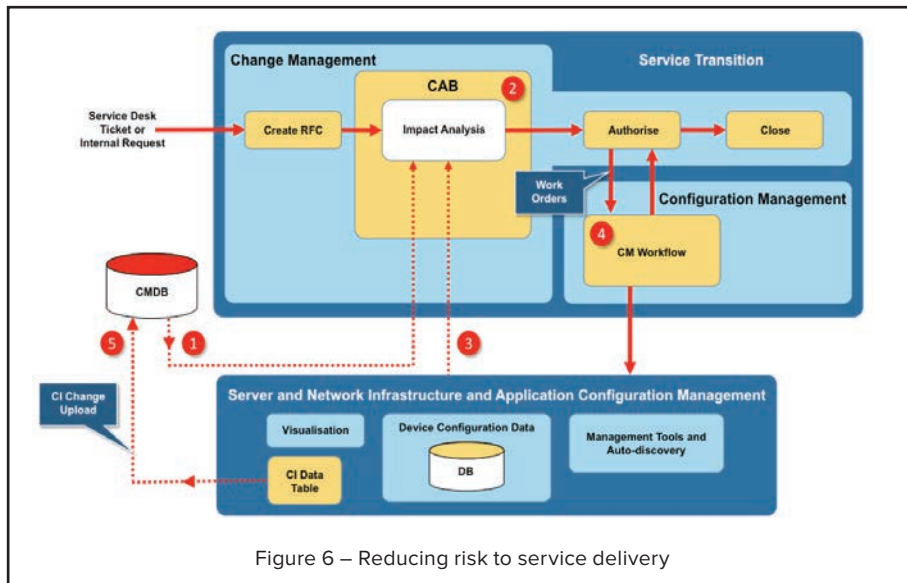


Figure 6 – Reducing risk to service delivery

- Auto-discovery tools;
- Plus of course a considerable amount of SME experience to interpret and model all possible change scenarios likely to impact the IT environment.

5. Once the analysis is complete the change manager will authorise the change to be made via work orders to the appropriate technical teams. There will also be an agreed roll-back plan should the change fail. This is managed by the configuration management team.
6. The CM workflow will be used to manage the work orders through to completion. The final step is for all the changes to the CIs to be collected and uploaded to the CMDB to create the current configuration baseline resulting from the change.

## Risk of service failure (Hot Spot 2)

For the second hot spot I want to look at how our CMS can be used to reduce the time taken to resolve incidents. I also want to consider how the incident records can be linked to the associated CIs held in the CMDB to aid this process. Incidents can be any type of failure or interruption to an IT service. Incidents are created from a number of sources, like customers' phone calls and technical staff alerts. In this scenario all the incidents are routed through the service desk where the incident is logged and an incident ticket raised. The incident ticket will contain a brief description of the incident and its impact on services or systems. This is usually added manually by the IM team. The majority of incidents can usually be handled and cleared by the IM team without consulting the technical teams. However, in our scenario the IM process is integrated with a CMS that has a CMDB as the source of CI records. This will provide the IM team with an extra source of data when SMEs are required to diagnose the root cause of an incident. Figure 7 details a simple IM process and how this links with the CMS.

All of the above examples involve insufficient knowledge of current IT system configuration, and the following narrative will describe how the implementation of a more robust CMS with a CMDB can help mitigate these risks.

## Risk to service delivery (Hot Spot 1)

The 'risk' we are trying to mitigate here is one of a poorly managed change request that leads to an uncontrolled service outage and associated breach in SLAs. Typically, this is due to inadequate impact analysis resulting from:

- an incomplete baseline for the current system configuration;
- insufficient understanding of dependencies and relationships between the CIs;
- unclear ownership of CIs;
- poor communication between technical teams.

The implementation of a CMDB as outlined in this article will eliminate many of the above deficiencies, but of course no technology solution on its own will compensate for poor teamwork and team communications. In this scenario I've created a basic change management process to demonstrate how these risks to service delivery can be mitigated by using a CMDB as the source of the current baseline, with supporting analysis from technical teams based on ITSM tool sets and local experience from SMEs.

Figure 6 shows a simplified change management process with a Change Advisory Board (CAB) as the forum for bringing together the various inputs for analysis.

For the purpose of this scenario I'm concentrating on how the CAB will operate with the SMEs using the various sources of data available to them when analysing the impact of a Request for Change (RFC). There are six key steps in this process:

1. The change manager will run a report from

the CMDB that shows a baseline for the current configuration for that part of the IT environment under proposed change.

2. This is expressed as a set of Configuration Items (CI) with known attributes that can be used as the starting point for the impact analysis process.
3. The CAB comprises a group of SMEs tasked with evaluating the proposed change to the IT system - i.e. impact analysis. These will typically be drawn from the server, network and application infrastructure and design teams, service owners, IT security and IT operations.
4. The SMEs will use a variety of data sources together with the CMDB baseline report to determine how the CIs will be impacted in terms of the relationships and dependencies with other CIs. The data sources, already discussed, will be outputs from:
  - Visualisation tools, for example server node modelling;
  - Network device management tools;
  - SAM tools that can identify dependencies between software modules;

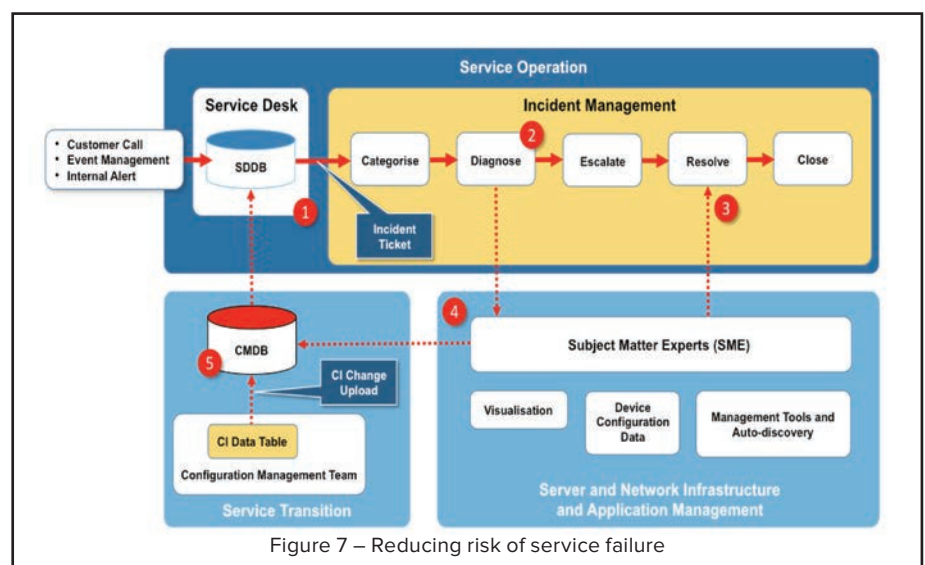


Figure 7 – Reducing risk of service failure

1. The incident manager will run a report from the CMDB based on what is known about the incident. For example, the service impacted, the location, known hardware or software failure. The report will list all the CIs and dependant CIs that have these attributes in their CI Records. The report is then attached to the incident ticket. It is also possible to add in a further attribute to a CI record that links known incident types to certain CI(s) and dependent CIs. See Step 4 below.
2. The incident ticket is then categorised – by priority and urgency – and passed to the diagnose stage where it is routed to the correct SME team for analysis. (Note: attaching an initial CMDB report will help to route the incident to the correct SME(s) first time round rather than the incident being passed from one SME to another due to wrong allocation.)
3. The SMEs will conduct diagnostics using the various tools sets already outlined, namely visualisation tools, device configuration tools and system management and auto-discovery tools. Once the diagnosis is complete the SMEs will notify the IM team that the incident is now resolved.
4. It is possible to associate CIs to an incident. This can be done by adding an attribute to each CI record. This will help build up a picture of how certain types of incidents affect some CIs directly and other CIs with dependent relationships. The SME team can update this CMDB attribute directly without going through the CM team. Over time, collecting this feedback on the relationship between incident types and particular CIs will help speed future incident resolution and provide system designers with potential system upgrades to improve performance.
5. The resolution may involve an update or replacement of hardware, or infrastructure, which in turn will result in a change request. The CM team will action this change and update the CMDB as outlined previously under the heading Designing a Configuration Management System.

## Risk to service recovery (Hot Spot 3)

For my third hot spot I want to look briefly at how a CMDB can assist with availability management and the risk to service recovery due to extended CI repair times. Availability is the amount of time a service is actually operating or a percentage of total time it should be operating. There are two other terms we need to consider here – reliability and maintainability:

- The reliability of a CI indicates how long it can perform its agreed function without interruption.
- The maintainability of a CI indicates how fast it can be restored after failure.

The time between system incidents is a factor

of maintainability and reliability. Considering most business-critical systems are designed as high-availability and as such will have hardware redundancy and failover, the more data that can be collected relating to the individual CIs the greater the understanding we will have of both system design and CI selection for that design.

This is key to service improvement and it is possible for the CMDB to hold data on the individual CI performance life cycle. One way we can do this is to collect metrics around CIs that make up our system or service. This will aid our understanding of both the reliability and maintainability of those CIs. There are two metrics that we can collect:

- Mean Time Between Failure (MTBF) is the average time that a CI can perform its agreed function without interruption. This is uptime - reliability.
- Mean Time to Repair (MTTR) is the average time taken to repair a CI after a failure. This is downtime - maintainability.

So, one way we can collect this data is to add an attribute to our CI record. This is a service record field and will hold data on both MTBF and MTTR for individual CIs.

This performance data is collected and added to the CMDB as part of the configuration management process that follows the closure of an incident. See Hot Spot 2 above.

## Risk to service continuity (Hot Spot 4)

Throughout this paper I have built up a picture of how a CMDB can be used as a key component in a configuration management system. Over time, the data held in CI records will build into a repository that will define the current system and service configuration as expressed in terms of a range of CI attributes including all dependencies. In this final scenario I want to look at how the CMDB can be used to support service continuity. When discussing service continuity there are multiple terms involved – disaster recovery, business recovery and service recovery – and I'm not intending to cover the whole subject of Business Continuity Management (BCM). However, IT organisations will to some degree need to build IT disaster recovery plans or business continuity plans to meet general governance or specific client requirements. These plans should be based on the scope and guidelines of ISO 223015 To support this planning activity we now have three principle sources of data:

1. CMDB – which defines the current system and service configuration in terms of CIs and dependencies;
2. Asset register – which shows all the data centre assets not held in the CMDB
3. KMDB – which holds all the business continuity plans and recovery procedures

Collectively, all this information will form the core repository of assets and configuration

that are needed to plan for disruptive incidents and thus meet the Recovery Time Objective (RTO). The RTO is the period of time following an incident within which a service must be resumed or resources recovered.

Clearly there is much more to discuss here, and that is the subject of a future article.

## Conclusion

This article looks at how to re-organise an existing CMS by including a CMDB as a central location for all CIs principally associated with business-critical services and systems. The emphasis has been on:

- using what already exists within a service desk software suite or ITSM tool set and utilising those features;
- building or purchasing a CMDB solution as described in the various options;
- adapting existing processes and policies to accommodate the CI data in the CMDB;
- introducing a CM workflow solution;
- providing support through an experienced team of configuration managers and SMEs.

These steps, although not all encompassing, will enable the change management and configuration management teams to minimise the risks involved when changing the configuration of an IT system.

## References:

- 1 Gartner Report - Critical Capabilities for Configuration Management Database, published in 2014
- 2 IEEE Xplore Digital Library – Best Practices for Developing a CMDB in large Scale Environments 2009
- 3 CIH Solutions White Paper – Knowledge Management within ITSM – May 2015
- 4 Checklist Configuration Item (CI) Record – <http://wiki.en.it-processmaps.com>
- 5 ISO 22301 – Business Continuity Management Systems.



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## A collage of various business and technology icons. It includes two envelopes, a line graph on a grid, a pie chart with three segments, a hand holding a pen and drawing a line graph on a grid, a cloud, a globe, a bar chart with an upward-trending line, and three stylized human figures. The background is a light blue gradient with a faint grid pattern.

**Everyone can understand the benefits of SIAM (Service Integration and Management). We talk a lot about increased alignment of IT services with the business, end-to-end visibility and de-duplication of roles. But putting a financial value on those benefits is difficult, especially if you are at the start of a multi-sourcing programme. SIAM SIG Chair Steve Morgan takes a look at the financial issues.**

It is likely to be business dissatisfaction with the level of service. Not a great time to be asking for more money, especially as it probably comes on the back of a significant investment in the last few years. If you do find yourself in the fortunate position of including SIAM in a wider business case there are a number of cost areas to be considered – SIAM design, process development, tools and tools integration, external advice, training and up-

A portrait of Dr. David J. Williams, a man with short dark hair, wearing glasses and a blue and white striped shirt. He is looking directly at the camera with a slight smile.

Steve Morgan is Director of Syniad IT Solutions. He has over 25 years of experience of working in IT, both in operational and consulting roles. He led the KPMG Service Management team in the UK before leaving to form Syniad IT Solutions Ltd in February 2012.



# A culture of service improvement

**Ian MacDonald describes the importance of intrinsic motivation as an enabler for continual service improvement within the organisation, and outlines a motivation framework to make your CSI strategy a real success.**

In today's competitive marketplace, where business leaders more than ever look for 'value for money' from their investment in IT, Continual Service Improvement (CSI) can play a significant role in positively changing the business perception of IT from one of cost to one of value.

The paradox, however, is whilst we recognise the importance of CSI it can often, albeit unintentionally, be stifled in the IT workplace.

The ITIL V3 approach assumes a level of ITIL maturity (prerequisite roles, processes and corporate capabilities) that for many organisations has not been achieved, and which may not be achieved for some time, if at all. Many organisations can therefore perceive that they are not 'ready' for a CSI implementation.

An often unforeseen consequence of implementing the ITIL approach to CSI is that it can be viewed by its people as creating a level of bureaucracy. CSI is now something that needs permission, a business case, funding and prioritisation.

For your CSI strategy to be successful requires a motivated workforce who feel empowered to exploit their insight, knowledge and skills to make the improvements they see as important. In this article we explore the importance of 'motivation' and the enablers you need to establish and exploit in order to create the high-performance environment within which CSI thrives.

The **CSI Motivation Framework** blends leadership, management and IT best practices whilst also introducing some new concepts that help support a sustained approach to CSI. The framework provides a blueprint of how to establish a workplace environment where CSI is very much accepted as 'part of the day job'.

Based on real experience, this article shows how the leadership approach, methods and techniques that have been employed within the framework can be easily adapted to any IT organisation, function or team. Specifically, the framework helps organisations to:

- Establish a culture of continuous improvement
- Deliver business value to the organisation
- Improve IT operational excellence
- Improve quality, efficiency and effectiveness through the aggregation of marginal gains
- Exploit the insight, knowledge and skills of your people to 'make a difference'
- Achieve improved levels of staff satisfaction among your people.

## CSI – the commercial importance

### We are good... Really, who says so?

The internal IT organisation can no longer get away with simply believing that it is 'good'. There are many commercial service providers who will market their ability to deliver IT services 'faster, better, cheaper' than the in-house operation.

In responding to this challenge it is more important than ever that the IT organisation can demonstrate to their business customers how they are delivering 'value for money' IT services.

### Value for money – perception equals reality

Getting value for money (VFM) is a key factor in

customer satisfaction. The ability to differentiate the services you provide from competitors is now becoming a commercial necessity for the IT organisation.

VFM is an interesting concept. The value you perceive from what you spend is often subjective, difficult to measure, intangible or in some cases not recognised. This is why IT needs to proactively influence their customers' perception of value. VFM will be influenced by:

- Total customer cost. The business will recognise and understand their IT costs, which are tangible and include the infrastructure (software and hardware), premises and staff required to run their IT services on a day-to-day basis.
- Total customer value. The value from the cost of IT provision comes from the products and services provided by IT and fully underpin and support the desired business outcomes.

### Influencing the business perception of 'value for money'

Areas where IT can use CSI to begin to differentiate its service provision and positively influence business perception of VFM include:

- The capability and competency of the IT organisation and its people in helping the business operation to achieve its goals
- How the IT organisation portrays a proactive, innovative and professional image at all times in supporting the business
- Creating 'customer delight' from no/low-cost ongoing service improvement.

The key message to derive from the above is that the business will recognise cost, which is tangible, whereas value for money is a feeling or perception which needs to be positively



influenced. Where the business perception is not positively influenced, the reality is that IT will be viewed as a cost regardless of how good you are!

## CSI – the barriers and blockers

ITIL V3 provides significant advice and guidance on how to establish CSI as a discipline, the organisational capabilities needed and supporting methods and techniques that help sustain continual service improvement.

However, the paradox is that, in many cases, the ITIL approach may be seen as a barrier that prevents organisations from embracing CSI and creating an environment in which an improvement culture can thrive. In some cases, once implemented, the organisation unconsciously becomes a blocker in the eyes of its people by making CSI too hard to progress.

## The ITIL perspective

“As the maturity of the ITIL implementation increases, the number of implemented processes also increases. As the maturity increases, the challenges of implementation decrease.”

The above perhaps typifies the challenges with implementing CSI. The ITIL V3 approach assumes a level of ITIL maturity that for many organisations has not been achieved, and which may not be achieved for some time, if at all. Many organisations perceive they are not ‘ready’ for CSI implementation as it requires:

- A significant number of pre-requisite roles, processes and reporting to be in place that are necessary to support CSI
- Additional roles to be established for CSI to interact with other service and process roles
- Mature organisational capabilities
- Governance systems and forums.

The challenge of trying to implement CSI without the above level of ITIL and organisational maturity in place is often seen too difficult and therefore ITIL ‘readiness’ becomes a barrier to organisations wishing to implement and adopt CSI.

## The organisational perspective

An often unforeseen consequence, when organisations do implement the ITIL approach to CSI, is that it can be seen as a level of bureaucracy that blocks rather than encourages improvement. As an example, it is not uncommon for organisations to establish a specific budget for CSI. Typically this is where there are strong governance processes in place, and where:

- Governance forums are established to review proposals for CSI
- CSI initiatives require approved funding
- Business cases are required to justify the level of investment

- CSI initiatives have to be prioritised where funding is limited.

In these circumstances, the effort to propose an improvement can hinder motivation and lead to a situation where CSI initiatives have to be substantive to be considered.

## Observation – is there a simple distinction to be made?

Later in this article we will show that a key enabler for making CSI ‘part of the day job’ is to provide your people with the autonomy to take ownership and progress the improvements that they see will make a difference. The dichotomy here is the balance between empowering the workforce to drive changes versus the need for governance and process around changes that require significant funding. This is a key feature of the ITIL approach to CSI.

As we have discussed, though, the ITIL approach can be seen as an inhibitor to CSI in the workplace. To move this forward perhaps there is a simple distinction to be made between CSI improvements that require IT investment and those that your IT teams can identify and implement as part of their ‘business as usual’ responsibilities in supporting IT services?

## Planned service improvement

The IT organisation needs to ensure that their IT services remain fit for purpose to continue to meet existing SLA commitments, that known risks continue to be remediated and that technology can be exploited to provide the business with new functionality as business requirements change.

Planned service improvements require the necessary IT investment to ensure there is a periodic upgrade and regular maintenance of the technologies and components underpinning the IT services that support the business.

Many organisations label this ‘technology refresh’ activity as Continual Service Improvement.

Planned service improvement needs:

- governance
- business case(s)
- project funding
- prioritisation.

## Enhanced service improvement

For existing IT services there are always opportunities to make low-cost enhancements that can improve efficiency or effectiveness. A number of small improvements together can significantly improve the IT services being provided.

Enhanced service improvement can exploit the insight, knowledge and skills of your people

and enable them to take ownership of their metaphorical ‘IT production line’. This provides a tight focus and scope for enabling CSI to become a fundamental part of their day job.

Enhanced service improvement:

- provides a purpose for CSI in the workplace
- provides ownership within the team – ‘our production line’
- empowers individuals and teams to identify and drive these changes
- exploits insight, knowledge and skills of the team to optimise existing IT services
- delivers ongoing incremental improvements.

In the remainder of this article we will continue to refer to CSI but very much in the context of enhanced service improvements that can be owned and driven by your staff without the overheads of governance to manage the CSI process.

## Motivation (to make CSI part of the ‘day job’)

Making CSI a fundamental part of the day job requires us to better understand what makes people ‘tick’. We are looking to create the work environment that not only delivers business improvement but also achieves high levels of job and staff satisfaction.

All organisations see the benefits of having a ‘motivated workforce’ as it drives improved business performance and over time creates the high-performance culture that drives ongoing improvement. In its simplistic form motivation is the desire to do things that make a difference and it is the crucial element in setting and attaining goals.

Motivation can be looked at as a cycle where thoughts influence behaviours, behaviours drive performance, performance impacts thoughts and the cycle begins again. Each stage of the cycle is composed of many dimensions including attitudes, beliefs, desire and effort. The levels of ‘motivation’ within the workplace can, like the warning on your stocks and shares investment, go up as well as down. Where desire is replaced by despair<sup>1</sup> motivation levels drop and performance is impacted.

I would contend that a motivated workforce is an essential pre-requisite to any serious CSI strategy, where teams and individuals truly take pride and ownership of their ‘IT production line’ and seek to improve it.

Let’s explore in a little more detail the theories behind motivation and what creates and sustains the desire in individuals to improve their performance. In particular, we’ll challenge the traditional corporate view on how to motivate a person through reward and incentives (extrinsic) to one that recognises and encourages the people to use their insight, knowledge and skills (intrinsic) to achieve the same, if not even better, business outcomes.

## Basing your CSI strategy on 'extrinsic motivation'

**Extrinsic motivation refers to motivation that comes from outside an individual. The motivating factors are external rewards such as money or grades. These rewards provide satisfaction and pleasure that the task itself may not provide.**

Extrinsic motivation has a simple premise. Rewarding an activity will get you more of it. Punishing an activity will get you less of it. (Also referred to as 'carrot and stick' management)



The company 'performance management' system is perhaps the most obvious example of an extrinsic motivation tool in the corporate workplace today. With reward as the incentive embedded at the core of the system, performance management provides the organisation with a level of control on what to focus its people on and how to set the targets that need to be achieved.

Performance management would seem to be an obvious fit for your CSI strategy to succeed. CSI is encouraged, with reward directly linked to the levels of CSI improvements delivered. This way you can provide your people with clear directives on what is required from them, the specific targets that need to be achieved, a regular review process to ensure progress remains on track, and an annual bonus dangled as the carrot to motivate your people to hit the targets set.

The reward-driven performance management system has been around for so many years that many managers see this as the only tool available to achieve the business results and outcomes required.

## Can extrinsic motivation support your CSI strategy?

Extrinsic motivation delivered via your performance management system can certainly be used to create focus on CSI. However, how you execute this can significantly influence the results you achieve.

Unconsciously, these are some of the typical pitfalls I have seen when trying to link CSI with performance management:

- A cornerstone of performance management is that of objective setting, with specific measures to assess performance. Typically SMART objectives are agreed and locked down at the start of the year. The challenge

with this for CSI is that 'continual' means that you are always looking to improve. If you set a target and you achieve this early, do you stop?

- Equally, how do you compare CSI improvements? Do you discount small incremental improvements as being too easy and only look to reward CSI improvements of a particular size and benefit? Once you start to determine what makes a 'worthy' improvement then people naturally won't bother with simple, quick wins.
- Hitting the numbers becomes what is important to your people as this is what dictates reward so here we see the dichotomy of quality versus quantity.
- Progress is not completely within your gift where you don't own the complete end-to-end process or IT service. Suddenly dependencies on other internal teams or external suppliers emerge who may be working to different priorities. Progress becomes slow and inertia creeps in.

Organisations tend to view their performance management system in terms of extrinsic motivation with reward as its primary driver. Certainly it can work in some cases, such as with jobs that rely on routine rather than creativity, which by necessity may need extrinsic motivation to achieve results.

However, if your CSI strategy places a strong emphasis on CSI as part of the day job where people take pride in their IT production line and aim to be the best they can be, this does require us to consider a very different form of motivation.

## Basing your CSI strategy on intrinsic motivation (alternative thinking)

**Intrinsic motivation refers to motivation that comes from inside an individual rather than from any external or outside rewards, such as money or grades. The motivation comes from the pleasure one gets from the task itself or from the sense of satisfaction in completing or even working on a task.**

To better understand how intrinsic motivation can provide a more powerful drive for CSI in the workplace it is important to recognise the three key factors that we as individuals respond to:

### Autonomy

People are motivated when they feel they are trusted to have choice and self-determine what at they do. For CSI to thrive this is where your teams and individuals take ownership and control of their IT production line to decide:

- What they do (Task)
- When they do it (Time)
- Who they do it with (Team)
- How they do it (Technique)

### Mastery

People are motivated where their skills and

experience are honed and focused on making improvements and as a by-product where their skills are further developed. Exploit this capability by:

- Matching peoples' insight, knowledge and skills to drive improvements (to their IT production lines)
- Defining CSI as a core requirement of their roles
- Using CSI as an opportunity to further develop skills.

## Purpose

People are motivated when they feel they are contributing to a bigger and greater goal. For your staff working on the IT production lines you need to create a compelling 'sense of purpose' that creates and maintains a direct link with what they do with this bigger picture:

- Have and describe a clear vision for your area
- Have a meaningful mission statement that everyone can relate to
- Have clear goals and describe the outcomes you wish to achieve
- Link this to your CSI strategy and measure the results.



**"Simple, clear purpose and principles give rise to complex, intelligent behaviour. Complex rules and regulations give rise to simple, stupid behaviour."**

Dee Hock (b 1929) founder and former CEO of Visa

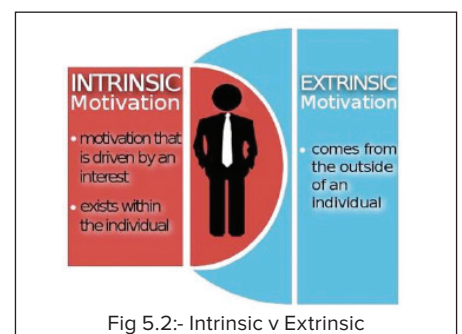


Fig 5.2:- Intrinsic v Extrinsic



## The CSI Motivation Framework

### Creating the environment to exploit intrinsic motivation

The previous section provides a greater insight into what makes people 'tick' and how they respond positively when intrinsic motivation techniques are applied in the workplace.

The challenge of course is how you establish and embed the key facets of intrinsic motivation into the work environment. What are the enablers you require for your CSI strategy that underpin autonomy, mastery and purpose?

Based on practical experience, the following can be considered as important enablers that, if implemented well, can drive and importantly sustain intrinsic motivation from within your team and commence the journey to make CSI part of the day job:

- Providing a strong and compelling 'sense of purpose' for your people
- Understanding your 'circles of influence'
- Adopting 'marginal gains' as a key approach for CSI in the workplace
- Self-prioritisation of CSI improvements
- Performance management utilised to exploit an individual's insight, skills and knowledge
- Objectives set against a framework that creates focus on CSI
- Using recognition rather than reward to get results
- Promoting the professional standing of IT and its people with your key stakeholders.

### Recommended Reading

**Book:** DRIVE (The Surprising Truth About What Motivates Us) **Author:** Daniel H Pink  
**ISBN:** 978 1 84767769 3

### References

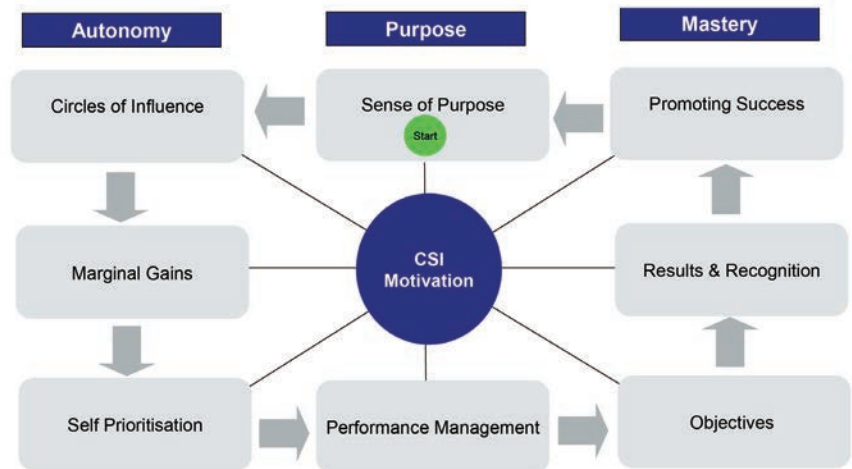
- 1 Consider the section on 'Barriers' and 'Blockers' as a good example of how the desire to drive CSI can be replaced by despair and prevent CSI from happening in the workplace.



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### Establishing a CSI framework based on intrinsic motivation

The following CSI Motivation Framework has been created to show how the above align with the key facets of intrinsic motivation.



### Quick reference

The following provides a quick reference on the framework elements and high-level description of the outcomes they are intended to provide.

Framework Component	Intrinsic Motivation Factor	Desired Outcome
Sense of Purpose	Purpose	Defines you as an 'organisation' with your purpose articulated through a meaningful Vision, Mission & Goals. Provides a focus to your people what you need to achieve and where to continually improve.
Circles of Influence	Autonomy	Define your circles of influence (the 'IT production lines') so you expend energy on the things you directly influence and can control. CSI is focused on the challenges and opportunities in your world.
Marginal Gains	Autonomy	Challenges the view that CSI improvements have to be significant. Promotes a simple principle that small incremental improvements when viewed in aggregate can make a significant difference.
Self Prioritisation	Autonomy	Supports the prioritisation of high visibility / low effort improvements to reinforce the benefits of marginal gains as a key tenet of your CSI strategy.
Performance Management	Purpose	Performance Management is focused to drive intrinsic behaviours. Your people become energised and committed to driving CSI in the workplace.
Objectives	Mastery	Encourages 'Short Cycle' performance objectives that support marginal gains by exploiting peoples skills, knowledge & insight. Sense of Purpose gives direction, circles of influence provide scope.
Results & Recognition	Mastery	Results demonstrate the improvements being made and the contribution of your people. This drives 'Recognition' which is a powerful motivator to keep momentum going.
Promoting Success	Mastery	Reaffirms to your stakeholders and people that your CSI strategy is working. Promoting success raises the professional standing of IT and its people and how their CSI focus is making a difference.

### Inside the CSI Motivation Framework

To find out more about the Motivation Framework and its key components and how to define and communicate a 'sense of purpose' within your team, check out the full version of this paper on the ITSMF UK website. Using the Framework as the basis for intrinsic motivation offers an excellent way to instil a culture of CSI throughout your organisation.

# ITIL Practitioner helps to put service delivery into practice

**The ITIL Practitioner qualification is the first significant addition to the ITIL scheme since the 2011 revision. Panagiotis Fiampolis explains the thinking behind the new Guidance.**

A brand new ITIL qualification from AXELOS, ITIL Practitioner, will enable those qualified at ITIL Foundation level to confidently and successfully adapt and adopt the framework. The Practitioner Guidelines are targeted at professionals in any role related to the delivery or support of IT services – all of whom may initially question the need for yet another exam. On closer inspection, though, ITIL Practitioner delivers vital practical experience, filling a gap in the ITIL series of qualifications.

A number of key issues are driving the need to improve the skills base of IT service management (ITSM) professionals, who also need to be able to apply what they have learnt and demonstrate the measurable difference their service management skills have made to their organisation.

Best Practice in ITSM aligns IT service delivery very closely with the needs of the business, focusing on improving IT processes to deliver customer benefits. For example, omni-channel customer communications call for joined up and responsive communications and service delivery across mobile, web, telephone and email channels. The use of technology to support increased personalisation and differentiation enables businesses to compete effectively for new customers and retain existing customers with offers of products and services that appeal to individuals. Today's IT service manager needs to be in a position to drive initiatives on all these fronts.

More than ever, there is a need to focus on customer-facing business issues and business processes rather than tools and technologies. The focus has shifted from IT

as infrastructure. IT professionals must be capable of developing a clear business case for their service delivery and be confident in applying this to the latest technologies from automation to real-time reporting and cloud computing. They also need a wide-ranging grasp of a number of Best Practice approaches – not just ITIL – so that they can adapt and tailor a strategy that is right for their organisation. Finally they need communication skills so that the benefits of the ITSM strategy are clear to all stakeholders. Many ITSM professionals are aware of these requirements, but lack the skills to put them into practice.

## A practical focus

As competition between businesses becomes global, IT service delivery needs to be flexible and adaptable to mirror the fast-moving requirements of the business and its customers. ITIL-based best practice in service management enhances customer relationships by delivering services that meet their needs and underpins service improvement by managing business risks more effectively. Over two million ITIL certifications have been awarded worldwide to service management professionals seeking to improve their practice. The ITIL qualification scheme now comprises: Foundation Level, Practitioner Level, Intermediate Level, Expert Level and Master Level. Practitioner Level, introduced February 2016, represents an evolution to the series focused on providing greater practical support.

Feedback from ITSM practitioners using ITIL for professional development was

highlighting a real challenge for the many IT managers who had qualified at ITIL Foundation level. The ITIL Foundation training and qualification provides a good grounding in IT service management, focusing on the 'what' and the 'why', but not the 'how to', leaving many professionals feeling they did not have the confidence or skills to put their new-found knowledge into practice. Now ITIL Practitioner has filled the gap, providing practical skills to enable trainees to adapt ITIL Best Practice to the particular challenges and aspirations of their organisation.

The ITIL Practitioner qualification will sit alongside the existing qualification scheme with a focus on Continual Service Improvement (CSI). ITIL Practitioner emphasises the CSI approach to structure service improvement that is being implemented in response specific business needs. ITIL Practitioner in turn will contribute practical guidance on using the CSI approach to maximise the benefits of its adoption. ITIL Practitioner does not replace the CSI Intermediate qualification, but has practical synergies with it.

## Who can benefit?

In the past, ITIL professionals who did not hold any ITIL certification started with ITIL Foundation level and some did not progress beyond this, perhaps because of the issue of applying it in practice in the specific circumstances of their business. Now, the synergy between the basics (Foundation), the adoption/adaption skills (Practitioner) and specialist skills (Intermediate) means that professionals considering ITIL for the first time can choose the route through the



qualification series that suits them best. Some might start with ITIL Foundation and ITIL Practitioner in combination and then choose the most relevant Intermediate path for them, or they can start by taking Practitioner together with the most appropriate Intermediate qualification.

ITIL Practitioner is also designed to deliver benefits to ITSM professionals who have already achieved some or all of the ITIL qualifications. ITIL Practitioner is a follow-on qualification from Foundation level – it is a requirement to hold the ITIL Foundation qualification before progressing to ITIL Practitioner. The ITIL Practitioner qualification counts as three credits towards qualification at Expert level but it is not a pre-requisite for the higher level ITIL certifications. It is not necessary to attain the ITIL Practitioner qualification before progressing to Expert or Master levels.

The ITIL Practitioner framework addresses issues relating to handling stakeholders and sponsors and applying change management principles to planning and implementing service developments. ITIL Practitioner has a practical focus on how to measure success metrics and, importantly, how to communicate them effectively, covering topics such as the purpose and value of communication and communication tools & techniques.

The syllabus covers three areas that are critical to the success of service improvement: organisational change management; communications; and measurement and metrics. Within these overarching themes the ITIL Practitioner framework follows nine guiding principles:

1. Focus on value
2. Design for experience
3. Start where you are
4. Work holistically
5. Progress iteratively
6. Observe directly
7. Be transparent
8. Collaborate
9. Keep it simple

Individuals and organisations should expect to see tangible benefits from an investment

of two days spent on ITIL Practitioner training. ITIL Practitioner sets ITSM professionals up with lifelong skills and an ability to draw from many major best practice approaches to create an ITSM strategy that most effectively meets the needs of their organisation's plans and aspirations.

ITIL® is the registered trademarks of AXELOS Limited.



Panagiotis Fiampolis is Research & Development Director of PEOPLECERT. PEOPLECERT partners with multi-national organisations and government bodies for the development & management of globally recognised certification schemes and the delivery of their related standardised exams in over 150 countries. .





# Bringing service management to a new generation

**Studio@Knutsford, short-listed for ITSMF UK's 2015 Service Innovation of the Year award, is leading the way in bringing an essential understanding of ITIL and PRINCE2 to teenage students. ServiceTalk caught up with the people behind this ground-breaking educational initiative.**



With employers consistently raising concerns about the lack of employability skills amongst school leavers, there is an urgent need within the education system to equip school students with the capabilities to survive and prosper in the working environment. Traditional academic work is only part of the picture: for those considering an IT- or business-related career, knowledge of disciplines such as service and project management are increasingly sought after by recruiters.

Studio@Knutsford, a finalist in last year's ITSMF UK Service Innovation of the Year award category, is a new Studio School and part of Knutsford Multi Academy Trust. The Studio's mission is to address the needs of students of all abilities, ensuring that its 'graduates' gain a range of qualifications in rigorous academic subjects while simultaneously acquiring the skills required for gaining employment and succeeding in chosen careers.

IT service management is a key part of this two-pronged learning objective. David Pownall, Head of the Studio's Computing Learning Centre, explained, "In addition to

programming and regular IT skills we wanted our students to understand the language of IT service and project management best practice. After consultation through the Studio's strategic partnership with Barclays Bank it was decided that ITIL would be the way forward for our first venture". So the programme was born, with knowing nods of approval from knowledgeable parents at the Studio's first open evening.

The first year involved student visits to Barclays' operation at Radbroke to see service management in action. Nick Jackson, service management expert at Barclays, added, "Barclays have supported Knutsford for a number of years and we were genuinely very excited at helping with the new Studio@Knutsford computing curriculum. I called a number of service management colleagues in Barclays and asked them to spend time with the students, explaining how service management underpinned by ITIL works. All our people readily gave up time and were more than happy to assist."

With the real-world experience element covered, Studio@Knutsford chose best practice education provider Global

Knowledge as their ITIL training partner. Global Knowledge used a blended approach to learning. They provided ITIL foundation e-learning, allowing self-paced study for the students to supplement the visits to Barclays throughout the year. In addition, Global Knowledge provided ad hoc sessions at the school where particular topics could be revised and exam technique addressed.

Global Knowledge Business Development Director Barry Corless led the coaching sessions at Studio@Knutsford. "With the UK being primarily a service economy, teaching Year 10s and above service management seems like a real no-brainer. It was so enjoyable introducing ITIL to a group of people with a completely different frame of reference to the thousands of primarily IT professionals we've taught before. The speed with which the students picked up the concepts is testament to their ability but also to the close liaison between Barclays, Studio@Knutsford and ourselves."

After a one-day revision session the students all sat down to take a professional exam that nearly 300,000 IT professionals sit every year (examining body PeopleCert very kindly





“When Global Knowledge first presented the whole ITIL vocabulary it was a little daunting. Once we’d grasped the concepts and seen it in action at Barclays it all started to make sense. After more training from Global Knowledge, it was a great result that we all passed. The qualification will make a real difference in the job market.”

### A Studio@Knutsford student

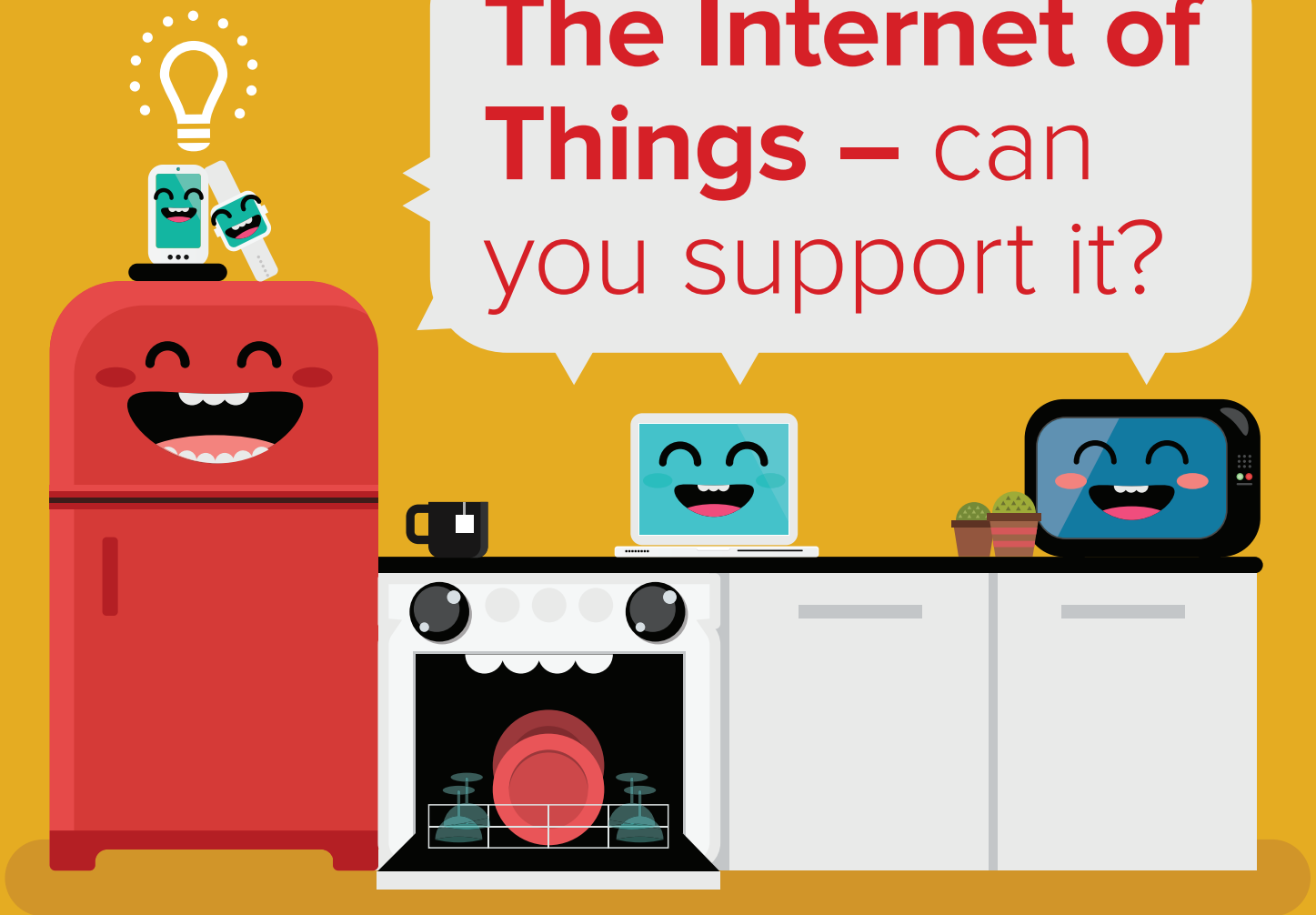
waived the Studio’s exam fees in support of the venture). The students were also motivated in chasing after higher scores than the Studio@Knutsford tutors who’d all passed successfully before the academic year began. The result? A 100% pass rate and almost certainly the first UK school age group to be ITIL qualified, a huge differentiator when they enter the world of work. Studio@Knutsford now has plans to take much larger cohorts through a similar process, with PRINCE2 project management best practice during the next academic year and ITIL following on the cycle a year later.

Studio Schools work differently from other schools and academies in a number of respects. One of their key strengths is that they offer individual, regular coaching to students, helping them to tailor their learning to their individual needs and aspirations. There is considerable evidence that coaching can lead to improved academic attainment, skills development and resilience amongst young people.

Another advantage of Studio Schools is that they understand the value of strategic partners. The relationship between Studio@Knutsford, Barclays Bank and

Global Knowledge is a great example of organisations working together to provide new, relevant educational opportunities for students. By working closely with young people and trainers, and offering more focused placements than are normally available, commercial enterprises can help to shape a new generation of business-savvy students - in this case with a good understanding of ITIL best practice - who can bring value to the employer from day one.

# The Internet of Things – can you support it?



**As most technologists are already aware, the Internet of Things (IoT) is here and it's here in force. Rob Stroud considers the easily overlooked requirements for support, governance and security in the brave new world of 'things'.**

IoT is everywhere. Not only are we seeing smart sensors and devices used for wide-scale applications like logistics, municipal applications (e.g., smart parking, traffic and air quality) and numerous other use cases, but we're also seeing consumer applications as well: things like intelligent household appliances, automobiles, smoke detectors and thermostats. There are even some more 'fanciful' applications like a smart fork that monitors your eating habits to alert you when you're eating too quickly. The latest ISACA Risk/Reward Barometer ([www.isaca.org/Pages/2015-risk-reward-barometer.aspx](http://www.isaca.org/Pages/2015-risk-reward-barometer.aspx)) found that only 35% of respondents were aware of all their organisation's connected devices and 33% believed there was a high probability of an attack through the IoT.

The IoT is literally everywhere: analysts are covering it, it's in the daily headlines, people are discussing it near-continuously in peer networking and industry conference events, and entrepreneurs are right now building businesses around it. It's huge!

But there's an elephant in the room: support. Support and, by extension, security.

These two areas aren't covered with anything like the regulatory control of other aspects of IoT, but they're every bit as important to enterprises as usability and functionality considerations. Support and security not only have broad reaching implications for IoT now, but as these devices and usage scenarios continue to proliferate, they're likely to become even more important. For instance many of us have heard about the car that was hacked. As enterprises see more and more network-connected devices come into the technology ecosystem, these two oft-overlooked elements are paramount to ensuring that organisations stay productive and protected in the IoT world.

## Is the IoT actually new?

Embedded computing is not new, the concept was discussed as far back as 1982 when a soft drink machine was integrated into the internet.<sup>1</sup> It wasn't just discussed once and dropped. Throughout the nineties and the

early 2000s, there have been discussions about integration of computational elements into daily life and objects. Believe it or not, there's even a little-known (and seldom implemented) HTTP response code (HTTP code 418, defined in 1998 by RFC 2324) that allowed the response "I'm a teapot" in the event a web-connected teapot was requested to brew coffee.<sup>2</sup> Now this was an April Fools' prank so was never intended to be taken seriously, but it illustrates that the concept was there and being actively discussed almost 20 years ago.

Embedded computing and networking capabilities in purpose-built devices have existed in actual production deployment in various industry sectors for years. In hospitals, for example, diagnostic equipment (like MRI machines and other imaging devices) are IP-connected; likewise biomedical tools such as patient monitors, lab equipment, medicine dispensers and most of the rest of the clinical environment. In manufacturing or energy, it's industrial control systems. In retail it's points of sale. Throughout the corporate world, there are



purpose-built 'utility' devices that have embedded computing and network capability.

As a concept, not only is IoT not new, it's actually something that many organisations are using to a significant degree already. The critical difference is scale. Previously, adding these networking and computing elements to a device was comparatively expensive and difficult to engineer (for example due to size and power considerations). From a cost perspective alone, integration of these capabilities could raise the purchase price of the device enough to make that integration impractical. What's happening now? Costs are rapidly decreasing. As the costs decrease and the computational elements become commoditised, it opens up more avenues for integration of these technologies. The cost involved in allowing new use cases that leverage those integrated components ceases to be prohibitive.

## IoT acceleration

With economics driving disruptive differentiation, it is becoming economically advantageous for device manufacturers to incorporate connected sensors into the goods they sell. This is increasing quickly with fierce competition among manufacturers, and we should expect this situation to proliferate within our organisations. From the support perspective this means the stage is set for a rapid influx of 'shadow' usage and volume will be extremely high due to the number of connected devices.

Think about the replacement of existing devices. What happens when a default option for a refrigerator involves built-in computing capability? Or when a stock option for a new vehicle purchase includes an IP-connected navigation system? If a business unit replaces an old and non-IP connected device/appliance with a new, IP-connected one, what happens? Maybe a remote field office replaces a smoke detector because the old one fails or is worn out and this one has built-in communication capabilities (for example to alert the manufacturer about the need for service or to alert the fire department in the case of an emergency.) These retail examples are entering into the business environment and being used for business value. Who supports these in each instance? Typically, it's the manufacturer. As the IoT enters the business we need to upgrade our support models to accommodate such complexity.

There could also be compliance ramifications, in addition to security impacts. A thermostat, smoke detector or refrigerator might not seem like a big deal, but keep in mind that it's probably not designed with the kind of robust security you would expect for a trading floor, retail location (for PCI), etc. But is it possible that these devices could be installed on those networks? It is. For example, a well-meaning office manager at a retail store might put a smart device on the same network as the points of sale; a physician might put a smart TV onto the same hospital network where patient data is flowing. Both of these directly impact the regulatory environment (in the

first case PCI, in the second HIPAA). Unless you've thought it through and have a plan, situations like this translate directly into unmanaged risk.

## Building your plan

The operative word in the above scenario is 'plan'. Without one, a proliferation of smart devices might very well be a source of unmanaged risk. With one, you may still incur some technical risks as a result of these devices (benefits too of course), but at least you'll know what and where they are. You can add it to your risk management activities and account for it just the same way that you would any other business activity.

Your plan will include factors unique to your organisation; your support and security requirements, your unique circumstances, the business you're in, your risk tolerances and so on. Some aspects of the plan are likely to be universal. For example, start by defining how the IoT is relevant to your organisation and business. This can be more complex than you might think. For example, what if your IT environment includes devices that run a non-standard, proprietary or 'closed' operating system? Maybe certain categories of devices like wearables are within scope, but others – such as mobile phones where you already have policy standards – are outside it. So, first step, define what you mean and what the scope is.

You'll ideally want to formulate a strategy that will help you find the devices you have fielded today, but that you can also use to help you find new devices should they 'magically' appear down the road (i.e. through shadow adoption). Useful techniques for this could include leveraging vulnerability scanning activities – for example, if you do an internal scan of your network already, you might scour the output looking for devices that fall into the categories you defined (things like printers, televisions, etc.) For those using 802.1x Port Access Control, this can help you enforce locate (and of course enforce) devices.

As you identify devices, you'll want to build out an inventory of what you find. If you have an inventory tool that you use already for general asset management or other purposes, consider consolidating this information there – this could be a GRC tool, a support tool, a BCP/DR tool, or any other tool that can collect, store and leverage this data. If you don't have one already, keep in mind that there are open source alternatives. The point is, you want to have a place where you can capture a master list that you can keep maintained about what devices are out there, who maintains them, who is the contact responsible for it, what type of device it is, maintenance history, etc.

Lastly, you'll want to put some thought into who will support these devices from an operational standpoint – and what the process will be for doing so. ISACA has consolidated its guidance and research data into nine key questions to ask<sup>3</sup> to improve IoT risk management – this includes questions about support considerations, responsibility

for monitoring, risk management, etc. This can be a useful starting point as you think through these operational and management impacts. Depending on what the device in question is, it might very well not be the folks you'd expect. For example, in our healthcare example from earlier, there's very often a specialised biomedical engineering group whose responsibility it is to maintain clinical equipment (including IP-connected equipment.) Since the stakes are high (these devices can have a health and safety impact on patient care), those folks are uniquely qualified and specially trained for supporting those devices. The point being, there should be a way to determine who maintains what.

From there, support is very similar to what we've experienced since time immemorial. You'll want to have a plan for becoming alerted to, and responding to, security and support notifications from vendors, conducting incident response activities and other general support hygiene. Even though you're applying these processes to different types of devices other than general-purpose computing equipment, the tasks themselves haven't changed.

At the end of the day, IoT doesn't have to be new or scary. Waves of new technologies over the years have caused a step change within our organisations (cloud, mobile – heck even the PC was new once upon a time.) And, in each case, by applying the same principles of sound risk management and IT discipline, we've been able to successfully integrate those technologies into our environments to the benefit of our business partners. All that's required is not to panic, understand the risks, and apply discipline and risk management principles.

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# A life of learning:

## talking to the new CEO at AXELOS



Kaimar Karu



Abid Ismael

ServiceTalk catches up with Abid Ismael, recently appointed CEO of AXELOS, and the company's Head of ITSM Kaimar Karu about the ITIL Practitioner, lifelong learning in service management, and the growing threat of cyberattacks.



**ServiceTalk:** Abid, what do you see as the key opportunity or challenge for the year ahead in the ITIL/PRINCE2 world, as CEO of AXELOS?

**Abid:** Well, I've been at AXELOS since its inception [before becoming CEO, Abid was chief financial officer at AXELOS since the business was formed in 2013] and the challenge is a little different now from what it was two years ago. At that time we were working with partners to establish the business and understand the issues that people were facing with the frameworks. Since then we've responded to our original findings in a number of ways: we've launched PRINCE2 Agile, started to address some of the challenges around cyber resilience with our RESILIA portfolio, and launched the ITIL Practitioner.

So it's been a busy two years. Our challenge moving forwards is to make sure we address the needs of a rapidly changing business environment. But our goal is also to provide life-long learning, to offer support throughout the professional's career. To this end, we introduced our CPD programme in September last year, and we will be building on this in the coming months, helping people to see learning as a journey – not just taking a Foundation course but developing long-term skills that they can take back to their organisations.

It's a journey that should really start before you enter the workplace, and we're now working more closely with Further and Higher Education, to understand what we can do to spread knowledge of service and project management and cyber resilience among students, and help them with the best practice building blocks they need. These skills are the cornerstone of so many careers now, and with business changing so rapidly it's essential that we start early in preparing students for the workplace.

**ST:** Yes, the academic initiative is very interesting, and of course Knutsford Academy was short-listed last year for ITSMF UK's Innovation of the Year award for their service management work with Further Education students.

**Abid:** Yes, I think the Knutsford work is very exciting indeed, and our Head of Education is currently working with the Academy and their business partners to help expand this project.

**ST:** So the ITIL Practitioner has recently been launched, offering a new 'how to' level to the ITIL framework. With this offering, are you encouraging candidates to view the ITIL qualifications in a different way?

**Abid:** Yes, we are. Of course lots of people move on from the Foundation to the Intermediate levels, but not everyone feels well prepared to do this. We identified a gap in the scheme, where individuals wanted to understand the next step after the Foundation but weren't quite ready for the Intermediate. The Practitioner is helping

people to take what they have learnt at the Foundation level, including the common language and terminology, and apply it in a practical way for the working environment. So we have the Lifecycle and Capability routes at Intermediate level, we have a growing range of career paths, and the Practitioner complements these offerings.

**Kaimar:** I would add that part of the challenge for 2016 is to remind people about the good stuff that we already have in ITIL. There's plenty of new content in the Practitioner, but its roots are in the existing guidance. So ITIL talks about organisational change management, it talks about metrics and measurement, but many people only have Foundation level knowledge; they know the language but don't have the tools to apply what they have learnt and make it work. So we need to make the content we have more digestible and accessible. Some things need to be updated, of course, because the business world is constantly evolving and some of the language has changed too. But there's so much good stuff in ITIL best practice that people don't know about because it's not in the Foundation, and our challenge is to make it more practical and relevant. The Practitioner is a key part of our response to this issue.

**ST:** We're often asked at ITSMF if there's a new ITIL version in the wings to follow on from V3, with all that entails in terms of learning and investment. Is it fair to say that the approach now is to release new content in more manageable chunks, as with the Practitioner? Is this the way it will evolve in future?

**Abid:** Yes, 'evolving' is the way to look at it. Going back to the discussion about the CPD, we're saying it's an on-going journey for practitioners. They need to keep their skills up to date, and that could be through more training or it could be by contributing as a community member, or whatever ways they choose to build towards their CPD. That's how we see things evolving now.

**ST:** Just looking at the Development Programme in a little more detail, there are a number of new tools and there's a self-assessment offering. How do these pieces fit together?

**Abid:** Probably the best way to look at it is that the candidate needs to understand where he or she is now in terms of skills and capabilities. So there's a self-assessment to help you do that. There are peer reviews too, so that you can understand how other people see you and your skillset.

Once you've done this, the Programme will help you to understand how your skills might be used within your industry and what areas you should be developing. We also have career path tools, so that if you want to move towards a particular role, we can help you build the skillset (through training and experience) to get you there. So it's bringing structure to career planning and skills development.

**ST:** Presumably, as with other CPD schemes, the value of the programme will increase as the knowledge base of skills and capabilities grows?

**Abid:** Yes indeed, but it's not just about how you get your points. We're looking to build a repository of content that can support the individual when they're back in the workplace, to help them to keep themselves up to date.

**ST:** Just to touch on RESILIA, how are things developing in this area? Is cyber resilience gaining traction from your perspective?

**Abid:** Yes, interest is growing dramatically. Historically, it was down to the CIO or CSO to assess cybersecurity issues and how significant they were. This has changed – cyber resilience is now a Board-level issue, and everyone is involved in some way.

We've recently published a short book entitled Whaling for Beginners, which has been very well received. It's a novel, but designed to demonstrate what can happen in the corporate world and how catastrophic cybersecurity breaches can be. This is a good place to start to understand the implications of cyber resilience. Anyone in the organisation can be inadvertently responsible for a cyberattack, which is why tools, training and general behaviour in this area are really gaining attention.

Now that we have Board-level commitment, the challenge for 2016 is how we facilitate change across the organisation and make cyber resilience part of the culture. Everyone will be affected by attacks at some stage and the priorities are to protect yourself and know how you will respond in the event of a major incident.

The key thing is getting the message across – different people respond to different training methods, from video to role play etc. So the RESILIA portfolio contains a wide range of learning tools to help us reach as broad an audience as possible.

**ST:** So just coming back to your new role, Abid, and looking forward eighteen months, what do you hope to have achieved?

**Abid:** Well, with every new role I've taken on, I've wanted to make a difference (sorry if that sounds corny), and the opportunity to help people to develop their skills in the business world is a great challenge. As I said earlier, it's all about lifelong learning and making sure that individuals enter the workplace better prepared for the road ahead. With employers reporting that 50% of university graduates are not ready for the workplace (the proportion of school leavers with business-ready skills is even smaller), society has a big task on its hands. If we can play a small part in improving this position, I'm happy with that.

**ST:** Abid, Kaimar, thank you very much.

# Optimising IT Service Management in 2016



**Process optimisation is the top opportunity for improving service management in 2016, according to a detailed survey undertaken by Axios Systems. Markos Symeonides takes a look at the research findings.**

Process optimisation: this is the top opportunity for improving service management in 2016, according to more than 100 service management experts who recently expressed their views on the most important issues facing the service management industry.

Conducted over a series of surveys by Axios Systems, the 2016 global ITSM guide is based on the contributions of employees at nearly 100 different organisations. Views are representative of 20 industry sectors, with respondents based in 16 countries. All responses have been anonymised.

Whether you're approaching these issues from the visionary perspective of a CIO, the strategic perspective of an IT director or the operational perspective of a service desk manager — or indeed one of many on-the-ground roles that make the end-user experience certifiably excellent — every ITSM professional can benefit from a broader understanding of the shared challenges and opportunities confronting the industry.

The success of your organisation depends largely on the reliability and efficiency of service delivery, which starts with you and the resources provided. If these resources are imperfect (as they often are), then it's down to you to identify any available opportunities to help improve the perception of IT across the business.

## Embracing the opportunities of 2016

One in four respondents plan to prioritise process optimisation. This is followed by nearly 20% of respondents saying that self-service and the service catalogue are key opportunities for improving service next year. We also note that 15% of respondents recognise the value of aligning IT with business needs to increase customer

satisfaction as being a key opportunity for 2016. Increased automation is also a leading response, according to the summary of responses in Figure 1.

Why are these opportunities so crucial to getting the most from your IT/business relationship? Let's look at the top priorities in more detail.

**Process optimisation.** The goal of process optimisation is to find opportunities to minimise costs while maximising efficiency. Process optimisation can also help ensure regulatory compliance, boost departmental accountability and help eliminate wastefulness. It also allows you to secure company assets more effectively, thanks to tighter internal controls.

**Service catalogue and self-service.** A service catalogue provides a virtual 'shop window' to the business, acting as a one-stop shop for IT and non-IT services. Providing shopping basket functionality is fantastic, and expanding the catalogue into non-traditional areas is becoming the norm. This can include the ability for customers to log their own incidents and view progress. This is key to improving IT maturity. Let's touch upon how these tools are currently being used within the industry to create a culture of success:

*As a public sector body employing almost 3,000 people in the UK, the Forestry Commission opted to combine the powerful forces of self-service and a well-designed service catalogue to create more robust service management. The result? A system which is now simpler to maintain, more agile and offers the ability to support new services. Since implementation, the number of contacts processed via self-service increased to 60%. Additionally, management have the benefit of real-time reporting for greater insight into organisational efficiencies.*

**IT/business alignment.** To achieve IT/business alignment, it's useful to identify the current touch points that exist between IT and the business. As a starting point, you should look to the interactions captured via the service desk, and through any reporting dashboards or meetings. A thorough review will help you identify any gaps in interaction.

Strategic alignment supports IT governance, as well as risk and compliance management. It does this by enabling transparency in your processes, with your service management solution acting as a conduit of decision-driving information.

## Addressing the challenges of 2016

Let's turn our attention next to the biggest challenges. Asset and configuration management lead the list, followed by incident, problem and change management. At a bird's eye view, here are the leading challenges we can expect in 2016: (see Fig. 2)

Let's dig into the headline challenges.

**Asset and configuration management.** Asset management allows you to easily track and manage devices. Major cost savings can be achieved once you begin to fully leverage all the resources that the organisation has already purchased, including software licences. Would you rather spend thousands of dollars/pounds/euros on new licences when it's entirely likely that a number of pre-allocated licences are being underutilised, or not even used at all? And how many discarded laptops are sitting in the office cupboard, left to gather dust whenever an employee leaves the business or switches to a new device? Without question, there's a major win to be had with asset management.

Configuration management allows you to establish and maintain consistency in



Figure 1: What do you see as the key opportunity to improve service in 2016?

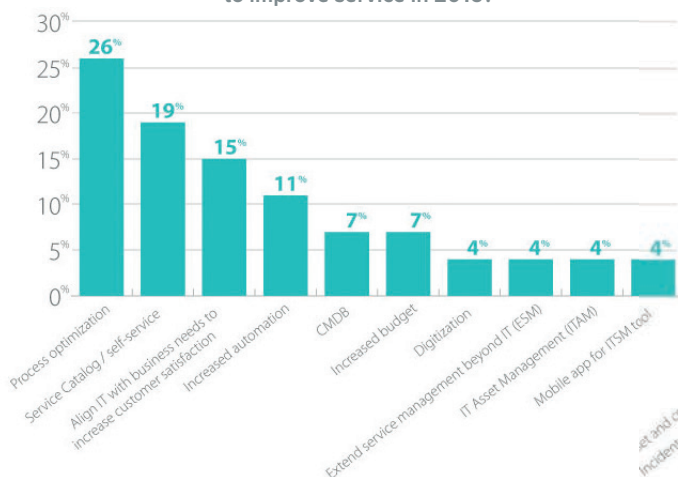
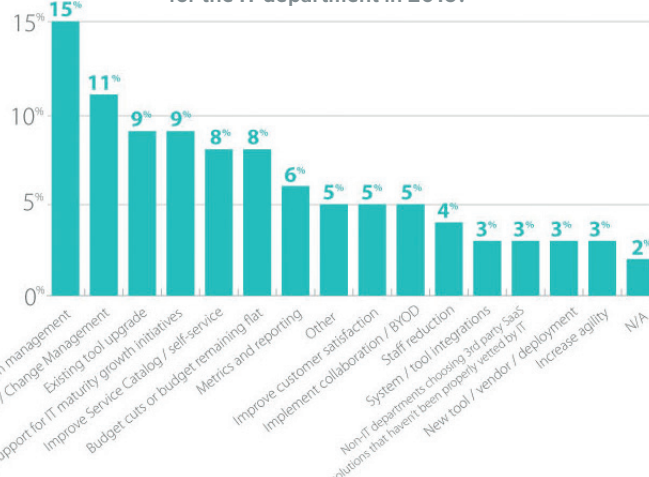


Figure 2: What is the biggest challenge for the IT department in 2016?



performance and function. With configuration management, you can implement a cost-conducive, agile, efficient solution with minimal risk.

Automating configuration and asset management can significantly increase an organisation's efficiency and effectiveness. Following this best practice can also yield substantial cost savings and help reduce the potential for errors.

**Incident, problem and change management.** Despite being a fundamental part of the IT foundation at virtually every level of IT maturity, this topic continues to permeate the challenge radar because management of these issues is at the heart of everything the IT department is designed to facilitate. Yet it doesn't always go well. Particularly when change management is at stake, poor communication or a lack of sharing/learning from feedback can contribute to a negative end-user experience.

**Existing tool upgrade.** Nearly one in three support centres has implemented new service management technology over the past year, according to HDI<sup>1</sup>. We can expect that a similar number will do likewise in the coming year.

## Pairing business priorities with investment

In their annual CIO survey<sup>2</sup>, Deloitte report that the leading business priorities for CIOs across all industries include:

1. Performance (48%)
2. Cost (45%)
3. Customers (45%)
4. Innovation (45%)\*
5. Growth (44%)
6. Regulations (21%)
7. Reconfiguration (19%)
8. Cybersecurity (18%)
9. Talent (12%)

\*By comparison, nearly 60% of CIOs from the technology and telecommunications sectors report that innovation is their leading priority.

To make any of these priorities happen, the ideal characteristic of a CIO is the ability to influence internal stakeholders and business leaders, as reported by nearly 80% of Deloitte's respondents. Yet only 9% of CIOs said they have all the skills they need to succeed.

Strikingly, talent falls at the bottom of the CIO priority list. But 45% of respondents in a service desk benchmarking report<sup>3</sup> expect their headcount to increase over the next year.

The following areas of technology are expected to have a significant impact on organisations within the next two years, according to Deloitte:

1. Analytics and business intelligence (77%)
2. Digital (mobile, social, web) (75%)
3. Cloud computing (64%)
4. Cybersecurity/data privacy (58%),
5. Legacy/core modernisation (47%)
6. Emerging technologies (28%)

So, how effectively are IT budgets supporting these priorities? Notably, 50% of CIOs expect high investments in legacy/core modernisation, as well as analytics and business intelligence. The Deloitte study also found that IT budgets are being allocated primarily to operations (57%), followed by enhancements (27%) and only then business innovation (16%).

Operational investments are closely linked to performance, cost, and indeed many items on the list, but it's interesting to observe the relative disconnect in the Deloitte report between the low-priority of investment in business innovation and the higher priority that innovation focus enjoys from the CIO perspective.

## The ultimate success factor: customer satisfaction

Beyond costings, how will you really measure the business contributions made by process optimisation/service catalogue and self-service/IT-business alignment? In this respect, we must consider customer satisfaction. On average, 87% of end users are satisfied with ticket resolution, as well as the support

centre overall, according to HDI. Indeed, 45% of organisations told HDI they observed an increase in customer satisfaction.<sup>4</sup>

That's incredibly positive news. Equally, however, we ought to query the reasons for 13% dissatisfaction: what was the severity of the various issues, what was the business impact, which users were adversely impacted? What effect did all this create on the reputation of IT?

Customer satisfaction is the common denominator belying each of these factors. Engaging in customer feedback is key to building and maintaining a positive reputation for IT throughout the organisation. Customers come from all levels and departments: ignore on-the-ground perspectives at your peril, because the risk is that you may be imposing IT structures and objectives onto end users without truly seeking to understand their needs, challenges and goals.

To read the full whitepaper featuring this research, please visit: <http://www.axiosystems.com/itsm-2016-goals>

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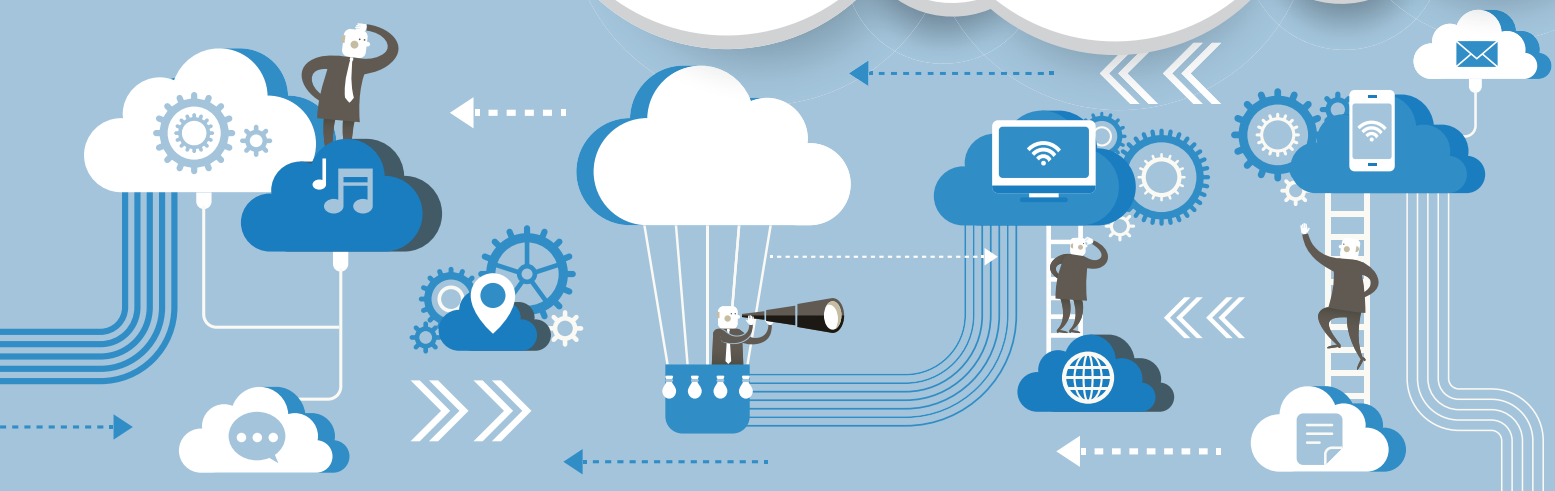
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Markos Symeonides is Executive Vice President at Axios Systems.

**Suzanne Slatter offers some food for thought about cloud-based service design, drawing on discussions at our recent SIG meeting.**

# Service management in the cloud – what's on your snagging list?



With the latest storms hitting the UK and satellite imagery of great swathes of clouds covering the country, it seems topical that the Service Design SIG recently discussed cloud services and what they mean for ITSM.

The 'pros' for cloud services focus mainly on the flexibility of service provision to customers, offering both short (eg weekly) and long-term solutions; and effective disaster recovery processes and high availability through the use of replication. Reporting systems providing good quality and visual management information could also impress customers, but be wary of the need to manipulate output to tailor presentation for an individual organisation's need.

Once established, cloud-based services sound very positive, a bit like moving into a brand new house. You've seen the specification and are happy with it, watched it being built, hopefully not suffered too many project delays, and when you've finally got the keys and can go inside... you start a snagging list.

Below is a list of things to watch out for when acquiring cloud services. These thoughts are based on the findings of a number of Service Design SIG members, but we'd be very happy for other members to join us and share their experiences.

Before you start:

- Be aware that private and public clouds are very different in terms of the planning involved and the ability to bespoke services and use a service level agreement (SLA) versus a standard model.
- Organisations typically have a mix of traditional infrastructure providers as well as cloud providers; this leads to complex organisations and sometimes means moving

towards a SIAM provider to help manage multi-supplier environments.

- Data privacy for multi-national organisations can be complicated – legislation and compliance varies on, for example, an EU/rest of the world basis, so consider this carefully.
- Think about a clear charging mechanism and consider how to pass the charge on for your cost recovery management.
- Consider the level of control a customer has over implementation of a change; and the level of influence a customer can exert.

Avoiding project delays:

- Time to implement configuration management should not be underestimated. Configuration management is 'unseen' and seems to present the biggest challenge in terms of understanding what exists, recording CIs and managing the process when changes occur. Close association with the service request and change management processes will help.
- Manage expectations – the business and end user experiences as well as IT professionals.
- Focus on risk reduction strategies – be prepared.
- Implement quality assurance and service acceptance processes.
- Make sure you have strong supplier management and back-to-back SLAs if operating in a multi-supplier environment.

The snagging list - try to pre-empt some of the following to minimise disruption to service:

- How do you control someone signing up to applications to deliver business functions without the IT department's knowledge? Does this sound familiar? Many of us have been there...

- Understanding the impact of change is important to make sure that services continue to operate and that support teams maintain their capability – and are aware of the change – to be able to support the changed system.
- Make sure you have controls and plans in place to sustain operational team knowledge.
- If you didn't consider the complexities of reporting and extracting data from cloud-based reporting tools before you started, note that one of the 'pro's' we identified at the start of this article was the quality and visual management of information, so let's hope that's the case for you!

If this has given you a taste for more information, take a look at the AXELOS paper "IT service management and cloud computing", or feel free to share your experiences with the Service Design SIG. Please contact the office for further details.



Suzanne Slatter is a consultant at Sopra Steria and chair of the ITSMF UK Service Design SIG







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