

Enabling Rainmakers

Cloud Computing benefits the bottom line, spawns entrepreneurship, and ensures a brighter future

By Marc Benioff, chairman and CEO, salesforce.com

In 1999 I started salesforce.com with three great software developers in a rented apartment in San Francisco. We didn't have much. Card tables and folding chairs served as office furniture. A walk-in closet housed our servers. The balcony doubled as our conference room. However, we made up for what we lacked with a big vision: The End of Software.

At the time, information technology was onerous to install, expensive to maintain, and burdensome to use. The systems required maintenance and customization that needed months, or even years, to get right. It also required more resources than many companies wanted to spend on this aspect of their businesses. We wanted to change that. We knew there was a better alternative.

By delivering information over the Internet, what we now call cloud computing, we could give companies a more economical and more efficient way to manage their businesses. While there were critics who said this idea would never gain traction (venture capitalists turned us down; our competitors said we'd be gone in a year), customers demonstrated they were interested in a change. They were frustrated by how the traditional software industry grew too greedy, too complex, and too out of touch, and they voted for the cloud with their dollars, euros, and yen.

Now, cloud computing has proven its advantages over traditional enterprise software and it has reached a tipping point. Gartner Group predicts that cloud computing will continue to be the top strategic opportunity in technology this year, and forecasts that cloud revenue will grow to \$150 billion in 2013. The Software-as-a-Service market is growing twice as fast as the enterprise software market. Nicholas Carr, author and one of the most influential thinkers in the IT industry, has opined that "utility-supplied" computing will have economic and social impacts as profound as the ones that took place one hundred years ago, when companies "stopped generating their own power with steam engines and dynamos and plugged into the newly built electric grid."¹

The massive migration to the cloud is the result of an innovative technology model, which is based on multi-tenancy. In the same manner that large urban office buildings house multiple discrete, secure tenants that share core services such as plumbing, electricity, and elevators, cloud services manage data and applications. Because the vendor has a single code base to manage—not dozens scattered over various platforms and operating systems—customers receive the most current version seamlessly. In other words: customers receive instant gratification.

¹ Nicholas Carr, *The Big Switch: Rewiring the World, from Edison to Google*, New York: Norton, 2008.

Much of the original idea for salesforce.com was inspired by technologies that emanated from the consumer world. I was amazed by how much the consumer websites revolutionized so many aspects of our daily lives: how we shopped, communicated, and learned. I kept asking a simple question: “Why isn’t all enterprise software like Amazon.com?” Why couldn’t applications be run from a simple website, without software or hardware to install, and expensive consultants to hire? Why couldn’t we just compute in the Internet, or the cloud, and get away from the data center and all its complexity?

We spent a decade pursuing that question, and the enterprise cloud computing industry that has grown up around us has validated that the cloud is faster, more efficient, and more economical than traditional software. Now, we are able to evolve to leverage the latest technologies to tackle even more significant issues, such as increasing productivity. Developments in social media have ushered in a new technology paradigm, which has spurred me to become obsessed with a new question: “Why isn’t all enterprise software like Facebook?”

We are in a very exciting time in the technology industry. Computing is being radically transformed by the social networking revolution, driven by sites like Facebook, Twitter, and YouTube, and advances in mobile devices like the iPhone and iPad, which are rapidly replacing the desktop. We are evolving beyond Cloud 1 (the desktop Internet) to move into Cloud 2 (the mobile Internet), which enables collaboration, mobile, and real time information flow. The result is new capabilities we could not have imagined 10 years ago. The shift underway is bigger than anything we have seen before in computing—and it’s more important than ever for individuals and organizations to hop aboard, or they risk being left behind.

I’ve always believed that all software would eventually be delivered in the cloud because it is a model that allows everyone to succeed. The advantages such as less risk, no capital expenditure, predictable operating expenses, increased productivity, and fast results are open to big and small companies alike. By removing infrastructure worries from a company’s focus allows it to prioritize what’s core: customers, sales, and innovation.

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Five Advantages of Cloud Computing

Cloud computing makes it possible to deliver software applications remotely to a large number of users, which creates important benefits.

1. Cost Effective and Elastic

Infrastructure is purchased as a service, resulting in savings through shared infrastructure, reducing redundancies, realizing economies of scale, and limiting license requirements.

2. Agility

Cloud applications can be implemented quickly (from a couple days to a couple months) and deployed instantly and simultaneously to thousands of users in different locations around the world.

3. Ease of Use

Cloud computing applications are modeled after consumer browser based Web applications and interfaces that are familiar, so they tend to be highly intuitive and easy to use, making user adoption rates and customer satisfaction rates very high.

4. Green

Cloud computing data centers consume far less energy than what is required by the traditional solutions. Take for example, that Microsoft exec Craig Mundie has estimated that Microsoft would require at least 100,000 servers to meet the demands of our customers. Salesforce.com has 3,000 servers, and half of them are not even turned on, but just there to handle peak demand).

5. Availability

Enterprises and government agencies can securely access real-time data anytime and from anywhere, which enhances their availability and business continuity capabilities.

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We are just beginning to prove how far cloud computing can go. A new era of enterprise agility is opening up as clouds mature and cloud platforms become more widely used. Google's AppEngine, Amazon Web Services, and our Force.com platform take vastly different approaches, but all of them liberate the customer from the time-consuming task of provisioning new hardware and software. There's no longer a need to fire up a server, worry about where it is going to sit in the data center, or fret over incremental real estate or infrastructure costs. The significance of that is staggering. (In the case of Force.com, developers achieve results five times faster and at half the cost of traditional platforms.)

What excites me most is how this enables a very real potential to unleash mass innovation and productivity. For the first time, developers across the globe can access unlimited computing power. With a browser and a Web connection, anyone can build applications and deploy them to users anywhere. (People can use these services on whatever they want: Windows, Mac, or any mobile device. All the intellectual property from the first click to the last line of code is stored, tested, deployed, and run in the cloud.)

Cloud computing has already spawned a significant number of new companies. (IDC estimates that there are more than 1,000 worldwide SaaS providers alone.) In the coming decade, thanks to the proliferation of cloud services, ubiquitous, low-cost bandwidth, and cheaper access devices like smartphones, tablets, and netbooks, there are fewer obstacles than ever to turn an idea into a business. Further, organizations of tomorrow—freed from buying in4f4r4a4s4t4r4u4c4t4u4r4e44 that44 4goes4 4o4u4t4 4o4f4 4d4a4t4e4, 4depreciates in 4v4a4l4u4e4, and requires a hefty investment to keep it humming—will have more resources to invest in pivotal pursuits that increase innovation. The best part is that we don't have to wait until tomorrow; these capabilities are already available today.

The time is right for consumers, small and large businesses and organizations, entire industries, local governments, and nations to adopt cloud computing as a way to cut costs, improve productivity, and drive innovation. As cloud computing is increasingly used as a global solution, its importance will only grow. Inasmuch as cloud computing platforms will become an important part of IT systems in the 21st century, governments around the world should recognize that they have a vested interest in developing and maintaining this growing industry.

There are myriad issues that can stymie innovation in the cloud. We must support and advance cloud computing by implementing public policies that accelerate its adoption and use around the world. We believe that Government should focus on two cloud computing policy priorities: 1) facilitating secure cross-border data flows and 2) getting government agencies to use the cloud.

Facilitate Secure Cross-Border Data Flows

The global information economy, including cloud computing, works best when information flows freely across borders in a responsible way with appropriate privacy and security protections. Efforts to lock data within a particular country or region will not only undermine the benefits of the global information economy, but also disadvantage local enterprises that want to take advantage of the tremendous cost, productivity, and innovation advantages that cloud computing enables. Facilitating secure cross-border data flows does not mean that governments must turn a blind eye to data transfers, but that they should encourage responsible information flows to ensure that information is adequately protected. At salesforce.com, for example, we are committed to protecting information our customers submit to cloud computing services by adhering to the ISO 27000 security framework and maintaining a rigorous privacy program.

Fortunately, today's policy environment is supportive of the free flow of data around the world. Policy innovations like the EU-US Safe Harbor framework have been especially constructive. A priority for government policymakers should be to make sure that the open yet responsible environment for cross-border data flows is maintained and extended across additional industrial sectors and geographic regions.

Get Government on the Cloud

Several governments, including those in the United States, Japan and the United Kingdom, have implemented programs to accelerate public sector adoption of cloud computing. The U.S. experience is especially instructive. The Obama Administration began the effort with the Presidential transition team's January 2008 launch of Change.gov, which allowed citizens to suggest ideas and vote on policy priorities. Change.gov was built on the Force.com multi-tenant platform and took only three weeks to set up. During the week that it went live, Change.gov logged 52,000 ideas, 1.4 million votes, and 10 million page views. At its peak it handled 145 hits per second. This performance demonstrates the access, scale, speed, and flexibility that cloud computing enables.

The Administration followed up the Change.gov experiment with an aggressive push to get Federal agencies to use cloud computing. As a result of the effort, led by then U.S. Federal CIO Vivek Kundra, several U.S. government agencies have already implemented cloud solutions. This momentum will accelerate over the next two years as a result of recent Office of Management and Budget (OMB) guidance that requires all Federal agencies to provide an alternative analysis for how they could use cloud computing for their technology projects.

In many ways, the cloud computing revolution—and the way it's changing the world—has scaled beyond my wildest expectations. So has the success of salesforce.com. Working in the small apartment, we had a simple idea that I believed in, but I had no idea that we would become the largest high-tech employer in San Francisco, one of the fastest growing companies, or spawn an entire industry.

My father was an entrepreneur, as were my grandparents before him. I grew up believing in the American Dream, witnessing its power over and over again, and in the past ten years, experiencing it in ways beyond what I ever imagined.

We are now at a critical time in our nation's history. Our public schools are lacking; our companies are struggling; our economy is deteriorating. Innovation and technology is prized as pivotal to success in the future, but receives little in terms of supportive policies and public actions.

A challenging time is never the moment to cut back on a commitment to innovation or creativity. Rather, it is a time to invest in these values; that's what's needed to build a better tomorrow. Innovation, which led to new companies that employed people, created wealth, and sparked economic growth, is the way we overcame the past economic crises—and it is the cornerstone to building a brighter future. I see it clearly—through the clouds.