ECM

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Mobile and Cloud:
accessing, capturing and processing content

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Process Used and Survey Demographics

While we appreciate the support of these sponsors, we also greatly value our objectivity and independence as a non-profit industry association. The results of the survey and the market commentary made in this report are independent of any bias from the vendor community.

The survey was taken using a web-based tool by 282 individual members of the AIIM community between June 05, 2015, and July 02, 2015. Invitations to take the survey were sent via e-mail to a selection of the 80,000 AIIM community members.

Survey demographics can be found in Appendix 1. Graphs throughout the report exclude responses from organizations with less than 10 employees, and suppliers of ECM products and services, taking the number of respondents to 221.

About AIIM

AIIM has been an advocate and supporter of information professionals for 70 years. The association mission is to ensure that information professionals understand the current and future challenges of managing information assets in an era of social, mobile, cloud and big data. AIIM builds on a strong heritage of research and member service. Today, AIIM is a global, non-profit organization that provides independent research, education and certification programs to information professionals. AIIM represents the entire information management community: practitioners, technology suppliers, integrators and consultants.

About the Author

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Introduction

Mobile and cloud are the twin drivers for change in the ECM world. Mobile access to content on the move, mobile interaction with content, capture to process, remote workflows, and cloud-based collaboration. All of these are moving at a pace, as many organizations overcome their security worries. However, there are still many issues to resolve between traditional back-office systems and new cloud-based solutions.

There are many different flavors of cloud-stored content: thin hybrid models with collaboration-only content in the cloud, thick hybrids that retain small amounts of sensitive content on-prem, so-called private clouds which often are just virtualized on-prem servers, and genuine multi-tenanted cloud. How attractive are these, and how do users rate their economic and collaborative benefits?

Mobile devices are the new window onto content and process, but users are still concerned about who might be peering in. Online-only content access is quite limiting, but does containerization fix the problem of device-stored content? We know that mobile devices can capture forms, photos, video and voice, but to what extent are these integrated with back-office processes and applications?

In this report we will look at the current and future adoption of cloud applications in general, and content applications in particular. We ask the early adopters about issues, benefits and ROI. Content access and collaboration on mobile is a big driver for cloud, but there are also big opportunities for approval workflows and direct links to back office processes. Are mobile security fears creating a risk that late adopters will be left behind the competitive edge?

Key Findings

Cloud Policies and Adoption

- **16% of responding organizations are unequivocal about cloud for all core IT applications, 42% will review each application for cloud on its merits.** 13% have a wait and see policy. Only 10% say "No cloud".

- **87% of individual respondents are positive about moving ECM/DM content to the cloud, compared to 42% of the organizations they work in.** Those with an IT role are more conservative than those from records or information management, with business managers being most positive.

- **75% feel security by cloud providers is likely to be better or the same (27%) as their own servers.** 38% of the largest organizations feel their own security is better, compared to 15% of the smallest. IT staff are less confident of their own security (19%).

- **The preferred "cloud" hosting model for 34% is virtualized servers in their own data centers, with a further 25% opting for private cloud on outsourced servers or IaaS (Infrastructure as a Service).** 16% prefer defined server hosting by their ECM supplier, with just 18% prepared to go for multi-tenant/public cloud hosting.

- **26% of surveyed organizations are using some form of cloud ECM or DM,** 27% of non-users are likely to deploy cloud content systems within the next 2 years, plus 21% in the next 4 years.

Cloud ECM Users

- **47% of those with cloud ECM/DM are using a stand-alone cloud system, including 17% where it is their only ECM.** Equal numbers (11% each) are settled on thick and thin hybrid cloud models, and 26% are only slowly migrating their content.

- **A third of those using ECM in the cloud are also live with approvals, forms and workflows for process management.** There is a strong appetite from a further third to implement workflows in the next 12 months.

- **35% of cloud ECM users have had problems with enforced upgrades, poor availability and content migration.** 25% had issues with SLAs, privacy and costs. 10% report data or security breach issues.

- **The two biggest operational benefits are more effective collaboration, and more modern and flexible applications (both 58%).** Extending access to partners and customers (47%) and teleworking for staff (42%) come next.

- **44% of cloud ECM users have benefited from a cost reduction compared to on-prem, although only 18% have reduced staffing.** A further 24% have saved less than planned, but are still cost neutral or better.

Mobile Policies

- **30% of responding organizations are live with BYOD (although two thirds of these are not yet running smoothly), 30% are in planning or rollout.** Just 19% are sticking with company owned devices, of which two-thirds will be business use only.

- **76% of respondents agree they need to embrace mobile applications or be left behind.** 10% have identified big threats to their current business model from mobile, and 18% are awake to the possibilities.

- **Only 9% are reviewing every process to take account of mobile, with 33% picking off the most obvious processes or those coming up for review.** For 37%, policy is somewhat ad hoc, and 22% aren't looking at it at all.

- **Only 5% have anything that looks like a "CMOO" (Chief Mobile Officer),** but 71% agree that there should be a single person responsible for mobile innovation.

- **Only 17% have a mobile information governance policy that is appropriate to business needs. 22% have a very restrictive policy.** 35% do not cover mobile in their IG policies, and 18% have no IG policies at all.

Content Access on Mobile

- **39% have no access to on-prem/ECM content, and 28% rely on browser-view.** Only 15% have a dedicated app with offline content access, and are able to comment, edit and approve on mobile.

- **Onsite access to drawings and manuals is the most popular process use for mobile devices (27%),** followed by expense receipts (18%) and then field-staff report back (17%).

- **Photos are the most popular content captured (40%), then notes (29%) and scanned documents (27%).** Only 24% are using electronic forms on mobile.

- **The two biggest benefits are staff mobility and speed of data availability.** Poor connections, lost devices and multiple device support are the biggest issues.

- **48% report ROI on 12 months or less.** 76% in 18 months or less.

Spend

- **Responding organizations are likely to increase spend in all cloud content areas compared to on-prem ECM.** Strongest growth is in mobile access apps.

Cloud Policies and Deployment

We have charted cloud strategies for general IT deployment in the cloud for a number of years, and although many might feel that there is now much less resistance to the cloud concept, the proportions of those opting definitively for or against cloud for key applications hasn't changed greatly since our survey in 2012. There is, however, more commitment now. In 2012, 53% had no agreed strategy, but this has now dropped to 20%. Much as then, 16% are now actively committed to cloud deployment of all core IT applications, and 10% are definitely not taking this route. In between are 42% who have a strategy to consider each application on its merits, 5% who will review after a first try, and 8% who will wait and see how others get on.

Figure 1: What is your organization's policy on moving core IT applications to the cloud? (N=219)
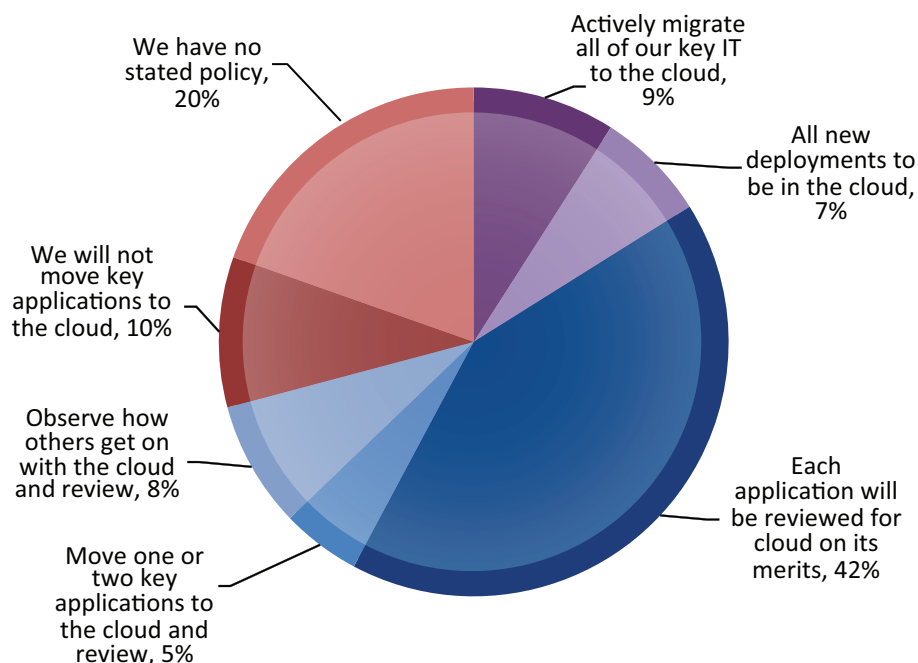
Looking at this by size of organization, larger organizations (5000+ employees) are a little slower to make a move, with only 4% actively migrating all key IT to the cloud, although the 7% stating "all new deployments will be cloud" is the same across all sizes. At the other end, 15% of the largest have ruled out cloud for core IT compared to 6% of the smallest (10-500 employees) although 28% of the smallest have yet to decide, compared to 8% of the largest.

Current Cloud Deployments

Many people would point to CRM, with its cloud poster-boy Salesforce, as the most popular application for early cloud deployment, but it turns out to be SharePoint. We have charted a rapid move in this direction over the last two or three years[1], albeit not always for the core of corporate ECM, and also more likely as a private cloud rather than the Microsoft-hosted 365 product.

File share and sync services are likely to be prevalent in most organizations, as we will see later, but 27% have taken the step to approve – and manage – these useful and popular cloud products. Long term records management archives are highly sensitive to cost-per-Mb storage prices, and 13% have opted to take advantage of the very competitive storage costs of bulk cloud provision.

Only 25% of responding organizations have none of these cloud applications in operation, although given that this survey was self-selecting, with "Cloud" as the topic, this is likely to be an under-reading of the broader demographic.

Figure 2: Which of the following enterprise applications is your organization currently deploying in the cloud? (N=218)
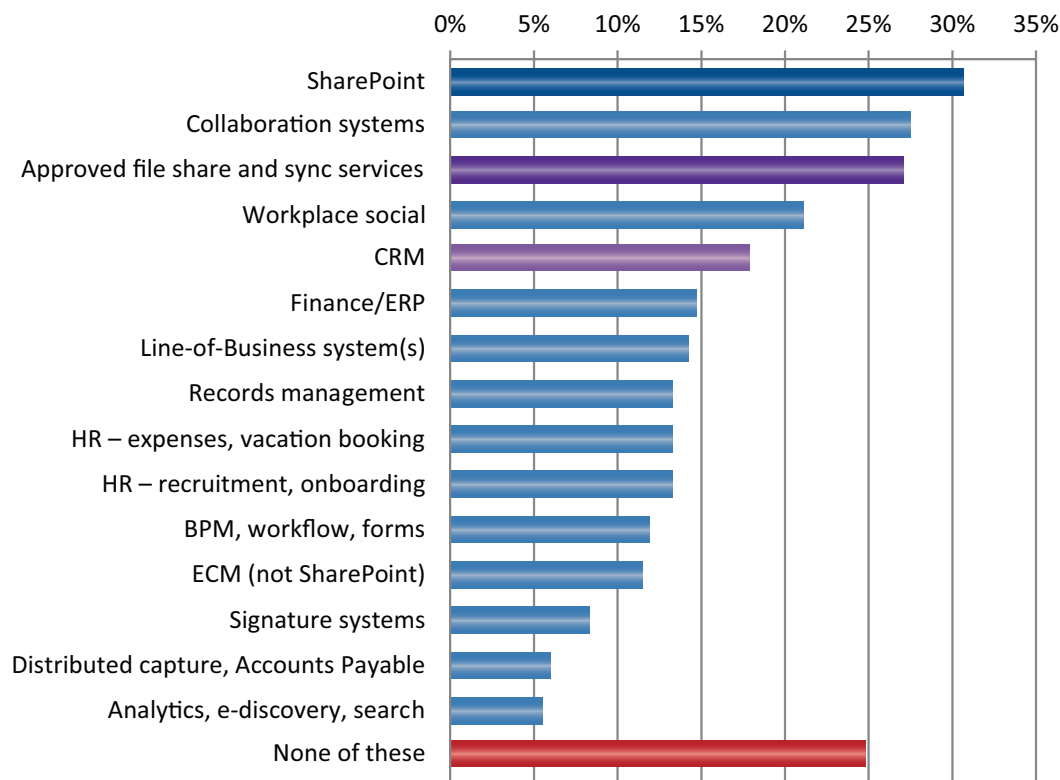
Personal Productivity Products

To get a feel for the spread of personal use of cloud and SaaS (Software as a Service) applications, we asked about their use from desktops or laptops, and on mobile devices, and also whether they are sanctioned by IT. As we see in Figure 3, communications and meeting support has the widest use on desktop at 78%, although only 36% use these on mobile. File share and sync, cloud office apps and cloud email, on the other hand, are nearly as popular on mobile as on desktop or laptop, with about half of our respondents using most of them one way or another.

Many of these products and services are likely to be purchased by a company (or personal) credit card rather than by IT, and then claimed back on expenses. In 43% of organizations, this is frowned on, although 36% also recognize that free services can be more troublesome from a technical and security viewpoint. In around a third of organizations, file-share-and-sync, workplace social, cloud office apps, and cloud email are all not allowed.

22% still bar public social sites, which is understandable for Facebook, less so for LinkedIn, and the use of personal note products such as Evernote or OneNote is accepted by all but 19%, even though these are often set to synchronize content across all manner of devices, at home and on mobile.

Figure 3: Which of the following cloud/SaaS applications do you personally use for work? *(N=204)*
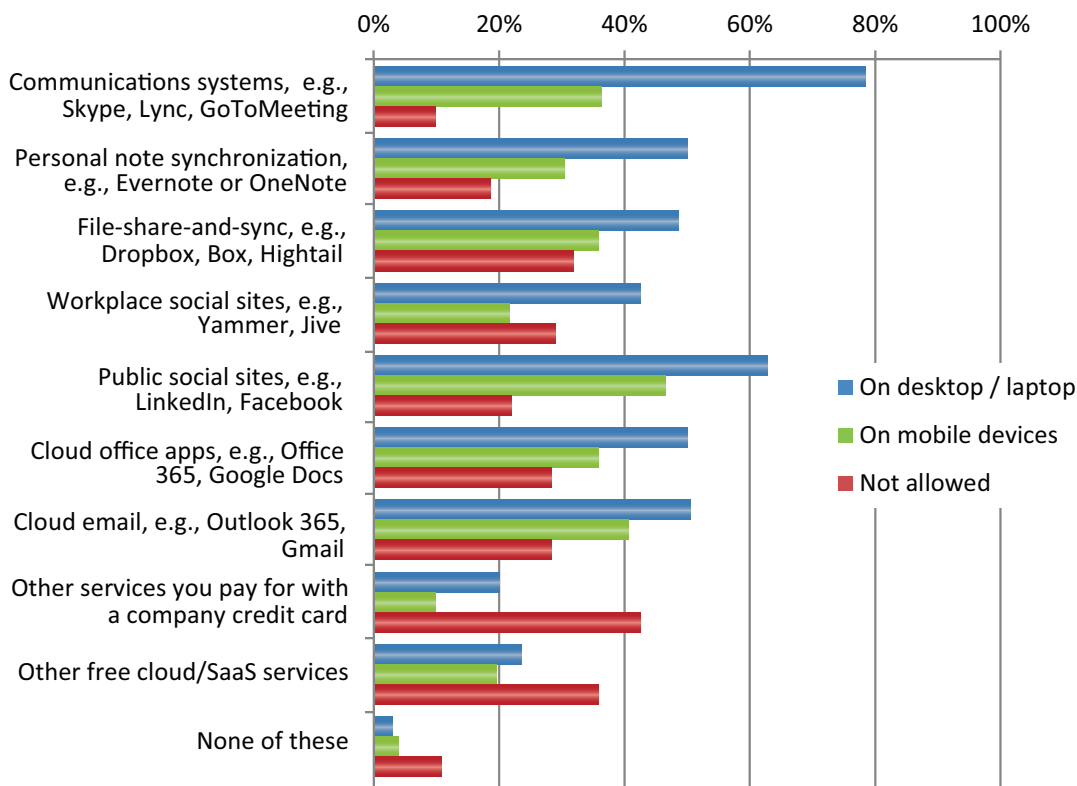
ECM in the Cloud

There is a view that senior management are keen to push the cloud agenda in order to make cost savings, but our survey shows (Figure 4) that individual respondents are much more positive about cloud (70%) than the organizations they work in (38%). There is also a view that records managers and information management staff are reluctant to move content to the cloud for security reasons, but again, our survey shows that IT staff are more conservative, with those in business roles much more positive, showing particularly strong support for a thick hybrid model of small on-prem, large cloud ECM.

Figure 4: How do you feel about moving ECM/DM content to the cloud, and what is the company's view? *(N=202)*
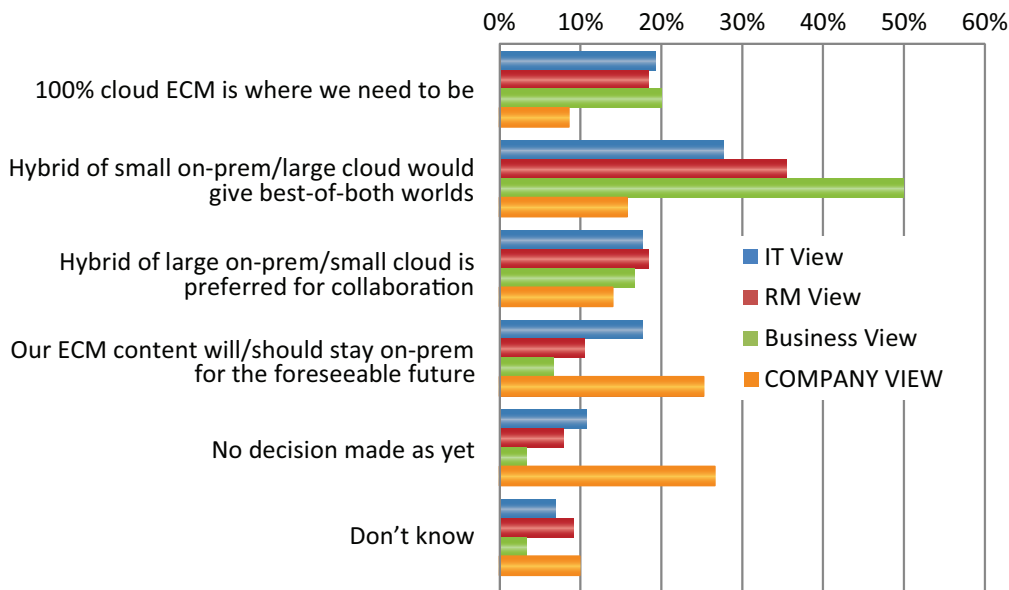
Cloud Security

Security has always been a key issue for cloud adoption, and a key comparator is how the security of a cloud service might compare with that of on-prem servers. This is an area that has moved on since our 2012 survey. At that time, only 37% felt that cloud services offered similar or better security to on-prem servers. Now 75% feel that cloud providers are likely to offer better (48%) or similar security (27%) to that of their own data centers.

Size of organization is a factor here, with 24% of the largest organizations feeling that their own servers offer better security, but this drops to just 17% of the smallest, somewhat neutralizing the security issue at this level.

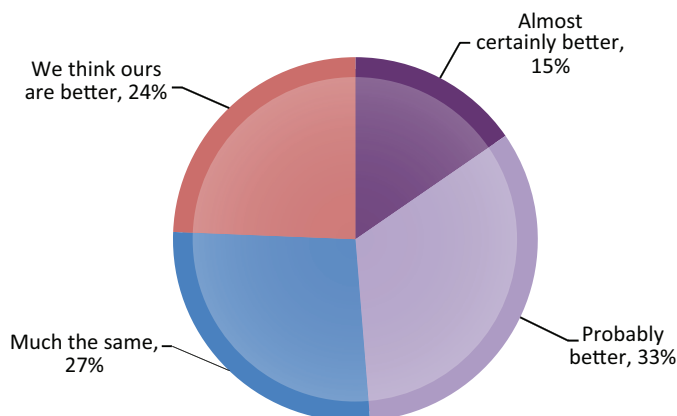**Figure 5: How do you think the security measures taken by cloud providers compare with those on your own servers or data centers?** *(N=156, excl. 23 Don't Know)*

75% of respondents consider cloud service providers will have as good or better security measures than they have in their own data centers.

Cloud Drivers

Simply following the trend, or complying with the Microsoft imperative, is not a sufficient reason to move all of the on-premise content systems into the cloud. Users are looking to save running costs and reduce investment, but for ECM in particular, we see that providing better access for remote and mobile employees is the biggest single advantage.

Savings on data center expansion, and staff savings come next, but then come improved collaboration, and access for partners from outside the firewall.

Figure 6: What do you think would be the key benefits for your organization of running ECM/DM as a cloud application? (Max THREE) *(N=203)*
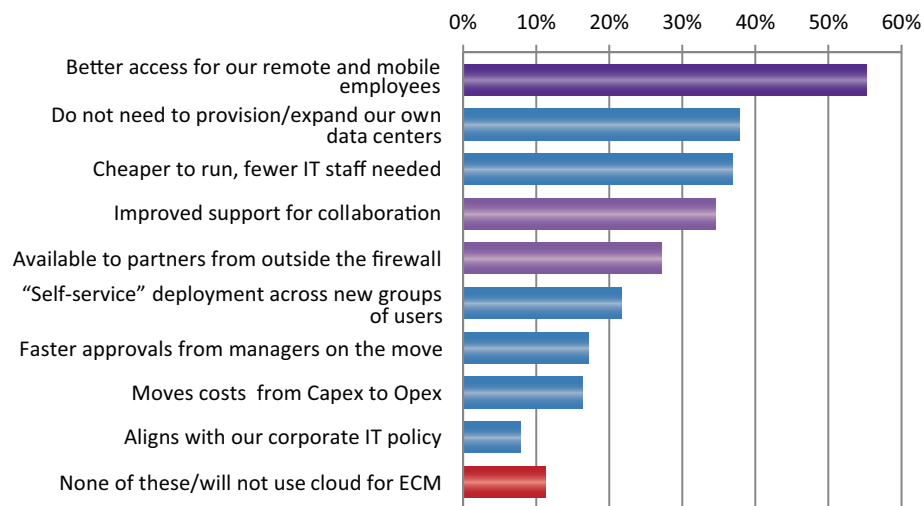
Hosting and Private Cloud

The security issue still has a significant influence, particularly when users visualize what they mean by "cloud". 34% of our respondents consider that simply virtualizing the servers across their own data centers constitutes a cloud deployment, despite the fact that it is still very much within their own firewall, is probably using standard installed software (but with a browser client), and offers only a small change to the funding model. This negates the two main benefits that we have just discussed, i.e., improved access to content, and reduced provision of data centers. This model is preferred by 34% of the largest organizations.

A further 25% embrace the idea of a "3rd party private cloud" using outsourced data centers, probably with an IaaS (infrastructure as a service) model, but they would still expect to have full control of the software, with no sharing of applications or servers with others. This model does retain the option to customize the applications software, which is important for many large organizations, and also places responsibility for secure and expandable data centers with the outsource.

The next option is to contract with the provider of the ECM software to host a dedicated version of the software on their own servers, or more often at an outsourced data center. The ECM provider then takes responsibility for continuity and upgrades, but the customer still retains control of timing and configuration.

Finally we come to the genuinely mult-tenanted option, which involves shared software across fully virtual, non-identified servers, serviced through the public cloud by the ECM provider. In this situation, customization is limited to configurable changes, and upgrades are imposed against a fixed timeline. Overall, 18% would opt for this model, rising to 22% for both small and mid-sized organizations.

Figure 7: What would be your preferred model for hosting or cloud deployment of ECM/DM? (N=203)
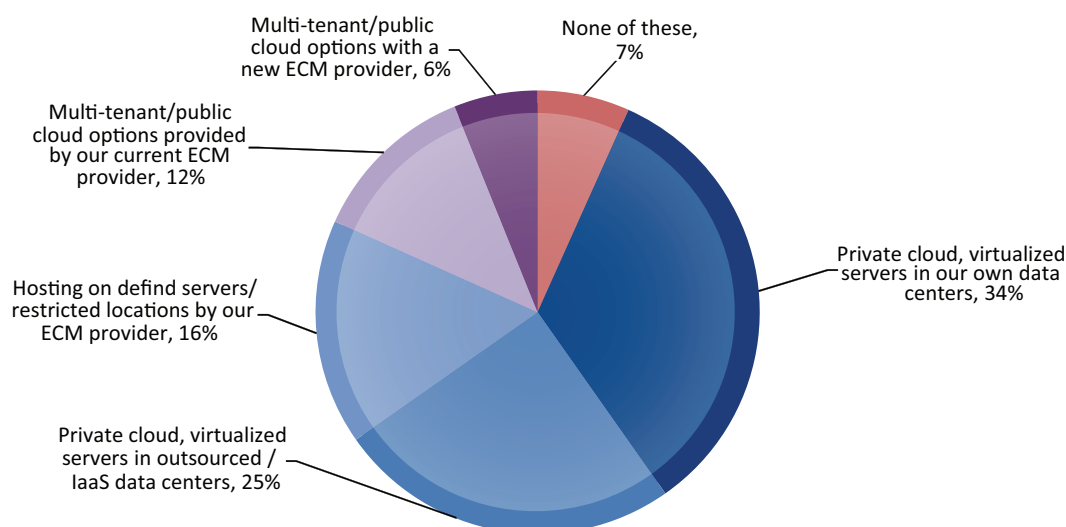
Given the dominance of the private cloud model, we asked those respondents what the key decision factors are for this. Control of security was cited by 52%, then the ability to connect to other enterprise systems in their corporate cloud (37%), and then the choice to run customized versions of the software (28%). In the comment section, respondents mentioned issues of privacy for overseas locations, and the ability to respond faster to data crashes or system outages.

Adoption and Source of Cloud ECM

26% of our respondents already have ECM or DM systems in the cloud, and many of these are utilizing their existing ECM supplier – 12% overall, or 46% as a proportion of those with cloud ECM. This is likely to be partly due to the SharePoint factor, with Microsoft offering persuasive cost savings to move to the Office 365 suite. 9% of those already in the cloud are consolidating systems into the cloud from an existing supplier. 22% of cloud users have chosen a different supplier, and 22% are implementing ECM for the first time.

Figure 8: Are you currently using cloud ECM/DM in any of the following formats? *(N=205)*
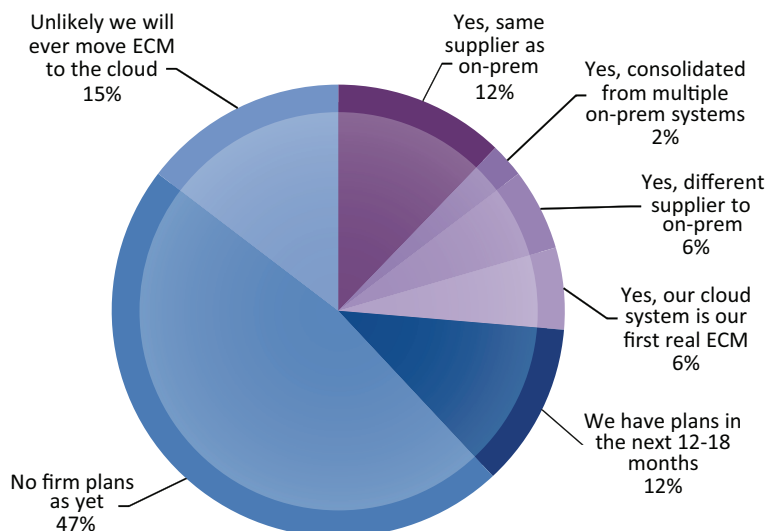
Cloud Non-Users

Of those not currently using cloud ECM, 27% are likely to deploy within the next 2 years, and a total of 48% within the next 4 years. The main things holding them back are security issues (75%) - despite our earlier findings comparing cloud services to local servers - and not wanting to relinquish control of their own data (51%). There is also an element for 30% that no one is actually promoting the idea internally.

44% of larger organizations consider that simply virtualizing the servers across their own data centers constitutes a cloud deployment. Only 12% would consider using a true multi-tenanted public cloud model.

Already Using Cloud

Hybrid Models

Of those using ECM in the cloud, nearly half have it as a standalone system, either as their main ECM (17%), as a dedicated collaboration and file-sharing system (9%), or to service a different set of users, or a different type of content to their on-premise ECM system (11%). The remainder have either settled on a hybrid model, or are still migrating content to cloud over time. Of those using a hybrid split of content between on-prem and cloud, equal numbers (11% each) are using "thick" (mostly on cloud) and "thin" (mostly on-prem) models.

Figure 9: How would you describe your cloud ECM/DM deployment? *(N=47 with cloud ECM)*
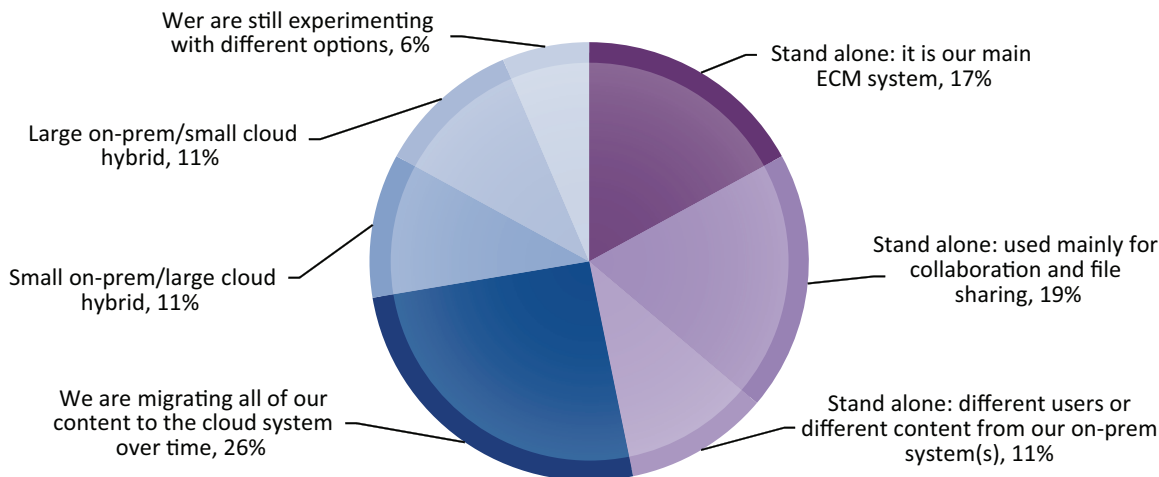
As a follow up question (Figure 10), we asked our respondents how they decide which content goes to cloud and which stays on-prem. This brings into sharp focus the relative advantages of a hybrid scheme for putting collaboration content "out there" and retaining secure content and records on-prem, although it does raise the issue of how to search across both repositories.

It seems likely that the 13% who have no policy on this are victims of the often unplanned deployment of cloud file-sharing and content management systems to solve an immediate problem, with little thought for long term lifecycle management. This may also apply to some of the 27% who reserve the cloud system for ad hoc collaboration and file sharing, raising the question of how the more significant pieces of content that may be generated get managed after the immediate project, and by whom.

Only 4% have any degree of automation, either to add metadata that defines where the content can be stored, or to take account of existing metadata or security classifications in order to place the content accordingly.
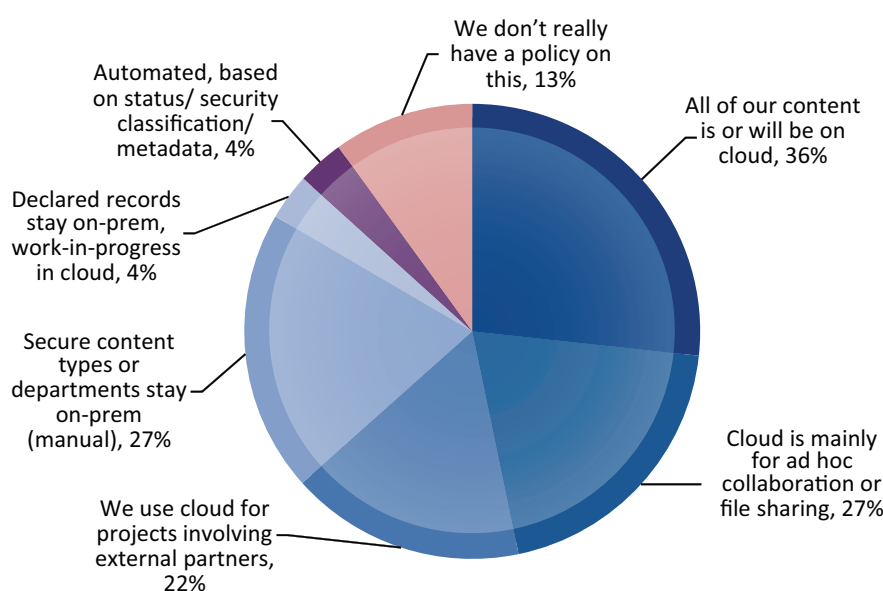
Figure 10: How do you decide which content goes to cloud and which stays on-prem?
(N=47 with cloud ECM)

Automated, based on status/ security classification/ metadata, 4%

We don't really have a policy on this, 13%

All of our content is or will be on cloud, 36%

Declared records stay on-prem, work-in-progress in cloud, 4%

Secure content types or departments stay on-prem (manual), 27%

We use cloud for projects involving external partners, 22%

Cloud is mainly for ad hoc collaboration or file sharing, 27%

In thin hybrid schemes, cloud content is generally used only for ad hoc collaboration or sharing with external partners. In thick hybrid schemes, secure content types and records remain on-prem. Only 4% have any degree of automation to make this separation happen.

Cloud Content - issues

The biggest issue reported by those using cloud ECM (and most likely by non-users too) is individual users creating their own cloud-stores, with no lifecycle management. Even where a cloud system is adopted, the lack of a formal requirements assessment, and the wish to keep things open for users, can create what we would call "digital landfill in the cloud". Along with this goes the issue of retention policies for cloud-stored content, especially if metadata discipline is lax. Of course, the long-term consequences of paying to keep redundant content in place could accumulate significantly.

At the other end of the spectrum, user reluctance to adopt the discipline of ECM can be hard to overcome, whether the system is in the cloud or on-prem. Users may be even more reluctant to store on cloud, especially if there is an appreciable download delay for documents, although this should be offset by the ease of access across multiple local and mobile devices. There is also an ethos around some cloud products that they are so easy-to-use that formal training is not required, ensuring that take up will be patchy.

Extending search across cloud and on-prem systems is a real issue, especially as many organizations have poor search capability on existing on-prem systems. Non-alignment of tagging and metadata will also make things worse. Extending cloud search to on-prem, and vice versa is not impossible, and many vendors are working to provide standard inter-connecters between the more common systems.

Figure 11: Have you experienced problems in any of these areas with having content in the cloud?
(N=46 with cloud ECM)
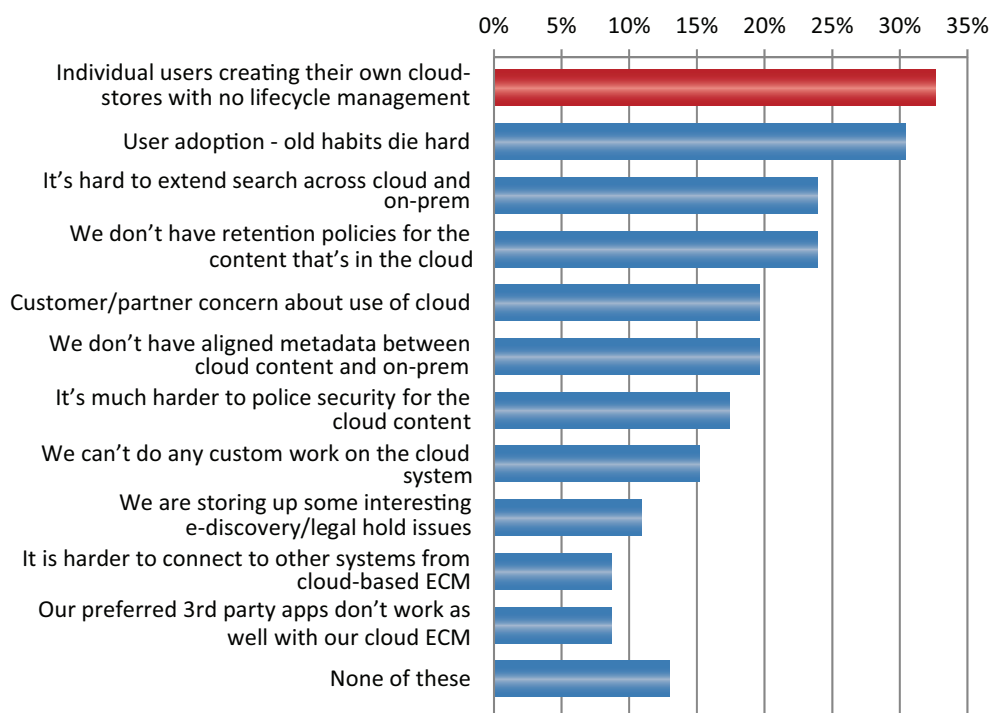
Cloud Suppliers

As we know, relationships with any supplier of mission critical software can be taxing, and it seems that moving to the cloud merely substitutes one set of issues for another. Upgrades are always disruptive. The little-and-often approach with cloud services should improve things, but there may be less choice of timing, and a third or more of those surveyed have had issues with this.

The same goes for downtime, which is always an issue, and some may feel some loss of control with cloud suppliers rather than their own staff. Content migration is reported as a problem, but this would apply in similar way to new on-prem ECM systems, especially if moving quantities of content from existing shared drives. Perhaps of more concern are the 26% reporting higher than planned costs, unbudgeted extras and price hikes.

Function mismatch between cloud and on-prem would likely only apply for hybrid deployments of existing on-prem systems, and is most likely to refer to SharePoint 365 which has had some problems in this area.

Of real concern is the 10% who report having had a data breach of their cloud content system. This seems alarmingly high, but we did not collect any further details for follow up. It may well be that the provider was not at fault.

Figure 12: Have you had any of these issues with your cloud content systems / suppliers? *(N=47 with cloud ECM. Line length indicates N/A or Don't know)*
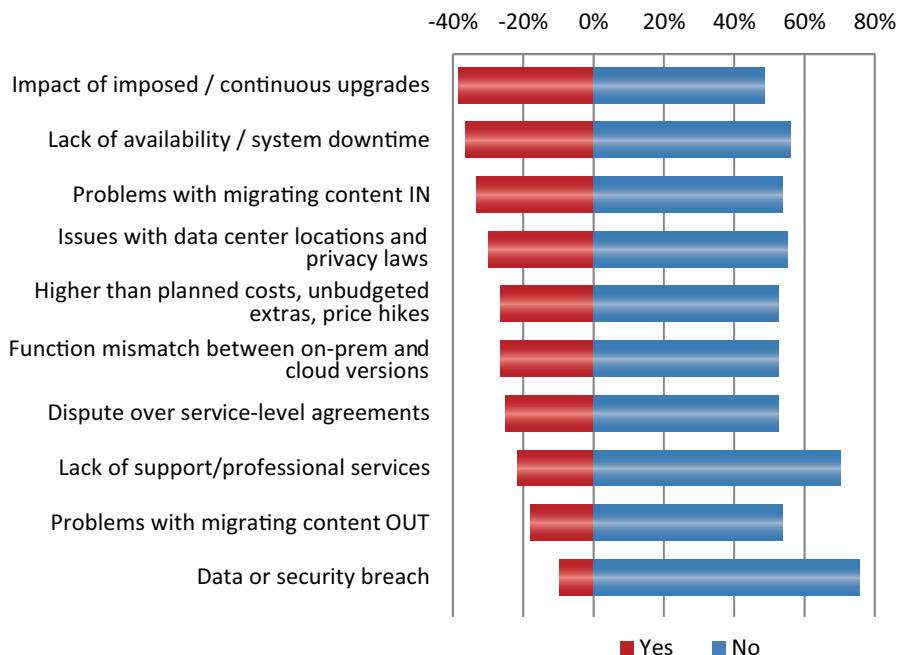
Using Cloud for BPM/Workflow/Analytics

A third of those using cloud ECM already have approvals, forms and workflows, and there is a strong appetite from a further third who have plans. These processes may have been extended from an on-prem ECM system, or may be a fresh deployment. There are also dedicated cloud-based workflow systems that maximize the cloud and mobile benefits, offering less formal workflows that are more user-driven than IT driven. Cloud-based search and analytics products can offer powerful capabilities as a SaaS service, as can system performance monitoring and analytics. These can be a good starting point for cloud adoption as quite sophisticated products can be utilized for a much lower investment, and security may be less of an issue.

Figure 13: Are you using cloud or SaaS products for BPM/workflow/analytics applications? *(N=45 using cloud ECM)*
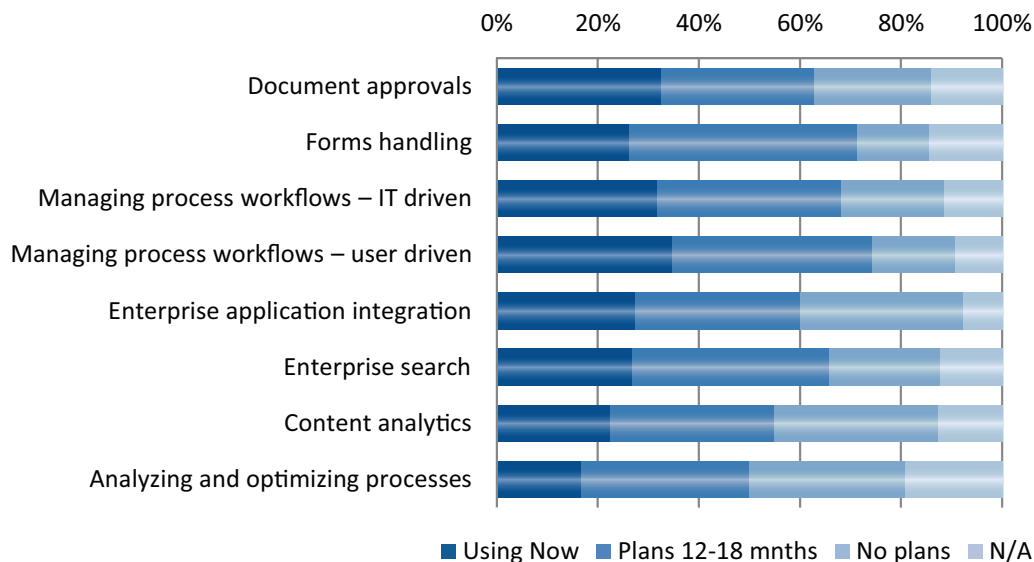
Cloud Benefits and ROI

Simpler and more effective collaboration is a key operational benefit identified by our cloud ECM users, allowing content to be accessed, shared, and work-flowed from any location on any device. In particular, the cloud extends this to partners and customers outside of the firewall without the need to set up VPNs and secure gateways.

A more interesting finding is that our respondents feel that the cloud offers more modern and flexible applications. This may well refer to the more innovative start-ups that have appeared in their space, but it may also reflect the fact that most software vendors have allocated major R&D efforts in this direction, leaving the on-prem versions trailing somewhat.

Having staff more able to telework is another vital benefit, cited by 42%, providing resilience to weather events and travel disruption. It is in these circumstances that the old way of taking home copies of work-in-progress, and then synching back on return is apt to result in multiple duplicate copies, whereas the cloud offers a much better option of one version, one set of comments, and one truth.

Figure 14: What have been the biggest operational benefits for you of cloud-based systems? (Max FOUR) (N=45 using cloud ECM)
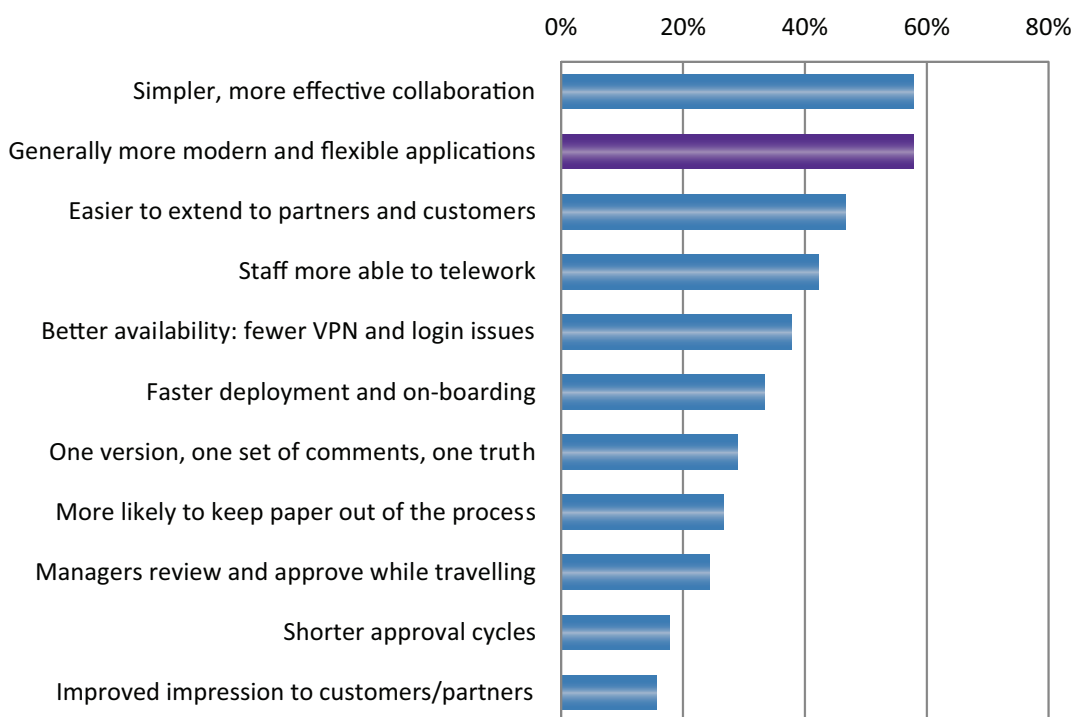
Cost Savings

Achieving cost savings from cloud deployment is not a given. Savings may depend on the alternative of increased equipment spending in-house along with more infrastructure staff, against actually turning off existing servers and reducing existing support teams.

Having said that, 18% report that they have reduced staffing, and 26% have reduced costs – 44% overall. 24% are spending the same or less than before, although not achieving their planned reductions. With hybrid systems and long migrations, it can take a while to actually switch off existing on-prem systems, and this is creating extra costs for 6% of our survey. Meanwhile, pointing to the key benefits of improved access and collaboration, 15% say they did not move to cloud simply to save money.

Figure 15: Have you achieved the cost savings or budgeting improvements that you expected?
(N=45 using cloud ECM)

We didn't do this
to save money,
15%

Yes, we have
lowered costs
and made staff
savings, 18%

No, on-prem is
still live and
costing money,
6%

Yes, we have
lowered costs,
but have yet to
see staff savings,
26%

No, costing more
than on-prem,
6%

No, but still
lower or same as
on-prem, 24%

Yes, we prefer
having fixed
costs over time,
6%
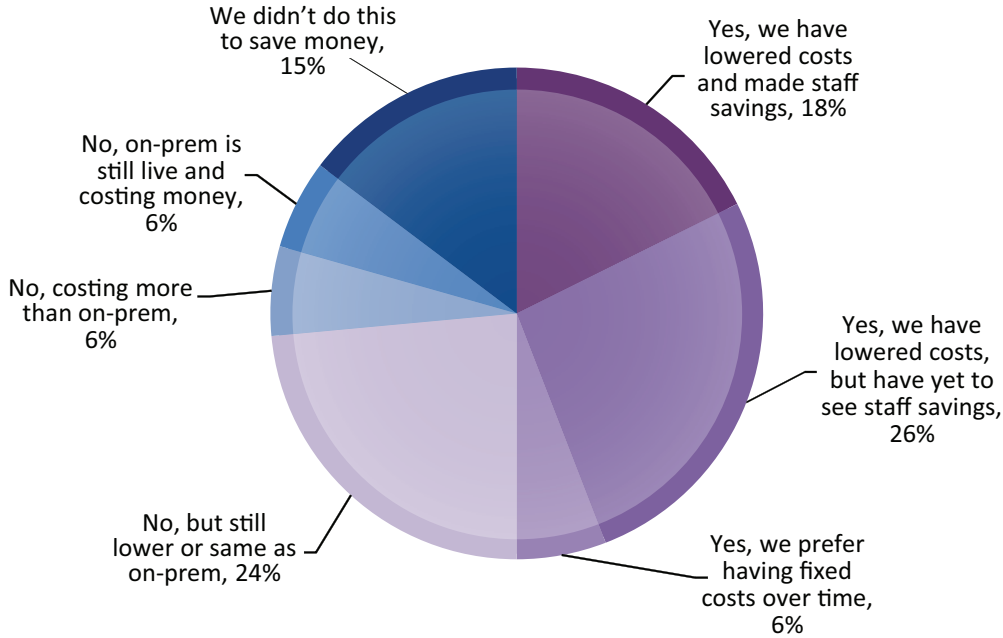
44% are seeing cost reductions as planned from moving to the cloud for ECM, with a further 24% showing some reduction, or a cost-neutral situation. Others have yet to turn-off their existing on-prem systems.

Mobile – Policies and Adoption

Multiple Devices

In order to provide some insight into how people use desktops, laptops tablets and smartphones to access company content, we asked how many devices they use for each category of content (Figure 16). More than half access emails on three or more devices, with a quarter having four or more. This in itself presents a headache for both security and longer-term archive. When it comes to accessing content systems, 28% have access across 3 or more devices, although this may be view-only access, which in itself indicates a particular frustration of needing to provide an ECM-stored document for email attachment when on the move.

Accessing workflows and approval loops from mobile devices is increasingly important, but only 16% have this ability on three or more devices, with a similar number able to access ERP, CRM or LOB systems.

Figure 16: On how many devices - desktops, laptops, tablets, phones - do you access the following: *(N=219)*

0% 10% 20% 30% 40% 50% 60% 70% 80% 90%100%

Company emails and attachments?

Company content systems, eg, file shares,
ECM, SharePoint, workplace social

Workflow interactions , eg, review and
approval processes

Company transaction or reporting systems,
eg, CRM, Finance, ERP, HR, Line of Business

None   1 device   2 devices   3 devices   4 devices   5 devices   More than 6
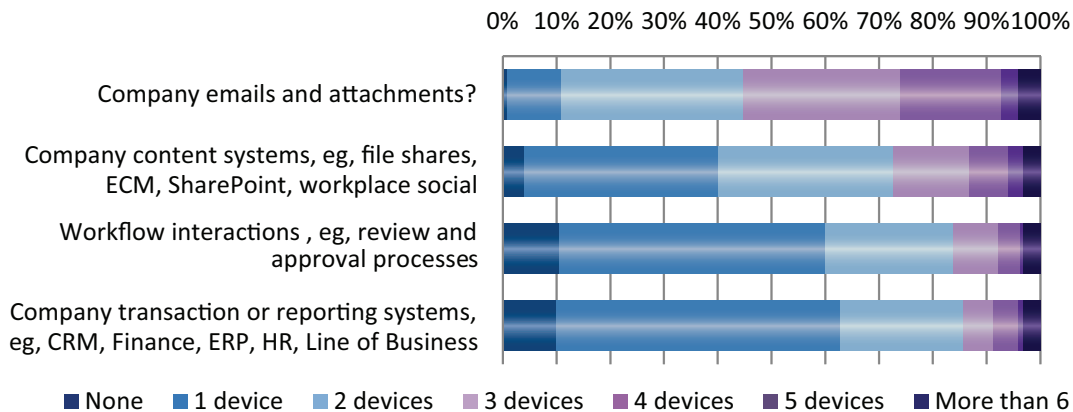
BYOD

Much has been written about Bring-Your-Own-Device policies, and for many it is a "done deal" – if not BYOD, then CYOD, choose your own device. However, only 10% of our survey respondents are up and running successfully, with a further 20% working, but not entirely without issues, and 30% in some level of roll-out or planning. Of the remainder, 8% have a firm policy of no mobile access, and 13% are sticking with company-owned business use only (COBO). Despite the long debate, 13% still have no stated policy, including 7% of the largest organizations.

Figure 17: How would you describe the progress and success of BYOD (or CYOD) mobile policy for your organization? *(N=219)*
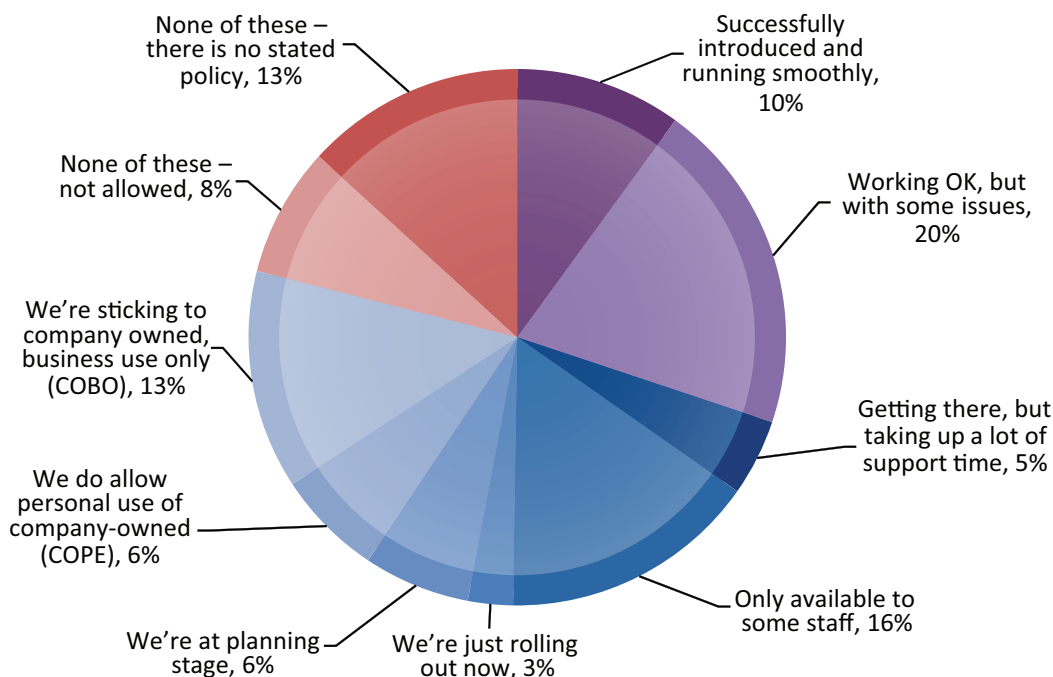
Corporate App Store

As a way to bring order to potential chaos, 18% of organizations have introduced a corporate app store, where in-house and other approved (and pre-licenced) applications can be downloaded. 11% have an app store in development. Unsurprisingly, the largest companies are ahead on this one, with 30% live, and 15% in development.

Content Access on Mobile

Content functionality that we would take for granted on desktops and laptops can be hard to achieve on tablets and smartphones. It is somewhat ironic that the long term moves to universal browser clients for core applications needs to be reversed for mobile devices. Here local apps provide much richer capabilities than browser-only, even if the source web pages are mobile-friendly or responsive.

Leaving aside the often hard to support solution of VPN access and remote desktop, 28% of our respondents rely on browser access for search and view, compared to 15% who have a dedicated app. Beyond that, only 14% have offline content access (i.e., documents are available even with no internet connection), and more crucially, only 12% have comment and edit capability. This may be changing as Word is now available on Android and IOS devices, although commenting in these versions is not so straightforward.

16% report that they are able to interact with tasks, processes and approval cycles, but this must surely represent considerable frustration (and low productivity) amongst the remaining 84% who are isolated from normal business workflows when out and about, plus, of course, the 39% who have no content access of any sort on mobile.

Figure 18: Which of the following capabilities do you have on mobile devices? *(N=186)*
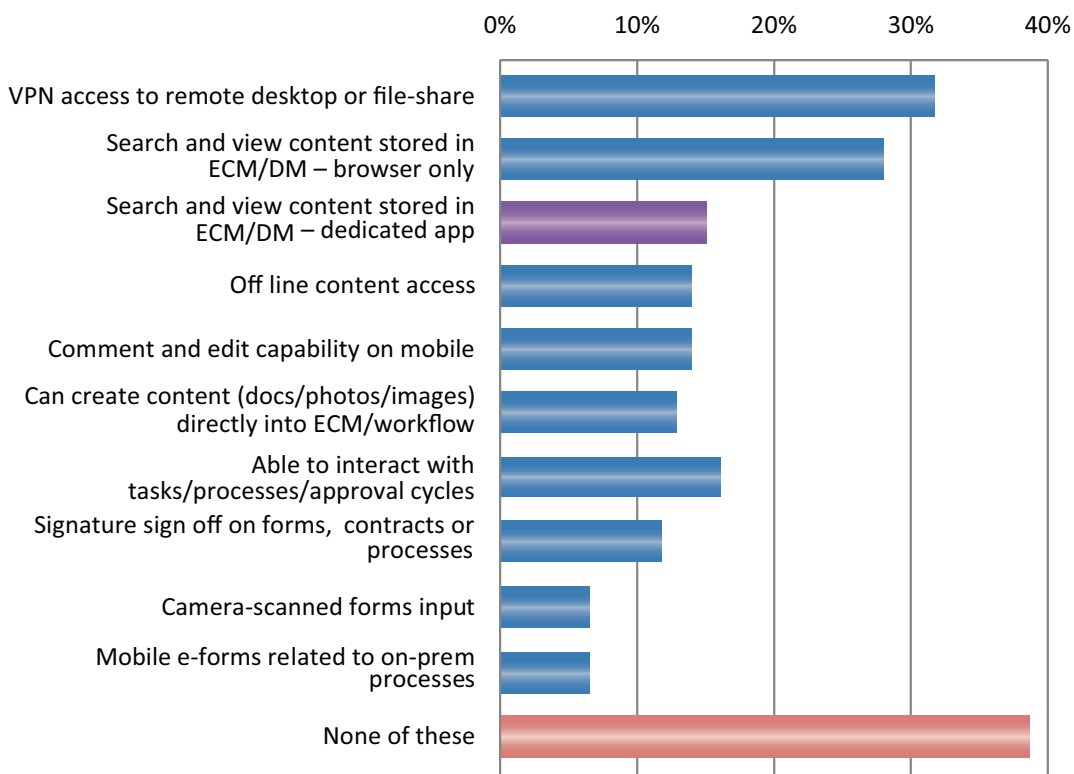
> 39% of organizations provide no content access on mobile devices, 28% rely on browser search and view, with no offline capability, and no commenting and review. In 85% of organizations, mobile users cannot access workflows and approvals.

This area is one of quite rapid change, and we have plotted progress towards the ideal, which we would consider to be a full range of secure comment functionality, on-line and offline, that can be readily extended beyond the firewall to all staff and business partners. 14% can meet this ideal for search and view, but this drops to 6% when we include create, comment and share. However, there is strong intent, with over 40% having some staff able to do this, and over 20% with plans. Capture applications, including signatures are somewhat in their infancy, but over 40% have some capability in place, or have plans in the next 12 months.

Figure 19: What progress are you making towards access for the following on mobile devices (smartphones and tablets)? *(N=178)*

Legend: ■ Staff & Business Partners ■ Most Staff ■ Some Staff ■ Rolling Out ■ Plans in 12-18 mnths ■ No Plans
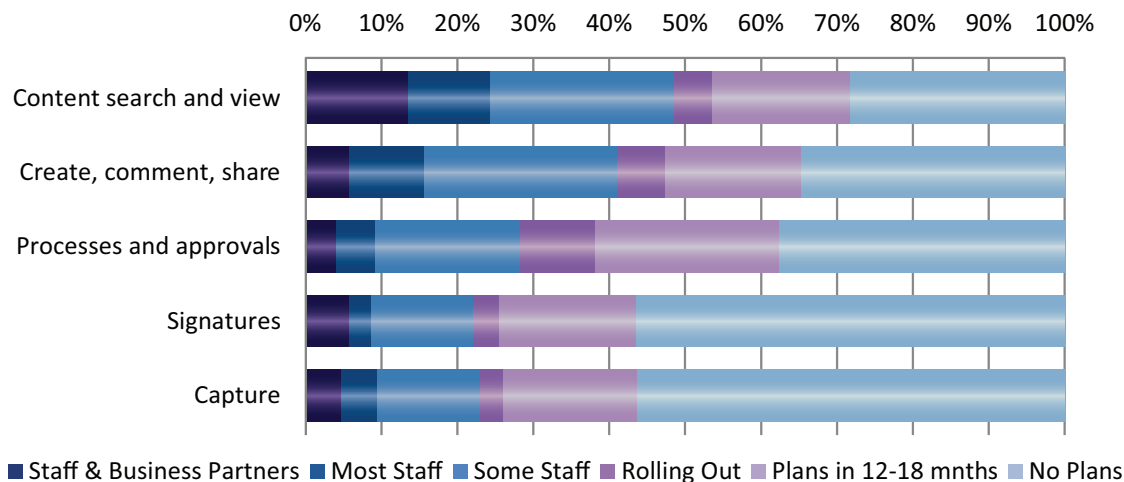
Mobile Processes and Content Types

Many would say that the true potential of mobile devices is only now becoming apparent as more people become accustomed to their use, as higher bandwidth connections are more available (roaming Wi-Fi as well as 3G and 4G), and as businesses are able to source tablets at a much wider range of prices. Even so, the range between innovative users and non-user organizations is huge, with 40% of our survey respondents reporting that they have none of the mobile applications listed in Figure 20.

At the other end of the range, we have interesting and novel applications in retail, healthcare, education and on-site work – in particular access to manuals, drawings, and instruction videos.

Figure 20: Are you using mobile devices for any of the following processes/ applications?
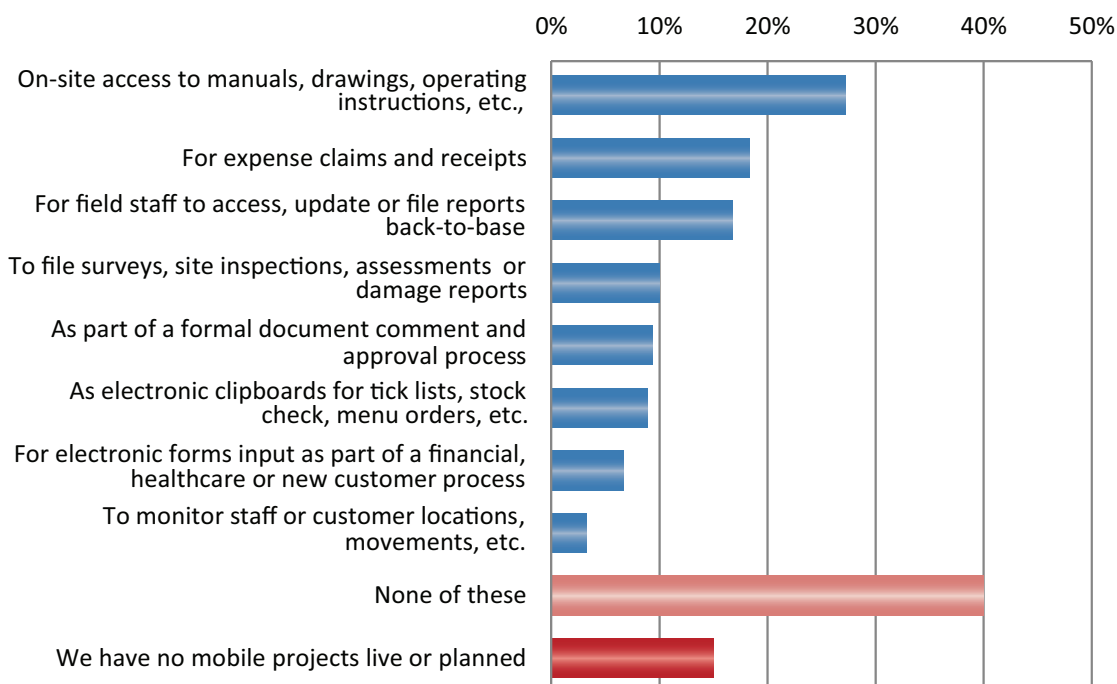
Mobile capture across a wide range of content types is a key part of innovation in mobile, with photos, and increasingly video, leading the way, but with document images, signature images and bar codes all having their part to play. Expenses claim systems such as Concur, and bank applications for scanned check deposits have demonstrated how smart apps with integrated capture can encapsulate a process and remove the discontinuities that many "home built" ad hoc procedures can introduce.

By-passing forms scanning and going straight to electronic forms input is of course a key way to eliminate re-keying or OCR, and to feed data immediately to back office processes. Replacing clip boards with tablets allows local validation of data entry, and replaces the whole logistics exercise of forms distribution and collection. On the topic of validation, sign-on credentials via fingerprint opens up a new area, especially in conjunction with near-field communications for payment systems.

**Figure 21: Which business content types are you
capturing on mobile?** *(N=113)*
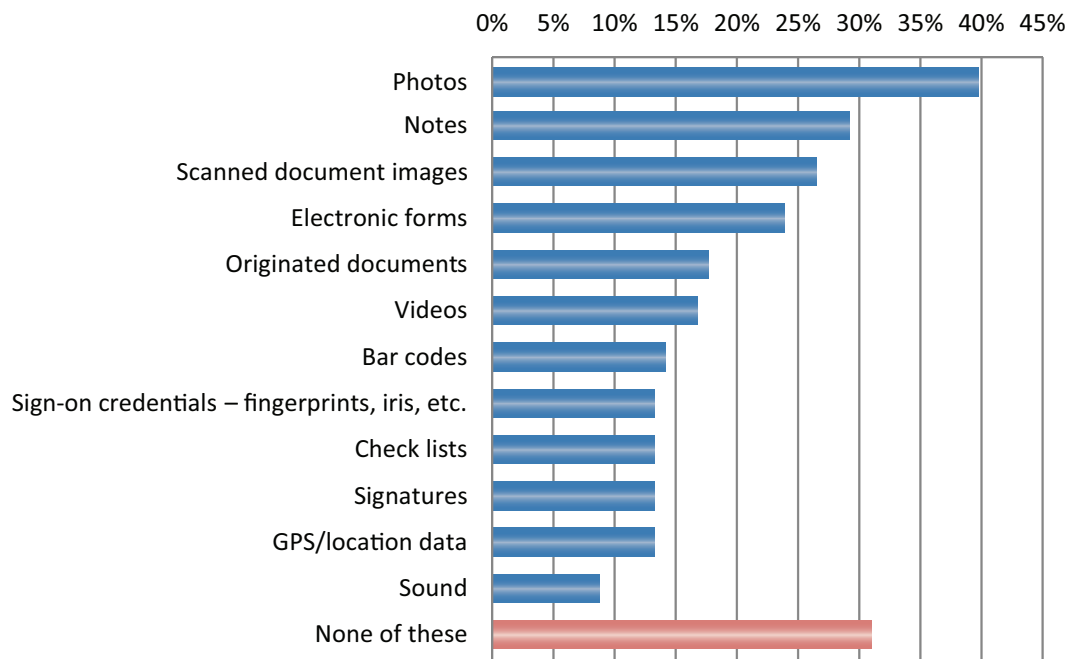
Mobile Security

Looking at the issue of content security on mobile, browser-only access is inherently safe, especially if download capability is turned off. In reality, many users find ways to put useful content on their devices, the easiest of which is to email it to themselves. Early apps, especially in-house developed ones, were not much better, with huge issues where secure information could end up unprotected in the standard OS document folders.

This problem can be overcome by setting up protected or containerized storage on the device, accessible only to the specific app. This would generally allow selective deletion in the event of a lost device. The arrival of mobile data management (MDM) systems has provided a more versatile and secure platform for app development, and this can now be extended to MAM or mobile application management platforms. In the survey, 20% are using containerized storage on mobile, and 29% have MDM or MAM environments.

Another interesting development, in use by 15%, is the concept of inherently secure content that is encrypted through an information rights management system that can enable or selectively disable decryption by specific individuals in specific locations. There are, of course, issues of offline access if the rights management server cannot be accessed.

49% are relying on basic OS security, and feel safe in the fact that they can remotely delete content if things go wrong.

Figure 22: How secure is your content when accessed by mobile? *(N=80, excl.33 Don't Know or N/A)*
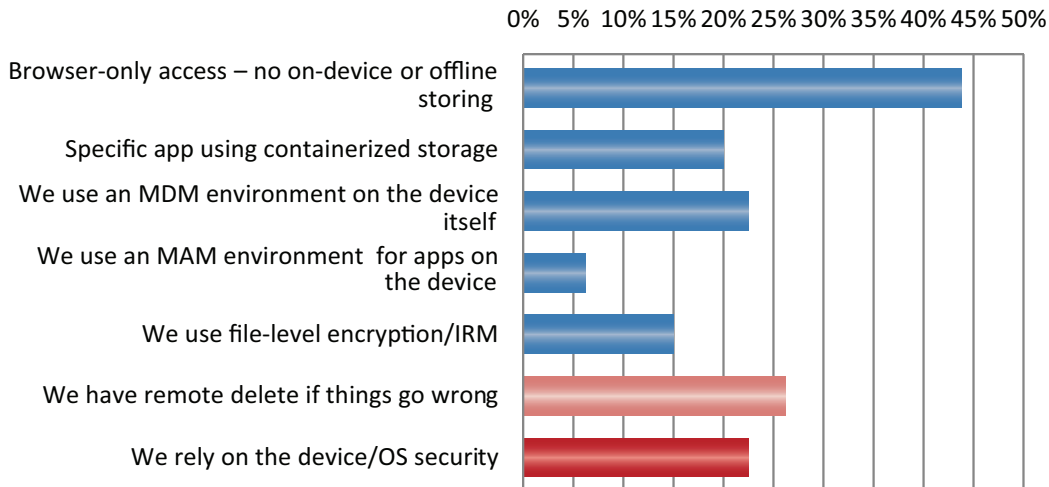
App Development

We have alluded to the problem of using in-house developed apps that have insufficient security, and there is also the issue of support across a wide and ever-changing range of devices. 35% of organizations develop apps in-house, including 18% who are not using MDM or MAM platforms. 36% are using productized apps, including 19% who prefer to source them from their ECM/BPM supplier. Only 8% use a specialist integrator, despite the fact that they will have considerable experience of connecting back office processes to mobile applications.

Figure 23: How are you/will you source your mobile content applications?
(N=72, excl. 42 Don't Know or N/A)
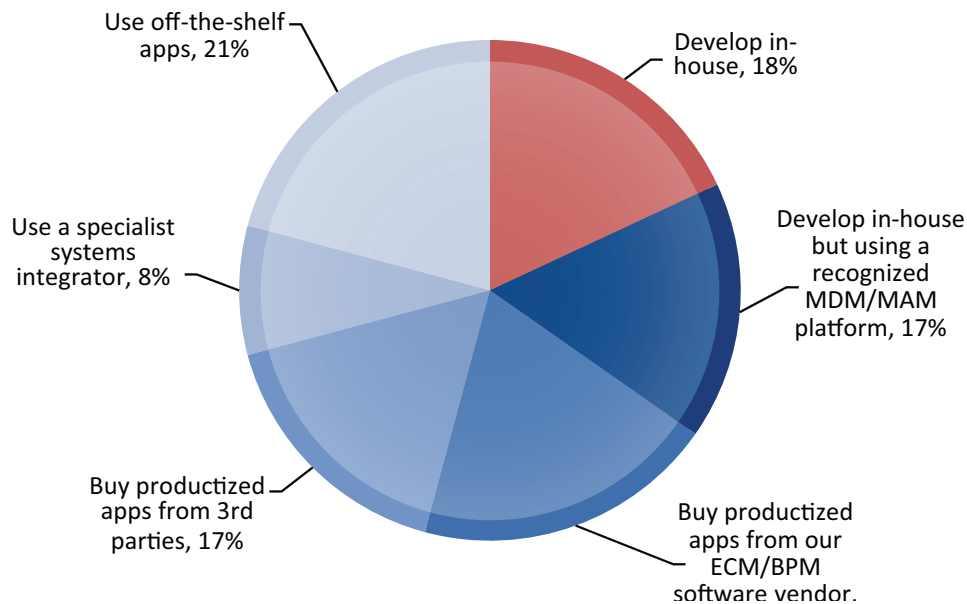
35% of organizations develop their own apps, but only half of those use an MDM secure platform. Overall, half of those accessing content on mobile devices are relying on built in OS security for protection.

Mobile Issues and Benefits

Issues

In business as in life, poor signal and slow connection speeds are the biggest frustrations for mobile applications, and as we all know, this can be as true for a city center office worker as it is for a remote charity worker in Africa. Perhaps more of a concern in the city is stolen devices, or, of course, those simply left on buses or in taxis. This raises a further issue of how to manage the reporting structure when this happens, as well as the technical issue of neutralizing the lost content.

Further issues are the support overhead for BYOD across many device types, part mitigated by narrowing the range with a CYOD policy. Where devices are issued to staff, the device costs (and data costs) can still add up. User resistance is falling away as more users become familiar with tablets and touch applications at home.

Figure 24: What issues have you encountered with your mobile projects?
(N=102 with projects)
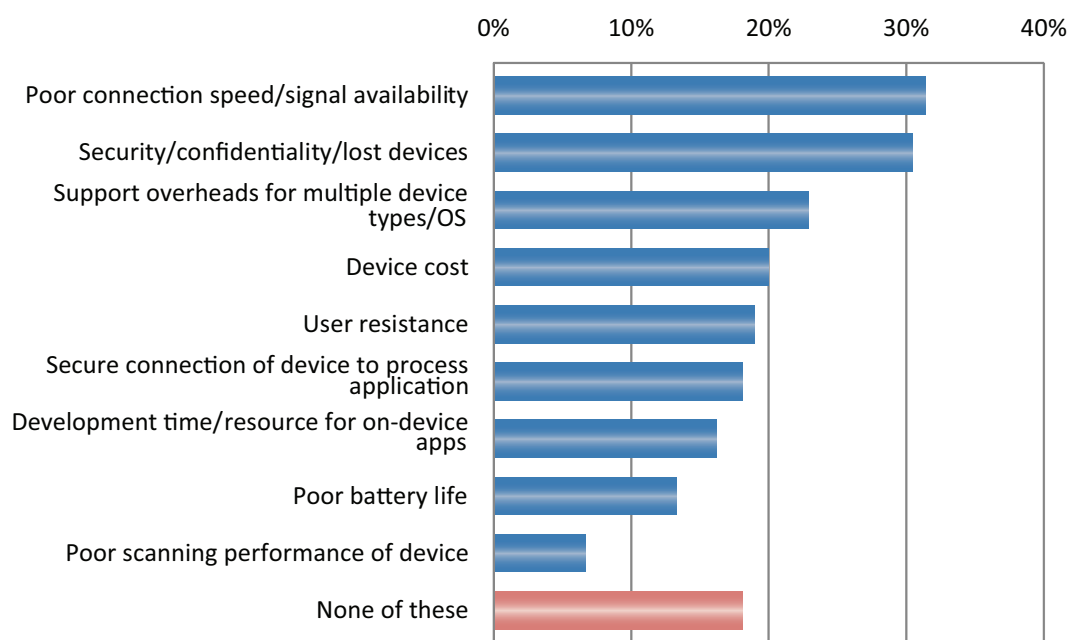
Mobile and Information Governance

It is important to make users aware that sensitive corporate content on mobile devices needs to be protected, and mobile should therefore be a core section of any information governance (IG) policy. Unfortunately, it is easy to go overboard here (22%), and stifle otherwise innovative and productivity enhancing projects. On the other hand, not covering mobile devices in some way leaves the organization wide open in the event of any data leaks or misuse of devices (35%), as, of course, does the absence of any IG policies (18%).

Figure 25: Is mobile included in your information governance policies? *(N=185)*

Don't know, 8%

We don't have
much in the way
of IG policies,
18%

Yes – takes
account of needs
and sensitivities,
17%

Yes – but in a
very restrictive
way, 22%

Not yet, 35%
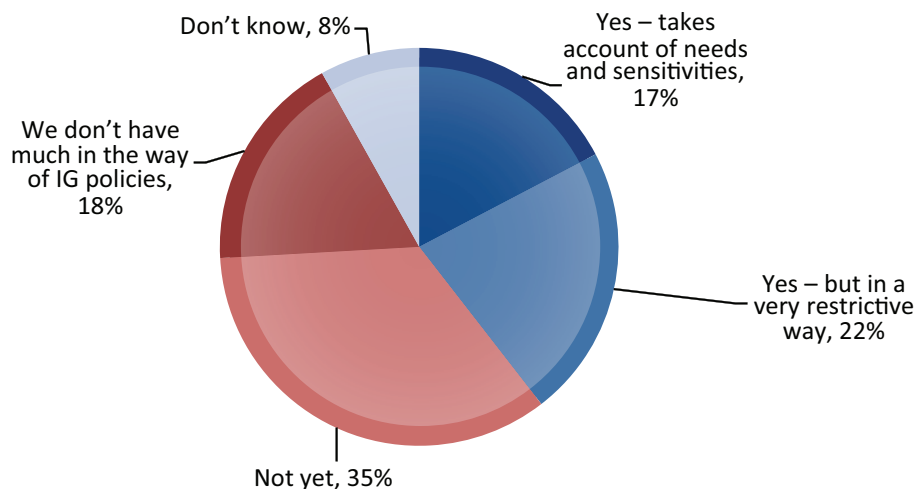
Benefits

On the benefits side, the ability of staff to work remotely is the key, not just in office hours, but throughout a more flexible working day. Few would doubt that email access on mobile is now a given, but the ability to go further, to interact with content, workflows and approvals, and to collaborate with colleagues is still a work-in-progress. When linked to back-office processes, data becomes available much more quickly, and back office support staff are able to stay in the loop with customer and partner interactions, improving productivity, and providing a better customer service.

Figure 26: What have been the biggest benefits of your mobile projects?
(Max THREE) *(N=102 with mobile projects)*

| | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% |

Staff more able to work remotely
Speed of data availability
Better collaboration
Keeping paper out of the process
Improved back-office efficiency
Reduced logistics of forms and paper handling
More competitive customer service
Better data accuracy
Better archives and compliance
Freeing up process flows/approval cycles
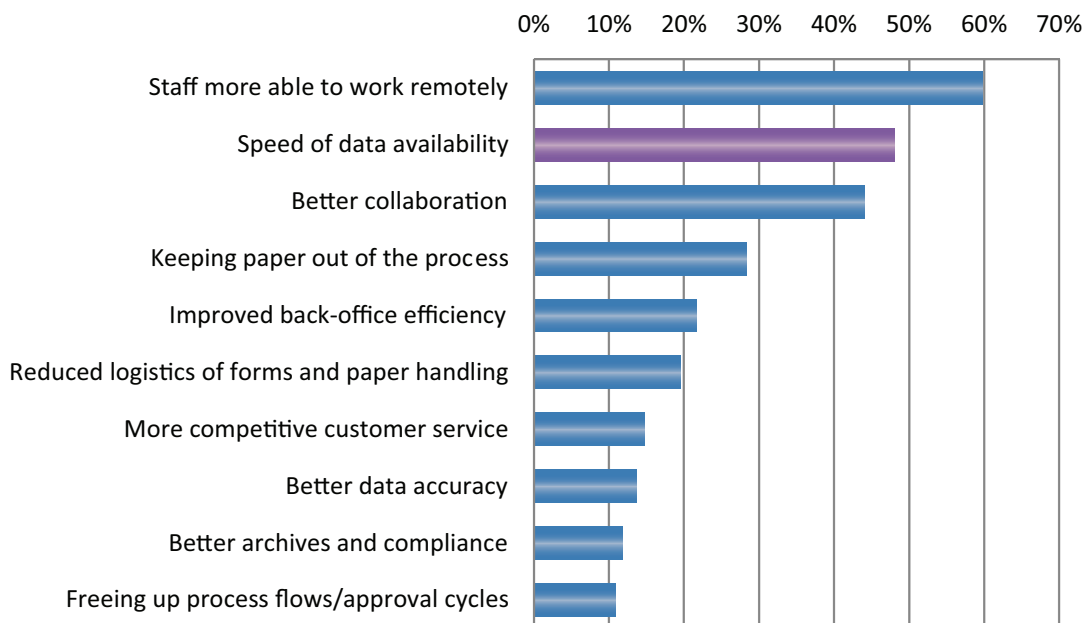
ROI

Given some of the innovative applications we described earlier, but also the cost of issuing many staff with expensive devices, we would expect a wide range of payback periods from investment in mobile projects. Some have seen returns very quickly – 14% within 6 months or less, and a majority of 76% are on track for positive returns within 18 months, which is one of the strongest we have measured across many different IT application areas.

Figure 27: What payback period would you say you have achieved, or are on track to achieve, from your mobile investments? *(N=42, excl. 69 Don't Know or N/A)*

- More than 3 years, 5%
- 3 years, 7%
- 2 years, 12%
- 18 months, 29%
- 12 months, 19%
- 9 months, 5%
- 6 months, 24%
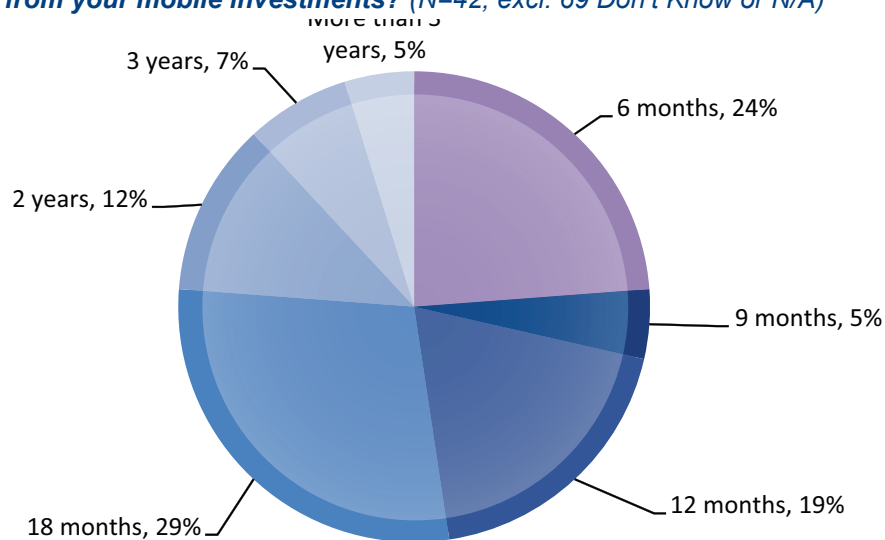
Forward Mobile Strategies

We have seen statements from many chief executives along the lines of "mobile first", but this only translates into reality on the ground if there are policies to review every process for potential mobile benefit (and impact) – and only 8% are doing this. 33% are picking off the most obvious candidates, or the next process that comes up for review, which leaves 37% who have a very ad hoc approach and 22% who aren't really looking at all.

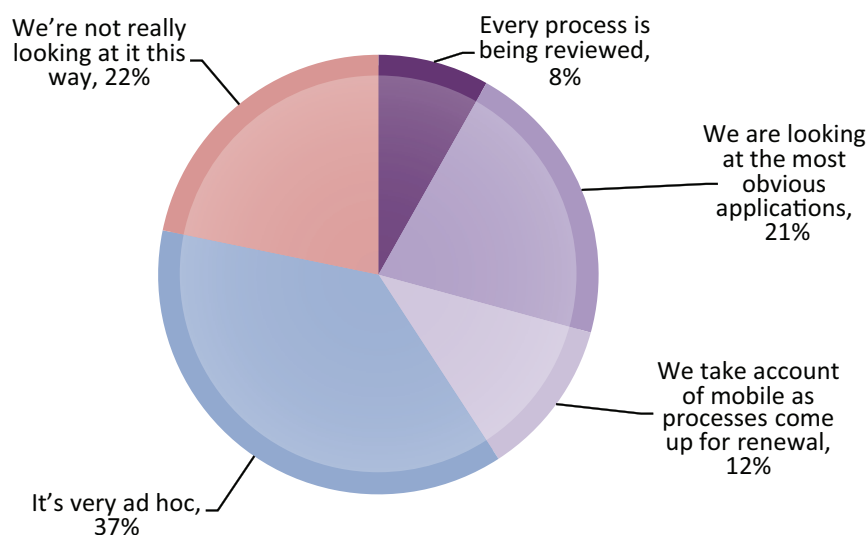**Figure 28: To what extent are your key business processes being re-engineered to account for mobile?** *(N=147, excl. 34 Don't Know)*

- We're not really looking at it this way, 22%
- Every process is being reviewed, 8%
- We are looking at the most obvious applications, 21%
- We take account of mobile as processes come up for renewal, 12%
- It's very ad hoc, 37%

Some have suggested that organizations should appoint a Chief Mobile Officer (CMOO) to champion and coordinate mobile activities, although others would say that all managers need to be aware and alert to the opportunities. In any case, we could only identify four organizations (2%) with such a job title, plus a further 3% who have such a role, but not with that name. 20% feel it would be a good idea.

Digital Disruption

A key element of digital transformation is the potential disruption that mobile applications can bring to long-standing business models, and even whole industries, Uber is the most obvious example for the taxi business, but there are many others. 4% of our respondents feel they are already being disrupted in this way, and 6% feel such threats are imminent – compared to 2% who say they are the disrupters. This may seem complacent, but 18% are awake to the possibilities, and a further 27% would not rule it out at some point in the future.

Figure 29: To what extent are parts of your organization's current business model under threat, or potential threat, from new apps and services in the way that, for example, Amazon, Spotify, Uber, AirBnB, Lynda, etc. have disrupted, or are disrupting their industries? (N=180)
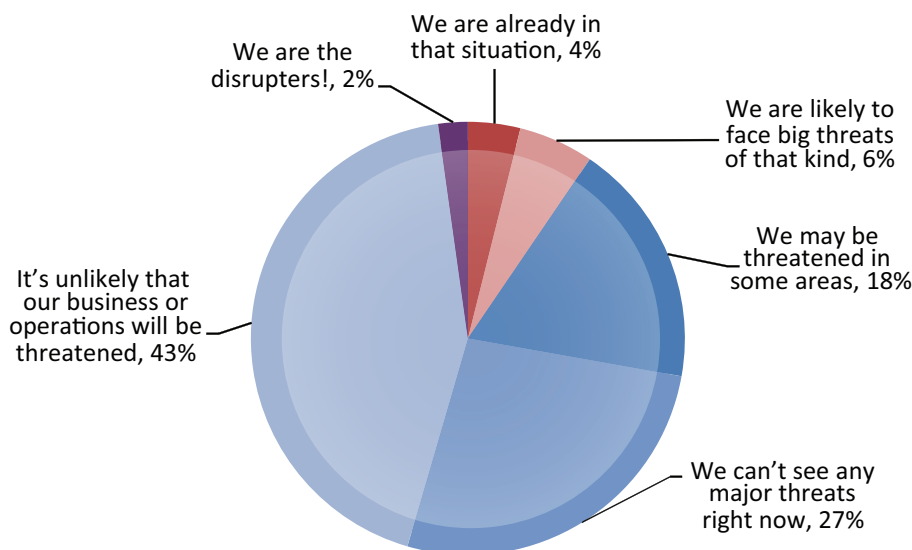
Opinions

Our "opinions" question is intended as a way to take the pulse of active practitioners, and those who are aware of the possibilities but may have more pragmatic issues to solve.

- 70% agree that cloud content is "usable with care".
- 52% feel that ad hoc cloud collaboration needs adult supervision.
- 71% would like to see a single person in their organization given responsibility for mobile innovation.
- 76% see the need to embrace mobile or be left behind.
- 86% can see bigger changes driven by cloud and mobile in the next 5 years than in the past 5 years.

Figure 30: How do you feel about the following statements? (N=179)
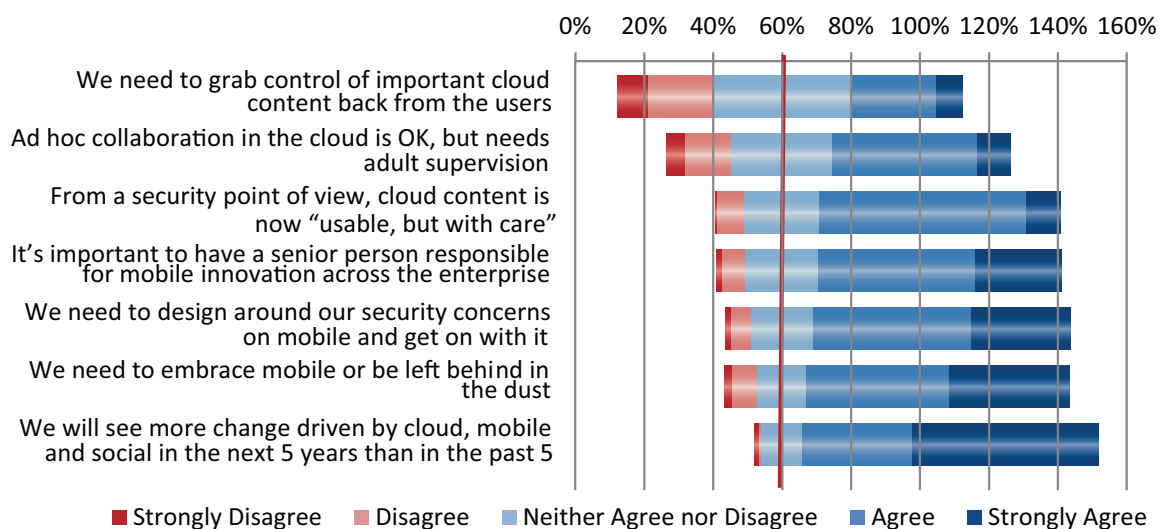
In summary, content applications in the cloud are now deemed as acceptable (or inevitable) but there is still concern about ad hoc use without any governance. On the mobile side, there is both enthusiasm for the potential, and concern about being left behind.

Spend

The indications are for much stronger growth in spend on cloud ECM systems or extensions than on on-prem ECM, especially cloud collaboration/workplace social systems, and cloud BPM and workflow. There is still growth in company supplied mobile devices, amd mobile access apps are set for strong spends.

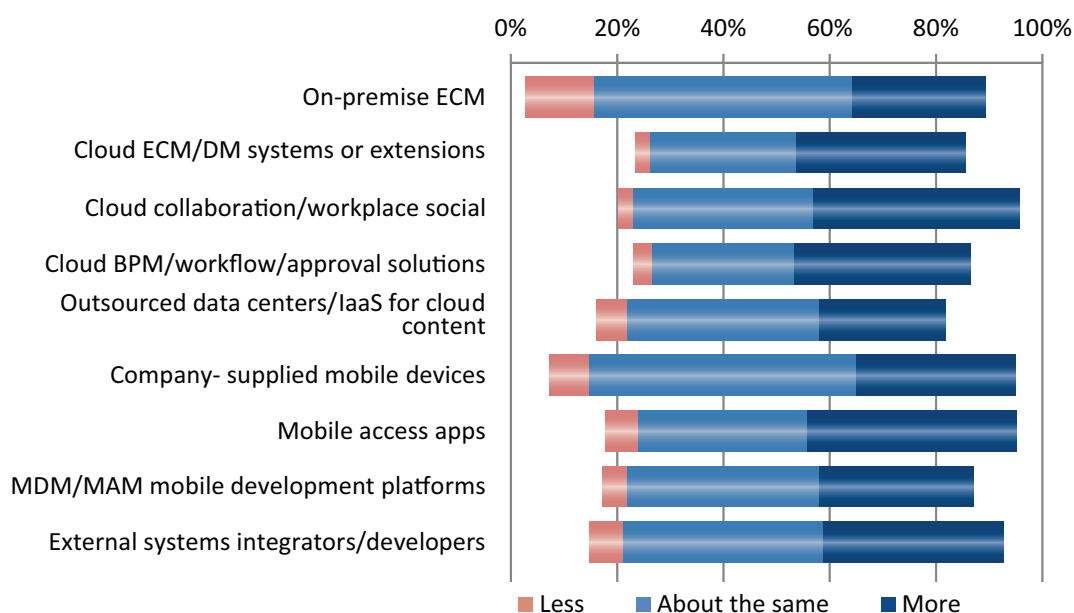*Figure 31: How do you think your organization's spending on the following products and applications in the next 12 months will compare with what was actually spent in the last 12 months? (N=174, line length reflects "We don't spend anything on this")*

As we might expect, growth forecasts are strong for both mobile applications and cloud ECM – the later at the expense of on-prem systems.

Conclusion and Recommendations

Security concerns are still holding back cloud adoption, but the majority of users now admit that cloud service providers actually have better security in place than they have on their own servers, Two thirds of the organizations we surveyed are making some moves for core IT applications, although only 16% have an unequivocal policy to migrate all applications. Content systems seem to be leading the way, with nearly a third running SharePoint as a cloud application compared with 18% for CRM and 14% for finance or ERP.

We have seen that more effective collaboration, internal and external, and a range of more modern and flexible applications are the biggest operational benefits of cloud-based content systems, but also that nearly three-quarters of those who have made the move to cloud are saving money – although not always as much as was anticipated.

There is still an element of conservatism, with a third of respondents preferring a "private cloud" model within their own data centers, and a further 25% using outsourced or third-party data centers as infrastructure while maintaining their own software applications. Only 18% are using genuinely multi-tenant cloud for content applications.

There are strong moves towards mobile content access and process interaction, and most of our respondents agree that it is vital not to be left behind on this. However, nearly 40% do not provide their employees with the simplest of document search and view on mobile devices, and only 15% have online and offline content access with edit, comment and approve capability.

When it comes to interaction with back-office processes and approval loops, the early adopters are way in advance here across a range of innovative applications, and are being well rewarded, with nearly half of projects showing payback in 12 months or less and three-quarters within 18 months. Faster data availability, easier teleworking and better collaboration are reported as the main benefits.

Recommendations

- Align your content and ECM applications with your organization's policy for cloud, and set a strategic plan. Access to content for users and partners outside the firewall can be a vital element of staff productivity and improved collaboration. This may raise the priority for cloud deployment of content systems.

- Be aware that as some data center issues fall away, the cloud will introduce new challenges, particularly in dealing with suppliers, who will need to meet demanding service levels and security compliance.

- Consider the benefits of a hybrid deployment, perhaps a thick hybrid retaining highly sensitive content on-prem, or a thin hybrid moving only collaborative content to the cloud – although this will diminish the potential cost savings.

- Be careful not to duplicate existing digital landfills in the cloud. Search and retention will require accurate metadata, and this needs to be aligned with on-prem systems, and with your information governance policies.

- Ensure that your employees have full access to corporate content from mobile devices, and that they can capture, edit, comment and share content.

- Don't let security be an excuse for not proceeding with mobile projects. Use MDM or MAM platforms, and utilize external help rather than expecting in-house developers to be security experts.

- Raise the importance of mobile applications within your business, particularly where competitors may be able to gain advantage. There may even be a threat to your whole business model. Consider whether there should be a "Chief Mobile Officer".

- Scrutinize every process for the potential of mobile. Every clipboard could be a tablet, every picture worth a thousand words, and every process could start here and now, not back-at-base.

References

1 "Connecting and Optimizing SharePoint" AIIM Industry Watch, January 2015, www.aiim.org/research

Appendix 1: Survey Demographics

Survey Background

The survey was taken by 282 individual members of the AIIM community between June 05, 2015, and July 02, 2015 using a Web-based tool. Invitations to take the survey were sent via email to a selection of the 80,000 AIIM community members.

Organizational Size

Survey respondents represent organizations of all sizes. Larger organizations over 5,000 employees represent 34%, with mid-sized organizations of 500 to 5,000 employees at 31%. Small-to-mid sized organizations with 10 to 500 employees constitute 35%. Respondents from organizations with less than 10 employees have been eliminated from the results, taking the total to 221 respondents.

Pie chart: Over 10,000 emps, 24%; 11-100 emps, 15%; 101-500 emps, 20%; 501-1,000 emps, 11%; 1,001-5,000 emps, 20%; 5,001-10,000 emps, 10%
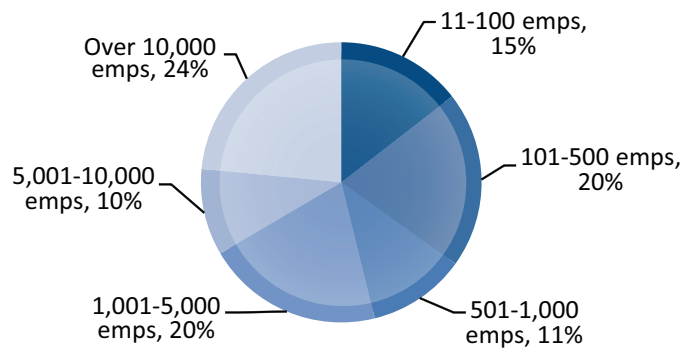
Geography

58% of the participants are based in North America, with 24% from Europe and 18% rest-of-world.

Pie chart: Asia, Far East, 3%; Central/S.America, 3%; Australasia, 5%; Middle East, Africa, S.Africa, 7%; Eastern Europe, Russia, 3%; Western Europe, 10%; UK, Ireland, 12%; Canada, 13%; US, 45%
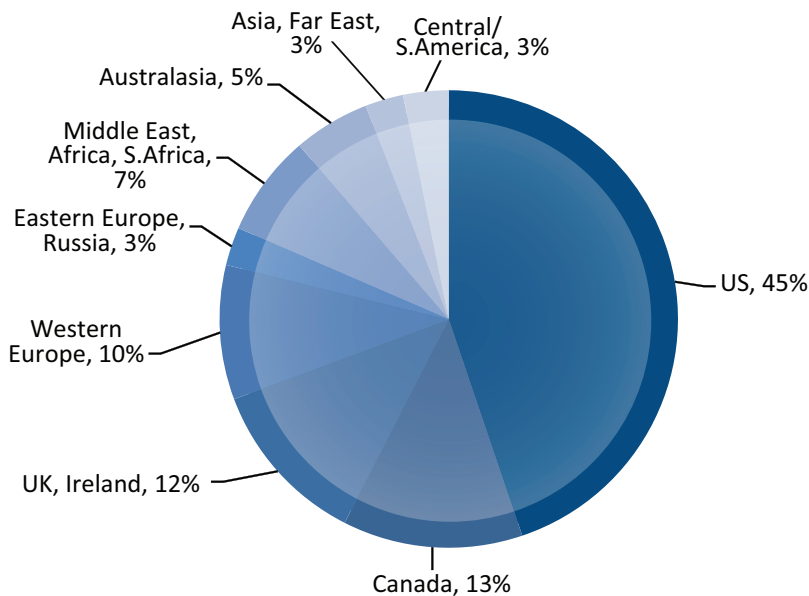
Industry Sector

Local and National Government together make up 18%, Finance and Insurance 13%, and Manufacturing 9%. To avoid bias, suppliers of ECM products services have been excluded.

Life Science, Pharmaceutical, 1%
Media, Entertainment, Publishing, 1%
Legal and Professional Services, 2%
Retail, Transport, Real Estate, 3%
Engineering & Construction, 3%
Document Services Provider, 3%
Telecoms, Water, Utilities, 4%
Non-Profit, Charity, 4%
IT & High Tech not ECM, 4%
Healthcare, 5%
Education, 7%
Energy, Oil & Gas, Mining, 8%
Consultants, 8%
Manufacturing, Aerospace, Food, Process, 9%
Finance, Banking, Insurance, 13%
Government & Public Agencies National/ International, 7%
Government & Public Services - Local/ State, 11%
Other, 6%

Job Roles

47% of respondents are from IT, 33% have a records management or information management role, and 19% are line-of-business managers or consultants.

President, CEO, Managing Director, 1%
Legal/ Corporate Counsel/Corporate Compliance, 1%
Business Consultant, 6%
Line-of-business exec., dept. head or process owner, 5%
Head of records/ information management, 12%
Records or document management staff, 21%
IT Consultant or Project Manager, 19%
Head of IT, 6%
IT staff, 22%
Other, 6%
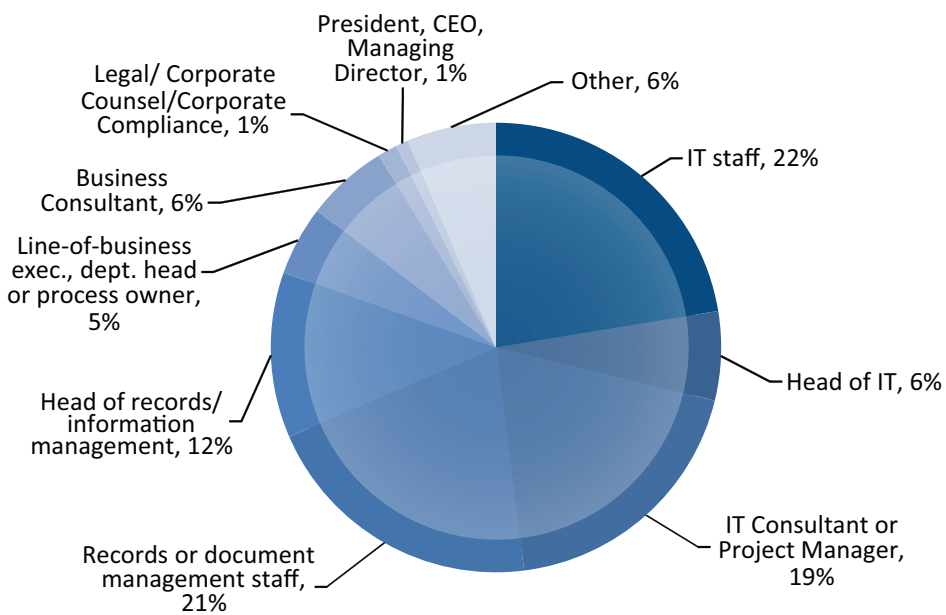
Appendix 2: Do you have any general comments to make about your content analytics projects? (Selective)

- We do not distinguish mobile: to us it is "just another deployment type". Our strategy is to be "deployment -type agnostic".

- Our goal is to make all of our work mobile and accessible from anywhere

- We're having a difficult time getting ECM to work with on-prem - desktop systems. We aware of mobile, but we have so many legacy systems that we are required to use that mobile is a dream and the cloud is not likely in the next 5 years.

- As a government organization, we are very constrained by security requirements.

- ECM in the Cloud for corporate business data is always a challenge when we have global ECM repositories with varying requirements around compliance.

- The Social Housing Industry has already gone mobile and we will be left far behind if we don't develop a strategic approach soon enough.

- The cloud is not the place for law firms to be working. Many who have gone to the cloud are coming back to on-premise intra-nets.

- Our direction is "cloud first" but not yet "cloud only".

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About AvePoint

AvePoint is the established leader in enabling enterprise collaboration across platforms and devices. Focusing on helping enterprises in their digitization journey to enable their information workers to collaborate with confidence, AvePoint is first to market with a unique solution that centralizes access and control of information assets residing in disparate collaboration and document management systems on-premises and in the cloud. AvePoint solutions and services aim to bring together business, IT, as well as compliance and risk officers to serve key business objectives such as big data, cloud integration, compliance, enterprise content management, and mobile data access monitoring.

Founded in 2001 and based out of Jersey City, NJ, AvePoint serves over 14,000 organizations and 3 million Office 365 users in five continents across all industry sectors, with focused practices in the energy and utilities; financial services; healthcare and pharmaceuticals; and public sector industries. AvePoint is a Microsoft Global ISV Partner, Gold Certified Collaboration and Content Partner, Gold Certified Cloud Platform Partner, winner of the Microsoft Partner of the Year Award for Collaboration and Content in 2015 and Public Safety and National Security in 2014, as well as a US Government GSA provider via strategic partnerships. AvePoint is privately held and backed by Goldman Sachs and Summit Partners.

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About Konica Minolta

To manage a growing document workload, businesses, turn to Konica Minolta Business Solutions, U.S.A., Inc. Our Enterprise Content Management (ECM) solutions solve everyday business problems, giving our customers the tools to capture and distribute documents in any form, automate routing, maintain compliance, preserve records and more. Konica Minolta ECM speeds the flow of information, enhances security, controls costs and makes all essential document processes more productive. As a trusted partner, we work with our customers to identify their unique needs and create a tailored approach to solve their specific business problems so they can achieve their goals.

As a leader in enterprise content management, technology optimization and cloud services, our solutions help our customers improve their speed to market, manage technology costs, and facilitate the sharing of information to increase productivity.

Our expertise is why Konica Minolta ECM received the 2015 OnBase Platinum Partner and Diamond Support Partner awards from Hyland Software and New Partner of the Year from Kofax. Further, Konica Minolta has been placed in the Leaders Quadrant of the Gartner 2014 Magic Quadrant for Managed Print Services (MPS) and Managed Content Services (MCS). We have also been recognized as a #1 Brand for Customer Loyalty by Brand Keys for eight consecutive years, awarded "MFP (multifunction peripheral) Line of the Year" by Buyers Laboratory LLC, and named to the Dow Jones Sustainability World Index for three consecutive years.

With more than 41,000 worldwide employees and cutting-edge research, our global solutions team delivers innovative insights and focuses on end-to-end business solutions to give shape to your ideas.

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About Lexmark

Lexmark creates enterprise software, hardware and services that remove the inefficiencies of information silos and disconnected processes, connecting people to the information they need at the moment they need it.

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About Nitro

Nitro is changing the way the world works with documents. From the desktop to the cloud, Nitro makes it easy to create, edit, share, sign and collaborate – online or offline. The goal: make businesses more productive. More than 500,000 businesses run Nitro, including over 50 percent of the Fortune 500. Nitro is the PDF software partner of choice for Lenovo, and our award-winning products, including Nitro Pro and Nitro Cloud, are used by millions of people around the world every month. Nitro EMEA is headquartered in Dublin, Ireland; Nitro also has offices in San Francisco, USA, Melbourne, Australia, St. Petersburg, Russia and Nitra, Slovakia. One of the fastest-growing private companies in the world, Nitro is also a multiple Inc. 500/5000, BRW Fast 100, Deloitte Technology Fast 50 and Software 500 award winner.

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AIIM (www.aiim.org) AIIM is the global community of information professionals. We provide the education, research and certification that information professionals need to manage and share information assets in an era of mobile, social, cloud and big data.

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