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White Paper

Cloud Migration for SMBs:
Harnessing the power of cloud computing

Cloud computing now holds a central place in the modern IT landscape for large, medium and small enterprises alike. According to the Cloud Industry Forum (CIF), for example, 84 per cent of small and medium businesses (SMBs) in the UK currently employ some form of cloud services, up from just 48 per cent in 2010. Furthermore, almost 80 per cent of SMBs use more than one cloud service.

Cloud computing allows SMBs to compete, on a technological footing, with much larger enterprises by giving them access to vast computing resources, and access to a multitude of applications and services that they would not normally be able to finance. Cloud migration can reduce costs and offer a level of flexibility, agility and scalability that premise based solutions can't provide. Not to mention improved IT security that is often stronger than on-premise systems.
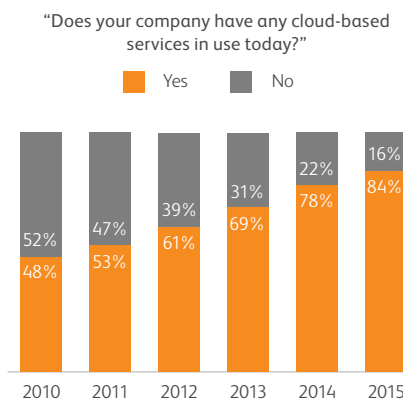
ACCESS TO AN ENTIRE INFRASTRUCTURE

SMBs can now build an entire IT infrastructure for themselves, with office productivity tools, collaboration applications, mobility, and even sales and marketing functions within a matter of minutes, and at a fraction of the cost of bloated, time-consuming on-premise, bespoke deployments.

Cloud services cover a broad range of functions including, but not limited to, email, file sharing, collaboration tools, webhosting, ecommerce, mobility, CRM, analytics, finance, online storage/backup, to name a few.
The benefits of cloud migration are myriad. Reducing

capital expenditure is often the primary motivator for moving operations to the cloud. Cloud services negate the need for the costly implementation and maintenance of on-premise hardware and software, easing the pressure on already squeezed IT resources and budgets. It provides access to 24/7 IT support, along with better resilience and reliability. Flexibility, agility, scalability and mobilisation are just some of the other benefits of using cloud services.

FIGURE 1: UK CLOUD ADOPTION SURVEY (CIF, 2015)

"Does your company have any cloud-based services in use today?"

Yes　　No

Year	No	Yes
2010	52%	48%
2011	47%	53%
2012	39%	61%
2013	31%	69%
2014	22%	78%
2015	16%	84%

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Another advantage of cloud computing is that it can future-proof the IT needs of SMBs allowing companies to add, upgrade, downgrade, or change the amount and type of services they require, or offer to their own customers, almost at will on an on-demand basis.

However, the benefits of cloud computing do not end at the bottom line. Indeed, cloud services provide competitive advantage by facilitating flexibility and agility: the power to increase or decrease the use of cloud services as required, or to deploy new services as the business grows. Agility today can mean the difference between business success and failure.

There are further more intangible benefits such as allowing flexible working outside the office. As long as employees have access to corporate data they can work from anywhere, thus reducing operational overheads. Greater collaboration between departments, improved efficiency and productivity and improved employee satisfaction are all cited by users are clear benefits.

An increasing number of businesses are moving towards the cloud, in order to harness the clear advantages it offers. We are now at a point where a businesses can be run from within the cloud. So its not a question of whether to move to the cloud, but when. This white paper will describe what the cloud is, its benefits, the challenges, and how SMBs can best manage their migration to the cloud and harness the opportunities it offers.

WHAT IS THE CLOUD?

Essentially, the cloud is synonymous with the Internet. Data storage, application usage, backup, and even IT infrastructure, is hosted in a dedicated server farm built and maintained by a cloud service provider. All computing power, hardware and software is run by the provider, which is then accessed – via the Internet – by its customers i.e. businesses of all sizes.

At its simplest, cloud computing means storing and accessing data off-premise over the Internet – rather than on a desktop computer, laptop or mobile device, or on an on-premise database. In the cloud, everything is accessed over the Internet, and cloud computing is synonymous with the Internet.

With cloud computing, any business can access a wide range of off-the-shelf applications and functions, storage and backup solutions, disaster recovery capabilities, all of which can be changed, upgraded or downgraded almost at the flick of a switch, according to current business needs. Conversely, maintaining and upgrading on-premise (non-cloud) resources would require weeks of work for an IT department, for example to install an additional database or to launch a new application.

Many SMBs will already be using a cloud service, sometimes without even realising it, for example, website hosting, Microsoft Outlook for email, or Dropbox for file sharing. Indeed, many SMBs are now embracing cloud office productivity tools, such as Office 365 and Google Apps, as more nimble, lighter alternatives to on-premise solutions, such as Microsoft Exchange.

Of course, as cloud computing provides access to business functions, services and applications via the Internet, without the need for software on a client device, users can use them on any device of their choosing, from desktop to laptop to smartphone. This immediately provides customers with a more accessible and flexible way of working.

Cloud applications and services span a gamut of functions, from email to collaboration apps to finance and sales applications. Examples of popular cloud applications and services include:

- Email/collaboration
- Office tools/productivity
- Web/ecommerce
- IT Department
- Marketing
- Sales
- Customer care
- Operations
- Product management
- HR

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PUBLIC VS. PRIVATE?

There are four main types of clouds:

Public clouds – As the name suggests, a public cloud offers the resources of a cloud service provider, such as servers, data centres, applications, computing power and infrastructure, to the general public via the Internet. While public clouds are synonymous with the consumer, one-man bands and small businesses are likely to make use of public cloud services, such as webhosting, email, and data backup. Public clouds are usually sufficient for the requirements of small organisations, and are particularly favoured by younger, agile companies.

Private clouds – Private clouds are more synonymous with medium-sized organisations. A private cloud is typically dedicated to one organization, which gains access to its own highly secure, private network. In a private cloud a customer, your business, is allocated 'ring-fenced' resources and services – such as data storage space, computing power, and applications – within the cloud service provider's infrastructure. Private clouds for SMBs are usually created off-premises at the service providers locations, but can be developed on-site too, usually for larger enterprises. Private clouds deliver virtualized applications, communications, and infrastructure services

Hybrid clouds – Hybrid clouds offer the best of both worlds of public and private clouds. They enable an organisation to retain dedicated, private resources, for example for storing sensitive data and information or for hosting mission-critical applications, while offering access to the wide variety of cloud computing services offered by public clouds on a subscription basis.

Community clouds – These are usually collaborative versions of a private or hybrid cloud created and shared by a small number of organisations, for example, from the same industry vertical. Costs are split between the users.

There are also different types of cloud service options. Cloud computing is the umbrella term for a number of service options, as outlined below:

Software-as-a-Service (SaaS) – SaaS provides customers with a specific application or service on a subscription basis. Simple examples might include webhosting, Dropbox and Salesforce.com. As always in the cloud, the applications are managed, maintained, and run by the cloud service provider on their own infrastructure, and accessed by customers via the Internet. Most SMBs will find that SaaS is an ideal way of gaining access to a limited number of applications and services – which may otherwise be cost-prohibitive and difficult to manage as on-premise solutions – in a simple, fast, and scalable manner.

Infrastructure-as-a-Service (IaaS) – As the name implies, the IaaS model allows businesses to 'rent' dedicated physical infrastructure, such as an off-site data centre, from a cloud service provider on a subscription basis, without the need to build and maintain costly on-premise infrastructure. Components might include servers, databases, firewalls, storage, computing power, and so on. The infrastructure will be used by multiple customers of the cloud service provider, and so allows smaller organisations, for example, to gain access to powerful data centres, which would otherwise be out of their reach.

Platform-as-a-Service (PaaS) – PaaS provides organisations with their own off-premise platform infrastructure on which they can create and deploy their own bespoke and custom applications, database and line-of-business services in an integrated environment. It means that the company and its developers can focus on creating innovative and creative applications without having to worry about the infrastructure requirements. Applications can be launched at the click of a button, providing speed, scalability and agility to organisations without the need for costly and resource-heavy on-premise hardware and software deployments.

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THE BENEFITS OF CLOUD COMPUTING

Cost reduction

Reducing capital expenditure is probably the prime driver for smaller organisations migrating their operations to the cloud. Every SMB wants to grow in a sustainable way, but are often constrained by the costs and resources required to invest in business technology to drive growth. Cloud solutions offer SMBs a low-cost option to gain access to resources that would be otherwise out of reach to the majority.

The cloud eliminates most infrastructure costs, including servers, databases, software upgrades, backup storage, physical space and cooling, as well as significantly reducing maintenance costs and staff resources. It is estimated that cloud solutions offer savings of between 11 and 50 per cent compared to on-premise solutions.

As well as eliminating the need for new infrastructure, such as servers, databases, and software, cloud services can significantly reduce the need for dedicated IT staff to manage and maintain resources – migrating to the cloud means that IT staff no longer have to install new software on local device, secure sensitive data, perform daily backups, or maintain in-house IT infrastructure. In turn, the cloud reduces the cost of IT staff and resources, in exchange for the 24/7 support provided by cloud service providers. A further saving comes from the elimination of maintenance and upgrade costs for technology and new applications once existing services inevitably become obsolete at some point in the future.

Growth, scalability & agility

Many SMBs reach a growth plateau at some point in their evolution – sometimes referred to as 'crossing the chasm' – whereby they are at maximum capacity, but lack the additional resources and income to invest in, and expand, the business productivity tools, applications, and staff required to move to the next level. Cloud solutions offer SMBs, in particular, a low-cost option to access the same computing resources as much larger enterprises, at a fraction of the cost of on-site solutions. SaaS solutions, for example, can provide office and productivity tools, collaboration applications, mobility on a subscription basis.

Furthermore, with cloud solutions, SMBs can upscale and downscale their storage, application and computing requirements in almost real time, affording them great scalability and the ability to ride peaks and troughs in business demand, without paying for on-premise resources that may sit idle during quiet times, yet still come with associated costs. IaaS, meanwhile, allows small businesses to maintain lean operating costs on a flexible, pay per usage pricing structure.

A further benefit of cloud solutions is that they provide almost unlimited agility and rapid deployment of new business functions. Services and applications can be added, changed or removed rapidly in response to changes in the business environment, or when organisations are looking to expand into new revenue opportunities. The cloud also allows organisations to test new processes or services without the risk of buying in new infrastructure or investing time and resources into developing new applications of on-premise solutions.

Accessibility

One of the main advantages of cloud computing is that it provides SMBs access to an almost limitless supply of high-powered, sophisticated computing resources that previously have been the preserve of much larger enterprises. Young companies running their operations in the cloud always run the latest versions of software and applications, at a fraction of the cost of on-premise solutions. Companies can now run their entire business operations in the cloud should they choose.

High availability & 24/7 support

Some large cloud service providers, such as Rackspace and Amazon EC2, offer exceptional service level agreements – 100 per cent and 99.95 per cent, respectively. Redundancy, resilience, data mirroring and high availability guarantees are built in to almost every cloud service providers infrastructure. Furthermore, responsibility for availability, maintenance, and 24/7 IT trouble-shooting and support lies with the cloud service provider, meaning that SMBs probably have a more resilient operation than they would with an on-premise solution.

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Security & compliance

Security is commonly cited by SMBs as the main inhibitor to cloud migration, but in reality cloud-based servers are probably more secure and resilient that traditional than on-premise servers. Cloud service providers will likely have antivirus, intrusion detection and network protection capabilities built into the infrastructure, making cloud services an extremely secure, resilient and disaster-proof option for SMBs.

Furthermore, the right cloud service provider will offer applications, particularly vertically focused apps, embedded with the appropriate compliance requirements.

Mobilisation, collaboration & employee satisfaction

As it is Internet based, the cloud offers the opportunity for employees of any company to access corporate data and applications wherever they are, and on any device, providing they have a broadband connection. Field workers have instant access to information and collaborative tools, which in turn can boost productivity and, by allowing flexible working, employee satisfaction. Time after time surveys reveal that many employees would leave their existing job for another at a different company if it offered better flexible working options.

THE CHALLENGES OF CLOUD COMPUTING

Security & complexity

Security is still the number one concern of SMB owners looking to migrate their business operations to the cloud. The perception is that by storing data – often critical or sensitive in nature – organisations somehow 'lose control' over how and where that data is stored and secured. However, it is becoming increasingly clear that these concerns are largely unjustified, with many tests and surveys revealing that cloud security is often stronger than for on-premise solutions.

FIGURE 2: PERCEPTION vs REALITY, ATTITUDES TO CLOUD SECURITY (CIF, 2015)

Perception of risk
70%

Reality of risk
<1%

70% of UK business report concerns about the security of their data in the cloud.
99% of cloud users have never experienced a security breach.

According to recent research from the Cloud Industry Forum (CIF), for example, 70 per cent of UK businesses are concerned about data security in the cloud. However, it says, these concerns are not the reality experienced by cloud users, with 99 per cent never having experienced a breach of security.

Indeed, the most likely source of data loss or a security breach comes from end-user error, whereby passwords are accidently lost or shared, or, for example, a laptop containing sensitive data is misplaced or stolen. In this case, the problem resides not in the cloud service itself, but in better education of employees using these services.

For companies that do want to store sensitive data in the cloud, the migration can seem daunting. However, a carefully planned, incremental migration of data to the cloud, combined with a collaborative approach to the migration with your cloud service provider, can minimise the stress and danger of the migration. Once in the cloud, the data is likely to be more secure than it would be stored on-premise.

Complexity is another inhibitor cited by SMBs that can hold them back from making the move to the cloud, and missing out on the significant opportunities it offers. Again, a well-structured migration path, based on immediate costs and priorities, and current business requirements, can help to ease the transition.

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MANAGING THE CLOUD MIGRATION

Many small and medium business owners are involved with overseeing every aspect of running their own company, so the thought of migrating business-critical applications and functions to the cloud, and relinquishing the control that they have been used to, understandably creates a certain amount of apprehension and reluctance. However, the advantages that cloud migration offers are difficult to ignore.

Cloud migration need not be difficult or stressful, as long as there is a well-structured migration plan in place, and a deep understanding of the business requirements. It is not a technology decision, so organisations should not get hung up on, for example, choosing between public or private cloud, or SaaS and IaaS solutions. It is essential to define the business objectives first, and then choose the cloud solutions that will help to achieve those goals. SMBs should consider a number of factors, such as does the business have existing bespoke applications that might not be available in the cloud, or mission critical data requirements? Are there specific data synchronisation requirements, or do certain functions need to be tightly integrated with other functions? Do some functions need to meet compliance objectives? What about disaster recovery, data retention needs, and so on?

Working with a third-party specialist can also help to define immediate and future business goals, enabling organisations to get the right tailored cloud solution that's a perfect fit for their business. The other good news is that cloud migration does not have to be an all-or-nothing affair. For example, a small company may only require an off-the-shelf office productivity tool, such as Office 365, or collaboration software, in which case the decision is relatively straight forward: the right cloud service provider, promising an appropriate level of availability (99.95 per cent, for example), at the right price.

In reality, most businesses will be looking for something a little more complex from their cloud migration. Again, this need not be a daunting prospect. Once business objectives and processes have been defined, choosing the right cloud solution should be relatively simple. If, for example, your company has sensitive data, or a bespoke application that has been developed over many years, it is still possible to continue running these on-site, while using the cloud to deliver new or more powerful applications, for example, alongside. In fact, not all data is suited to migration to the cloud, so again organisations can remain in complete control of their migration, provided they understand their exact requirements.

Choosing the right cloud service provider is an essential component of the decision. Whether making those decision alone, or alongside a dedicated third-party service provider or consultancy organisations should consider whether the provider offers the levels availability or security and compliance obligations required. Do you need 99.999 per cent availability, and if so, is it worth paying more for that level of availability, or can some applications work with a lower availability requirement?

When it comes to data migration, there are inherent risks involved in moving data, such as corrupt files, or lost data. Again, there is no rush. An incremental data migration can help to minimise any risks, and make the transition less fraught and stressful. The bottom line is that, if mission-critical or sensitive data does not need to be moved to the cloud, then don't move it. Another factor to consider is how much control does your organisation need over configurations and APIs, for example. Your business may require two functions to be tightly integrated with one another, in which case it is vital to ensure that the cloud service provider can enable this. Security is more of a perceived risk, but it is still worth discussion your requirements with the cloud service provider, at least to put your mind at ease. Ensure, however, that you know where your cloud service provider will keep your data, and that you understand its storage backup and disaster recovery plans, and how it meets any compliance obligations you may have.

Do not be afraid to ask a cloud service provider for case studies, particularly if they have similar companies to yours as customers. What do they offer other customers? What have been the benefits? How difficult was the migration?

Finally, the point of cloud migration is to enable remote access to data, applications and services, so it is essential to ensure that connectivity to the data is protected and available at all times.

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CONCLUSION

Migrating to the cloud offers significant benefits and opportunities to SMBs, providing access to computing resources that small and medium business owners could only have dreamed about just a few years ago. The cloud can level the playing field for SMBs, giving them access to the resources of a much larger company.

The cloud offers growth, agility, scalability, flexibility and future-proofing all at a fraction of the cost of an on-premise solutions. It is easy to procrastinate over perceived security, complexity and migration concerns, but the opportunities offered by the cloud are too great to be ignored. Working with a third-party service provider can allay these fears.

The beauty of a cloud migration is that organisations can choose to migrate as much, or as little as they feel comfortable with. Sensitive data can still be maintained in-house on a Microsoft Server, for example, while gaining access to the latest office productivity tools, such as Microsoft Office 365 or Google Apps, on a monthly subscription basis. Migrations can be incremental, or for younger companies without existing bespoke solutions, can be seen as a great 'greenfield' opportunity.

Furthermore, cloud computing offers SMBs the ability to upgrade, downgrade, and even change its business technology requirements at the flick of a switch, not only protecting the organisation from swings in demand, or a change in the business environment, but also future-proofing the business and allowing it to grow in a sustainable manner.

As long as the migration is well-structured and fully-planned, based on a detailed analysis of the business requirements, there is no reason why a cloud migration should be challenging. It is not an all-or-nothing decision, and can be achieved incrementally as the business grows, or as the business becomes more comfortable with the cloud, for example, after migrating small amounts of data, or using a single application, in the cloud first. Remember, it is your migration and you are in control.

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