The sky is the limit for cloud computing

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The prospects for "cloud computing" now seem a little less ... cloudy. Once a term confined to the personal-speak of high-minded tech geeks and derided by critics as a bogus marketing ploy, cloud computing today is arguably the hottest trend sweeping the information technology industry sector, investors, analysts and entrepreneurs say.

"It's a real business that has grown in stature enough to have its own fancy marketing term," said Dan Grigsby, a prominent Minneapolis, Minn., software entrepreneur.

The company enStratus Networks (enStratus is derived from Latin words for "in the clouds"), was recently selected to present at the Under the Radar Conference, a prominent Silicon Valley event for tech start-ups. The Minneapolis-based company designs security applications for cloud computing.

The exact definition of cloud computing is still foggy. George Reese, the co-founder and chief of technology at enStratus, who has written several books on cloud computing, calls it all that "stuff that is not my problem. The black box of technology."

Huh?

OK, try this: Cloud computing refers to a distribution-and-pricing model in which companies -- large corporations and start-ups alike -- can purchase services such as software, bandwidth, server space and Web applications over the Internet on an on-demand basis. For example, a

retailer needing a little extra computing power during holiday shopping season can rent out additional server space from "clouds" like Amazon Web Services just for that period.

The economic benefits are huge, experts say. By paying only for what you need when you need it, start-ups can quickly and cheaply scale up their business. And corporations don't need to purchase heavy-duty infrastructure to manage their huge data flows.

"One of the important benefits (of cloud computing) is that the resources scale up and down in a flexible manner," said Michael Gorman, managing director of Split Rock Partners, an early stage venture capital firm based in Eden Prairie, Minn. "If a company has major peaks and valleys in their usage, they are able to accommodate the peaks without paying for full, peak capacity all the time. They only pay for what they use, and they get the benefit of never being out of capacity. For emerging companies, this can substantially reduce the costs associated with starting and running their business."

Cloud computing is nothing new. Firms such as Firepond Inc. and IDeaS Revenue Optimization Inc. already sell supersmart software over the Internet that helps companies set prices and manage sales. But such services tended to focus on a specific niche.

What's made cloud computing a reality is Amazon.com, the ubiquitous bookseller, experts say.

Depending on whom you ask, the Seattle-based online retailer was either just looking to rent out some extra server space or deliberately crafted a strategy to conquer cloud computing. In any case, Amazon's giant computers allowed big customers to scale up and generate meaningful cost savings.

Today, major Internet companies such as Google, IBM and Microsoft are diving into clouds. IDC, an IT market research firm, estimates global spending on cloud computing services will jump threefold to $42 billion in 2012.

Gartner Inc., another prominent research firm, is even more bullish. The company predicts the cloud services market will grow from $46.4 billion today to $150.1 billion in 2013, an annual compound growth rate of 26.5 percent. The boom, Gartner says, will be led by business processing (advertising, e-commerce and payments processing), software-as-a-service and systems infrastructure (storage and backup services).

Cloud computing also represents a big opportunity for start-ups, investors say. The company calls its core technology "key management," software that protects access to a company's data within a cloud. "It takes the keys out of the cloud and puts in a lock box," Reese said.

The start-up's software can also authorize employees to access a cloud with one user ID but only see information relevant to their jobs.

"They have transformed the use of the cloud by providing a tool that eliminates corporate and security objections," said Dan Mallin, a tech investor whose holding company, Magnet 360, is an investor in enStratus.

The start-up also has technology that monitors a cloud's reliability. For instance, if one Amazon server fails, enStratus will automatically migrate a company's data to another Amazon server. Eventually, customers will be able to switch seamlessly from, say, an Amazon cloud to a Microsoft cloud in real time depending on their needs, Reese said, much in the same way a local utility purchases power over the electrical grid from different sources around the country. A customer's home might be powered by wind in South Dakota in one minute and then a coal plant in

Ohio the next. In any case, electrons are electrons. In the IT environment, digital signals are digital signals.

Reese says cloud computing can significantly boost entrepreneurship and innovation by leveling the playing field.

"With this economy, getting access to capital is expensive," Reese said. Now, "everything that used to be a huge capital expense is now an operational expense. Cloud computing will be able to make scale available to companies with no scale at all."

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