Cloud Computing for Midsize Businesses: Delivering Innovation and Efficiency
Executive summary

Midsize companies often have limited resources and therefore want to make the most of their IT investment (dollars, skills, infrastructure and capacity) to achieve economies of scale. They need innovative, secure and cost-effective ways to cut costs without disrupting current business operations, improve efficiency and employee productivity. They want to enter new markets and find new opportunities, manage risk, improve business agility and retain customers.

To achieve these goals, it’s time for midsize companies to start thinking differently about infrastructure. Instead of acquiring more storage, adding new servers or server rooms, or “ripping and replacing” inefficient hardware and software, midsize businesses could benefit from the cloud computing model. Cloud computing directly addresses their needs.

“Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider integration.”

It rapidly provisions standardized services over the public Internet or a private network and can be used to reduce IT complexity and accelerate business value. It is an entirely new way of thinking about computing and business. And it can lead to extraordinary cost savings and business innovation.

This paper provides a brief overview of cloud computing, explains how midsize companies can benefit, and describes the steps they can take to take advantage of what it has to offer.

Thinking differently about infrastructure

Midsize companies require flexibility and agility to respond to change, to innovate rapidly and to achieve faster time to market so they can profitably grow their business—even while facing resource constraints and a need to reduce costs. However, it can be difficult to be flexible and agile when you consider the infrastructure and computing challenges that are affecting midsize companies in the form of:

- **Lost business opportunities**—Midsize companies are losing business opportunities because their IT environments lack the agility and scale needed for innovation. They need infrastructure with an amplifying effect, one that enables them to compete with larger companies.
- **Complex IT change management**—Change management processes used by midsize companies can be very complex and this can result in errors.
- **Costly infrastructure investments**—Investing in new infrastructure can be costly in terms of upfront outlay and the “rip and replace” process.
- **Server sprawl with low utilization**—Many midsize businesses are experiencing server sprawl but usage levels remain low while others don’t know what resources they are using or what they cost.
- **Security, audit and compliance**—Compliance, auditing and security patching are taking a significant toll on midsize company budgets.
- **Difficulty funding new IT projects**—Midsize companies are not able to fund new IT priorities because their IT budget is being spent on maintaining their current infrastructure.
As a result, midsize companies need innovative, secure and cost-effective ways to cut costs without disrupting current business operations, improve efficiency and employee productivity, enter new markets and find new opportunities, manage risk, improve business agility and retain customers. To achieve these goals, it’s time for midsize companies to start thinking differently about infrastructure. Instead of acquiring more storage, adding new servers or server rooms, or “ripping and replacing” inefficient hardware and software, midsize businesses could benefit from the cloud computing model. Cloud provides an amplifying effect that enables midsize companies to compete with larger companies.

This paper provides a brief overview of cloud computing. It then explains how it can benefit midsize companies and the steps they can take to take advantage of what it has to offer.

Pike County Schools delivers modern education without incurring modern costs

Pike County Schools, a school district in Kentucky, needed a consistent and integrated technology environment to support learning objectives and enable its more than 10,000 students to be technology proficient upon graduation. With 27 educational facilities to manage, ensuring its systems were loaded with the latest educational software—and capable of running the software—was challenging. And it became more so when its funds were reduced by 80 percent. Rather than replace thousands of workstations, Pike County Schools implemented a virtual desktop solution on the IBM cloud. Students now access school applications using either a web browser or a special CD that bypasses the start-up processes of the desktop system. As a result, the school system achieved cost savings of more than 60 percent, increased security and reduced software license and overall maintenance costs.

It's time to consider cloud

In recent years the Internet has taken on greater significance as a conduit for an enormous amount of computing capability. Using the Internet to gain access to and deploy computing resources is often referred to as a “cloud computing.” In a nutshell, cloud computing changes IT services delivery in the same way that ATMs changed banking and the web has changed commerce.

Cloud provides applications, data and IT resources using virtualized computing resources and you can use it to acquire computing services that can help improve business performance and control the costs of providing IT resources to your organization. Four major categories of cloud computing services have emerged that transform how IT services can be used.

The first category is cloud business processes as a service, which makes business processes available from the cloud using web interfaces and exploiting web-oriented cloud architecture. The provider of the business processes is responsible for the related functions. Examples include multitenant, self-service provisioning, elastic scaling and usage metering or pricing.

The second category is cloud software as a service, which makes a provider’s enterprise applications, analytics and collaboration available to consumers from the provider’s cloud infrastructures using a thin client user interface. Customer relationship management, enterprise resource planning and business analytics software are examples of enterprise applications that you can find in this layer.

The third category is cloud platform as a service, which deploys consumer-created or acquired applications created using programming languages and tools (supported by a provider) onto the cloud infrastructure. Examples of these applications include database applications, middleware, development tools, Java and Web 2.0 application runtimes.
The fourth category is cloud infrastructure as a service, which provides provisions processing, storage, networks and other fundamental computing resources to the consumer. Servers, networking, data center, storage and security are examples of what this category of cloud computing delivers.

Cloud is also not limited to one type of deployment. There is a spectrum of options available for you to choose from. The most common is a public cloud option. At the other end of the spectrum is a private cloud deployment where a company owns, manages and controls all the resources. It is also possible to merge the options between public and private and create what has been coined a “hybrid cloud.”

Companies can elect to design and build their own cloud computing environments, putting in place the infrastructure, hardware and software needed to operate and manage a private cloud. Or, they might decide to manage only certain layers, such as the application layer, and tap into a public cloud or a third party-owned private cloud for the infrastructure and platform layers. It is one of the most effective ways that midsize companies can meet infrastructure and computing demands without breaking the bank.

It really is time to consider cloud. The next section takes a look at the reasons why.

Why cloud?
There are a number of reasons why midsize companies should consider cloud as an option for meeting their challenges and addressing their priorities. Cloud is simple to deploy quickly. You pay just for what you use. It allows internal resources to focus on higher value IT services to your business. How does it do this? By offering:

- Single virtual appliance workloads
- IT development and test environments
- Mature packaged offerings, such as email, collaboration, sales force automation
- Web application assessments for security and compliance
- Isolated workloads where latency between components is not an issue
- Desktop, storage, backup and restore solutions and services

Using these cloud capabilities and solutions, you can:

- Increase agility.
- Turn information into insight.
- Connect and empower people.
- Drive effectiveness and efficiency.
- Enable your internal resources to focus on providing high-value IT services to your business

The following sections describe how.

Increasing agility
In this complex and uncertain world, midsize companies struggle to keep pace with change. This becomes difficult when business processes cannot be altered as fast as the market demands. Also, the high cost of maintaining the infrastructure that supports...
applications and services can make it difficult for midsize companies to accommodate market changes. Because cloud computing simplifies infrastructure management and builds in flexibility, it helps increase business agility because applications can respond immediately to new business requirements. Cloud computing makes it possible to manage service levels in a controlled fashion, route traffic based on changing demands and run more workloads with fewer servers. In addition, you can significantly speed time to value when you deploy business process management (BPM) solutions and other workloads from the cloud. In short, the increased agility provided by cloud can help you roll out new products faster.

**A computer services company experiences a shorter sales cycle after implementing a cloud solution**

The research and development engineering groups of ZSL, a global IT solutions provider, were unaware of what other departments were doing. As a result, they developed the same code multiple times. After implementing an IBM cloud solution, they were able to reduce their sales cycle by 30 percent. The also reduced the time spent finding information by 50 percent and systems administration time by 20 percent.

**Turning information into insight**

Having access to the right information at the right time is what enables smart businesses to make the right decisions in a timely fashion. Yet, a recent IBM Institute for Business Value study discovered that one in two business leaders do not have sufficient information from across their organization to do their jobs. Business analytics and reporting can help. With business analytics, companies take information that is either isolated or scattered all over their organizations and transform it into insight that can improve decision making and company performance. However, many business analytics solutions are compute intensive, requiring a great deal of processing power. Cloud computing offers an alternative to acquiring the power, servers and applications for business analytics by making it possible to access a single business analytics environment capable of supporting all users in the company. Midsize companies can take a self service approach to delivering business analytics services to new divisions, departments and users that reduces time, resources and costs.

**Connecting customer information with a data warehouse using cloud**

A pharmaceutical distributor used an IBM cloud solution to connect its customer relationship management system with its on-premise corporate data warehouse to give its customer service associates access to the accurate, real-time information they need to deliver the best possible customer experience while realizing annual cost savings of $250,000.

**Protecting data, applications and systems**

Midsize companies understand the need for information security but still struggle to manage the cost and complexity of a myriad of security technologies for everything from threat prevention to email security, vulnerability scanning and security event and log management. However, it is possible to secure data, application, systems and infrastructure at a lower cost—by taking advantage of security solutions that are available on the cloud. Cloud-delivered security enhances the security of the IT network in a
practical way, requiring fewer IT resources and providing access to security experts whenever it is needed. In addition, there are no hardware and software licenses to purchase and no associated maintenance fees. The cloud delivery model also helps reduce security complexity because companies do not have to manage, configure and patch a proliferation of security devices and technologies.

Because cloud providers manage the data center that the cloud solutions are delivered from and those providers and centers are shared by multiple customers, midsize companies can feel confident that their systems are secure. Cloud helps provide a valuable backup to on-premises computing.

The United States Golf Association depends on cloud services for data backup and recovery

The United States Golf Association uses cloud security services from IBM to protect 590 GB of critical data on a daily basis and provide timely access to mission-critical data. The nonprofit governing body for golf had invested in backup and disaster-recovery plans that were well designed for business conditions but were no longer adequate for today’s world in which companies can’t afford to be down for even brief periods of time. As a result, the association chose a cloud-based backup service from IBM. “The services IBM was offering were enterprise class,” says Jessica Carroll, managing director of IT. “I knew right away this was the way to go. The product was so strong.”

Connecting and empowering people

A new generation of social media savvy workers has emerged. They prefer to use communities, forums, wikis and blogs to discuss and refine ideas with one another and with customers. In fact, more and more, an organization’s brand is experienced through its people. As a result, there has been a significant rise in demand for social networking capabilities in midsize businesses. Cloud is an easy and cost-effective way for midsize companies to provide social networking and other collaborative tools such as email and instant messaging. By moving applications that connect employees, companies and customers to the cloud, midsize companies can empower employees without the responsibility of maintaining applications and infrastructure. Everything can be done with a web browser. As a result, everyone can work more efficiently and effectively.

Technology distributor builds knowledge and relationships using a cloud solution

Azlan, a leading distributor of enterprise technology solutions in Europe, wanted to build a network of resellers for IBM Lotus small business solutions and provide an effective way to communicate information and provide training on these products. Azlan chose an IBM cloud solution that helps create secure, private online communities and provides file-sharing, instant messaging and virtual meeting rooms. With this solution, Azlan created an online community for its partner network rapidly, with no up-front investment. Because there was no software deployment on servers or local PCs, the company was able to reduce maintenance and support. Occasional face-to-face meetings were replaced with regular online collaboration, helping to reduce travel expenses and building closer working relationships.
Driving effectiveness and efficiency
Improving the economics and elasticity of infrastructure and development processes can help midsize businesses achieve new levels of business efficiency and effectiveness. Moving activities such as developing, testing and accessing applications to the cloud is one way to reduce cycle times, improve quality and lower the costs of these activities. When development and testing is delivered from the cloud, midsize businesses can save on most capital and licensing expenses, reduce operating and labor costs with automated provisioning and configuration and improve quality by reducing defects from faulty configurations and poor modeling. Cycle times can be reduced with reuse of codes and images.

When application and business services are provided from the cloud, midsize businesses can benefit from efficient desktop management, application monitoring and lower user IT support costs. When they are not being hampered by difficult access to the applications and environments they need to get their tasks done, developers and workers are not only more productive, but also what they produce is higher quality.

Cloud really is ideal for midsize businesses
When you take into account the needs of midsize businesses—doing more with less, reducing risk, higher quality services and breakthrough agility—cloud is an ideal fit. Accessing business services, software, platforms, infrastructure and security from the cloud provides all kinds of benefits to midsize companies who often must work with limited resources and budgets. With cloud solutions, midsize companies can:

- Reduce capital expenditures and operational expenses.
- Ensure the right levels of security and resiliency for all business data and processes.
- Improve quality of services and deliver new services that help the business grow and reduce costs.
- Increase ability to quickly deliver new services to capitalize on opportunities while containing costs and managing risk.

With these kinds of benefits, it makes sense to adopt cloud as an integral part of your IT strategy.

Savvy midsize businesses are already pursuing the use of cloud computing, primarily because it helps them transfer capital costs to operational costs, reduce operational costs, improve product and services time-market and raise levels of quality. The key to achieving these benefits is to be precise about which of your capabilities can benefit from cloud and move specific workloads rather than simply trying to “cloud enable” an entire IT infrastructure all at once. For this reason, we recommend three steps for making cloud an integral part of your IT strategy.

A media company uses a cloud solution to increase productivity
LiVE Ltd, a company in Japan that specializes in software that manipulates computer-generated imagery, needed to process extremely large files at high volume for a computer-generated film. Their server infrastructure was not up to the task and they did not have the resources to expand it. With an IBM cloud solution, the company processed 40,000 layers of computer-generated footage, increased productivity with an independent environment for rendering and completed the project on time.
Step 1. Realize the value of cloud
Adopting a cloud computing model requires a paradigm shift in business and IT. Before they invest in a cloud-based solution or services delivered over the cloud, it is a good idea for midsize companies to understand the value that cloud can bring to their businesses. The right cloud architecture enables companies to reap the cost advantages of shared hardware, while physically separating and securing data with virtualization. Establishing a task force to evaluate which areas of IT and your business would most benefit from a move to the cloud is one way to determine which architecture is right for your company. Or, you can enlist the aid of a trusted advisor with cloud experience to assess your business processes and architecture and make recommendations.

IT support in the cloud reduces costs
Implementing an IBM cloud solution that helps users resolve their technology issues without calling a help desk has generated a cost savings of up to 10 percent in the first year, 15 percent in the second and 25 percent the third. These cost savings are a result of reducing the numbers of calls to the help desk and up to a 36 percent reduction in desk-side visits.

Step 2. Explore cloud capabilities
Midsize companies often have limited resources and therefore want to make the most of their IT investment (dollars, skills, infrastructure, and capacity) to achieve economies of scale. They need surety as they make business decisions and want to be flexible and agile to respond immediately to market changes and opportunities. Cloud computing directly addresses these needs. However, because cloud is new and requires the paradigm shift mentioned earlier, putting critical workloads and data in the cloud can seem daunting. To get started with cloud, it is often advisable to focus on optimized technology models or adopt cloud for smaller, non-critical workloads such as sales force automation, time tracking, collaboration, workforce management, application development and testing, business continuity and disaster recovery. This incremental approach will help your company become accustomed to the cloud while reaping the benefits described in this paper.

A U.S. mortgage company uses a cloud solution to eliminate their manual, paper-based mortgage application process
Signature Mortgage Corporation is a fast-growing mortgage company with operations in Ohio and Florida. The company reduced the average loan-processing time from 7 days down to 24 hours, when it worked with an IBM Business Partner solution that uses IBM cloud-based collaboration software. The new electronic process is expected to speed the closing process to 10 to 15 days, substantially faster than the 30 to 45 days typically experienced.
Step 3. Grow your secure cloud environment and scale over time

After a midsize company has implemented basic cloud capabilities in the exploratory phase, or if the company already has cloud architecture in place, it is time to consider expanding it beyond initial cloud implementations of narrowly-focused workloads. For example, companies that are experienced with cloud services can benefit from the cloud-delivered security solutions as described earlier. Cloud-delivered security of the IT network could make the midsize company less vulnerable to attacks and loss of data. The midsize company should also consider their cloud integration options.

IBM is already known for industry-leading application integration capabilities for both on-premise and business to business applications. Now, with the addition of Cast Iron Systems to IBM’s software portfolio, IBM is able to offer clients a complete platform to integrate cloud applications from leading providers. And, finally, for those midsize companies who understand the value of cloud computing, but still do not wish to put their data in a hosted or public cloud deployment, they can consider building and deploying private clouds with industry-leading technologies from IBM hardware, software and services.

A Japanese company bolsters security efficiency with a cloud solution

Implementing an IBM cloud-based managed security solution enabled Property Data Bank, Inc, a Japanese provider of specialized real estate management support tools to rely on IBM experts to monitor its critical systems and develop timely solutions for any security issues. Because it no longer employs in-house security experts, the company reduced operating costs and has reallocated resources to its core competencies.

In summary, midsize companies will benefit most from a phased approach to adopting cloud, with each step building on the previous. The key to success is choosing the right solution.

Next steps: Choosing the right cloud solution

For midsize companies like yours, cloud computing is a viable option for reducing operating costs, simplifying business processes and collaborating more easily. However, deciding on the right solution or solutions can be daunting. Do you choose an architecture? A series of services delivered in the cloud? How do you know whether your solution was designed for a midsize business?

One method of researching is to look for solutions for midsize businesses that map to the six benefits mentioned in the “Why cloud?” section in this paper. Server virtualization, automatic network backup and virtualized desktop services can increase business agility. Cloud-based smart analytics and business analytics and optimization services turn business information into insight.

To protect your data and systems from hackers and attacks, look for cloud-based solutions that identify attacks on and safeguard your IT infrastructure, monitor threats, test web applications for vulnerabilities and continuously and automatically secure your network. Cloud-based collaboration, social networking, email, scheduling and contact management solutions can help you connect and empower your workforce, customers and partners. Smart business desktops and monitoring services, along with development, test and deployment, in the cloud can drive effectiveness and efficiency.
In addition, before you begin evaluating specific solutions, it is helpful to establish some general guidelines that can help you in the process. For example, does your company view IT as an important part of your business, providing innovation and competitive differentiation? Or is IT a behind-the-scenes facilitator for plans made elsewhere in your business? The answers to those questions can tell you whether to look for solutions that strengthen the role IT plays in innovation and competitive differentiation or to search out solutions that will make it easier, faster and more cost-effective to facilitate plans.

Another consideration is how many physical sites your company has. Firms with a single site find coordinating technology resources easy, whereas those with multiple sites require more work. According to IDC, on average, midsize firms have 10 locations, with IT resources usually based at headquarters. This can increase the complexity of data and application maintenance, along with the installation of new software and upgrades. Therefore, companies with multiple sites might find that implementing an entire cloud architecture or a private cloud is more beneficial and those with one or just a few sites might be satisfied with services delivered from the public cloud.

Other factors to take into consideration include mergers and acquisitions and the role of mobile workers in your company. Midsize companies that are growing because of mergers and acquisitions—and even product successes—are going to need cloud solutions that can help them integrate existing and older systems from what were once separate companies but are now part of your company. They should look for cloud solutions that can provide their entire organization access to a central set of rationalized offerings. In the case of mobile workers, ask yourself what extent would remote sales staff improve their sales rates if they could access inventory positions or competitive intelligence in real time? Even a 5 percent improvement is an effective argument for using the cloud to provide them access to that information, especially if providing it to them by other means has been cost prohibitive.

Other questions to ask as you consider cloud solutions

- How long does it take you to react and deliver a new IT service to users?
- How many steps are in your provisioning process?
- What is the ratio of system administration staff to servers in your company?
- What role has human error played in your outages?
- How are systems sized and scaled quickly?
- How many images are there per user? Is IT sized for minimum, mean or peak?
- How do you currently manage and track employee expenses?
- How much of your budget allows for innovation that supports new business initiatives?

The answers to these questions and others will establish the guidelines that can help you develop a framework for deciding which cloud solutions suit your company best. However, another option is to consider partnering with a third-party advisor with experience in, knowledge of, and experts on cloud computing for midsize businesses. A trusted advisor will be able to view your organization with an objective eye, help you identify bottlenecks that you might have missed and recommend the cloud technology that can meet all of your objectives while reducing costs and increasing your competitive advantage.
Why IBM?
IBM cloud-based solutions and services can help midsize companies meet their current infrastructure, computing, application and budget challenges. IBM has the ability to deliver a powerful combination of:

- Leading service management capabilities
- Flexible delivery options, including public clouds, private clouds, hybrid and purpose built-infrastructure
- A full spectrum of technology and capabilities for building private clouds
- Expertise and proven ability in infrastructure, applications, processes and information for all technology platforms to build on what you have and to integrate existing and new capabilities into cloud-based solutions
- Depth of knowledge and experience in industry-specific business processes

In addition, IBM is a trusted company with a proven track record when it comes to safely securing and protecting critical business data. We have real-world implementation experience with rapid service innovation for clients, service providers and as a service provider ourselves. We can rapidly deploy and elastically scale services, with flexible pay-as-you-go pricing and financing solutions to help you better manage up-front investments, ongoing operations costs and disposal of retired assets. Most importantly, IBM and IBM Business Partners offer solutions designed specifically for midsize businesses that include competitive financing and access to a vast network of experienced, knowledgeable industry experts who can provide the exact level of assistance you need.

IBM can help your midsize business meet changing demand by identifying areas in current IT that can be moved to the cloud, freeing up skilled IT staff to work on higher-value initiatives and reducing total cost of ownership. We can help you quickly transform your IT Infrastructure to match your business needs.

Conclusion
Cloud computing is a style of computing that provides applications, data and IT resources to users as services delivered over the public Internet or a private network. It enables self-service, economies of scale and flexible sourcing options. When you take into account the needs of midsize businesses—doing more with less, reducing risk, higher quality services and breakthrough agility—cloud is an ideal fit.

Midsize companies should consider cloud as an option for meeting their challenges and addressing their priorities. Cloud is simple to deploy quickly. Companies pay just for what they use. The costs per month are low and it requires fewer resources than in-house implementations. And unlike hardware, cloud computing is not an all or nothing investment, so companies can keep costs down without affecting performance.

Companies are asked to look at infrastructure and computing in ways that are new to them while being presented with an almost dizzying array of cloud solutions. Many are excited about the prospect of cloud but daunted by the task of moving processes and infrastructure to the cloud. They should consider partnering with a company with experience in cloud. A trusted advisor will be able to view their organizations with an objective eye and recommend the cloud technology that can meet all their business objectives while reducing costs and increasing their competitive advantage.
For more information
IBM has a range of technologies to support customers in building private clouds to meet specific security and industry customer needs. To learn more about cloud computing for midsize companies, please contact your IBM marketing representative or IBM Business Partner, or visit the following website: ibm.com/cloud

To learn more about the addition of Cast Iron Systems to the IBM software portfolio, visit: castiron.com/ibm

Compare your company to “best in class” companies using the cloud ROI tool: ibm.com/cloudroi

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1 http://www.nist.gov/itl/cloud/index.cfm


3 IBM MI and IPR definition bridge between Gartner and ICD, August 19, 2010.
