White Paper

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Cloud Computing

Effective Web Solution Technology Investment

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Cloud Computing

The future of effective technology investment

The benefit of web solution technology within an effective business strategy

Web solutions bring many benefits, including a relatively low cost and fast return on investment (ROI) through the creation of core web solutions such as websites or extranets. The ability to distribute your essential messages and information to a global audience directly over the web, whilst improving your internal operations, also leads to a greater awareness of your organisation and the creation of a rapid ROI.

Medium sized organisations are often frustrated by the difficult decisions they have to make in relation to future technology investments. These organisations are large enough to need a reasonable level of technology infrastructure to function effectively, but have to bear the cost penalties that go with setting up and managing a technology support team and the associated IT budget.

The key focus for many SMB organisations is traditionally on targeted and planned achievements and changes over a three to five year period. Most organisations focus on these five key business challenges:

- Managing costs across the organisation to ensure returns on investments are maximised.
- Improving employee and internal efficiencies to maximise the returns on personnel costs.
- Improving internal employee and external customer and partner communication effectiveness.
- Improving awareness of their organisation and their products and services.
- Generating incremental revenue and profit based on targeted levels of investment.

By delaying the use of modern technology to solve the challenges above, many SMBs and larger organisations are being outpace by their more proactive competitors. This is often because of a belief that many of these challenges are simply too difficult or expensive to tackle without a large amount of effort, when most board members want to focus on profitability and more day-to-day concerns. Alternatively, the view of senior managers may be that their organisation is just not large enough to invest significant funds in IT improvements, or to spend time and effort implementing new technologies that could help solve many of these challenges.

One explanation as to why board members avoid making big decisions on IT, or are slow to invest in technology, is that many of them are simply not aware enough of new technologies available, how it can help and what it can deliver. There is frequently an assumption that investment in technology can only mean additional infrastructure, cabling, server racks, PCs and laptops, together with expensive software licenses that have to be regularly upgraded, plus the cost of a team to support and maintain the new technology on the ground.

What ‘cloud’ computing solutions are available?

Most of the major technology vendors now offer some form of cloud solution. The names of cloud technologies you may well have already heard of include Microsoft Office 365, Microsoft Online Services, Windows Azure, Amazon Web Services, Google and Salesforce.com. However, due to the cost and flexibility benefits of cloud solutions, the list of effective cloud technologies available to organisations of all sizes grows by the day.

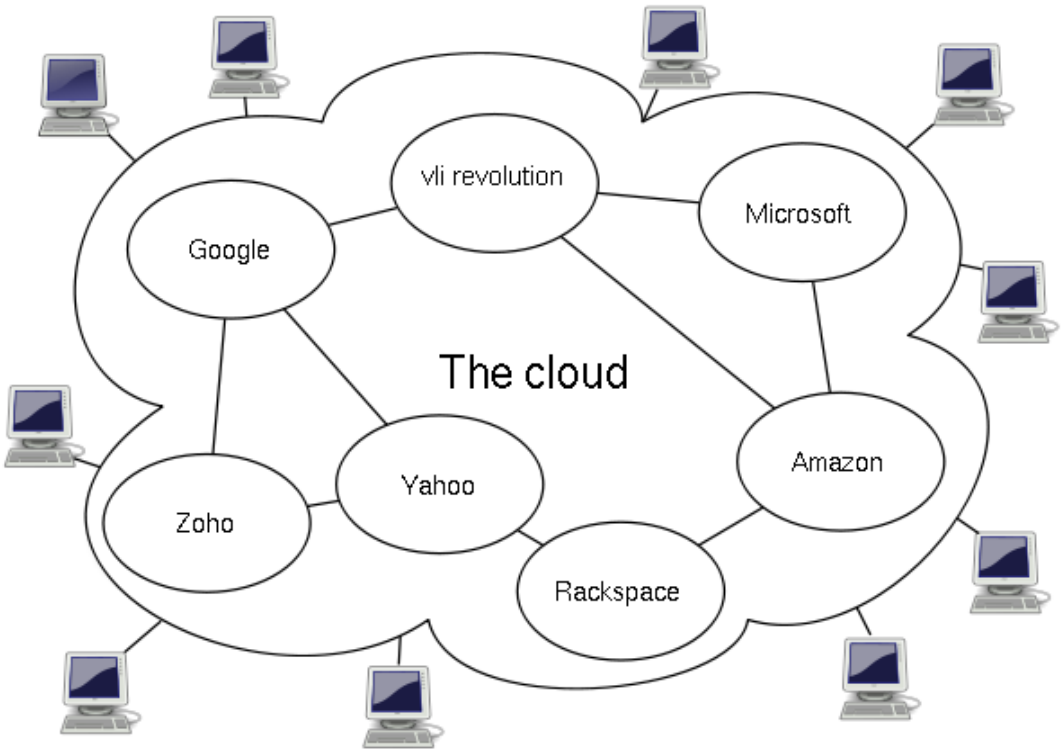
Why has 'cloud' computing become so important?

One of the biggest challenges facing organisations is what proportion of turnover to invest in effective technology. Most corporates invest around 3% to 5% of their turnover in technology, compared to current SMB investment levels of less than 2%. This differential in technology investment can be partly explained by the fact that most corporates have IT teams with available time to keep pace with new technology, understand it and fully assess how it can best help their organisation.

Key fact: whilst technology may require a significant outlay, it is far more likely than any other area of investment to achieve successful results against all of the five core business challenges outlined.

What is 'cloud' computing and where did the term come from?

'Cloud' computing is a relatively new concept that hit the business world around 2007, and the term 'cloud' really just means the internet or web. Cloud computing in its simplest terms is the provision of demand-driven software, web solutions, services, applications, information and data storage, all accessed directly and securely by users over the internet through a simple web browser, instead of being provided via a server or PC.



Major IT and eCommerce vendors like Microsoft, Amazon, IBM and Sun have joined a variety of technology and service providers in creating and satisfying demand for cloud web solutions. The current notion of cloud computing seems to blur distinctions between a variety of technologies that encompasses Grid Services, Web Services, data centres, platforms, software and infrastructures. Analysts are keen to stress the evolutionary path between older terms like 'grid technology' and cloud computing, tracing its roots back to application service providers (ASPs) in the 1990s and the parallels to Software as a Service (SaaS), often referred to as applications on the cloud.

SaaS is a similar earlier concept, a model of software deployment where a provider licenses an application to customers for use as a service on demand. SaaS usually only includes software, so this concept has been superseded in technology web solution thinking by the idea of cloud computing, this includes both services and software.

Cloud has become a common label for pay-per-user access to large-scale web solutions, third party applications and computer resources. Cloud systems are designed to support patterns of flexible user resource requirements for applications and services across the IT spectrum. These requirements can vary from online office applications such as Web Content Management and CRM systems through to high volume eCommerce transactional services and high performance applications involving substantial quantities of data, information processing and storage.

How does cloud computing work?

Cloud computing services provide common business applications online that are accessed directly from a web browser, with the software and data stored on remote servers and hosted securely by a third party.

This means that all users require to access services over the 'cloud' are:

- A standard PC or laptop with relatively fast broadband, mobile modem connection or internet cafe access.
- A modern browser on the PC or laptop such as Internet Explorer 7/8, Firefox, Google Chrome or Safari.

Cloud computing architecture

'Clouds' have essential characteristics, based on definitions by the National Institute of Standards & Technology:

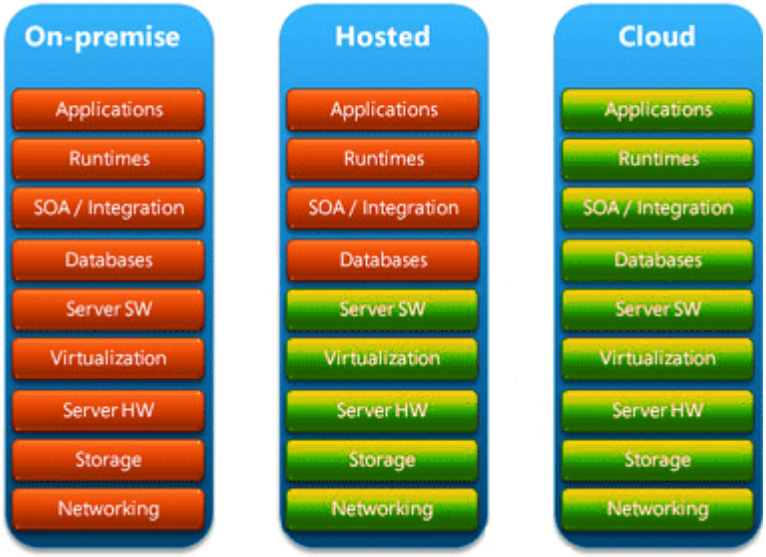
- Direct user driven and 'on demand' self service access.
- Broad network access.
- Resource pooling.
- Rapid elasticity and measured service.

In general, cloud computing customers do not own the physical infrastructure that hosts the software being provided over the cloud. Instead, they avoid capital expenditure by renting usage from a third party provider, consuming resources as a service and usually paying only for resources as they go.

Many cloud computing offerings employ a utility computing model, similar to how traditional utility services (such as electricity) are consumed. However, a business model becoming more common is subscription billing for a pre-defined number of users over a given time period. From a cloud provider's perspective, their ability to offer organisations low cost access to relatively expensive services and software stems from having multiple customers and users on servers, improving utilisation rates to a theoretical maximum and minimising overall costs per user.

The majority of cloud computing infrastructures consist of services delivered reliably through data centres, giving user access to services from almost anywhere that has access to an internet connection. Cloud services are increasingly becoming single points of access for all user needs within an organisation, with customer quality of service requirements being underwritten by robust Service Level Agreements (SLAs) over a given contract period. With most cloud services covered by SLAs with financial penalties, organisations also have the assurance that cloud providers are legally bound to ensure a high quality service.

On-premise vs. hosted and cloud services



An example of the differences in resource and management overheads is shown here.

With on-premise services, all of the overheads for developing, deploying and managing the services are internal (in red).

With hosted solutions there is generally a varying mix of internal (red) and external (green) resource requirements.

Cloud services have minimal overhead, with all resource requirements external (green)

A positive side effect of cloud computing is that, perhaps for the first time, everyone who potentially needs access to software and services within an organisation can have direct access to the latest technology. Inevitably this means that overall computer usage within an organisation tends to rise dramatically, so review of broadband bandwidth needs to be undertaken in advance before considering adopting organisation-wide cloud services.

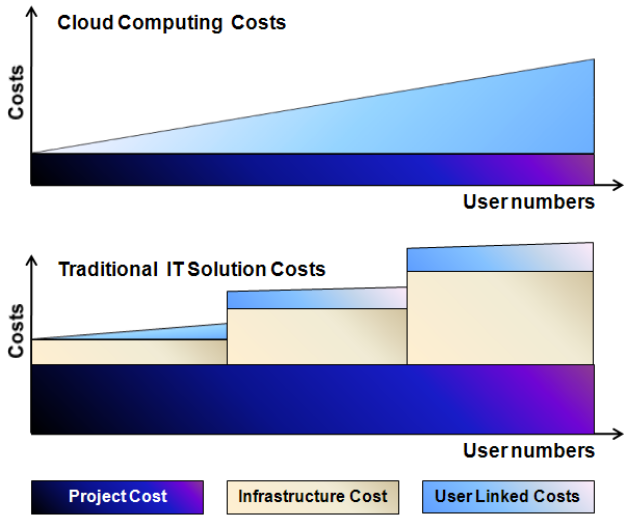
However, given current broadband vendor competition across the globe, increasing or even doubling or tripling broadband bandwidth is often a relatively small cost outlay which has benefits in other areas of the business. Improving your broadband connection also ensures that user access to software and services over the cloud can match, or even potentially exceed, the speed of access users have versus locally installed software, especially if many users have old PCs.

Cloud computing economics

For organisations capitalising on cloud computing there are major economic benefits. The essential economic element is that organisations avoid capital expenditure (CapEx) on infrastructure hardware, software and services, as they pay a provider only for a predefined number of users and the services that each user accesses. UK organisations such as the Telegraph and Westminster College, for example, have recently moved to predominantly cloud service IT solutions, with Westminster saving over £1m a year on software licenses alone.

Cloud computing versus traditional IT economics

With cloud computing there are very low initial project or implementation costs, as most web project types are implemented in a repeatable way. Most costs are associated with user numbers, which scale linearly as users are added. As long as an organisation currently has suitable PCs and laptops in place to access the cloud services, for which only a basic PC is usually required, organisations are also able to remove all of their infrastructure costs in one go.



With traditional IT solutions there are generally higher fixed project costs associated with more bespoke solution development and implementation. There are also substantial infrastructure and software costs and, as user numbers rise, more infrastructure will inevitably be required in step stages.

With a traditional IT solution cost model, whilst the direct user related costs are relatively low, the total costs including project, hardware and software costs are often 30% to 50% higher than with a cloud solution.

With cloud computing, consumption is usually billed on a 'utility' or subscription type basis that has a low or sometimes no upfront cost. Cloud providers generally offer specific 'modular' services, like CRM and email marketing for example, for a flat monthly fee per organisation or per user, usually paid a year in advance. Other benefits of this time sharing style approach are low barriers to entry. Cloud service providers utilise shared service infrastructure in large data centres to ensure data security, reduce costs, reduce management time and IT department overheads, and provide immediate access to a wide range of applications.

If circumstances change, such as the number of users, with cloud solutions organisations can generally extend, increase or even terminate cloud service contracts within reasonable timescales. This ensures any organisation can flex cloud resources as it expands or contracts, thus maximising on returns in investment.

Is cloud computing technology right for my organisation?

In assessing whether a cloud service technology model is suitable, the following factors should be borne in mind:

- With a traditional IT solution CapEx remains high and costs remain continually on your balance sheet.
- With cloud computing, apart from initial low project costs, almost all costs are operational costs (OpEx).
- Organisational flexibility in capital budgets versus operating budget is likely to dictate the solution chosen.
- If rapid implementation is required, many suitable cloud services may already be available for deployment.
- Whether the number of users working in an organisation changes regularly e.g. use of contractors.
- Current technology suitability – cloud solutions are often implemented at the time of a planned IT upgrade.
- The type and suitability of required functionality available with a cloud service vs. traditional IT solution.
- Any requirement to access specific organisation's information and data from multiple or out of office sites.

What are the business advantages of cloud computing?

Key fact: the primary advantage of cloud computing is users do not need to have any local software installed to access the available services and technology.

Only limited knowledge is required of the software and services provided over the web. 'Cloud' computing also minimises internal resource requirements and enables convenient, on-demand access to a shared pool of configurable computing resources, software, applications and data storage. These can be rapidly configured and released, with virtually no management effort or user interaction required.

The second advantage of cloud computing is that it is ideally suited to the many organisations that have a varying number of employees or contractors. Rather than investing in hardware and software to run applications and services for a set number of users, cloud computing allows for the provision of dynamically scalable resources to any number of users over the Internet.

Key fact: typical cloud solution savings are 30% to 50% versus traditional IT solutions.

The third advantage and, for many organisations the critical benefit, is the low cost of the initial outlay. As commercial cloud services are generally provided on an annual 'per user' contract basis, the traditional costs associated with a software based solution are removed, with the organisation paying a monthly fee for each user's access of services via the cloud. This means comparative software solution based costs for hardware, infrastructure, software licenses and upgrades are all removed at a single stroke. At the same time, rather than having to plan a future programme of software upgrades for any installed software, cloud services generally provide automatic upgrades on any software or services provided on renewal of annual or other contract periods.

Summary of cloud computing benefits	
Low cost outlay with cloud services provided on an 'organisational use' or 'per user' contract basis.	✓
Rapid implementation - suitable cloud services are usually already available, ensuring fast deployment.	✓
Users do not need local software installed to access services and technology accessed via the 'cloud'.	✓
Shared infrastructure gives immediate web application access, at 30% to 50% less cost per user.	✓
Any organisation is able to access the latest technology without software or infrastructure investment.	✓
Only a basic PC or laptop is required, plus relatively fast broadband or a mobile modem connection.	✓
Increasing broadband bandwidths bring cloud service access speed in line with traditional IT solutions.	✓
Automatic upgrades on any cloud service are common on renewal of annual or other contract period.	✓
Direct access to required services from almost anywhere with access to an internet connection.	✓
Instant on-demand access to shared computing resources, software, applications and data storage.	✓
Ideally suited to organisations that have a constantly varying number of employees or contractors.	✓
Minimises internal resource requirements with virtually no management effort or user overheads.	✓
No need for latest hardware (servers, PCs or laptops), infrastructure, software licenses or upgrades.	✓
Quality of service requirements underwritten by robust contractual Service Level Agreements (SLAs).	✓
Users do not need any prior knowledge of any of the software and services provided via the 'cloud'.	✓
Return on investment (ROI) established almost immediately, with known cloud service costs per user.	✓

Summary

Whilst cloud computing is relatively new there are many reasons why sophisticated web solution services are being rapidly created using a 'cloud' model. With the financial benefit of little or minimal capital expenditure, cloud solutions also offer flexibility as your organisation grows and changes over time.

Whilst there may not be a direct cloud solution match for every type of service required by an organisation, the increasing number of web based solutions available via the cloud is likely to ensure that a suitable cloud based solution is available when considering technology investments or upgrades.

Five key areas every SMB should consider when reviewing a 'cloud' solution for their organisation	
Understand the principles of cloud computing and key benefits versus traditional IT web solutions.	✓
Review the costs versus return on cloud computing versus traditional and other IT web solutions.	✓
Review your organisational structure and decide where cloud computing services could best fit.	✓
Review technology plans to decide whether timing is favourable for a move to a cloud solution.	✓
Talk to cloud solutions experts to help you make a decision about the best cloud solution available.	✓

About KB Consultants

With a client focused and online solutions led approach, KB Consultants has been providing eMarketing, marketing and new business consulting and advice for over a decade. KB Consultants focus particularly on Microsoft technologies, working in partnership with clients to improve marketing of their websites, online messaging and communication, collateral and fact sheets, and helping to generate profitable and effective new business from the web. Our expert marketing strategy consulting is backed by online and cloud technology expertise, combined with creative and technical skills and a proven 'can-do' approach.

Contact KB Consultants

For more information about this white paper, or to discuss how we can help you implement your own effective cloud solution strategy, please email Andrew Kerry-Bedell at KB Consultants at a.kb@live.co.uk or call 07899 741939.

kb CONSULTANTS 07899 741939

KB Consultants Haywards Heath West Sussex RH16 1QZ United Kingdom

Phone +44 (0) 7899 741939

Website www.k-bc.co.uk