

## Business Records Online: Facing the Reality of End-User Adoption



When collecting electronic evidence most organizations focus on corporate email systems, file servers and perhaps PC's. In certain cases databases or enterprise applications might be searched but the focus remains on in-house systems. The increasing business use of online services requires a change in approach: business records are now generated and stored on Google Docs, Dropbox, Huddle and dozens of other popular services. Although business use of these services is often prohibited by policy they are increasingly popular and their adoption is driven almost entirely by end users, without involvement of IT, Legal or Records groups.

For any questions on this report, or to learn more about Cernam's work around online evidence and investigations, please get in touch via email, see [www.cernam.com](http://www.cernam.com) or contact us via Twitter, [@CernamOE](https://twitter.com/CernamOE).

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## The Rise of Online Services

To take a very simple example of personal email accounts, many employees find it useful to forward company emails to a personal web-based email account so that they can maintain a personal archive or refer to emails while away from the office. Others may actively use their personal email account for business, preferring to correspond with colleagues via an external rather than corporate email system. In some cases business use of personal email takes hold amongst a group of employees and results in sensitive business records being generated or stored in personal email accounts, for example details of interactions with customers or suppliers.

The problem of business records in personal repositories is not limited to personal email accounts. Business data can also be stored in a wide variety of online or “cloud” systems: online document editing tools, personal calendaring or task management tools, collaboration systems, file repositories, etc. Some organizations have even discovered that enterprise collaboration systems such as Basecamp or Central Desktop have been adopted by teams or departments without official sanction or knowledge, creating unofficial stores of business records which are difficult to examine if litigation or disciplinary issues arise.

Online tools can give a tremendous boost to employee productivity and for this reason they are commonly adopted by employees without reference to corporate policies. Well-meaning employees, including many at senior management level or in very sensitive functions, are increasingly storing business records online rather than in corporate repositories and unwittingly creating significant problems. While business use of these services is often prohibited

by policy our experience suggests they are widely used and that adoption is driven almost entirely by end users.

Locating, preserving and collecting data from online repositories will require changes in the mechanics of e-discovery as well as the use of new technology which companies such as ours are now developing. In this report we will look at five categories of online services which pose a risk in terms of business records online: a) personal productivity tools; b) online group collaboration; c) data synchronization & backup; d) enterprise applications online; and e) online communication. In the remainder of this report we will discuss the specific issues with each category of service; look at a case study of well-meaning employee adoption; present the results of a survey among Irish professionals; and finally discuss the specific challenges of identifying and preserving business records in online repositories.

## Personal Productivity Tools

Many employees now make use of online productivity tools in both their professional and personal lives. Using tools such as Google Docs or Microsoft Office Live allows users to create, edit and share files online, without needing to install large and complex software products. For example, these services can generate documents, spreadsheets and presentations which are stored in the typical file formats and are compatible with standard Microsoft Office tools. The entry-level versions of these tools are typically free of charge and are capable of storing large quantities of documents, both files created on the system and those created in standard Microsoft Office tools.

Google Docs is the dominant service in personal productivity and is accessible to every Gmail user as well as anyone with a Google account, for example all users of Android smartphones, Google Reader, Picasa, etc. Similar services from Microsoft (Office Live & Docs.com), Adobe (Acrobat.com) and smaller companies such as Zoho are less popular but are equally problematic in terms of storing business data. Other productivity tools such as Remember the Milk focus on task and project management, meaning they are often used to store documentation or correspondence related to business projects. Reminder tools are also being used and may contain corporate data such as meeting agendas.

## Online Group Collaboration

For knowledge workers the mechanics of working collaboratively can be a source of great frustration, for example where a report needs to combine input from several colleagues. Online collaboration services give the ability to create and revise documents with multiple colleagues in real-time or over a period, typically tracking changes and managing multiple versions of each document. Crucially these services are accessible by external colleagues as well as direct co-workers and are often easily accessible while travelling, including from mobile devices.

Within this category the project management tool Basecamp and its associated products are popular, as are Central Desktop and Huddle which provide more sophisticated collaboration tools compared with Google Docs or Microsoft Office Live. In our experience Huddle has gained users based on its close integration with LinkedIn which allows new users to try the service without creating a new account. A similar service, Mymoon, is less well-known but also integrates with LinkedIn and was recently purchased by Salesforce.com.

## Data Synchronisation & Backup

Unlike physical storage devices such as USB sticks or hard drives, online data stores are seen as safer by many employees in terms of theft, loss and unauthorized access. A further problematic set of online services relies on this belief, namely online backup and synchronization services. Online backup services such as Carbonite and Sugarsync can back up the entire contents of a PC and then maintain that online backup so that any new files or changes are

reflected. Of more concern are data sync services such as Dropbox, Box.net and Microsoft's Live Mesh. These services are extremely popular as they allow users to work on the same files from multiple PC's while keeping each copy exactly in sync. For example, an employee could sync the contents of a folder on their business PC and have it available from a personal system or mobile device.

## Enterprise Applications Online

Many companies already use online services on an official and sanctioned basis, for example hosting corporate email with a "cloud" service provider or using online versions of Salesforce.com, SAP or Microsoft Dynamics. This type of controlled corporate adoption will usually address how data is to be located, preserved and collected in the event of litigation. However, there are cases where end-user adoption has extended to quite complex or sophisticated services for example where one team or department moves to Salesforce.com or Google Apps. In these cases there may be no awareness in the IT or Legal departments that these services are in use and therefore the records they contain could be overlooked.

## Online Communication

Social networking sites pose many business issues but the business records risk may not be obvious. However, as the messaging functions within Facebook and, more particularly, LinkedIn become more sophisticated they are beginning to be used for business correspondence. For example, a group of employees might begin

exchanging Facebook messages regarding lunch plans and move on to discussing a customer issue or a current project. At Cernam we have seen both LinkedIn and Facebook adopted as "shadow" email systems in order to avoid creating a record on company systems.

This issue of business correspondence via social networking sites is likely to become more common as Facebook rolls out a new messaging system with support for attachments, Facebook.com email addresses and text message integration. Companies may also find it more difficult to entirely ban the use of Facebook and LinkedIn in future as their business value increases. Just as web-based personal email accounts have become acceptable in many companies the pressure to enable social networking sites will increase and there will be a greater need to deal with business records online.

## Case Study:

# Knowledge Workers & Online Collaboration Services

To illustrate the ways employees are adopting online services for business; let's look at a day in the life of Rebecca, a project manager at a large telecoms company. Rebecca divides her working week between client sites and her office, as well as sometimes working from home. Like most employees Rebecca is well-intentioned and hard-working, yet she finds it difficult to get her job done using the standard software provided by her employer. After taking a class on personal productivity Rebecca has begun to use several online tools to improve her own efficiency and that of her team.

### 9.00 a.m.

Rebecca is working at home and begins the day by using her personal iPhone to catch up on overnight emails. As her company email system does not permit direct iPhone access she has configured Outlook to forward messages to her personal Gmail account. She has further configured Gmail and her iPhone so that she can respond to emails from Gmail using her corporate email address.

***Issue #1:** Many organizations prevent – or at least attempt to prevent – their email system being accessed from personal mobile devices. The method Rebecca uses to receive business email on her iPhone is not unusual or particularly sophisticated. We often see employees take exactly this approach or alternatively install specific forwarding tools on an always-on PC in their office. Others simply give a personal email address to colleagues and ask that they “cc” that address on any important messages. In Ireland this approach is even seen in Government, where former cabinet minister Noel Dempsey has used a personal email address to conduct government business.*

### 9.30 a.m.

One of the emails forwarded to Rebecca's iPhone contained an attachment which Rebecca needs to review urgently. Rebecca views the attachment using the Google Docs viewer which supports over a dozen common and not-so-common filetypes. She then edits the file using Google Docs which is installed as an application on her iPhone.

***Issue #2:** By viewing and editing this attachment using Google Docs Rebecca has stored a business record in a personal repository, one*

*which her employer knows nothing about and over which it has no control. Many organizations have experienced issues with employees storing confidential records in online data stores, for example in the United States the Department of Veterans Affairs discovered that end-users had adopted “Yahoo! Calendar” to store medical records, including patient names and details of surgical procedures. In other cases reported by the VA a total of 8 separate hospitals had adopted Google services to store patient information.*

### 10.30 a.m.

Having edited the attachment, Rebecca needs to share the updated version with her team, including several external colleagues. Rather than attach the document to an email she shares the document within Google Docs and passes a weblink to her colleagues. Unfortunately one external colleague does not have a Google account and so can view the file but cannot make changes. Still using only her personal iPhone Rebecca uploads the revised file to Box.net and again a link to the file with her external colleague, who can then access it via the Box.net website.

***Issue #3:** The document Rebecca is working on is now stored in 3 separate repositories: Gmail, Google Docs and Box.net. Even if her company sanctions the use of one of these services it is unlikely to approve of all 3 or even to know that they are in use. If Rebecca's file were to become relevant to litigation it is likely that only the final copy would be found in her corporate mailbox, meaning earlier revisions and potentially comments would be overlooked.*

### 11.30 a.m.

Rebecca now logs on to Huddle, an online project management tool, to check the status of her tasks and review meetings which she

needs to attend. Rebecca shares information from her personal Huddle account with her team by posting a reminder about a meeting taking place later that day. Within this Huddle reminder she attaches the meeting agenda and minutes from a previous meeting so that her colleagues can prepare.

**Issue #4:** *Once again Rebecca has stored business related information in a personal online repository. Her personal Huddle account will remain active even after she leaves her current company and although her tasks within Huddle may be hidden when completed, their contents – including attached documents – will still be available.*

#### **12.30 p.m.**

Rebecca arrives at her office and begins preparing a PowerPoint presentation which she will present at a seminar later that day. Using Huddle she shares her draft presentation with a colleague who makes several changes as they review the slides. With editing complete Rebecca shares the document via Huddle so that other meeting participants can access the presentation electronically. Rebecca then logs on to LinkedIn to check the attendance list for the event she will be addressing, where she reads and replies to several queries about the event through her LinkedIn Inbox.

**Issue #5:** *LinkedIn is the dominant business social networking site and in many industries it is unusual to find a business contact that is not on LinkedIn. Like many social networking sites LinkedIn has a messaging function which is effectively a lightweight email system. In this instance Rebecca has used LinkedIn to exchange written messages with external colleagues; messages which may be limited to discussing a specific event but which could nonetheless represent*

*relevant business records or lead to a more general business discussion. These messages may never touch her employer's email system and they therefore represent a further cache of business data stored online.*

#### **2.00 p.m.**

Rebecca leaves the office to attend the seminar where she is due to present. She logs in to Huddle via her laptop, opens the PowerPoint file and delivers her presentation. As she does so she notices changes to the slides which she does not recognize. When she later checks the file she realizes that changes had been made through Huddle by a colleague and that the system now contains multiple versions of the presentation, each with slightly different content.

**Issue #6:** *In this case, the revisions made by Rebecca's colleague were legitimate changes, albeit unexpected. However, since Huddle is being used unofficially by Rebecca and her colleagues these changes could have been made as a practical joke or even maliciously. Malicious changes might be easy to investigate within her employer's network but investigating access to cloud-based applications such as Huddle is often difficult or impossible.*

#### **7.00 p.m.**

Rebecca arrives home and turns on her personal PC to prepare for the following work day. Once her PC connects to the Internet it automatically synchronizes the latest copies of her current working files from her office PC. By using Microsoft's "Live Mesh" product she can access exact copies of her office files from home and any changes, deletions, new files etc., will be synchronized and updated on Microsoft servers. After completing her work for the day Rebecca shuts down her PC, ready to work on the latest copies of her

documents from a client site on the following morning.

**Issue #7:** *The final online service which Rebecca relies on is Windows Live Mesh, one of several data synchronization services which can automatically make files available on multiple PC's while keeping their contents identical. In this case Rebecca is syncing business data to her personal PC which is very likely to be in violation of her employer's policies and could represent a serious security issue if Rebecca were to resign or be fired.*

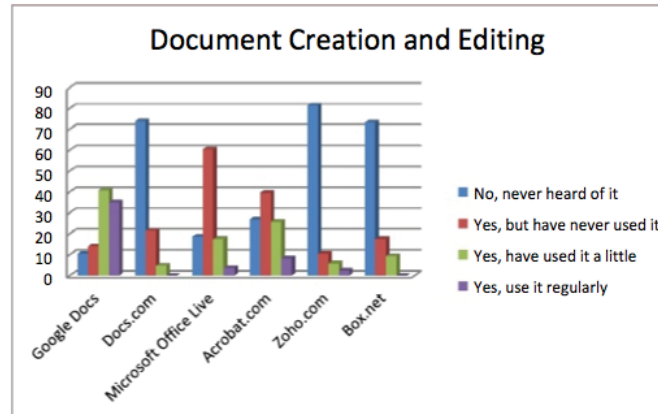
# Survey Results

At Cernam our work with clients on litigation projects has repeatedly demonstrated the popularity of online services in the workplace; however each engagement has involved a different mix of services, often being used in different ways.

In order to identify the services most commonly used in Western Europe we recently conducted a short informal survey among knowledge workers in Ireland, i.e., employees whose role revolves around the creation or consumption of information. Although certain aspects of the results were predictable, for example the dominance of Google Docs for onlinedocument creation, the information we received highlights a number of data points which are worth highlighting.

## Personal Productivity Tools

The first section of our survey dealt with document creation and editing tools, i.e., online services through which users can create a document, spreadsheet or presentation before sharing it with colleagues for direct online editing. The first set of questions asked respondents to consider a specific list of services and indicate whether they have heard of each service, whether they have personally used the service, etc.

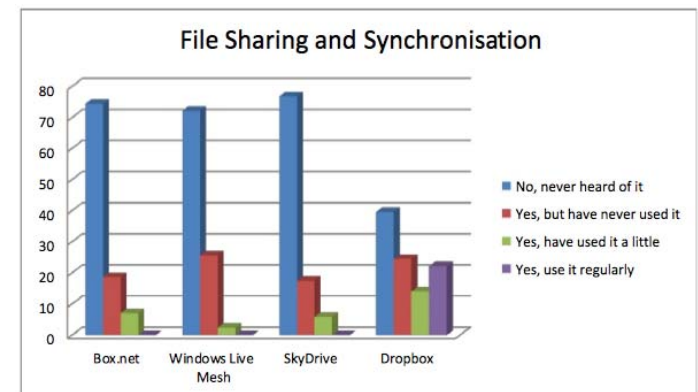


As expected Google Docs dominates this category among Irish professionals, with 76% of those surveyed reporting that they use Google Docs. Other services with a strong showing include Dropbox, used by 36% of respondents; Adobe’s “Acrobat.com” service at 34%; Microsoft’s “Office Live” tool at 20%. We should note that while Acrobat.com and Office Live feature relatively prominently this may reflect a degree of brand confusion with the traditional software applications Adobe Acrobat and Microsoft Office.

It is also worth highlighting the potential for confusion around Microsoft’s online Office offerings. Our survey named two online versions of Office: Docs.com, the lightweight version integrated with Facebook, and Office Live, which is currently being supplanted by “Office Web Apps on SkyDrive”, “Office Live Workspace” and “Office 365”. It is therefore possible that online versions of Office are more widely used but that this complex series of brands makes it difficult to measure adoption.

## Data Synchronisation & Backup

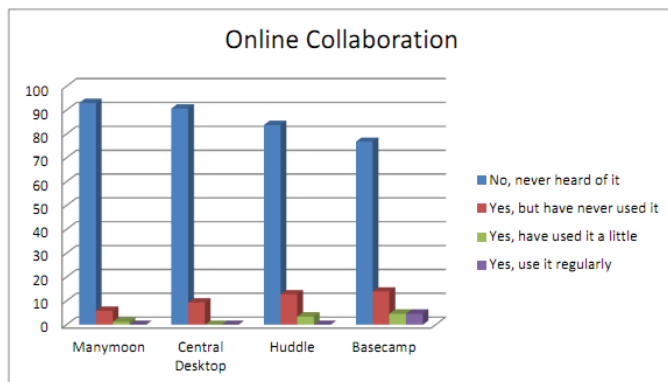
The next survey question asked the same question in relation to file sharing and synchronization. In this category services such as Dropbox and Box.net allow users to replicate data from one PC to multiple other devices, potentially including those used by external colleagues as well as mobile devices such as an iPhone and iPad. Again respondents were asked whether they were familiar with each service and whether they had used or are currently using the service.



The most popular file sharing service was Dropbox which is used regularly by 22% of respondents, has been used previously by 14% and is familiar to a further 24% who have yet to use the service. 26% of people had heard of Windows Live Mesh, 19% had heard of Box.net and 17% had heard of Skydrive but they are not widely used. Again Microsoft's offering is fragmented in this area since SkyDrive and Live Mesh provide certain overlapping functionality and the complexity of assessing two services from the same vendor might push users towards a simpler alternative such as Box.net or Dropbox.

## Online Group Collaboration

In our next section we focused on collaboration services which offer richer group-working features than Google Docs or similar services. In this category services such as Huddle and Basecamp provide sophisticated collaboration tools to manage the work of a project team, department or even an entire company. Adoption of these services typically requires greater planning and preparation than



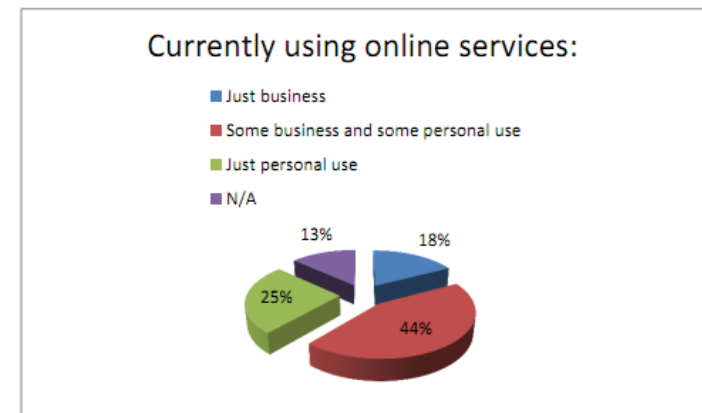
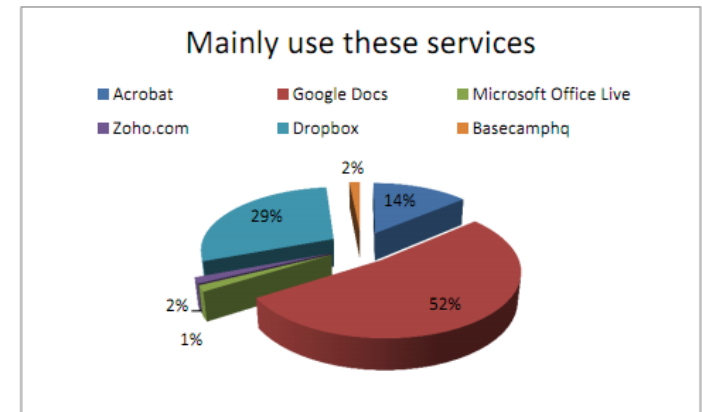
simply posting an initial document which means our expectations were lower for these services. Again in this section we asked our audience of Irish professionals to indicate whether they have heard of particular services, whether they now use or have used them, or whether they are entirely unaware of the services.

Within this category we see that Huddle and Basecamp are the most popular services but with very limited usage compared to the simpler services addressed under personal productivity. Just 19% of respondents have used Basecamp, a service which is extremely popular among technology startups and small businesses, and 16% have used Huddle, a service which is closely associated with LinkedIn. Name recognition for services such as Manymoon, recently purchased by Salesforce.com, was poor at just 7% while the well-established Central Desktop service was unknown to over 90% of respondents.

## Primary Services Used

In a further question we asked our respondents which service they primarily use and whether they use it entirely for business, entirely for personal use or a mixture of both. Google Docs is the clear frontrunner in our sample, with 52% of respondents using it for online file sharing, editing and project collaboration. Dropbox is also popular, as is Acrobat.com.

Almost half of our respondents (44%) use online services for both business and personal use. 25% use them solely for personal use and 18% exclusively for business. 13% of respondents indicated they do not actively use any listed service, meaning they either are not using online services or are using a less common service which was not named in our question.



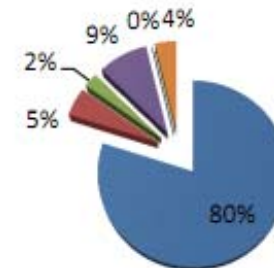
## Scenario #1: Distributing a Single Document

In the second half of our survey we outlined a series of collaboration scenarios and asked respondents to consider a number of possible approaches, some of which used online services and some based on more traditional methods. Our first scenario involved a simple requirement to distribute a single document to a number of external colleagues, i.e., a one-way distribution without needing to collect comments or revisions.

80% of our respondents indicated they would create a document in Microsoft Office and attach it to an email. The popularity of this traditional approach is unsurprising in a very simple scenario but it is notable that even in such a case a relatively large number (16%) would choose a different method. 9% of these individuals stated they would create a document in an online collaboration service and share a link to a file; 5% stated they would first create a document in Office before uploading it to an online service; and a further 2% would upload a file to a file sharing service such as Box.net

### Scenario 1: Distributing a single document

- Create doc in Microsoft Office and email as attachment
- Create doc in Microsoft Office and upload to a document collaboration service such as Google Docs
- Create doc in Microsoft Office and share the file via a file sharing & sync service such as Dropbox
- Create doc in a document collaboration service such as Google Docs and share a link
- Use an external collaboration system provided by your employer, e.g., an "extranet" or external Sharepoint site
- None of the above



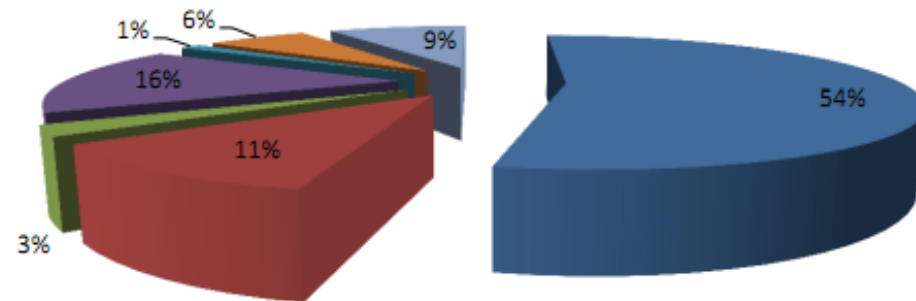
## Scenario #2: Creation of a Report through a Cross-company Team

Our second scenario posed a requirement for a cross-company team to produce a detailed report with input from each team member. In our experience this scenario represents the most common tipping point where a document author or project manager will grow so frustrated that they turn to an online collaboration service. Productivity research has shown very clearly the inefficiency of the traditional approach whereby a draft is created and distributed via email, comments and revisions are manually collated, a new draft is circulated and the process repeats until a satisfactory document is produced or patience is exhausted. We were therefore not surprised to see strong interest in online services in this scenario.

Just over half of respondents (54%) stated that they would use the traditional asynchronous approach outlined above. 16% would create an initial draft in Google Docs, Docs.com or similar and have colleagues directly edit the document. A further 11% stated that they would create an initial draft in Office before uploading the file to a collaboration service for direct editing. The numbers suggesting the use of a sophisticated collaboration tool such as Huddle or Manymoon were extremely low at just 1% and fewer than 10% indicated they would use an official employer-provided collaboration system

### Scenario 2: Cross-company collaboration to produce a detailed report, multiple inputs required

- Create initial draft in Microsoft Office; distribute it as an email attachment; collect comments or revisions via email
- Create an initial draft in Office; upload to Google Docs, Docs.com or similar; have colleagues add input or revisions directly
- Create an initial draft in Office; share the file via Box.net, Dropbox or similar; have colleagues download file and add input or revisions
- Create an initial draft in Google Docs, Docs.com or similar; have colleagues add input or revisions directly
- Use a more sophisticated collaboration service such as Basecamp, Huddle or Central Desktop
- Use an external collaboration system provided by your employer, e.g., an "extranet" or external Sharepoint site
- None of the above



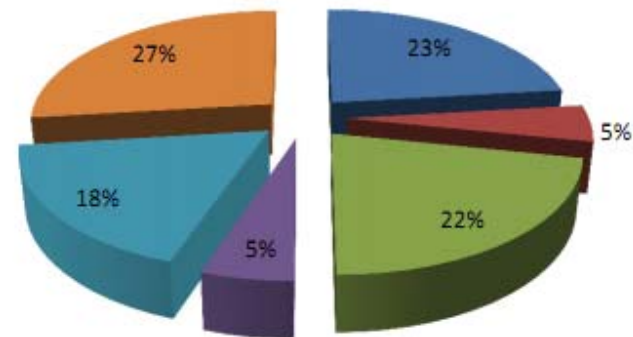
### Scenario #3: Long-running Project, Requirement for Single Shared Document Repositor

In our final scenario respondents were asked to consider a project involving multiple internal and external colleagues which has been running for a lengthy period, in which time a large number of documents have been created. Respondents were presented with a requirement to create a single shared document repository accessible by each team member.

The fact that the most popular response to this question was “none of the above” indicates that many respondents do not know how they could meet this requirement, despite this being a common scenario in external collaboration. The views of the remaining respondents varied greatly, with 23% indicating they would create a shared folder on a file sharing service such as Box.net and 22% opting for a shared folder in Google Docs or similar. A higher percentage than previously, 18%, would use an external collaboration system provided by their employer, potentially suggesting that while some companies have these facilities available the overhead of using them is such that they are only used when absolutely necessary.

### Scenario 3: Long-running Project, Requirement for a Shared Document Repository

- Create a shared folder on a file sharing & synchronisation service such as Box.net, Dropbox, Windows Live Mesh or SkyDrive
- Create a shared project on a full-featured collaboration & project management service such as Huddle, Basecamp, Manymoon or Central Desktop
- Create a shared folder within Google Docs, Zoho.com or similar to store project documents
- Sign up for a temporary Google Apps account and invite each team member to use Google Apps
- Use an external collaboration system provided by your employer, e.g., an "extranet" or external Sharepoint site
- None of the above



## Conclusions

Based on the results of this survey, albeit one focused on a subset of professionals in Ireland, it appears necessity is the main driver of adoption, with many employees not yet using online services simply because the nature of their work has not required external collaboration or complex data management. Nonetheless, awareness of these services is high and the increasing integration with LinkedIn and Google for authentication is lowering the bar to adoption, suggesting that ad-hoc business use of personal productivity tools, online collaboration suites and other online services will continue to grow.

# Preserving Data for Litigation

When an organization is subject to civil litigation, a government investigation or a regulatory enquiry one of the first challenges encountered is the need to preserve electronic data as evidence. In dealing with email or “loose” electronic documents from PC’s and file servers the processes to be followed are widely understood and well supported by current technology. Organizations will typically follow a standard process of identifying relevant email and file repositories, issuing instructions so that their contents are not modified, and finally collecting their contents in a forensically-sound manner which can be explained and defended if issues arise

## Preserving Online Content

In comparison with email and other electronic data the use of online content as evidence is a more recent and complex challenge. Fundamentally the same requirements exist and the same process must be followed: data sources must first be identified; organizations must then ensure their contents are not modified prior to collection; and finally the relevant data must be collected in a defensible manner.

Unlike email and loose files however, the technology and processes required to handle online content as evidence are at a nascent stage. In relation to collection and storage for example there are significant challenges in terms of developing forensically-sound collection processes; defining trustworthy data formats for long-term storage; documenting the provenance of online evidence, etc. At Cernam we are developing technology to address exactly these issues as well as many others and we are currently fielding our technology through consulting projects with key clients.

Until evidence collection technology and standards advance organizations dealing with online content as evidence are primarily focused on the identification and preservation of online content, i.e., discovering the online sources which may be evidentially relevant and attempting by way of policies and processes to ensure their content is preserved when necessary.

## Identifying Personal Online Repositories

As we have discussed in this report many well-meaning employees are turning to online services to boost productivity and engage more efficiently with colleagues. Regardless of the integrity or security of these individual services each one represents a personal data repository which contains business records – a repository which is entirely controlled by the employee and extremely difficult to address for electronic discovery or other evidential purposes.

In order to address personal online repositories an organization must first understand the scale and scope of their problem, for example which employees are using online services, which departments or business units are particularly affected, and which specific services are in use. Much of this detail can be derived from existing IT records, for example the logs produced by many corporate firewalls, proxy servers and other components are an obvious starting point. To the extent that external services interact with the corporate email system it can also be useful to review email server logs, for example to identify sign-up or notification emails from collaboration services, productivity tools, etc.

In several cases organizations have become aware that services such as Huddle were in use based on the integration with LinkedIn, whereby a user will “install” the Huddle application on LinkedIn and potentially notify their LinkedIn connections of that action. Crucially however, these public indications of online services use are also visible to third-parties and could be used to question any evidence collection process which excludes personal online repositories. It is also likely that these lightweight methods of assessing usage will detect only well-meaning employees, with potentially malicious or more sophisticated users necessitating more in-depth analysis.

## Preserving Data in Online Repositories

Once online repositories have been identified, for example a list compiled of all relevant employees using Google Docs, the question of preservation arises: exactly what instructions should be given to staff in order to avoid deleting or modifying evidence in online repositories.

In the context of a high-profile lawsuit or sensitive government investigation it may be acceptable to require that staff immediately stop accessing any online services which store company data. It may even be possible to have relevant employees sign an undertaking that they will not log on to the problem services, for example a Huddle or Box.net account, until they are cleared to do so by the Legal department.

At first glance such a “no further access” instruction might appear equivalent to disabling access to a set of network data or retaining email backup tapes. However, our experience is that such instructions can be extremely dangerous since they fail to take account of the unique nature of these online services. In many cases an employee will stop accessing the account, and data, in question however other colleagues will still have access via the collaborative features of the service, potentially including external colleagues. Data may therefore still be modified or deleted after the hold instruction is issued and could even be maliciously altered by non-employees.

A second and perhaps greater concern relates to the account and data deletion policies of online services. Just as web based email systems such as Hotmail will delete an account if it not accessed for

an extended period, certain online services may remove data, delete accounts or otherwise withdraw service if an account is not used. Equally an employee who has upgraded to a premium service plan might simply cease to pay for the service and rely on the providers billing policies to effectively remove their data, without having violated the “no further access” instruction.

Automatic deletion policies are a particular issue when trial accounts are used for business purposes, since data might be deleted within weeks or months if an account is not upgraded or if some positive step is not taken to enable continued access. For example, Huddle indicate that they will delete any stored content at the end of a trial period while Box.net specify a 30-day period after which they will removed uploaded data. Dropbox offer a free service level but with the caveat that accounts and data may be removed “if your Free Account is inactive for 90 days”. Other services such as Zoho operate similar policies, all of which have the end result of risking the loss of corporate data based on a “no further access” order.

Rather than issuing a blanket instruction covering all online services a tailored approach is needed for each service or category of service. A specific preservation plan should be drawn up for each service covering issues such as ongoing access, deletion of data, payments for any subscription services and access by third-parties. In many instances the features of the online services which are so problematic can also be helpful, for example the fact that most services will maintain multiple versions of a document reduces the impact of inadvertent data changes. As a lawsuit or project progresses the same approach can be taken to collection and / or removal of data from the personal repositories, for example if a

system forwards every revision by email then it may be possible to retain the email data and delete the online repository.

## Assistance in Addressing Online Service

As a specialist digital investigations firm focused on online evidence Cernam works directly with clients to address complex online evidence issues. The issues highlighted in this report around business use of online services are a real and current issue for many organizations and as electronic evidence increases in importance there is an increasing need to address data stored in online repositories.

### **For organizations who wish to address these issues Cernam can assist at every stage of the process, for example:**

- › Formulating processes and policies to address online repositories in e-discovery
- › Engaging with corporate IT departments to determine current usage of online services
- › Documenting current usage in terms of specific individuals and services
- › Developing service-specific preservation plans to address the unique features of each service

### **For organizations who have already taken steps to control the use of online services Cernam's expertise can help to verify and document current controls, for example:**

- › Examining the resiliency and integrity of current blocking technologies to determine means of bypass
- › Analyzing current logging and reporting within blocking systems, e.g., to confirm correct level of detail capture
- › Assessing current exceptions and bypass policies relating to website blocking system
- › Documenting current usage of online services based on approved exceptions or bypass arrangements

### **Finally, for organizations with current litigation or other matters involving online evidence Cernam can provide specialist expertise and work with other resources to:**

- › Examine Internet access patterns to identify personal online repositories associated with relevant employees
- › Identify online services which may contain relevant business records or correspondence
- › Develop policies and technical measures to enable consent-based access to personal online repositories
- › Collect data from online collaboration systems, productivity tools and other online service

To discuss these matters further or learn more about Cernam please see [www.cernam.com](http://www.cernam.com) or contact Owen O'Connor via email at [Owen@Cernam.com](mailto:Owen@Cernam.com). For updates on Cernam and our work in online evidence you can follow us on Twitter ([@CernamOE](https://twitter.com/CernamOE)) or subscribe to our blog at [www.cernam.com/blog](http://www.cernam.com/blog).