THE FUTURE OF INSURANCE IT INFRASTRUCTURE

A SURVEY OF GLOBAL INSURANCE LEADERS

This is an authorised reprint of an independently researched and executed report granted by Celent exclusively to Wipro Technologies.

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EXECUTIVE SUMMARY

Insurance IT infrastructure teams are facing significant strategic challenges, such as the rise of cloud computing, popularity of outsourcing, and consumerisation of common IT assets. Celent wanted to understand how the IT infrastructure and service delivery disciplines within insurers were being affected.

The initial hypothesis was that Celent would find an underinvested discipline struggling to cope with the change and looking to outsourcing partners and other schemes to both save costs and deal with increasing complexity. What Celent found was a robust discipline adding significant value to its customers through a variety of pragmatic schemes—a discipline embracing the new complexity and continuing to drive cost efficiencies.

The traditional role of IT infrastructure changes when software is not built internally. For prebuilt and purchased software, IT infrastructure and service delivery teams are involved in selecting and negotiating for the software and supporting hardware. As less and less software is built within insurers, so the role of service delivery and IT infrastructure has grown. The contact between IT infrastructure and its customers extends beyond service updates and service management issues.

The key change is not one of technology, though; it’s one of culture. The line between infrastructure and applications is blurring, requiring that infrastructure, application development, and business teams collaborate to deliver meaningful IT change. Many infrastructure leaders now report being engaged earlier in the thinking regarding new technology investment, and even being asked to contribute ideas on how technology could improve the insurer.

The message is clear for those insurers where infrastructure is working and is settled: focus is turning to enablement. This shift brings new challenges and questions. How can infrastructure enable the application development teams to meet their objectives? How can infrastructure work and collaborate with business units to enable them to meet their objectives?

Infrastructure, along with internal security teams, has been seen as a lock-down, constraining force. In the future, infrastructure’s role in the insurance industry will be one of an enabler, making the discipline more valuable by bringing thought leadership and education to their colleagues. It will move from lock-down to empower and protect. Most infrastructure leaders are looking to foster a collaborative and consultative relationship, positioning themselves as advisor, solution finder, and most importantly business insider.

Regarding technology, the respondents saw a move towards enabling new working practices. Key themes were the flexible allocation of resources, enabling mobility of staff and greater automation of key tasks within the infrastructure team’s roles and responsibilities.

The challenge for the whole insurance industry is to do more with less. This is no less acute than in the IT infrastructure discipline, where budgets are flat or declining. Despite this budget position, the same team is being asked to deliver more agility and enable more business practices and devices than ever before. There is also an often unexpressed expectation that infrastructure will provide this agility and enable the business in a secure and compliant manner. Infrastructure leaders in insurance are already moving to meet this challenge.
KEY FINDINGS OF THE REPORT

There is a perception that the insurance industry is very conservative, and in no way at the front line of innovation and technology adoption. One might expect a survey of IT infrastructure leaders in the insurance industry to yield a picture of old and tired technology, failing to keep pace with business requirements and holding the industry back. The results of this survey point to quite the opposite case, one where modern technology is adopted and enabled within insurers, and infrastructure leaders are pushing innovation.

The objectives of this report are to:

- Inform infrastructure leaders of the challenges and approaches their peers are taking.
- Inform CIOs of the current state of infrastructure and where it is headed.
- Educate the industry with regards to the leading edge work the infrastructure teams are doing.
- Describe the potential infrastructure has to enable the insurance industry.
- Inform the service providers and outsourcers of insurers’ expectations regarding their infrastructure.

The key findings from the survey reflect an environment that is undergoing significant change.

Table 1: Key Findings of the Survey

<table>
<thead>
<tr>
<th>FINDING</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>If it takes more than two hours to deliver a server, you’re slow, infrastructure is getting automated.</td>
<td>Advances in virtualisation and managing capacity have greatly sped up most insurer IT infrastructure operations, almost to the point that insurers can deliver infrastructure almost as quickly as the cloud providers. Tasks that used to be manual are swiftly getting automated.</td>
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<tr>
<td>Infrastructure teams are delivering more applications than application development.</td>
<td>Historically infrastructure ran the IT systems and took their change requests from application development work. Infrastructure is now being engaged earlier and delivering applications to their customers.</td>
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<tr>
<td>Infrastructure teams add greater value when engaged earlier.</td>
<td>Insurers are realising infrastructure teams have more to contribute and can help drive innovation.</td>
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<tr>
<td>Cloud is being adopted, but integration is the key inhibitor.</td>
<td>While security is a worry, integration requirements are the key inhibitor to cloud adoption. IT infrastructure teams have taken a very pragmatic and open approach to evaluating these new offerings.</td>
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<tr>
<td>Software as a Service is gaining traction.</td>
<td>Both sanctioned and unsanctioned adoption is on the rise, and service desk personnel are already noticing differences in how SaaS operations work and positively impact infrastructure operations.</td>
</tr>
<tr>
<td>The help desk is facing radical change.</td>
<td>One size doesn’t fit all, but there are common themes to what insurers are trying to achieve with the service or help desk.</td>
</tr>
<tr>
<td>Infrastructure is enabling virtual offices stocked with tablets, iPads, and consumer technology.</td>
<td>With increasingly mobile work forces, fewer permanent office locations, and staff working from home, the definition of office is becoming increasingly virtual. Add to this the desire to use personal gadgets, and the office IT systems are changing radically too.</td>
</tr>
<tr>
<td>Infrastructure is meeting the challenge of the post-PC era head on.</td>
<td>All of the respondents had a position on modern, highly capable personal devices and were either actively enabling their use or piloting this capability.</td>
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<tr>
<td>FINDING</td>
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<tr>
<td>Thought leadership and service improvement are gaps in today’s outsourcing deals.</td>
<td>Multiple respondents reflected on having outsourced running services but not service improvement. Insurers are seeking thought leadership from their infrastructure teams and partners.</td>
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Source: Celent analysis
BACKGROUND

Insurance IT infrastructure teams are facing significant strategic challenges. With the rise of cloud computing, popularity of outsourcing, and the consumerisation of common IT assets, Celent wanted to understand how the IT infrastructure and service delivery disciplines within insurers were being affected.

The principal challenge for all IT infrastructure teams is one of balancing cost control with service delivery. Actions related to lowering costs are taken against a backdrop of having to support ever more systems, whether it’s new channels for business or new ways of working. Customers and staff are now consuming IT and software in new and ever more convenient ways. Software at home was once an expensive purchase at a shop and installed with our fingers crossed. Now it is something we can get for pennies or cents and is available to us anywhere we choose to acquire it. How are these pressures translating into internal infrastructure teams, and how are they responding?

The goal of this study was to understand the current position of IT Infrastructure in insurers and particularly how the infrastructure discipline and team are perceived by their colleagues. A secondary objective was to understand how these leaders saw the discipline evolving in the future.

The initial hypothesis was that Celent would find an underinvested discipline struggling to cope with the change and looking to outsourcing partners and other schemes to both save costs and deal with increasing complexity. What Celent found was a robust discipline adding significant value to its customers through a variety of pragmatic schemes—a discipline embracing the new complexity and continuing to drive cost efficiencies.

METHOD

Trends discussed in the following chapters of this report reflect Celent’s experience of the market based on on-going discussions with the industry and, specifically, deep interviews with 15 infrastructure services leaders during the summer and autumn of 2012.

The interviews covered the role of infrastructure in insurance in 2012, as well as attitudes towards cloud, SaaS, bring your own device, and outsourcing more generally.

Table 2: Sample Survey Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>RESPONSE</th>
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<tr>
<td>How is infrastructure defined in your organisation?</td>
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<tr>
<td>In your organisation, is the computing infrastructure viewed as unique and critical to the operation of the business—for instance to its agility?</td>
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<tr>
<td>As the chain of suppliers involved gets more complex, who will be responsible for identifying what is the problem?</td>
<td></td>
</tr>
<tr>
<td>Regarding the help desk, as the chain of suppliers involved gets more complex, who will be responsible for identifying the problem?</td>
<td></td>
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<tr>
<td>What’s the future of service provisioning? Will all provisioning be self-service? Can it all be instant-on provisioning?</td>
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Source: Celent

RESPONDENTS

Celent spoke to infrastructure leaders in a number of positions, as described below. The mix is presented in Figure 1.

- Heads of group infrastructure. These individuals ran centralized infrastructure teams whose services were being consumed by a number of divisions of the insurer.
- Divisional heads of group infrastructure or architecture. These individuals sat in divisions of a broader group and consumed IT services from a central function and possibly from local suppliers.
• Outsourcing management. These individuals operated at insurers where the bulk of the IT infrastructure operation was outsourced.

Figure 1: Respondents, by Organisational Role

The respondents were a mix of property and casualty, life, and multiline insurers, as shown in Figure 2, with interests that were in Europe or North America, or global, as seen in Figure 3.

Figure 2: Insurer Type
Figure 3: Geographic Focus of Respondents

Source: Celent
THE EVOLVING ROLE OF IT INFRASTRUCTURE IN INSURANCE

The role of service delivery and IT infrastructure in the insurance industry is something that is shifting significantly. This will be discussed throughout each section, and we will return to the future role of IT Infrastructure in the concluding section.

The respondents unanimously felt that insurance IT infrastructure has been and still is concerned with at least:

- Desktops: PCs, laptops, telephony, and more recently mobile devices.
- Networks: Data and voice, those within a building, between buildings, within datacentres, and to staff homes.
- Datacentres: Buildings or rooms specifically designed to house IT equipment.
- Servers: Computing resources typically housed in datacentres.
- Software: The running, management, and deployment of built software to clients.

For the most part IT infrastructure is concerned with the physical assets associated with information technology. The exception is in software or applications. Infrastructure teams do not create software, but they will install, run, and manage software.

THE HERITAGE OF INSURANCE IT

Historically core systems and ancillary software have been built by application development teams within insurers. These teams worked with the business to specify the software or changes to the software and to build it. In this environment, IT infrastructure is engaged by application development when the software is ready to be handed over and supported by the infrastructure team.

In this sense the infrastructure teams have been quite reactive, forced to support what the application development teams produced and to run it to the best of their ability for their clients. Also the infrastructure teams have largely been associated with running IT assets rather than delivering change through IT. Perhaps as a result of this, infrastructure leaders are, and have always been, aiming for very stable services more than leading or bleeding edge technology adoption.

The contact between IT infrastructure and its customers extends beyond service updates and service management issues.

However, whether dealing with in-house or purchased applications, historically IT infrastructure was instructed regarding major IT change rather than consulted. Many leaders describe a state where they were engaged by application development teams at the end of development, when the new systems needed to be put into a test or production environment. Rarely were the teams looking after the datacentres and desktops engaged in the formative stages of a project or asked for their advice. Conversations between infrastructure and their colleagues in business divisions tended to focus on operational issues. IT infrastructure was about running the companies’ systems, maintaining them, and occasionally introducing change that had been specified and designed elsewhere.

INSURANCE INFRASTRUCTURE TODAY

At many of the insurers interviewed, this attitude is starting to change. The view of insurance as a very conservative or staid industry is now unwarranted, with many insurance infrastructure leaders
investing in new technologies. The rise of consumer devices and highly capable smartphones has led to an array of new requests and challenges for insurance IT infrastructure, one that is being met in new ways.

The key change is not a technology one, though; it’s one of culture. The line between infrastructure and applications is blurring, requiring that infrastructure, application development, and business teams collaborate to deliver meaningful IT change. Many infrastructure leaders now report being engaged earlier in the thinking regarding new technology investment, and even being asked to contribute new ideas on how technology could improve the insurer.

IT infrastructure leaders reported a wide variety of attitudes from their colleagues towards the IT infrastructure discipline. Some felt that they were technology companies offering financial services products, whereas others viewed infrastructure as a resource required to run the business but not one that they were particularly good at managing or needed to be.

The message is clear for insurers where infrastructure is working and is settled: focus is turning to enablement. This shift brings new challenges and questions. How can infrastructure enable the application development teams to meet their objectives? How can infrastructure work and collaborate with business units to enable them to meet their objectives?

These changes bring the role and activities of the infrastructure team under significant pressure. Some areas or whole departments are now outsourced to other organisations, leading to a specific set of challenges and opportunities. The influence of shared services structures is also common, a kind of internal outsourcing approach with both similar and different challenges for those on either side of the arrangement. Then there is the influence of automation and self-service, with internal teams looking to the future and wondering what parts of today’s role will still exist.
Customer perception of IT infrastructure is crucial to the challenges now facing the discipline. Part of the interviews therefore focused on customer-facing infrastructure to better understand how infrastructure is perceived and key changes the teams are making that most affect the customer experience. In this context the customers are typically colleagues and fellow staff members that consume IT services from the team...for this section, then, “staff” is used to denote this group to avoid confusion.

**THE EVOLVING DESKTOP**

The needs and equipment of the insurance staff desk have changed significantly in a few short decades. As one respondent put it:

> “100 years ago staff weren’t given a phone unless absolutely necessary, for fear it would distract them, 15 years ago it was the PC, 8 years ago it was email and now it’s instant messaging, Facebook and Yammer.”

The insurer desktop has seen terminals attached to mainframes, IBM-compatible PCs (as they were once commonly called), laptops, mobile phones, and recently a plethora of new devices such as smartphones and tablets. In this section we will discuss how the desktop is being redefined and some of the devices being used for mobility. We will focus on how IT infrastructure teams are providing the suite of required software and services to staff.

At first glance, the desktop and software on it may seem fairly uniform across an insurer estate; however, there can be significant differences. Task-based staff, or staff with a specific purpose and role, often have quite uniform requirements within their team. Requirements between teams often vary. For example, sales staff in a customer-facing contact centre will need different access and privileges to those in the claims handling teams. Additionally, within the insurer there are different sets of staff with very specific and sometimes unique IT requirements. Examples of these are executives, managers, team leaders, actuaries, application developers, and even members of the IT infrastructure teams themselves.

As such, insurer IT infrastructure teams are trying to deliver access to the required IT assets through the most cost-efficient methods across a variety of devices. One such tool is virtual desktop infrastructure (VDI), adoption of which can be seen in Figure 4.

**The Case for VDI**

Those implementing VDI cited a number of reasons. Most were leveraging a Microsoft Windows 7 upgrade to implement VDI, since the old desktop operating systems needed refreshing, and the staff infrastructure and software would need to be tested as part of this process.

> “Two years ago we were locked down, standardised. Now we’re enabling staff”

A few adopters spoke of never having to do another desktop refresh project, stating that VDI would allow them to deploy the next desktop upgrade far more easily than previous upgrades. The cost of this and previous desktop refresh programs have been significant and required extensive disruption to the business staff involved.

Most respondents discussed the way that VDI enabled their staff to work in a very flexible way using a variety of devices. This included secure access to their workplace data and applications from their home machines and even tablet devices. As such, VDI was seen as a way not just as a way to refresh the desktop but also to enable recent working practices, and the expectation was expressed that it will support unforeseen practices that may arise.

Some respondents were using thin client desktop terminals as part of their VDI strategy. These systems have the minimum hardware required to operate a virtual desktop (i.e., no local storage) and offer a screen, keyboard, and mouse. This hardware is cheaper, less prone to failure, doesn’t require backing up, and wouldn’t require upgrades for future software and operating systems. Thin clients do drive requirements for higher bandwidth and lower latency in the networks, however. Those in the
industry for more than a decade or two are amused at the return to “dumb terminals” once common in insurers.

Figure 4: Use of Virtual Desktop Infrastructure

Source: Interview respondents

The Challenges of VDI
Those who weren’t adopting VDI typically cited the lack of a strong business case as the key reason, preferring to roll out Windows 7 in the same way as previous Microsoft rollouts. It may be that the business case for VDI lies in simplifying the next rollout of an operating system. However, rollouts have become simpler with successive versions of Microsoft Windows, making this hard to estimate in a business case.

Those who were adopting VDI spoke of the need to simplify the desktop estate in order to make it cost effective. This includes activities to consolidate and reduce the number of applications used as well as the number of different profile types used. There is financial sense in this too because savings in IT licenses for unused software can contribute to the business case for the desktop replacement programs as a whole.

Within insurers, one size does not fit all. For heavy or unique users some insurers were still rolling out non-virtual specific desktop hardware—for instance, for actuaries who were engaged in modelling activities with unique software requirements. It is worth insurers considering what they will do with this small but difficult group of staff when considering or executing a VDI strategy.

A minority of insurers had already rolled out Microsoft Windows-based tablet devices and noted that “VDI was not mobile enough.” They were referring to the connectivity constraints and lack of mobile network availability in the target regions the staff were working in, so perhaps this is a challenge for VDI that will diminish in time.

One respondent noted that VDI as a solution to serving applications on tablet devices and Apple Macs went against the proposition for bring your own device (BYOD) schemes and the benefits of using these devices. If the benefit is one of user experience, then forcing a Windows experience through another device seems contrary to the objective.

The Virtual Office and The Rise of Homeworking
Homeworking and supporting mobile staff is not new to the insurance industry, which has always had a mix of head office and remote staff, with claims adjusters and sales teams often on the road. What
has changed is the increasing trend for head office-based staff to also work from home or between offices.

Working from home has been enabled by ubiquitous access to high speed Internet in the home, access to mobile Internet services, and the digitisation of most of the activities in an insurer. Insurers typically support homeworkers through a mix of Web Mail, VDI, virtual private networks (VPNs), and devices for use at home including laptops, docking stations, and spare screens. Use of mobile phones, email, and collaboration software all contribute to enabling this behaviour as well.

Homeworking is a very cultural topic; even within divisions at insurers, adoption of homeworking varies significantly. Some Continental insurance infrastructure leaders have run into issues in rolling out homeworking practices to some staff groups. In rare cases, the union or workers council have felt that the organisation should provide a full at-home support service.

Multiple respondents discussed how the IT infrastructure teams regularly had part of the team working from home. One noted this as a useful risk mitigation approach in the event of the loss of a building, while others cited cost savings in running fewer buildings and less office space.

This is a strong example of IT infrastructure teams working to enable the business to allow different working practices where required or simply desired in line with that organisation’s culture.

Bring Your Own Device and the Evolving Business Machine

As mentioned above, the technology on staff desks has changed significantly, with the speed of change increasing each year. Insurance IT has broadly kept pace with technology change and staff requirements until recently. In the last decade, the world has seen the rise of Research in Motion (RIM) with the BlackBerry, the introduction of the iPhone and iPad, and the launch of a plethora of Android phones and tablets. Staff are buying these connected devices for entertainment and for productivity, and increasingly want to connect them to the corporate network.

Figure 5: Mobile Device and BYOD Policy Focus

In the last decade Blackberry devices from RIM have had a huge following in most corporate environments and have had a strong following in the consumer base. Consumer affections have shifted in the last five years towards Apple’s iOS devices such as iPad and iPhone and Android devices from the likes of Samsung, Sony-Ericsson, HTC, and others. Microsoft is also investing in Windows.
Phone-based devices, which could also grow in market share and business user utility. These new devices are general purpose computers which staff are now bringing with them into the office and want to use for their work.

All of the survey respondents are now looking at how they can support this new array of devices, with many having schemes for piloting or fully supporting such devices. Vendors such as Good Technology provide a secure method of delivering corporate data access to these devices while preventing unauthorised access from other software running on the same device. A few respondents observed that they now administer Blackberry access, Apple iTunes device provision, and Good Technology access in order to support staff mobile devices.

The most common approach was to offer a corporate device and then provide the infrastructure and self-service material to allow those with other devices to use them safely and securely within the insurer. The most popular corporate-provided device was a Blackberry, although some insurers are offering supported Apple devices running iOS (see “deploying” category in Figure 5). In terms of enabling personal devices, Apple’s iOS-based devices are clearly the most popular (see “enabling” category in Figure 5) with Android-based devices following. Infrastructure teams are taking a pragmatic approach to device support—responding to customer demand and waiting for strong support tools and options for the devices.

Some respondents are offering iPads to senior managers, and one respondent mentioned offering corporate iPhones. More than one respondent noted that the Blackberry Playbook was not well liked by staff, although one respondent was a happy purchaser of Blackberry devices. In these cases the items are unlocked for now, as open as if they had been purchased by the staff member. This may not remain the case, with insurers looking to limit the apps that could be installed if a cost-effective approach can be found to control the app management process.

One final note regarding Tablet devices: Two respondents mentioned their pilot use of iPads as VDI clients—allowing full access to their work environment via a secure connection and a simple device. They described this as getting much easier with the recent versions of the VDI client software, although Celent notes the customer experience concern in having MS Windows desktops on non-PC devices. Some respondents noted that the executive and sales teams were still carrying around laptops as well as their new iPads, so they were not better off for having the tablet device. Perhaps these trials point to a future where senior managers operate on a lighter device—an interesting challenge or opportunity for Microsoft’s Windows 8-based Surface device.

SOFTWARE AS A SERVICE AND THE NEW DESKTOP
Software as a Service (SaaS) is a tricky trend to pin down. This is discussed in the section on cloud and outsourcing, but it is worth a mention here as well.

A key feature of true SaaS offerings is the ease with which they can be adopted. Assuming no integration is required, staff can sign up for the service and start using it straight away, often at no cost for a limited set of functionality. It is further possible for managers to expense the cost of a team using the software, often with no oversight, governance, or intervention from the IT team. This particular feature of SaaS offerings was a concern to many of the respondents.

Infrastructure leaders are using a number of mechanisms to address this risk in conjunction with their colleagues. The principal step is one of education, ensuring that staff are aware of the regulations, of privacy concerns and/or requirements with regards to data security. The second is the use of software to look for and highlight where restricted data is being shared beyond the organisation and to allow managers and individuals to validate that this is their intent and an appropriate use of the data.

“We won't make a recommendation [about tablets] until the Surface is out”

“...that [the infrastructure team] and procurement team are centralised”
THE FRONT LINE: THE EVOLVING HELP DESK

No other area is more synonymous with IT than the service desk or help desk. When things go wrong, this is the point of contact, and dealing with staff issues swiftly and efficiently has as much to do with customer satisfaction as it does with running a well-oiled business. Clearly, though, the role of the service desk is changing.

Among the majority of respondents, there was a clear approach for the service desk emerging, with the following characteristics:

- Single point of contact.
- Seeking resolution in a single call—once and done.
- The rise of self-service.

SINGLE POINT OF CONTACT
The single point of contact requirement is important from a staff satisfaction point of view but also for internal processes of infrastructure teams.

As the respondents pointed out, despite the overall solution and staff interface to IT being a plethora of applications, devices, outsourced software, and SaaS, there still needs to be one number to call or one route to resolution when things go wrong. Historically, the internal IT team delivered, largely built, and understood all of the various pieces of IT that staff may be using. The rise of cloud, SaaS, outsourcing, use of own devices, and the complexity of IT systems today means that it’s not always obvious where the error is or who should fix it. Having a single place to resolve these issues is key to satisfying corporate users.

Again, as the respondents repeatedly mentioned, they have a single point of contact that tracks issues across the organization. This is important for managing service-level agreements (SLAs), in terms of both the internal IT team supporting the business units and SLAs between the IT organization and their external suppliers. If staff contact the provider directly, there is no means to track the frequency of issues or the resolution time. One final reason mentioned by respondents for the single point of contact is the ability to broadcast a single message regarding issues and outages.

Having a single point of contact also drives a single point of ownership to manage and drive resolution of the issue. One key difference this single point of contact makes is a psychological one. Respondents who had previously outsourced the service desk or had solutions where staff could call multiple specialised service desks found that issue ownership was a key challenge. For instance, those involved in the resolution of the issue could all simply respond that the issue was not within their remit.

There are exceptions to this where the service desk offers little or no value. Respondents mentioned issues with very technical or specific software were often routed directly to the provider. Examples include actuarial modelling and specific application development tools.

SEEKING RESOLUTION IN A SINGLE CALL—ONCE AND DONE
This is standard practice in operations and contact centres serving customers and is something the respondents are building into their service desks. The aim is to empower the service desk so that the most frequent calls can be dealt with while the staff member is on the phone or shortly after the call. Clearly this isn’t possible for all calls, but the goal is to automate or enable the work to be done quickly for the most frequent calls.

There is clearly a benefit to the corporate user (the issue is dealt with more quickly) and to the service desk (fewer tickets are open). Calls resolved on first contact require less time from second- and third-
level support and reduce the number of follow-up calls chasing resolution rather than reporting new issues.

An observation made by a few respondents relates to the growing complexity of issues facing the service desk. One respondent expressed this as, “Very few tickets require only one skillset now,” while another respondent noted that the service desk increasingly needs to operate “off-script,” requiring a different kind of personnel to manage and operate the desk. This points to a need for automation of frequent tasks for the service desk—particularly where the resolution is repeatable but complex. Further, for those issues that are uncommon, there is a need for a hybrid issue manager who is familiar with a broad spread of technologies, although perhaps not a specialist in any particular one. This individual needs to have experience in isolating and resolving issues at a cross-system or system of systems level, and in delegating resolution within a particular system to the experts at that level.

THE RISE OF SELF-SERVICE AND AUTOMATION
As with other operational tasks in insurers, infrastructure leaders are seeking to leverage automation and straight-through processing where possible. Interestingly, this is one area where most respondents reported that they had made limited progress. Perhaps here the infrastructure team could be the customer of the application development teams.

Use of workflow tools can significantly improve the execution times and tracking of service desk actions. Ticketing systems are popular with most of the respondents, with several respondents having hosted or SaaS-based systems.

Some respondents were investing in portal-based solutions to enable self-service of common requests. These tools automate business workflows and approval procedures to allow requests such as password resets to be executed without engaging service desk personnel. Such self-service automation appears to still be a rare tool in insurance infrastructure teams.

ALTERNATIVE MODELS
So far we have discussed a model leveraging single point of contact for most queries, with a goal of resolving the issue on the first call. While this model was the one most frequently followed, respondents did discuss alternative approaches.

Several insurers made use of local teams of service desk personnel. These staff were located permanently at respondent sites to deal with local issues there and then. There was a pragmatic use of this type of deployment, with sites being selected based on number of personnel and the type of problem. Sites with many task-based users would typically have most local issues addressed by simply replacing the hardware. Sites with users with more specific IT needs tend to be more complex and may benefit from local resources.

Another model discussed with a respondent was not having a service desk at all. Rather the insurer’s contact centre took the call and raised the ticket on behalf of the staff member. This was passed to a team to resolve offline and to contact the staff member. Clearly this is a very different model to the once and done approach, but meant the tickets were supported by very few FTEs.

HELP DESK AND SaaS
The broader impact of cloud on the help desk will be covered in the next section, but there was a repeated comment from respondents regarding SaaS. SaaS applications typically produce fewer tickets than other software and require less intervention. These were anecdotal comments, certainly not sufficient to contribute to a business case, but perhaps point to how the help desk will become more efficient in the future. One respondent noted that the errant help desk tickets may be recorded directly with the vendor; after all, if staff are using a SaaS application and the help button is right there, would they bother the help desk?

The survey respondents also noted that staff are increasingly more comfortable with consulting Google searches, YouTube videos, and FAQs to help resolve issues themselves. Collaboration software could form a core part of the help desk in the future, enabling staff to help themselves. As the staff base in the organisation becomes more technology-savvy, the infrastructure and IT functions’ roles will change.
THE HIDDEN WORK OF IT INFRASTRUCTURE

The staff-facing work of IT infrastructure is very visible, but the bulk of the effort and cost for IT infrastructure teams lies elsewhere, and it is this work that can enable or inhibit agility within the insurer.

This section will discuss this work and what infrastructure teams are doing today, how it is impacted by recent trends, and where this work might be heading.

IT INFRASTRUCTURE AND INSURER AGILITY

In business there has always been a sense of urgency, a realisation that key tasks must be achieved swiftly in order to gain competitive advantage. With the consumerisation of technology and the ability to buy and install working software on our mobile devices in just minutes, this requirement for speed is increasing in IT infrastructure. Multiple respondents noted that staff “want it faster” and that “everything is right now.” Can insurer IT infrastructure meet these expectations? Celent examined two measures from many of the respondents to gauge speed and attitude to change. Those measures were:

- Time taken to provision a server.
- Time taken to on-board a new member of staff.

SERVING SERVERS

The time taken to bring servers online showed insurers operating at two speeds, but also showed that insurers execute among the best of their peers.

The Speed of the Cloud

The bulk of respondents who answered the question were able to bring up a simple server within hours, some less time than that, and a few taking more than four hours. The insurers were able to do this due to heavy server virtualisation capabilities. There were occasions where the capacity would need to be increased to accommodate more virtual servers, but this was something they were actively managing. An interesting observation from this: the speed and agility improvements from public clouds were negligible compared to internal capability.

Figure 6: Server Deployment Speed

These respondents were interested in and actively investigating hybrid cloud architectures, which would allow their internal capability to deploy new servers to be extended to private cloud infrastructures when their own capacity was breached.
Most respondents commented that getting a simple server up and running doesn’t add business value, and that time is taken up installing the server and adding it to the pool of working assets. Again, when the respondents considered the cloud in this regard, most observed that moving servers to the cloud doesn’t fix this issue. If anything it can be trickier, particularly where a large amount of data must be transferred to make the server useful.

A few respondents also commented that Z-series virtualisation and management has allowed for cloud and virtual style provisioning for decades.

**The Impact of Legacy**

A phrase repeatedly by many respondents was, “Of course it differs for legacy.” Infrastructures that run as client-server applications or on legacy hardware are much harder to provision and add capacity to. Since so much of most insurers’ activity is run on legacy systems and infrastructures, it may be that most business customers of the infrastructure teams don’t see this agility benefit. It also points to a business case for renovating old applications to run on more agile infrastructures.

**The Surprise Impact of Modern**

One respondent noted that a key supplier only certifies its system on physical infrastructure. Here the vendor is required to meet a set of SLAs and to test the system to ensure its integrity in this environment. In the near future insurers and vendors will have to work together to understand the impact, both positive and negative, of virtual versus physical infrastructure.

**The Impact of Legacy Outsourcing Arrangements**

It’s worth talking about some respondents’ views on server provision. In this context legacy outsourcing arrangements refer to deals put in place over five years ago, which were largely uninfluenced by the cloud and SaaS phenomenon. These arrangements were long-lived (typically five to seven years) with the premise for change being organised around an order-taking model. In essence the respondent would specify their requirement and submit it to their partner for review, and it would be delivered within the SLA. In this sense the measure is a little unfair because the partner would deliver a server with software installed rather than the basic server discussed above. In all cases that fit this profile, the timelines were in days or weeks, and the respondent felt that this was too slow.

Respondents considering their next outsourcing contract unanimously mentioned including cloud style provisioning capabilities as part of their expectations and how they would construct the next contract. When asked if they were considering what they might be looking for in five or seven years, towards the end of the contract, most respondents hadn’t considered this and accepted that they may be in a similar position in five years, where they felt they had fallen behind the rest of the industry.

**Observations on Server Provisioning**

One size doesn’t always fit all. One respondent described how they had over-virtualised and were returning to physical servers for part of their infrastructure. They were actually managing that server load requirement in a multitenant fashion using the software’s capability, so they could provision that part of the infrastructure just as quickly, but without the need for virtualisation. It was their opinion that this was a better trade-off in performance than standardising on virtualisation throughout.

Multiple respondents made reference to server provisioning being the easy or quick step. The key challenge would be in installing the software and adding to clusters of machines or the set of servers taking on the workload. There is already software looking at this problem in provisioning cloud services, with RightScale being one such platform. This area will likely be a topic of focus for infrastructure leaders seeking greater agility in their operations in the future.

Finally, don’t underestimate the importance of unprovisioning. It is easy to get a customer to request something they don’t have, particularly if they need it urgently. It is much harder to get a customer to invest time in understanding what they no longer need. This applies as much to server instances as it does to desktop software, licenses, security settings, etc. Some respondents have gone to some length to measure usage of assets and automatically remove privileges, licenses, etc. when they appear to be no longer needed. The benefits to the organisation of managing provisioning and unprovisioning in this way can be extraordinary. As we move to a pay per use model and dynamic provisioning, considering how and when services are unprovisioned will be key to reducing costs.
**DESKTOP AND NEW USER PROVISIONING**

This topic was surprising and far less clear than server provisioning discussed above. This is seen as a process that IT owns and executes on—one that for most organisations IT infrastructure teams are seen to execute poorly on. In practice, however, this process is owned by many parts of the insurer: from HR to IT and the business units bringing on the user. For some infrastructure teams their parts in the process are automated and very swift, while other teams have not automated these steps given the relatively small benefits associated. The key time taken in this process tends to be in getting the request to the right level of detail and in getting the appropriate sign-offs complete. At one respondent site, a total of almost 20 approvals were required across the insurer to onboard a new user. As already stated, IT infrastructure is often seen as the inhibitor here, although the reason for the delays often lies outside of IT.

**CHANGE IN INFRASTRUCTURE AND ITS IMPACT ON THE CIO AND INSURANCE BUSINESS**

Core insurance operations departments no longer spend the bulk of their time hunting for, updating, and filing paper thanks to digitisation, business rules, and workflow engines. Similarly, IT infrastructure and service delivery teams no longer spend the bulk of their hours in dimly lit datacentres directly serving the needs of the company’s infrastructure. Virtualisation, automation tools, ticketing systems, and common standards are speeding up this process and freeing up infrastructure time to work on other tasks.

Just as ubiquitous computing and storage power have enabled cloud-based disruptive business models, so insurers are gaining this kind of speed and capability internally. Insurers still have work to do in providing the capacity, but modern core systems have yet another advantage over legacy implementations.

**Unfortunately, IT’s customers don’t want just a server or a device, but rather installed, tested, working services. It is in this last mile that we will see more effort coming to the fore in enabling new cloud-based services and new consumer devices and in swiftly provisioning systems of systems to meet demand.**
Outsourcing of some subset of IT infrastructure is now common, with most respondents making use of some sort of outsourcing arrangement. Respondents reflected the full spectrum of outsourcing—from an insurer with no outsourcing at all through to an insurer that had outsourced all but high-level governance and strategy setting.

**Mind the Outsourcing Gap**

Three areas were repeatedly cited as lacking or missing in outsourcing arrangements:

- IT infrastructure consulting.
- Service improvement.
- Thought leadership.

**IT infrastructure consulting** refers to the assistance typically offered in specifying what infrastructure is needed. For insurers that outsourced to third parties or internally (e.g., to other group functions), a key area that was missed was the ability to ask someone to help specify what was required. Many outsourcing arrangements replaced the internal team with an order-taking process, one where the customer specifies what they want and passes it to the supplier. This works well except in cases where the customer lacks the expertise or experience to do this kind of specification. This gap appears most problematic in cases where the outsourcer is another division of the same organisation (i.e., where a country IT team sources its infrastructure from a group function). Where the outsourcing arrangement is external, there is an opportunity for third party consultants to fill the gap in expertise.

Respondents in group positions that are on the provider side of these arrangements are already looking at models to help address this gap, describing a need to get a seat at the customer’s table and be part of the business rather than just another supplier.

For respondents on the client end of these arrangements, this gap or potential gap was cited as the key reason for keeping local infrastructure architect resources and the need for a local architect team. With third party suppliers, there is the opportunity for a multisourcing arrangement which could serve to keep suppliers honest. Of course these additional teams and skills must be taken into account when assembling the business case for an outsourcing arrangement.

With respect to **service improvement**, multiple respondents felt that they had “outsourced running [operations] but not service improvement.”

When outsourcing, the insurer seems to have hoped that the outsourcer would leverage their experience to inform the insurer on how it should invest in the outsourced infrastructure. Further, there is an expectation that the outsourced service will be improved and invested in at the end of the term. It seems that this is lacking in the contracts and also in the execution of the outsourcing arrangement. Service improvement at least is likely to be a key feature in the next round of outsourcing arrangements.

With regards to **thought leadership**, a few respondents felt that this manifested itself within the arrangements as a sales pitch on the outsourcer’s latest products. Insurers have been faced with an array of technical challenges in recent years, such as:

- How to respond to the social phenomenon? Should we block access to social networks? How do we respond to what customers are saying about us on social networks?
- How to prepare the infrastructure to deal with hurricane season? That is, how best to support remote teams with little connectivity and increased demand in terms of notifications of loss from customers and businesses? How to understand total exposure?
• What mobile devices should the insurer support? Are iPads a threat or an opportunity? Are Android devices secure enough to do business on, and if so which should we support?

While hearing how the supplier’s latest offerings support these issues is a form of thought leadership, it falls far short of expectations. As expressed by one respondent, “we can get that type of thought leadership for free.” What is interesting is that the respondents that were clients of outsourcing relationships had difficulty expressing what thought leadership was as a product or deliverable. For respondents within group insurer functions offering services to their colleagues, there was a clear mandate to engage earlier in the change process, because their customers were thinking about change, and to provide expertise and new thinking. Some group infrastructure leaders with customers in other divisions of the insurer described doing road shows and specific meetings to help their customers understand the potential of new technologies to enable the insurer.

Infrastructure consulting and thought leadership appear to be very tightly coupled and in a commercial relationship; this is tricky to get right, for the respondents to this survey.

**Defining Thought Leadership**

When insurers speak of thought leadership and service improvement together, what they are seeking is typically quite specific, if hard for them to define. Broadly it can be expressed as, “Now you have ownership of our infrastructure and you have experience of lots of other infrastructures that you support. How should we be changing the infrastructure, and why?” This is still a poorly scoped request that perhaps is best broken down further with possible answers of the following forms:

- Other companies seeking agility took steps A, B, and C, and we believe these could work for your infrastructure with these benefits.
- Other companies seeking license reduction across their server / desktop estate took steps A, B, and C, and we believe these could work for your infrastructure with these benefits.
- We have noticed significant change being requested for system X. This is slow and expensive for these reasons and could be addressed by a project to achieve A, B, and C. If the requests for change continue as they have, this would yield a benefit of €X per annum.

Crucial in these conversations is drawing on experience elsewhere and helping to assemble the business case. This in essence deals with the following complaint, “We outsourced this function to a provider with a global capability, but we only get back the answers we used to get from the internal team.”

While insurers might be asking for deals to run their infrastructure more efficiently than they can, the observations for today’s infrastructure leader is that their customers are expecting more, delivered quicker, and at lower cost. While doing more with less, the insurer business colleagues are seeking insights into the art of the possible, thought leadership, and most importantly service renewal and improvement.

References to thought leadership without reference to service delivery are typically requests for a point of view on changing trends such as mobility, cloud, SaaS, or social media. These requests aren’t for a white paper, though; rather the insurer is seeking a perspective from a partner with insight into the insurer’s infrastructure, the insurer’s issues, and the insurer’s challenges. In line with the observations for the infrastructure leader, insurers are seeking thought leadership in the context of their business and situation: what does this mean to me?

**SaaS and the Cloud—Whatever It Is**

“Cloud” as a term was described by respondents as “poisonous,” “useless,” and a “sales technique,” to name but a few. Most agreed that the concept behind the cloud was nothing new, but the recent changes in business models and marketing were putting increased pressure on infrastructure teams and providing opportunities.

When asked, the respondents agree that public clouds will at some point be cheaper, be more secure, and offer better up time than in-house infrastructure. Most of the respondents had looked into cloud services in some detail but felt that they were not yet cost-effective for the whole datacentre. Cloud offered an enabler, a low cost to entry with built-in scalability and utility computing, which would work well with some business models. There are still, however, significant inhibitors to adoption.
Inhibitors to Adoption—Integration and Knowledge, Not Security

Security in the cloud is now well understood among the respondents, although a few pointed out there was little guidance on this from the likes of the FSA (the regulator) or the Information Commissioner (the data protection office) from the UK. A couple of respondents noted how the security and other requirements for the services at cloud providers effectively formed the super-set of all the requirements of their customers—supporting a view that these will naturally be more secure. The providers may be more natural targets for hackers and electronic attacks but would be better equipped to respond.

Instead the key inhibitor to adoption is integration. Where a new or replacement service needs to integrate or send data to a service already in the datacentre, it can be very expensive. An extreme example would be analytics and reporting tools in the cloud where getting the kind of bandwidth required is not feasible. One solution would be to move the entire datacentre, but most respondents felt that there was not a sufficient business case for doing so at this point, certainly not at the required SLAs.

An additional concern was retrieval of the data. In the event of a loss of service from the cloud, having the insurer’s data locally was key to getting back up and running elsewhere if required.

A final inhibitor was the need to retain infrastructure knowledge and architects. Apart from SaaS offerings, cloud services provide servers but not working applications. The consumer still needs to install the required software and hook the servers together to offer a finished service. In addition, adopting these services typically requires review of the contracts and the SLAs and due diligence done on the provider and sub-contractors. Some respondents had outsourced this legwork, but it is still a time-consuming process. One respondent noted it could be quicker to provision a service internally than to execute the due diligence on an outsourced cloud or SaaS service.

Almost all respondents felt that public or hybrid cloud arrangements would be used for test and development environments in the future. With test and development environments, the risk in terms of service and associated data was far less and the requirements were more transient—lending themselves to a leasing model.

SaaS is Driving Cloud Adoption but is it Friend or Foe

SaaS services provide a full piece of software to their consumers rather than just bare bones servers. As such, these offerings are much more popular than public cloud variants. Respondents cited many non-core system applications that were consumed via a SaaS model including Office365, Google Docs, Salesforce, HR systems, and Global Expense Systems—even service desk systems to run the help desk.

SaaS offerings are anecdotaly reported as requiring less support and offering less burden to the help desk. Also, these services can be very quick to get up and running where there are no integration requirements. Of course it should be noted that even something as simple as a single sign-on capability constitutes an integration, so insurers must take care to consider any integration a new SaaS offering might require.

In addition, it should be noted that SaaS type services can be adopted quickly and easily in small pockets across an organisation. Yammer, for instance, offers a free intracompany collaboration tool, only charging for access to premium features and administration functions. Most respondents noted some use of Yammer across the organisation (both sanctioned and not sanctioned). A few respondents described how they were attempting to monitor and educate staff regarding what was appropriate with web-based tools. Respondents felt it wasn’t always possible to restrict access to such tools and instead looked to improve the level of “common sense” among the staff.

Whilst the respondents only discussed SaaS implementations on a horizontal basis Celent is aware of growing interest in and adoption of insurance vertical solutions or core insurance systems on a SaaS basis. Thus far this has been limited to niche lines or opportunities in emerging markets but Celent predicts use of SaaS delivered core systems for main lines of business over the next 5 years.
THE FUTURE OF INSURANCE IT INFRASTRUCTURE

THE EMERGING ROLE OF IT INFRASTRUCTURE
The effort in IT infrastructure is moving from providing, running, and changing core services to enabling services and staff beyond their expectations.

Throughout the conversations, a clear trend in insurance IT infrastructure emerged; the human effort involved is moving away from repeatable tasks to higher-level, business value-add services. This automation trend is one that is disrupting or being adopted across all industries and in many disciplines within the insurance industry. It is gratifying that this move away from repeatable tasks is happening already among the respondents, and they are focusing more on adding business value. In addition, it is Celent’s view that customers of IT infrastructure are crying out for this type of engagement.

In practice this points to greater adoption of SaaS offerings over time, reducing the amount of infrastructure and support activity within the team. Where there is local infrastructure, the effort involved will reduce as automation moves further up the chain, with the possibility of self-service deployment of agreed architectures or patterns of architectures. Application development teams will focus on building not only testable software but also automatable software, allowing newly developed software to be provisioned and unprovisioned automatically.

There is already a trend in some circles for software vendors to distribute not only software but also built servers that can be deployed. If the above trends move forward, this could well become the standard as insurers move away from provisioning servers and installing software towards provisioning infrastructures. Those working with mainframes and AS/400 systems will be familiar with this practice, although they weren’t call server images back then.

In terms of staff-facing infrastructure, insurer IT will deliver the minimum required amount of hardware to enable staff to do their job, with the option of supporting staff to do their job securely and efficiently leveraging their own technology, or indeed whatever technology is available and the point where the staff member needs to execute their task.

A LOOK TO THE FUTURE FROM INFRASTRUCTURE LEADERS
The key, overwhelming view on the future from the leaders interviewed was the move to greater collaboration, leaving the ivory tower of infrastructure and getting closer to the business and the other disciplines. Infrastructure teams in the future must understand the evolutions and disruptions and help the business understand what infrastructure can do for them.

Infrastructure, along with internal security teams, has been seen as a lock-down, constraining force. In the future, infrastructure in the insurance industry will be an enabler, making the discipline more valuable by bringing thought leadership and education to their colleagues. It will move from lock-down to empower and protect. Most infrastructure leaders are looking to foster a collaborative and consultative relationship, positioning themselves as advisor, solution finder, and most importantly business insider.

Regarding technology, the respondents saw a move towards enabling new working practices. Key themes were the flexible allocation of resources, enabling mobility of staff and greater automation of key tasks within the infrastructure team’s roles and responsibilities.

Respondents noted that legacy systems that are heavily integrated to the rest of the infrastructure can serve as significant disablers. The key inhibitor to adopting cloud and SaaS services is integration, with legacy systems suffering the most. More than one leader spoke of the need to manage both the provisioning of services and their removal, looking to the full lifecycle of services under their control rather than constantly adding to a pile of services over time.
All this new thinking is no doubt kindled from the many competitors the infrastructure team is now facing. The rise of SaaS applications preclude the need for much of the infrastructure activity required to roll out a new service, although they present their own challenges. In the future, it will be possible to provision a whole architecture in a self-service manner with little technical know-how. Some would argue that, with services like RightScale, this is already possible. As IT infrastructure moves towards full automation and the teams move towards straight-through processing, the change frees up time for value-added services and will change the day-to-day activities of those in IT infrastructure roles. Infrastructure thought leadership and design activity will be focused on getting these patterns of systems right, so that the right infrastructure can be deployed swiftly to support the needs of the business.

Finally, drawing on the observation of moving more work to straight-through processing schemes, one respondent observed that they could learn from the activities undertaken by their business operations colleagues. This team, as is happening in many insurers around the world, looked deeply at their own processes, distribution of resources, and key activities and processes with a focus on understanding them and driving through new efficiencies. This same activity of understanding what infrastructure does, with whom and where it adds value, is crucial to today’s infrastructure leaders as they drive new efficiencies and efficiencies are imposed upon them.
Chapter: Final Thoughts

Observations for the CIO
IT infrastructure is no longer just an operational concern focused on running IT assets. IT infrastructure teams are increasingly a source of speed and agility. In addition insurers are turning to infrastructure when looking for innovations and looking to help understand what technology can do for them.

The key challenge for the CIO is to deliver IT in such a way as to enable today’s working practices and devices as well as those of the future. In addition, IT shouldn’t be in the way when these changes occur. This focus on enabling agility using infrastructure subtly changes the conversation between the CIO and his customers.

Observations for the Outsourcing Partner
Insurers relate having been left at the end of an order-taking process for which they are ill-equipped to define their order. At the same time, they are looking at services that offer self-service interfaces to deliver simple infrastructure swiftly and at a predictable cost. Today’s outsourcing deals will take input from cloud providers, but insurers will be left wondering what tomorrow’s infrastructure will look like.

This kind of thinking, of offering, requires a multidisciplinary skill set capable of understanding the business issues but also having knowledge of solutions within the outsourcer and how they can apply to this customer. This points to a crucial need to break silos within the outsourcing firm and to invest in individuals with long experience delivering technology in given verticals. The crucial step is to efficiently articulate the benefit, impact, or point of view deeply rooted in the client’s state.

Outsourcers with a proposition that can balance all these desires will be the winners in the next round of deals.

Observations for the Infrastructure Leader
The challenge for the whole insurance industry is to do more with less. This is no less acute than in the IT infrastructure discipline where budgets are flat or declining. Despite this budget position, the same team is being asked to deliver more agility and enable more business practices and devices than ever before. There is also an often unexpressed expectation that infrastructure will provide this agility and enable the business in a secure and compliant manner.

Security is a primary concern. Infrastructure leaders are looking for security solutions that work across the spectrum of their needs. Infrastructure leaders are deploying a variety of schemes to protect assets on shared machines (e.g., smartphones and home computing equipment), over the network and from overzealous sharing of information from within the office. These schemes include standard VPN and security schemes, sandboxes on shared devices, and monitoring software to alert the misuse or systems or just prompt a user to think deeply about sharing an item of data. Of course, education and common sense are crucial to this defence.

In terms of cost savings, there is much to learn from operational efficiencies efforts in other departments. Understanding and documenting what IT infrastructure teams do and then prioritising efficiencies and automation exercises are key to driving out further efficiencies. Automation and self-service (or perhaps, self-help) will bring about additional cost savings as well as increase agility.

Thought leadership has always been much harder to nail down. The advantage the infrastructure leader has is that they and their team sit within the business. Those who are contributing and engaging with their colleagues effectively are not just infrastructure experts, but infrastructure experts in the context of their business. This blending of knowledge, skills, and purpose across infrastructure, application development, and the insurance business is crucial to the modern infrastructure leader’s position, contribution, and on-going relevance to their employer.

Conclusion
The insurance IT infrastructure itself is critical to any insurer today, regardless of its position, ownership, or how the insurer chooses to consume it. For some insurers, this is simply a fact of life and
not an opportunity to differentiate; for other insurers, the way they leverage technology is core to their offering and part of their uniqueness.

Regardless of the attitude towards IT infrastructure, the teams involved are focused on improving the infrastructure in alignment with the business need. There is a real possibility of IT infrastructure moving to a near fully automated and robust position, if insurers find the tools and a business case for automating the last elements.

Rather than IT infrastructure personnel spending their time hidden away in data centres, draped in cables, and moving nondescript pieces of IT kit around, the infrastructure teams of the future will be sitting alongside their business colleagues, educating them as to the art of the possible and helping to design unique propositions leveraging technology.

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If you found this report valuable, you might consider engaging with Celent for custom analysis and research. Our collective experience and the knowledge we gained while working on this report can help you streamline the creation, refinement, or execution of your strategies.

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Typical projects we support related to IT infrastructure include:

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