

OPINION

LOGISTICS

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Software applications for logistics can be anything from sales order processing or warehouse management to highly mathematical route optimisation

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Cloud computing

■ Could IT really be getting cheaper and need less kit than previously? DataArt's John G O'Brien MILT argues it's time to get our head *into* the clouds.



'IT often gets a bad press for over-promising and under-delivering. The cloud will help to turn around that perception,' says author John G O'Brien.

In its relatively short lifetime, information technology (IT) has probably generated more acronyms and given rise to more mysteries for the uninitiated than just about any other business discipline. IT change comes in waves. Y2K came and went, leaving most oblivious to quite what it was all about, and some just a bit irritated by how much it cost. (Believe me, it was worth all the effort.) The dot.com bubble burst, but left some sparkle and the results are here to stay. Another wave is breaking: cloud computing is playing an increasingly significant role in the way IT runs in the background, and over time the effects will become more visible at the user front-end.

In this article I hope to shed some light on what is different about cloud computing and how it is likely to change the way we use IT, focusing on the change occurring in how information is managed within the enterprise as cloud computing extends its reach. I want to draw attention to how cloud computing will impact on the price we pay for IT (the good news is it is getting cheaper) and to say a little about what cloud computing is doing for the logistics sector.

What is cloud computing?

From an end-user perspective, the short answer is: mostly the same as we always had, but packaged up a

different way. The big changes right now are occurring under the bonnet. The accounting system still does the accounts and spreadsheets do what they always did, but where the files are kept and where the processing power comes from changes. How you get at things changes, as well, and depending on where you are starting from and how far you choose to go with cloud computing, these changes may be significant with some powerful advantages, along with one or two concerns of which you should at least be mindful.

More than anything, cloud computing revolutionises how software applications are deployed and how we access them. To put that in context it helps to say a little about how we got to where we are. When computers first moved out of universities and into offices, the physical manifestation at the user end was the green screen or so-called dumb terminal. It was dumb because it had no processing power of its own and it had no file storage capability. It merely provided a window into the mainframe running in a computer room or data centre nearby. Before long, personal computers (PCs) came along with their own processing capability and the ability to connect to a central computer or file server. This became known as client-server architecture and, like the mainframe, it is still around.

In its infancy, the internet was a place to publish information and advertise your wares. Then it became interactive, and by a process of natural selection a set of applications emerged that link and are used by people everywhere to communicate and share information. These were, in effect, the first cloud computing applications.

Access to these applications is primarily through web browsers and mobile devices. In principle, there is nothing to stop these browsers delivering the same applications that previously ran on desktop PCs, and that is in effect what is happening. Most of us are familiar with the idea of a URL or web address; it is how we find the page we are looking for. In the early days of the internet, that page was likely to be a website with information about a company or perhaps a document with information on a particular topic. Today it is just as likely to be where we go to find applications such as email – and that is cloud computing. The wheel has turned full circle; the applications themselves are once again running on large powerful computers remote from the end-user.

What is happening in logistics?

Any attempt at defining the word 'logistics' tends to give a pretty good insight into just what an all-encompassing term it actually is. Likewise, software applications for logistics can be anything from sales order processing or warehouse management to highly mathematical route optimisation to data collection from engine management systems. It will be a long time therefore before enough applications become available through the cloud to run an entire logistics operation, but a start has been made.

Logistics processes are complex and many parties will be involved between the point of production and the

consumer of any product. Putting applications like sales order processing and warehouse management systems (WMS) in the cloud will be interesting, but the opportunity to facilitate multi-party access to the same piece of information could be the area where the cloud makes the biggest impact. It is easy to visualise scenarios: select the preferred transport provider, and route documents and instructions to the provider seamlessly. This model will attract players wanting to establish dominant value-added networks and the race is already on. Descartes Systems Group claims to have been offering cloud-based logistics applications before the term was invented.

What is in the cloud?

It helps to think for a moment about what we use computers for in business. This breaks down broadly into two categories: office automation applications – email, word processing and spreadsheets; and what are called back office applications – what we use to plan and manage the business. The automation stuff is already in the cloud. Most of us have our work email address and another one for personal stuff that we get from Google or Yahoo or similar. We do not pay for these in return for allowing ourselves to be advertised to in astonishingly subtle and clever ways. These are not free applications! When we signed up for these email accounts they might not have been called cloud applications, but that is what they are. As soon as we could send each other emails from personal accounts we wanted to include attachments, so applications came along to open up documents and spreadsheets. This had to work from internet cafés where there was no guarantee of Microsoft Office being available, so simple, free analogues quickly came along.



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Putting applications like sales order processing and warehouse management systems (WMS) in the cloud will be interesting

The back office applications are taking longer to make their presence felt, probably because they are less generic and more particular to whatever business we might happen to be in. This is the area where things are likely to change most, however. Some candidates emerged quite quickly that lend themselves to the new way of doing things with customer relationship management (CRM) being an early success story. Why CRM? Possibly because sales people, who use them a lot, are by definition mobile and rarely in the office, but require constant access to their main database.

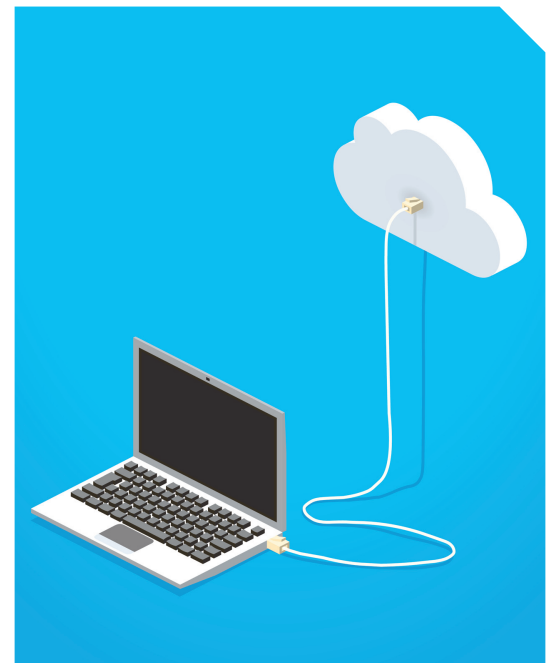
These back office applications are not free, but they are driving a major change in the way we acquire and pay for software applications. We no longer kit ourselves out with more shiny new hardware and buy licences that hit the capital expenditure budget in the solar plexus. Instead, we pay for what we use under the pay-as-you-go Software as a Service or SAAS model. As more applications become available under this model, small companies can aspire to software functionality previously only accessible to corporations with formidable budgets.

Technically, what is different?

Not all cloud-based applications are equal. Application vendors wanting to promote cloud versions of existing applications may make the application available through a web front end. Instead of clicking on a desktop icon, you open a web page to see the application, and it looks and feels more or less the same as it always did. Applications developed specifically for the cloud are subtly different. Computer programmers who develop Microsoft-based applications now have within their development environment tools that facilitate writing applications to be delivered through the cloud. Microsoft calls this Windows Azure. The application is written from inception to anticipate the cloud environment and in particular to utilise features of the cloud. The practical

implication of this from an end-user perspective is likely to be in the area of performance and resilience. A web front end to a legacy PC application is unlikely to take advantage seamlessly of spare capacity on available servers, for example.

Amazon is staking its claim on the cloud, but while Microsoft majors on the development environment, Amazon majors on where the code will run. Its Elastic Compute Cloud is more like hardware-as-a-service. However, it goes further; Amazon Elastic Beanstalk makes life easier for the developer by taking care of application deployment once it is ready to be published. Amazon's cloud supports Microsoft applications, but it supports a lot of others, too, which can only be a good thing.



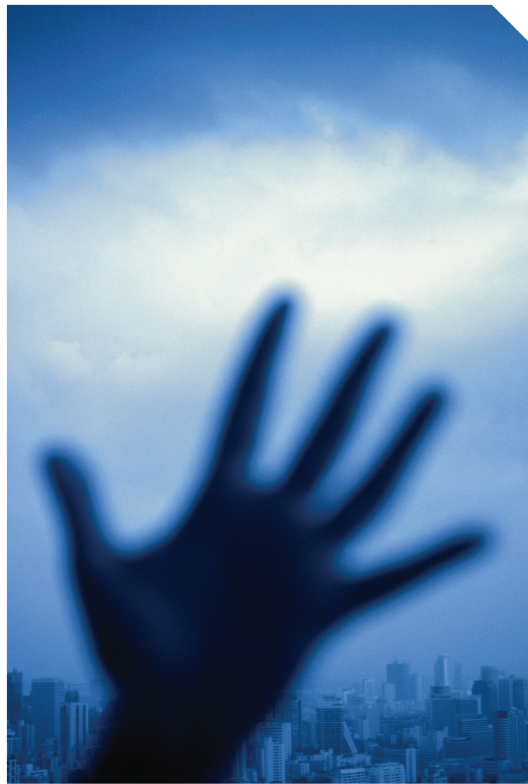
Google Apps for Business takes the automation stuff and packages it nicely for commercial use so that using Google Mail, for example, instead of john.Smith999@gmail.com you can have John.Smith@SmithsWidgets.com type addresses. Not only does this look so much more professional, but also it is a lot simpler, albeit less sophisticated, than a corporate email package to implement. More intriguing, however, is the Google Apps Marketplace with functionality for, say, accounting, sales and marketing that opens up the possibility of running the entire enterprise using just Google for IT, with some nice integration built in from the start.

Force.com is from SalesforceCRM and looks like a natural extension for that company, given its history as a pioneer in cloud computing. Appforce claims to build project management, HR and finance type applications five times faster at half the price of traditional development methods. It has an app exchange where you can download free and paid for applications that in themselves are quite useful but do tend to have the main Salesforce application as their basis. In other words, if you are not already using Salesforce, this might not be where you would go for your new cloud applications.

No single player dominates the cloud environment so far and it remains to be seen if a clear leader will emerge, but there are some big names waiting in the wings. Get ready to Facebook your colleagues for work, as well as your friends socially – it is coming.

The cloud forecast

As adoption of cloud-served applications increases, organisations will need fewer people looking after expensive computer rooms. They will be replaced by massive facilities built and run for us by companies such as Microsoft and Google, with backups and disaster recovery taken care of along the way. Installing software will become a thing of the past, as you only need access to a web address. The cost of IT will go down as access to powerful applications comes within reach of even modest budgets. Anytime, anyplace, anywhere access to applications using just tablet and hand-held devices will provide significant benefits in terms of flexibility and improved productivity.



There are downsides, though. The minute you stop paying the bill for applications delivered through the cloud they can evaporate, taking your data with them if you have not made provision for this eventuality. Data records created, manipulated and stored remotely are protected by encryption. Theoretically, however, government agencies, including those of foreign governments, may access information managed in the cloud. In practice, this is probably no more likely than similar access to other confidential information, such as bank statements or mobile phone records.

IT directors of old are giving way to the new breed of chief information officers and in turn they are shifting the emphasis away from data and on to information. That can only be a good thing. IT often gets a bad press for over-promising and under-delivering. The cloud will help to turn around that perception.

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ABOUT THE AUTHOR

John G O'Brien MILT graduated with a Masters in Computer Science before going to work in the Systems Office of Ford Motor Company for 12 years. Having held two IT Director positions in logistics, he started his own software company specialising in applications for logistics. He now works for DataArt. **Contact, email: John.O'Brien@DataArt.com**

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For more information about the issues discussed in this article, why not join our Data Capture and Information Management Forum? See our website www.ciltuk.org.uk for more information.

