

# A New Direction in Software Delivery:

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*Opportunities and Challenges for U.S. Suppliers in an Emerging Global Market*

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## *Opportunities and Challenges for U.S. Suppliers in an Emerging Global Market*

### **Software as a Service**

Software vendors are supplying increasing amounts of their products online, giving rise to the term “Software as a Service.” Market research firms generally define software as a service (SaaS) as a model in which applications software is delivered to users via a secure Internet connection on a pay-for-use basis, or as a subscription based on the amount of usage. Some of these researchers believe that SaaS should be defined more precisely as an architectural principle known as “multi-tenancy” where thousands of customers can share a single instance of a software application run on a provider’s server.

However defined, the key distinguishing feature of SaaS is that control and ownership of the applications software (even in the form of a license) is not transferred to the customer, but resides with the provider on servers that the supplier controls and maintains. The provider also typically offers storage of documents created using the application and, in many applications, may perform a substantial portion of computer processing using the application. Examples of SaaS applications include Turbo Tax Online, a consumer application for tax processing; Salesforce.com’s business application for managing customer relations; Blackboard.com’s educational applications; and outsourced government services such as regulation.gov. The attractiveness of the SaaS model for the customer is that it can significantly reduce the user’s up-front investment in software, computer processing, and storage. It also allows the supplier to offer competitive pricing by leveraging its economies of scale.

SaaS traces its roots to the timesharing services of the 1960s and 1970s, which allowed users on “dumb” terminals to share idle, remote mainframe and minicomputer resources to handle applications and storage. It has also evolved from the Applications Service Provider (ASP) model of the 1990s. In the ASP model, the customer has to pay a vendor for the application software license, use a service provider to host and manage that application on its servers, and then access the application through direct connections or via the Internet. By contrast, in the SaaS model, the user does not own the software and is not responsible for its upgrade and maintenance.<sup>1</sup> Many ASPs failed during the “dotcom bust” because customers found hosted software hard to change and customize, hosted arrangements more expensive than they had expected, and the performance of their software adversely affected by much slower broadband networks than those

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<sup>1</sup> Judith Hurwitz, “The Future of Enterprise Software: Who Gets the Power?” *Insight from Software 2007*, www.sandhill.com, June 3, 2007.

available today. SaaS vendors have worked to address many of those issues as well as the challenge of integrating on-demand software with legacy systems.<sup>2</sup>

SaaS has been driven in recent years by significant technological advances, notably faster broadband networks, so-called “Web 2.0” innovations (the development and evolution of web-based communities and hosted services), improved security technologies, and data centers that have virtualized computing and storage resources.<sup>3</sup> SaaS is now considered by some industry observers as part of or synonymous with “cloud computing”, a broader concept that includes other subscription based or pay-per-use services provided over the Internet such as utility computing, web services, platform as a service, and managed services providers (see chart below).<sup>4</sup> Indeed, some major SaaS firms are now transitioning from online applications to broader cloud services.

## Cloud Computing

### Utility Computing

*Online access to storage and computing resources*

### SAAS (Software as a Service)

*Online access to software applications*

### Web Services

*Offer APIs that enable developers to exploit functionality over the Internet; e.g. those from Google maps and USPS.*

### Service Commerce Platforms

*Hybrid of SAAS and MSP. Offers a service hub that users interact with; e.g. an automated service bureau*

### PAAS (Platform as a Service)

*Set of technologies and services used to develop, integrate, deploy, and deliver SAAS applications*

### Managed Services Providers

*Provide services such as scanning for email, anti-spam, managed security, and desktop management*

### Internet Integration

*Integrates cloud-based services*

Source: Galen Grunn, “What Cloud Computing Really Means,” *InfoWorld*, April 7, 2008. [www.infoworld.com](http://www.infoworld.com)

Although the debate over the benefits of SaaS between those companies that provide this service and some traditional on-premises software suppliers continues, there is general agreement that SaaS users can rapidly deploy applications, do not incur any major

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<sup>2</sup> “The Almost-Meteoric Rise of SaaS on Wall Street,” *Wall Street Technology*, [www.wallstreetandtech.com](http://www.wallstreetandtech.com), August 14, 2008.

<sup>3</sup> Jeffrey Kaplan, “SaaS Movement Accelerating,” *Cutter Consortium Sourcing & Vendor Relationships Advisory Service Executive Update*, [www.cutter.com](http://www.cutter.com), Vol.8, No.22, 2007.

<sup>4</sup> IDC estimates that global IT cloud services spending will reach \$16.2 billion in 2008 and will grow 27 percent annually to \$42.3 billion in 2012. See “IT Cloud Services Forecast-2008, 2012: A Key Driver of New Growth,” *IDC Press Release*, [www.idc.com](http://www.idc.com), October 8, 2008.

hardware, implementation, acquisition, or training costs, and can leave the burden and expense of upgrading and maintaining the software application to the SaaS vendor. In addition, since SaaS is web-based and delivered over the Internet, users have access to applications from any place they are online at any time. Cutter Consortium's Fourth Annual SaaS Survey, conducted in October/November 2008, shows that companies that are using SaaS are reducing their infrastructure costs, attaining better performance levels, and achieving higher productivity.<sup>5</sup> McKinsey & Company has found that firms deploying on-premises software spend 60-70 cents of every dollar invested on software over a five-year period on the underlying platform driving applications. By contrast, that cost falls to 20-30 cents on the dollar for SaaS users.<sup>6</sup> Finally from the perspective of vendors, selling SaaS rather than on-premises software provides them with stronger protection of their intellectual property rights and an ongoing, predictable revenue stream.

### **Corporate Interest in SaaS Mounting Worldwide**

Market researchers International Data Corporation (IDC) and Saugatuck Technology have placed worldwide demand for SaaS between \$5.7 billion and \$6.5 billion, respectively, in 2007. While these revenue totals represent only 2 percent of IDC's global packaged software sales estimate,<sup>7</sup> IDC along with other market research and IT consulting firms have reported that interest in SaaS has been growing significantly over the past several years, particularly among small and medium-sized enterprises (SMEs).

Saugatuck Technology believes that SaaS has evolved from its first wave of early adoption characterized by delivery of basic stand-alone, subscription-based applications solutions, such as email, web conferencing, and customer relationship management (CRM), during the 2001-2006 period, through a second wave of mainstream adoption featuring SaaS business solutions increasingly integrated with on-premises applications, and is now entering its third wave of ubiquitous adoption which is ushering in a workflow- and collaboration-enabled business transformation.<sup>8</sup> The Cutter Consortium reports from its October/November 2008 survey, representing a broad cross-section of industries worldwide, that 63 percent of its respondents are now using SaaS solutions. The survey also found that 85 percent of those who are considering SaaS expect to adopt a SaaS solution by the end of 2009.<sup>9</sup> The top vertical markets where SaaS applications

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<sup>5</sup> Jeffrey Kaplan, "SaaS Market Surging," *Cutter Consortium Business Technology Trend & Impacts Advisory Service Executive Update*, www.cutter.com, Vol.9, No.19, 2008.

<sup>6</sup> Antone Gonsalves, "Interop: SaaS Is a Key Driver behind Upswing in Innovation," *Information Week*, [www.informationweek.com](http://www.informationweek.com), April 29, 2008.

<sup>7</sup> IDC places SaaS revenues in packaged software and provides data and analyses on SaaS to its clients.

<sup>8</sup> Bruce Guptil, Mike West, and William McNee, "Enterprise Ready SaaS: Blue Chip Solution in the Business Portfolio," *Saugatuck Technology Research Alert*, Saugatuck Technology, July 10, 2008.

<sup>9</sup> Jeffrey Kaplan, "SaaS Market Surging," *Cutter Consortium Business Technology Trend & Impacts Advisory Service Executive Update*, www.cutter.com, Vol.9, No.19, 2008. The Gartner Group's survey of organizations in eight major countries worldwide during June and July 2008 found a similar adoption

are in use are banking/financial services, manufacturing, technology, healthcare, retail, government, professional services, telecommunications/ISPs, and software.<sup>10</sup>

The United States is the most advanced SaaS market in the world and has been shaped by two trends. One is the steady shift from front office and consumer-facing applications (e.g., CRM and collaboration) to “core” applications supporting mission-critical business systems and processes.<sup>11</sup> The other is increasing interest in mobile access to SaaS applications.<sup>12</sup> Saugatuck Technology finds that adoption in Europe varies, with the United Kingdom, Benelux, and the Nordic countries following a similar trajectory to the United States, but lagging behind it by a year. SaaS use in Germany and France is growing, albeit with an 18-24 month lag to the U.S. curve.<sup>13</sup>

The Asia Pacific region is less developed because IT market conditions are different there. Saugatuck Technology notes that, in contrast to the United States and Europe, SaaS offerings are generally directed toward the few, very large users and mostly industrial enterprises (major banks, healthcare providers, and IT services firms) and some very small firms with specific business operations (such as small manufacturers and services companies). The IT user culture is also still oriented toward custom solutions and, thus, has not invested as heavily in on-premises software. Finally, there is uneven investment throughout the region in the broadband Internet infrastructure that is essential to the growth of SaaS. As a result of these conditions, SaaS development, deployment, and adoption in Asia-Pacific are likely as much as two to three years behind the United States and Europe.<sup>14</sup> CRM is the largest and fastest growing segment of the \$274 million in SaaS spending in the region during 2007 and accounts for 42 percent of the total, according to Springboard Research estimates. Other important applications are collaboration, Enterprise Resources Planning/ Project Lifecycle Management (ERP/PLM), Supply Chain Management (SCM) and HR.<sup>15</sup>

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pattern with nearly 90 percent of the respondents either currently using or planning to use SaaS within the next 12 months (see Vanessa Ho, “Use of SaaS expected to Grow,” *eChannelLine Daily News*, [www.echannelline.com](http://www.echannelline.com), December 4, 2008).

<sup>10</sup> Presentation by Jeffrey M. Kaplan, “The Changing Economics of the SaaS Marketplace,” THINKStrategies, [www.thinkstrategies.com](http://www.thinkstrategies.com), 2008

<sup>11</sup>William McNee, “SaaS and Core Systems of Record: Observations from the FEI Summit,” *Saugatuck Technology Research Alert*, Saugatuck Technology, May 7, 2008.

<sup>12</sup> Victoria Ho, “Asia’s SaaS CRM Market Heating Up,” *ZDNet Asia*, [www.zdnetasia.com](http://www.zdnetasia.com), January 16, 2008.

<sup>13</sup> William McNee and Mike West, “3<sup>rd</sup> Annual SaaScon Shifts the SaaS Industry Spotlight to IT Executives,” *Saugatuck Technology Research Alert*, Saugatuck Technology, April 2, 2008.

<sup>14</sup>Bruce Guptil, “Road Research: Top Asia-Pacific ISVs and SaaS Concerns,” *Saugatuck Technology Research Alert*, Saugatuck Technology, March 19, 2008.

<sup>15</sup> “Business Users Fuel SaaS Growth in Asia Pacific, Says Springboard Research,” *Springboard Research Press Release*, [www.springboardresearch.com](http://www.springboardresearch.com), September 8, 2008.

SaaS is making headway in certain Asian markets, however. A Yankee Group survey of businesses conducted in late 2007 shows that 53 percent of respondents in China and 43 percent in India are using some SaaS. SMEs are the fastest growing segment of the Chinese SaaS market, but awareness is mounting in large corporations that are interested in advancing their business processes by using SaaS applications.<sup>16</sup> Springboard Research's surveys show that India is the growth leader in the region. The market research firm notes web conferencing and collaboration applications currently account for the largest portion of the \$27 million worth of SaaS revenues in that country. In contrast to China, Springboard Research finds that the eight million SMEs in India barely use SaaS because application software usage in this segment is low.<sup>17</sup> Australia also stands out as an important source of SaaS revenues. It is the top and most mature market in Asia-Pacific for SaaS CRM, representing 35 percent of total regional sales for that application.<sup>18</sup>

### **Emerging SaaS Industry Becoming More Global, Undergoing Consolidation**

The U. S. Government classifies SaaS firms under NAICS 518210 as application service provisioning suppliers and only reports operating revenue data for them. According to the latest figures from the 2007 Census Service Annual Survey, the revenues of U.S. SaaS companies increased 39 percent from \$3.8 billion in 2004 to nearly \$5.3 billion in 2006, the latest year for which data are available.<sup>19</sup> This growth was more than twice that of U.S. packaged software vendors (classified in NAICS 5112) during the same period.

Private sector sources offer further insights into the SaaS industry. Tholons, an Indian services globalization and investment advisory firm, believes that there are more than 1,000 private and fifteen public companies providing SaaS in the world market. It notes that the top five U.S. vendors (Salesforce.com, Cisco Systems' subsidiary WebEx, RightNow Technologies, Oracle, and NetSuite) collectively hold more than 50 percent of the world market revenue. However, there are other important players, many of which are "pure play" vendors, firms dedicated to building the software applications that are offered as a service over the Internet (see "SaaS at a Glance" for the five leading "pure plays.") A significant number of smaller suppliers exist that often collaborate with larger

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<sup>16</sup> Agatha Poon, "Are Chinese Firms Growing More Optimistic?" *Yankee Group Message*, [www.yankeegroup.com](http://www.yankeegroup.com), October 23, 2007.

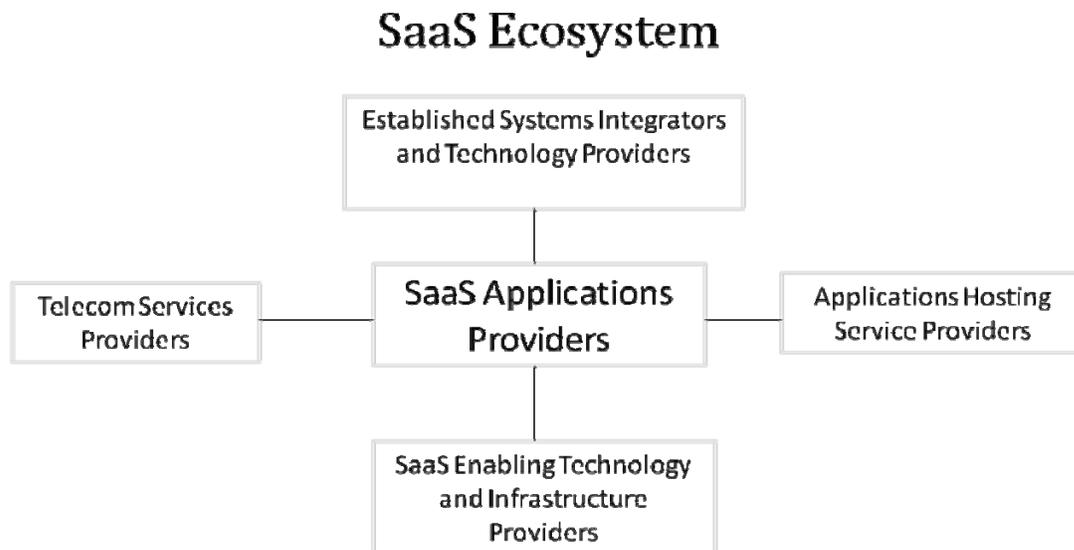
<sup>17</sup> "India Leads SaaS Growth in Asia-Pacific, Says Springboard Research," *Tekrati Research News*, [www.tekrati.com](http://www.tekrati.com), June 6, 2007. Also, "SaaS Enter the Blue Ocean," *Silicon India*, [www.siliconindia.com](http://www.siliconindia.com), October 1, 2008.

<sup>18</sup> "SaaS CRM Market in Asia Estimated to Grow 68% in 2007," *Springboard Research Press Release*, [www.springboardresearch.com](http://www.springboardresearch.com), December 7, 2007. Also, "Lower Cost of Ownership Drives Australia and New Zealand Enterprises to Adopt SaaS, Says Springboard Research," *Springboard Research Press Release*, [www.springboardresearch.com](http://www.springboardresearch.com), December 8, 2008.

<sup>19</sup> Census data are estimates and subject to sampling and non-sampling errors and revision at a later date

firms to develop low-cost SaaS solutions. Some have targeted niche areas, such as public relations and workforce management, or vertical markets like the automotive and healthcare industries. Traditional independent software vendors (ISVs) have also entered the market with offerings that are integrated with their on-premises products. They have termed this hybrid model as “software plus services.”<sup>20</sup> These companies include Adobe Systems, Blackbaud, Capgemini of France, Computer Associates, Intuit, Microsoft, Oracle, and SAP of Germany. The Gartner Group expects that these ISVs will play a greater role in SaaS than they do now. The market research firm estimates that more than 66 percent of ISVs will provide some of their applications optionally or exclusively as SaaS by 2012.

“Pure play” SaaS suppliers operate domestically and globally within a broad ecosystem of cooperative relationships (see chart below). The foundation for SaaS is provided by firms that offer enabling technologies and infrastructure, such as middleware and dynamic languages (Python, Ruby, and Java Script). While some “pure play” SaaS companies host their own applications, many rely on applications hosting service firms that not only sell them processing capability, storage and bandwidth within their data centers, but also services such as usage and performance reporting and analysis, billing, and service level management. They may also partner with telecom services providers that will sell their collaboration and communications applications as a service to telecommunications customers, particularly SMEs. Finally, some SaaS suppliers may use established systems integrators and technology providers to help their customers deploy SaaS applications and deal with integration issues.



*Source: "Ecosystems to Accelerate SaaS Adoption in Asia," Springboard Research Press Release. June 11, 2008. [www.springboardresearch.com](http://www.springboardresearch.com)*

<sup>20</sup> Mohit Agarwal, “SaaS: Friend or Foe of Global IT Services Firms?” *Tholons Services Globalization Review*, Tholons, [www.tholons.com](http://www.tholons.com), August 2007. Also, OTEC research on SaaS companies using Hoovers, MSN Money, and Yahoo websites.

SaaS companies have branched out in recent years. One new area is the supply of “platform as a service” (PaaS) technologies and services to customers, other SaaS vendors, and ISVs that allow them to build, test, integrate, deploy, and deliver SaaS applications on a data center infrastructure. Another area is the creation of SaaS marketplaces which allow SaaS vendors wider access to users as well as complimentary partners and offerings while SaaS users can access a broad range of customizable SaaS applications. For example, Salesforce.com’s App Exchange SaaS marketplace now has 450 third-party software firms selling more than 800 applications that run on its Force.com PaaS platform.

The U.S. SaaS industry has been focused mainly on the domestic market. Data from OPEXEngine, a technology industry benchmarking and data services firm based in Boston, show that U.S. SaaS firms gained roughly 87 percent of their revenues in 2007 from North America, 11 percent from Europe, the Middle East, and Africa (EMEA), and more than 2 percent from the Asia Pacific region. However, the larger companies reported 10 to 15 percent of their revenues as exports last year, and the rest of the industry saw sales to EMEA and Asia Pacific begin to take off in the second half of 2007.<sup>21</sup>

Venture capitalists in the United States have shown a great interest in software and SaaS companies in recent years. The National Venture Capital Association (NVCA) and PriceWaterhouse report that their investment in software has grown from 890 deals valued at a total of \$4.9 billion in 2005 to 944 valued at a total of almost \$5.5 billion. Although not as striking, venture capital funding of the IT services industry (where SaaS is classified), has increased from 153 deals valued at \$1.1 billion to 227 deals valued at \$1.6 billion over the same period. Saugatuck Technology notes that U.S. venture capitalists believe that more than 90 percent of all new enterprise software firms receiving their funds today have SaaS business models.<sup>22</sup> There were three rounds of VC financing in May 2008 alone: Rearden Commerce (\$100 million), Xactly (\$30 million), and Intacct (\$15 million).<sup>23</sup> After the financial crisis and recession hit in late 2008, the NVCA predicted that venture capital funding of software start-ups would decrease in 2009. A recent New York Times article indicates that U.S. venture capitalist firms are exercising caution, but some are continuing to invest in SaaS, virtualization software, and open source software.<sup>24</sup>

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<sup>21</sup> Lauren Kelley, “Strategic Operating Benchmarks for SaaS Companies,” Presentation to the SaaS Economics Conference on April 3, 2008, and “2008 Operating Benchmarks for Mid-Sized, Business to-Business Software Companies,” OPEXEngine, [www.opexengine.com](http://www.opexengine.com). Emails from Lauren Kelley, CEO and Founder of OPEXEngine, on May 16 and December 5, 2008.

<sup>22</sup> William McNee, “On the Road in Europe: SaaS Demand Grows,” *Saugatuck Technology Alert*, Saugatuck Technology, February 6, 2008.

<sup>23</sup> Phil Wainwright, “VCs Put Big Sums into SaaS,” *ZDNet.com*, May 9, 2008.

<sup>24</sup> Claire Cain Miller, “Venture Capitalists Look Ahead to a Bleak Year,” *New York Times*, December 17, 2008 and “In Silicon Valley, Venture Capitalists Turn Cautious and Focus on the Short Term,” *New York Times*, [www.nytimes.com](http://www.nytimes.com), January 5, 2009.

While the SaaS industry has seen its revenues grow and has benefited from an infusion of venture capital, it is now going through a period of rapid consolidation that is affecting the smaller “pure plays.” These suppliers have been particularly attractive to merger and acquisition for a number of reasons. Some are at risk because they may have not yet built up consistent cash flows from their subscription-based businesses to stand on their own in an increasingly tough U.S. economic climate. As a result, they have become attractive targets for leading SaaS “pure plays” and ISVs transitioning into this market that seek their software assets and talent and want to expand their offerings.<sup>25</sup> Smaller SaaS companies are also affected by the trend toward IT buyers wanting to work with fewer, larger suppliers to diminish the complexity of IT procurement.<sup>26</sup>

There is disagreement among industry observers about the impact of the current economic downturn on the SaaS industry. Some see SaaS firms doing well because their offerings are cheaper than traditional licensed packaged software, will provide operational cost savings, and can be expensed. Others believe that SaaS revenue growth may temporarily decelerate over the short term due to companies freezing any new IT projects, but note that a longer recession may increase the acceptance of SaaS, particularly by large enterprises, as one way of controlling their IT spending in general.<sup>27</sup> Forrester Research in a recent study reports that a number of SaaS providers are still experiencing strong subscription revenue growth.<sup>28</sup>

### **United States Remains Top Dog in Software and SaaS; Faces Challenges Ahead**

The United States still leads the world in software innovation. A February 2007 study of software innovation by researchers at Carnegie Mellon University and the University of Georgia concludes that inventive activity in software, based on software patents granted, is highly concentrated in the United States and controlled by U.S. firms. However, it found evidence that some inventive activity by U.S. companies has begun to shift abroad and that indigenous invention has been picking up in Brazil, China, India, Ireland, and Israel, although not to the extent that these countries will catch up to the U.S. software industry in the near future. The study noted the United States retains a significant lead over other countries in the stock of highly skilled programmers and software designers

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<sup>25</sup> William McNee, “Reaching for Strong SaaS Market Growth in Europe,” *Saugatuck Technology Alert*, Saugatuck Technology, June 18, 2008.

<sup>26</sup> Email from Stephen Minton, Vice President for IDC Worldwide IT Markets, on May 6, 2008.

<sup>27</sup> Scott Duke Harris, “Economic Crisis Both a Threat and an Opportunity to SaaS,” *Mercury News*, [www.mercurynews.com](http://www.mercurynews.com), December 10, 2008; Mike West et al, “Top-Ten Disruptive Technologies and CIO Issues for 2009,” *Saugatuck Research Alert*, Saugatuck Technology, December 24, 2008, and Jeff Kaplan, “On-demand Services Predictions for 2009,” [www.thinkstrategies.com](http://www.thinkstrategies.com), January 1, 2009. Emails from Stephen Minton, Vice President for IDC Worldwide IT Markets, on December 3, 2008 and from Lauren Kelley, CEO and Founder of OPEXEngine, on December 2, 2008.

<sup>28</sup> Patrick Thibodeau, “In a Down Economy, SaaS Revenues Rise,” *Computerworld*, [www.computerworld.com](http://www.computerworld.com), January 15, 2009.

that gives it an advantage in the production of new software products. The U.S. software industry also benefits from the significant past investments in R&D, supportive public policies, and more localized factors such as user-producer interactions and user innovations.<sup>29</sup> Other factors driving U.S. software innovation include a large domestic market that offers potentially big returns to those suppliers who can deliver the most advanced products and intense competition among companies to respond to this market demand with innovations that are better than their rivals. Moreover, in the area of SaaS, some U.S. firms have leveraged their strengths by engaging partners with complimentary assets in collaborative activities and, in certain cases, building on shared or open resources.<sup>30</sup>

A September 2008 report looking at five competitive factors across the broader IT sector, conducted by the Economist Intelligence Unit (EIU) for the Business Software Alliance (BSA), confirms that the U.S. IT industry remains the most competitive in the world, but warns that its lead has been slipping and that it faces challenges from certain European and Asian nations. The areas where the United States was outscored by other nations were in support for research and development (R&D) and for IT industry development (e.g., e-government initiatives, government IT spending, and access to domestic and foreign financing)<sup>31</sup>

In commenting on the report's findings, BSA and other industry observers voiced concerns about the U.S. education systems' ability to produce the innovators that the IT sector needs in the future, the negative impact that tougher immigration controls may have on the pool of U.S. IT talent and the skills base, and the effects that a heavier regulatory regime and slower growth of technology spending might have on the U.S. IT industry as it weathers the current economic downturn.<sup>32</sup>

As noted previously in this paper, the U.S. industry currently dominates the SaaS world market, largely due to its innovation and strong domestic sales. Many of the major U.S. SaaS suppliers have been aggressively expanding their presence in Europe and are doing

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<sup>29</sup> Ashish Arora, Chris Forman, and Jiwoong Yoon, "Software" *Carnegie Mellon University Tepper School Working Paper*, February 2007 (Chapter 2 in STEP Volume on the Globalization of Innovations, eds. David C. Mowery and Jeff Macher, The National Academies Press, 2008). Data from OPEXEngine show that "pure play" SaaS firms alone spent an average of 33 percent of their recognized revenues on research and development and had an average of 30.2 percent of their total employment engaged in this activity during 2007. See "2008 Operating Benchmarks for Mid-Sized, Business to-Business Software Companies," OPEXEngine, [www.opexengine.com](http://www.opexengine.com).

<sup>30</sup> Email from Douglas Lippoldt, Senior Economist, Structural Policy Division, OECD Directorate for Science, Technology, and Industry, November 18, 2008.

<sup>31</sup> "How Technology Sectors Grow: Benchmarking IT Industry Competitiveness 2008," Economist Intelligence Unit, September 2008.

<sup>32</sup> Arik Hesseldahl, "Is the U.S. Losing Its Edge in Tech?" *Business Week*, [www.businessweek.com](http://www.businessweek.com), September 16, 2008. Also, Grant Gross, "BSA: Other Countries' IT Industries Catching up to U.S." *Computerworld*, [www.computerworld.com](http://www.computerworld.com), September 16, 2008

well with their broad-based horizontal offerings. By contrast, indigenous European “pure plays” are finding the most success selling industry-specific solutions and niche-oriented applications. They have an advantage over their U.S. rivals in their ongoing investment in providing localization capabilities and services, and in their ability to deal more effectively with European and local cultural differences.<sup>33</sup>

In the Asia Pacific region, Salesforce.com is the leading supplier while other U.S. “pure play” SaaS providers (Cisco Webex, RightNow Technologies, Netsuite and Citrix Online) and traditional software vendors Microsoft and Oracle play key roles in the market. However, local ISVs have also gained substantial sales. These include Australia-based SaaSu, Aussiepay, Gate 13 and Woznet, China-based 800CRM, India-based Adrenalin eSystems and Pyxis Technology Solutions, and Singapore-based JustLogin. Springboard Research expects that a few upstart Asian vendors will eventually emerge to challenge U.S. SaaS companies, given the wealth of developer talent in China and India.<sup>34</sup> Software industries in both of these countries are also receiving growing infusions of venture capital from domestic and foreign sources.<sup>35</sup>

### **World SaaS Market Expected to Soar in the Future, U. S. Export Prospects Bright**

U.S. market research and consulting firms have predicted rapid growth in the world SaaS market over the near term.<sup>36</sup> McKinsey has the most bullish outlook and estimates that global SaaS demand could expand 35 to 49 percent annually from 2007 to between \$22 billion and \$37 billion by 2012, consisting not only of applications that replicate existing on-premises functionality, but also fundamentally new types of applications that do not yet exist.<sup>37</sup> At the other end of the spectrum, a more conservative projection from IDC places annual growth at a robust 29 percent over this same period and has the world SaaS market reaching almost \$17 billion.<sup>38</sup> Corporate adoption of SaaS is expected to nearly double over its 2008 level. Saugatuck Research believes that 70 percent or more of

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<sup>33</sup> William McNee, “On the Road in Europe: SaaS Demand Grows,” *Saugatuck Technology Alert*, Saugatuck Technology, February 6, 2008 and William McNee, “Readying for Strong SaaS Market Growth in Europe,” *Saugatuck Technology Alert*, Saugatuck Technology, June 18, 2008.

<sup>34</sup> “Emerging SaaS Players, Both Local and Global, Capture 54% of the Asian Market, Says Springboard Research.” *Springboard Research Press Release*, [www.springboardresearch.com](http://www.springboardresearch.com), April 16, 2008 and “Business Users Fuel SaaS Growth in Asia Pacific, Says Springboard Research, .” *Springboard Research Press Release*, [www.springboardresearch.com](http://www.springboardresearch.com), September 8, 2008

<sup>35</sup> John Ribeiro, “IT Vendors in India Target Sharp Growth in Software Sales,” *Computerworld*, [www.computerworld.com](http://www.computerworld.com), August 11, 2008. Also, “Venture Capital Eyes Chinese Software Sector,” *China Daily.com*, [www.chinadaily.com.cn](http://www.chinadaily.com.cn), July 25, 2008.

<sup>36</sup> These projections were made before the financial crisis and recession occurred in late 2008 and may be revised downward over the next few months.

<sup>37</sup> “Abhijit Dubey et al., “Emerging Platform Wars in Enterprise Software,” *The McKinsey Quarterly*, McKinsey & Company, 2008.

<sup>38</sup> Email from Stephen Minton, Vice President of Worldwide IT Markets and Strategies, August 14, 2008.

businesses with greater than 100 employees will have deployed at least one SaaS application by 2012. Many of these applications will be increasingly focused on core business solutions such as ERP, SCM, and Governance, Risk, and Compliance (GRC).<sup>39</sup>

SaaS use is dependent on certain readiness factors that the Economist Intelligence Unit (EIU) captures each year in its “E-readiness” rankings. One of the most critical factors for SaaS adoption is broadband infrastructure. Those countries, that are now experiencing SaaS growth, have significant broadband penetration and large numbers of fixed broadband subscribers, high dedicated connection speeds, and relatively low charges for broadband use. They also have high Internet and PC penetrations and user bases. Finally, these countries have governments that provide strong support for information and communications technology (ICT) development and have conducive business, legal, and social and cultural environments.<sup>40</sup> The 2008 EIU E-readiness ranking is a good indicator of SaaS growth markets and, as a result, the potential targets for U.S. SaaS exports over the near term (2008-2012). In the listing of the ranking’s top 25 are not only Western European nations where SaaS adoption is already well underway, but also Canada, Israel, Australia and New Zealand, Hong Kong, Singapore, South Korea, Japan, and Taiwan (see Table 1).

The long-term prospects for U.S. SaaS suppliers are good in the transitional economies of Eastern Europe and in certain developing countries in Latin America, Asia, the Middle East, and Africa since EIU projections over the next four years indicate that there will be substantial increases in PC, Internet, and broadband users in these regions. SaaS firms will also benefit from greater mobile access to the Internet through portable PCs and smart phones. For example, IDC forecasts that the total number of mobile Internet users around the world will surpass 1.5 billion by 2012.<sup>41</sup> Brazil, Russia, India, and China should be the leading developing country target markets, given the expected level of their ICT development and economic growth. A second tier of promising export markets would include Hungary, Poland, Argentina, Mexico, Malaysia, Thailand, the Philippines, South Africa, the United Arab Emirates, and Saudi Arabia. U.S. SaaS suppliers are particularly well positioned to gain a significant share of these export markets because of their experience in competing aggressively against one another, their technological prowess, and the economies of scale accruing from their large and growing installed base worldwide.<sup>42</sup>

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<sup>39</sup> Bruce Guptil and William McNee, “SaaS Survey: Mid-Sized Firms Show Aggressive, Focused Growth in Adoption and Plans,” *Saugatuck Technology Alert*, Saugatuck Technology, May 21, 2008 and Bruce Guptil, Mike West, and William McNee, “Enterprise Ready SaaS: Blue Chip Solution in the Business Portfolio,” *Saugatuck Technology Alert*, Saugatuck Technology, July 10, 2008.

<sup>40</sup> “E-readiness Ranking 2008: Maintaining Momentum,” Economist Intelligence Unit, 2008.

<sup>41</sup> “IDC Finds More of the World’s Population Connecting to the Internet in New Ways and Embracing in Web 2.0 Activities,” *IDC Press Release*, [www.idc.com](http://www.idc.com), June 25, 2008.

<sup>42</sup> Email from Douglas Lippoldt, Senior Economist, Structural Policy Division, OECD Directorate for Science, Technology, and Industry, November 18, 2008.

## **Foreign Trade Concerns and USG Action**

Concerns about data security and privacy overseas have emerged as potential trade barriers for U.S. SaaS firms. Vendors have come up against restrictions on transborder data flows in Asia that ban off-shoring of any banking and telecommunications data processing and, as a result, adversely affect their SaaS sales. They have also faced resistance in Canada and Europe from some federal agencies and state governments and businesses that are concerned about the confidentiality of data and the risk that U.S. intelligence and security organizations could access sensitive information at will.<sup>43</sup> In addition, some governments generally discourage trans-border services as a means to maintain oversight over industries and to ensure that they can effectively tax economic activity. In China, for example, it appears difficult for software vendors to bill a local customer and repatriate earnings without first establishing a local juridical presence. Both the data flow restrictions and resistance force U.S. SaaS suppliers either to consider establishing in-country and/or regional data centers, which is an extremely costly proposition, or to forego doing business in certain markets, ceding them to local and foreign competitors.

In February 2008, officials from Canada, Mexico and the United States signed a *Statement on the Free Flow of Information and Trade in North America* under the Security and Prosperity Partnership of North America (SPP). The Statement affirmed that SPP member countries will work together to address problems that inhibit cross-border services trade that involves computerized information flows. Towards that end, the Statement formally established a Trilateral Committee on Transborder Data Flows. The Committee, composed of government representatives of each of the three SPP member countries, has been working in consultation with the business community, including representatives of the SaaS industry, to identify and address impediments to electronic information flows across the border that affect economic growth. The U.S. Department of Commerce hosted the inaugural meeting of this Committee in September 2008. The Committee will deliver a findings and recommendations report to SPP Ministers in 2009.

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<sup>43</sup> William McNee, "On the Road in Europe: SaaS Demand Grows," *Saugatuck Technology Alert*, Saugatuck Technology, February 6, 2008.

**Table 1: EIU E-Readiness Ranking in 2008**

Country	Rank	Overall Score*
United States	1	8.95
Hong Kong	2	8.91
Sweden	3	8.85
Australia	4	8.83
Denmark	5	8.83
Singapore	6	8.74
Netherlands	7	8.74
United Kingdom	8	8.68
Switzerland	9	8.67
Austria	10	8.63
Norway	11	8.60
Canada	12	8.49
Finland	13	8.42
Germany	14	8.39
South Korea	15	8.34
New Zealand	16	8.28
Bermuda	17	8.22
Japan	18	8.08
Taiwan	19	8.05
Belgium	20	8.04
Ireland	21	8.03
France	22	7.92.
Malta	23	7.78
Israel	24	7.61
Italy	25	7.55

Source: *The 2008 e-Readiness Rankings: Maintaining Momentum*, Economist Intelligence Unit, 2008.

\*Score out of 10. The rankings consider connectivity and infrastructure, business environment, social and cultural environment, legal environment, government policy and vision, and consumer and business adoption of ICT.

## **SaaS at a Glance**

<b>Global Market (\$ billions)</b>	<b>Global Market (\$ billions)</b>	<b>U.S. Industry Revenues (\$ billions)</b>	<b>Geographic Distribution (Percent)</b>	<b>Companies (number)</b>
(2007) \$5.7-6.5	(2012) \$17-37	(2006) \$5.3	(2007) 87% North America 11% EMEA 2% Asia Pacific	(2008) 1000+ private; 15 public

Sources: International Data Corporation (IDC), McKinsey, OPEXEngine, Saugatuck Technology, Tholons, U.S. Census Bureau

<b>Top 5 U.S. Pure Play SaaS Companies (Revenues-\$M)</b>	<b>2007</b>	<b>1H08</b>
• Salesforce.com	748.7	510.7
• Dealer Trak Holdings	333.8	127.5
• Ultimate Software	151.4	85
• Omniture	143.1	134.8
• Concur Technologies	129.1	103.0

Source: OPEXEngine

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