

# Cloud Computing

Martin De Saulles

## Recent News

Perhaps one of the most important stories in cloud computing during the last several months has been the revelation that the National Security Agency (NSA) in the US and GCHQ in the UK have been able to decode encrypted data sent over the Internet. According to the *Guardian* (<http://www.theguardian.com/world/2013/sep/05/nsa-gchq-encryption-codes-security>), these organisations have been covertly working with major technology companies to insert backdoors into commercial encryption software, allowing them access to what users thought were secure messages and data. This revelation raises a number of disturbing questions about how much encrypted data the NSA and GCHQ have decoded and stored, what they have done or intend to do with it and, more importantly, how can we trust that our data in the cloud is safe. The agencies would argue that their efforts are in the interest of national security but as Bruce Schneier, an encryption specialist and fellow at Harvard University, argues in the *Guardian* article, "By deliberately undermining online security in a short-sighted effort to eavesdrop, the NSA is undermining the very fabric of the Internet." Whatever the pros and cons of these revelations, it has probably made persuading large organisa-

tions to move their IT functions to the cloud a harder sell for vendors.

However, these vendors might take heart from research reported in *Forbes* (<http://www.forbes.com/sites/louiscolumbus/2013/09/04/predicting-enterprise-cloud-computing-growth/>) that claims global spending on cloud computing will grow at a compound rate of 36% to 2016, when spending will reach \$19.5 billion. The largest sub-area of spending over the next 12 months is on internal private clouds which, bearing in mind the NSA/GCHQ story above, might be safer than trusting it to public cloud infrastructure.

## A virtual filing system

You've probably heard of Evernote and maybe even use it. If you have not tried this information capturing and storing device, then I strongly recommend you give it a go. I've been using it for about four years, and it has gradually become the key place where I store digital documents, write down ideas, plan classes that I teach as well as more mundane tasks such as shopping lists and recipes. I wrote this column on Evernote. Think of it as a virtual filing cabinet in which you can create folders (or notebooks as Evernote calls

them) and within those individual notes. You can also attach PDFs, Word documents, PowerPoint presentations and images (and many other formats) and Evernote will index the text of those files to allow efficient searching and information retrieval. The ability to allocate tags to individual notes complements the notebook structure and, if used properly, allows notes to be retrieved across multiple notebooks. The four things I value most in Evernote are:

1. Evernote software can be installed on PCs (PC or Mac) allowing a local copy of notes and attachments to be kept onsite. The more you upload to Evernote, the more important this is as even if the company disappeared tomorrow, you would still have all your data. This hybrid cloud model works well and allows the synchronisation of data across multiple machines. I have Evernote software installed on my home and work PCs, so I have an extra level of redundancy as my data is stored on two machines in different locations as well as on the Evernote servers;
2. Because all your data is synchronised to the Evernote cloud, you have full access to all your data via any web browser. I know some people who do not use the PC software at all and only use Evernote from their browser and smartphone;
3. The text recognition works very well and even uses OCR on image files. I am amazed how accurately Evernote recognises text on handwritten notes which I have photographed with my phone and uploaded via the Evernote Android app (there is also an app for iPhones);
4. The smartphone apps are very well designed and provide full access to all your Evernote data. The ability, mentioned above, to take photos via the app and instantly upload them to Evernote works well as does the voice memo functionality which I have used a lot to capture ideas when out and about.

The basic Evernote service is free, but for £35 a year you can upgrade to the premium service, which offers advantages such as note sharing, faster indexing and better searching within documents. In June 2012 the company claimed it had 34 million users, with 1.4 million of those paying for the premium service. Even if you only use it as a place to store and index PDF documents, I would argue it is worth the annual £35 as you would have all your files backed up and accessible from any browser.

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