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Pitney Bowes Software

GIS Plugs In to the Cloud

Dynamic Applications for Location Intelligence Drive Growing Preference for SaaS Delivery

WHITE PAPER:

LOCATION INTELLIGENCE

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ABSTRACT

THE GIS USER COMMUNITY IS ADOPTING SOFTWARE-AS-A-SERVICE SOLUTIONS WITH GROWING FREQUENCY – AND FOR GOOD REASON. APPLICATIONS FOR GEOGRAPHIC INFORMATION, SPATIAL ANALYSIS AND LOCATION INTELLIGENCE ARE WELL SUITED TO THE CLOUD APPROACH, WHICH GIVES USERS PAY-AS-YOU-GO ACCESS TO CRITICAL PROGRAMS, ELIMINATING WORRIES ABOUT HARDWARE, STORAGE, MAINTENANCE OR UPTIME.

SPECIFICALLY, THERE ARE SEVEN KEY CHARACTERISTICS – TRUE OF ALL GIS APPLICATIONS – THAT MAKE THE SAAS MODEL AN IDEAL DELIVERY METHOD FOR SUCH TECHNOLOGY. THIS PAPER WILL DISCUSS EACH OF THEM, AS WELL AS A FEW FACTORS TO CONSIDER WHEN SEEKING A SAAS PROVIDER.

ORGANIZATIONS ARE NO LONGER ASKING, "WHY SAAS?" — THEY'RE FOCUSING ON HOW THEY CAN IMPLEMENT IT

GIS users are no strangers to innovation. Given the role that location intelligence (LI) plays in mission-critical decisions, however, the GIS user community has historically been slow to adopt new technology, first demanding proof of its long-term value.

Software-as-a-service (SaaS) is the latest innovation to receive attention in the LI field. Under the SaaS model – also known as cloud computing – a provider hosts, manages and maintains applications and associated data on behalf of its clients, who access the software remotely via the Internet. Unlike outsourcing, SaaS only changes the way solutions are delivered, not how or by whom they are used.

Now, a decade after it was first introduced, SaaS has demonstrated its worth and is becoming GIS users' delivery method of choice. It's an innovation that's gaining momentum just in time.

For a number of companies, an explosion of GIS applications – and user populations – has increased pressure on already-strained in-house IT resources. The sheer volume and growing complexity of location data and images necessitate increased capacity and bandwidth. Given those demands and users' heightened expectations for speed, many organizations are struggling to respond, bogged down by obsolete data, inefficient workflows and costly solutions. Cloud computing, though, is changing the landscape for the GIS user community. Organizations are no longer asking, "Why SaaS?" – they're focusing on how and when they can implement it.

SaaS Solutions Come of Age

Cloud computing has reached critical mass – in 2009, this method of delivery accounted for more than 15 percent of all new software installations.

Delivered on demand, SaaS offers speed, flexibility and scalability – all of which are key in today's global, agile and competitive market. Not surprisingly, IT research firm Gartner ranked cloud computing as one of 10 strategic technologies for 2010. Based on current data, industry analysts predict the SaaS market will grow at twice the rate of traditional enterprise software through 2011 and forecast that in just four years, a full 40 percent of new business applications will be SaaS-based.

The growing popularity of cloud computing is not surprising. Tired of purchasing and managing resources that are too quickly outmoded and insufficient, organizations are allowing SaaS hosts to handle hardware and maintenance demands. In return, providers offer adaptable, low-risk solutions with convenient pay-as-you-go pricing.

SaaS Advantages for the GIS Market

While organizations in all industries use and benefit from SaaS applications, the approach is particularly well suited to GIS tools, applications that are complex, costly and increasingly in demand.

Through its work with location intelligence and on-demand computing, Pitney Bowes Software has identified seven characteristics of GIS tools that make the SaaS model an ideal delivery method for such technology.

The Increasing Volume and Complexity of Data

One thing is certain about the future of data: It will continue to grow. Currently, 80 percent of all business data has a location component. As organizations capture and store more information, the need for location intelligence grows exponentially. As the need for intelligence grows, LI computing needs increase as well.

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Geographic data is layered – addresses and zip codes in spreadsheets, for instance, are linked to complex map files. Geographic data is also in constant flux – zip codes change, roads are renamed. Making a seemingly small change, like updating the addresses included in a specific sales district, impacts not only sales district data but also territory maps and sales predictions to which that data is linked. The result: an intricate web of ever-changing information that could easily overwhelm traditional computing resources.

Because leading GIS tools process enormous amounts of complex information from multiple sources, speed and capacity are paramount. The unlimited computing power of on-demand solutions will help organizations solve problems that previously were beyond their reach. Because SaaS solutions are flexible and scalable, GIS users are guaranteed the processing power they need.

The Growing Demand for GIS Technology

As the business case for GIS technology becomes more obvious, companies in a wide range of industries – and of varying sizes – are looking to integrate location intelligence into everyday operations.

In the past, the startup costs of such an undertaking would have been an insurmountable barrier for most small and even midsize organizations. Cloud computing, however, has changed the rules of the game. In most cases, organizations subscribe to SaaS solutions under pay-as-you-go terms based on flat fees or system usage. No capital investments in hardware or long-term software license agreements are required, making the model financially viable for more companies. In addition, SaaS users have fewer servers to maintain, less data to manage and no need to support constant updates, backups and versions – all of which create savings.

The Emerging Internal User Base

Once only the domain of GIS specialists, location intelligence now drives day-to-day decisions in virtually every facet of a business – from marketing and sales to operations and risk management. As business development professionals, analysts, brand managers and others become more familiar with consumer-oriented geographic intelligence (like Bing Maps) in their private lives, they want access to company-specific GIS tools in their professional lives. Yesterday's internal infrastructure is not powerful enough to meet today's LI needs, and most companies lack the capital required to update their computing and hosting capabilities.

The SaaS model, however, is flexible and scalable, meaning that GIS applications can be made available to a limitless number of users. Organizations can easily expand and modify services without the financial exposure associated with in-house systems.

Thanks to its flexibility, the SaaS model also enables intelligent collaboration through 24/7 community computing – in any place, across every time zone. And when a company-wide network of users begins requesting new features and functionality, SaaS providers can meet demands quickly and efficiently in ways that small in-house staffs cannot.

The Shift to Customer-Facing Applications

In addition to making GIS tools available to company decision-makers, sales teams and call center staff, many organizations are cutting costs and improving service delivery by deploying self-serve tools that customers can navigate on their own. In telecommunications, for example, a customer can learn whether coverage is available for certain services; in property insurance, policyholders can view the potential for flood damage in their neighborhood; in real estate, brokers are using the technology to showcase homes and neighborhoods; in retail, applications allow shoppers to find the nearest store.

COMPANIES THAT WANT TO LEAD THE MARKET CANNOT BE CONSTRAINED BY LONG-TERM LICENSING AGREEMENTS

As companies, municipalities and other organizations offer a wider range of customer-facing GIS-enabled applications and as high-speed Internet access becomes more widely available, demands on hosts will increase. SaaS providers are equipped to meet these demands seamlessly. They're also prepared to upgrade and expand applications as needed. For instance, a city might create a "check before you dig" application to show the location of water lines and other underground infrastructure. Shortly thereafter, city leadership may want to add a second application – a tool that helps residents identify the closest recycling center. This kind of upgrade would be problematic or impossible for a self-hosted application. SaaS applications, however, are perfectly positioned for expansion, thanks to flexible technology and as-needed processing power and throughput.

The Popularity of Mobile Applications

Mobile GIS technologies, including GPS, smartphones, mobile apps and wireless communications, are creating many opportunities for innovation. Field-based location intelligence is an area that is particularly relevant to industries that deploy service teams, such as cable repair specialists or city workers. Today, individuals can collect, view, validate and update spatial data – like streetlamp locations, for example – in real time, on site.

For field users, ease of use and access are key. Organizations can't afford to wait on their mobile GIS applications and often don't have time for lengthy user training sessions. Fortunately, because SaaS providers' profitability depends on stable, long-term relationships, these vendors work to "win" their customers' business day in and day out – often through intuitive interfaces, increased availability and high levels of performance. In addition, Web-accessible SaaS applications make cumbersome VPNs unnecessary – another benefit for mobile users.

The Speed of Innovation

Location intelligence is evolving so rapidly that internal IT organizations can easily be overwhelmed by the increased pace. Companies that want to lead the market cannot be constrained by long-term licensing agreements when new GIS technology and applications are available.

Traditional hardware and software solutions aren't well suited to fast-paced innovation. Obsolete hardware is expensive to replace; disk-based software updates are burdensome to compile, distribute and install. SaaS users, on the other hand, benefit from an ongoing stream of enhancements and upgrades, enabling them to respond to market opportunities quickly. Instead of waiting to receive and implement new releases, users can simply log on and enjoy every improvement, including updates to data sources – which are frequent in the world of LI as customers move, new stores open, sales districts are reconfigured and boundaries change. With regular updates, users can be assured access to the most current, accurate information.

The Mission-Critical Nature of GIS Applications

As location intelligence becomes more important to all industries, its availability becomes essential. A company that depends on a mapping technology or database cannot afford for the service to fail.

Operationally, organizations that choose SaaS applications shift the burden of successful program deployment and management to the SaaS provider – the party with the most expertise and experience with the systems and software. While there may be a perception that cloud computing increases risks, leading vendors will often offer greater reliability, more secure environments, better privacy safeguards and built-in redundancies that exceed in-house expectations. A SaaS provider that cannot satisfy customers will quickly fail, so vendors have compelling motivation to exceed a client's expectations, making SaaS hosting the idea solution for vital applications.

Success Factors: Security, Scalability and Expertise

Because location intelligence plays a role in supporting mission-critical applications, some GIS users have been hesitant to migrate to the relatively new SaaS model. As market leaders have proven the model's worth, however, and LI professionals and IT teams have become confident in industry standards, demand for on-demand solutions is soaring.

As GIS users contemplate cloud computing, they should think carefully not only about the technology but also about the vendor with which they chose to work. Top-tier providers have made systems and data security and scalability their top priorities, but would-be SaaS users still need to determine whether potential partners adhere to industry best practices.

Security

In many cases, a SaaS solution may be more secure than in-house alternatives, given SaaS providers' rigorous rules for data check-in and checkout and established procedures for preventing data proliferation.

Still, companies considering SaaS should carefully interview potential vendors regarding security practices. When comparing possible SaaS providers, look for:

- Infrastructure redundancy.
- Around-the-clock physical security, including advanced measures such as biometric scanners.
- Secure portals.
- Multiple firewalls.
- Intrusion detection.
- Encrypted disk partitions and backup.
- SAS 70 Certification.

The long-term stability and financial wherewithal of a company are also important factors to consider. Pitney Bowes Software, for example, deploys SaaS on Pitney Bowes-owned equipment, using Pitney Bowes-owned software, managed by Pitney Bowes Software employees across three redundant U.S. sites.

Scalability

In addition to being secure, a hosting environment must also be scalable to truly meet customer needs. A vendor should be able to expand and contract with a client as its computing needs change. When evaluating potential partners, ask about:

- Space and processing power. Can this environment meet current and future needs?
- The machine-to-customer setup. If the vendor uses a "one machine per customer" approach, there likely will not be adequate room for expansion when needed.
- Contracts. If a company's bandwidth needs change, can it negotiate a new contract with the vendor in a timely manner? Generally, SaaS providers will only ask clients for 12-month commitments.

Expertise

Lastly, seek out a provider that has a proven record in the SaaS world. Ask:

- How long has this provider been in the industry?
- Does this provider understand the entire SaaS world? In other words, does it host a range of applications?
- Does this provider have well-known clients that hold vendors to high standards?
- Does this provider host mission-critical applications? Is it trusted to handle its clients' most important data?

ON-DEMAND SOLUTIONS ARE THE SMART CHOICE – FOR GIS USERS AND THE LI INDUSTRY AS A WHOLE

For GIS applications, the move to SaaS has been a gradual process. Migration is happening more rapidly, however, as companies and organizations see firsthand how SaaS is improving the delivery of GIS technology.

To assure the best possible migration and transition, GIS users are partnering with vendors that have solid procedures, stellar computing capacities and long-term commitment to the industry – qualities that ensure clients can enjoy security, scalability and expertise both today and tomorrow. While the SaaS approach is a departure from older methods of computing, on-demand solutions are the smart choice – for GIS users and the LI industry as a whole.

Pitney Bowes Leads with MapInfo® Stratus™

Since introducing the world's first desktop GIS application in 1986, Pitney Bowes Software has helped organizations find new ways to profit from the power of location intelligence.

Building on their pioneering efforts in cloud computing, including Spectrum™ OnDemand, Envinsa® Online Services and VeriMove™ Access, Pitney Bowes also makes it easy for GIS users to take advantage of the speed, flexibility and cost-savings achievable through SaaS.

MapInfo® Stratus™ enables organizations to rapidly deploy online web mapping, so owners of spatial data can share information with decision makers, employees, customers, citizens, business partners and other stakeholders. Delivered as a SaaS solution, it has little or no maintenance cost and is managed through a Web-based administration console.

This next-generation of web-mapping is built upon a foundation of Pitney Bowes Software strength, stability and reliability, and users benefit from a secure hosting environment, SAS 70 standards and network redundancies.

In addition to rapid deployment and an enhanced user experiences, organizations can take steps to eliminate hardware costs, optimize IT resources, reduce total cost of ownership and respond quickly to new business demands.

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