**SAP**insider

# Cloud Computing and SAP
## Where We Are and Where We're Going

**Kaj van de Loo**
Senior Vice President
Technology Strategy
Office of the CTO
SAP AG

**Roland Wartenberg**
Enterprise Virtualization
Strategist
SAP Labs, LLC

The cloud is in your future. Anyone who doesn't realize this fact will miss out on the biggest IT revolution in decades.

That's why, at SAP, we have heavily invested in R&D and other resources to bring to the cloud the very same qualities our on-premise solutions are known for — data integrity, data consistency, rigorous compliance, and unification of business processes across the company. We want to expand these qualities from the on-premise world to the on-demand world.

## 3 Layers of the Cloud

At SAP, we approach cloud computing holistically, but break it down into three distinct layers: infrastructure, software-as-a-service (SaaS), and consumption.

### Cloud as Infrastructure

We already have many customers who are deploying SAP systems on private cloud landscapes. SAP's ability to adopt technology innovation within our products has long been a key value driver for customers. With both private and public clouds, we are doing the same: We are enabling existing SAP applications to be deployed and managed on virtualized and cloud-based infrastructures. One of the biggest cloud participants is SAP itself; we have approximately 1,000 systems running on a third-party web service.

The future lies in customers' ability to reliably move any SAP system to the cloud and operate it there, regardless of whether they are using internal, private cloud technology, such as a virtualized data center, or external, public cloud technology hosted by a third party. Accordingly, we are developing tools to make it easier to deploy and manage SAP systems in both of these cloud environments.

To make this future a reality, we have been working closely with our partners, both the early cloud providers and those who we believe will be important future players, such as telecommunications companies and large IT service providers. For our part, SAP is learning what type of services our partners are planning to provide and determining how we should develop our applications in line with those plans. At the same time, we want our partners to understand SAP technology, the way it behaves, and our roadmap, so that they can align their own service definitions and development with ours.

We are also developing a certification program with our partners, so that customers can be confident that a particular cloud computing infrastructure solution will work, and that SAP will support their products on this infrastructure.

### Cloud as SaaS

On the software-as-a-service front, SAP is building its own SaaS applications and working with partners to develop additional on-demand applications. Our on-demand solution for small businesses and midsize companies, SAP Business ByDesign, is now in the ramp-up phase, and solutions focused on specific lines of business, such as SAP E-Sourcing OnDemand, have been available for some time.

We are also working to ensure that our on-demand applications are seamlessly integrated with SAP on-premise applications so that they share master data or business processes that go across both on-demand and on-premise solutions.

Of course, there are other levels of sharing, as well. There are applications and data that reach outside of the enterprise, enabling interaction and collaboration with individuals or organizations around the world. This could extend to known customers or companies,

*Download this special report at sapinsider.wispubs.com*

or even unknown individuals that you want to engage in some fashion, like consumers. You want to give them access to data and functionality, but you can't do so in any meaningful way with an on-premise solution.

In the not-too-distant future, expect to see a variety of hybrid solutions from SAP with some on-premise and on-demand components that all allow the customer to select the deployment model that best fits their business scenario. In addition, SAP is enabling an open ecosystem in the on-demand space, facilitated by an open platform and corresponding partner programs, including partners that provide SaaS solutions.

### Cloud as Consumption

The way people consume and interact with applications is a dynamic playing field. Today, the emphasis is on making applications for the mobile consumer. But new user interface technologies pop up constantly.

Of cloud computing's three layers — infrastructure, SaaS applications, and consumption — the last is the most mature. There are dozens of different mobile devices currently running some form of an SAP application or some functionality that interacts with an SAP system. And make no mistake: We want to increase the consumption of SAP systems.

In the end, though, users should be able to access SAP applications without having to worry about where those applications reside. This means that we are not going to be able to increase consumption by pushing an SAP

> Cloud computing is coming. For your company, it's only a question of how quickly.

consumption technology. Instead, our strategy is to enable consumption from non-SAP technologies, whatever they may be, via standard protocols.

### Readying Your SAP Landscape to Enter the Cloud

Within each of these three layers, there are exciting possibilities that create the promise of cloud computing for customers. But when that promise is delivered, will you be ready?

SAP customers should really think about what exactly they want to achieve before they start looking at cloud technology solutions. They should consider how they want to attain these objectives within all three layers of cloud computing; otherwise, they may not be happy with the results.
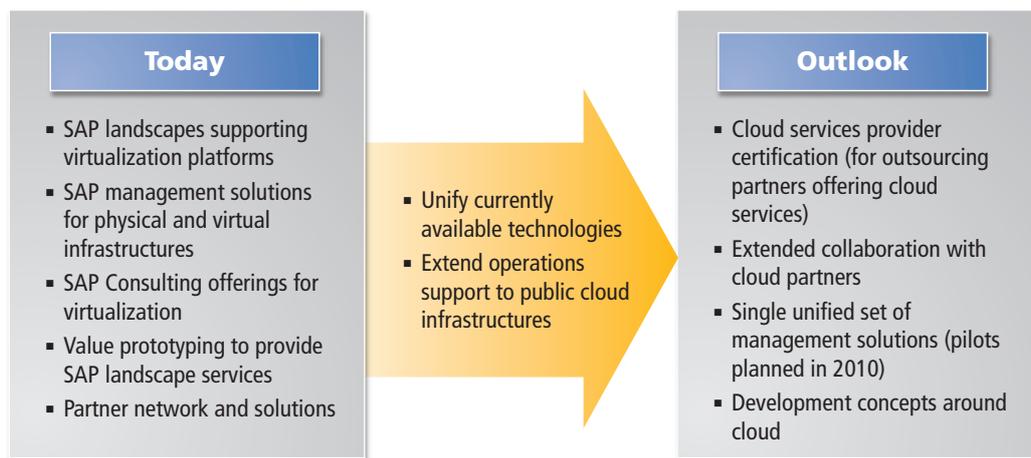
### The Cloud Outlook: Today and Tomorrow

While many flavors of cloud computing are now available to SAP customers, the future presents an even wider variety of ripening opportunities that will soon be ready (see **Figure 1**). There are several steps customers can take today to prepare for a future on the cloud:

- At the infrastructure level, use virtualization technologies provided by SAP and certified SAP partners.

- Take advantage of SAP lifecycle management tools, including the SAP NetWeaver Adaptive Computing Controller tool and SAP Solution Manager.



**FIGURE 1** ▶ SAP's mission is to define and develop enabling technology, management tools, and value-added services to help customers deploy and manage existing SAP applications in virtualized data centers and the cloud

**Today**
- SAP landscapes supporting virtualization platforms
- SAP management solutions for physical and virtual infrastructures
- SAP Consulting offerings for virtualization
- Value prototyping to provide SAP landscape services
- Partner network and solutions

- Unify currently available technologies
- Extend operations support to public cloud infrastructures

**Outlook**
- Cloud services provider certification (for outsourcing partners offering cloud services)
- Extended collaboration with cloud partners
- Single unified set of management solutions (pilots planned in 2010)
- Development concepts around cloud

- Ensure that organizational changes are flexible enough to accommodate later cloud usage. The CIO, for example, may move into the role of more of a service broker than a service provider and, as such, should begin developing metrics, skill sets, and a budget mix based on that transition rather than the traditional service provider model.

- Reassess necessary administration skills currently available in your organization; managing virtualized and cloud environments is fundamentally different from managing more traditional landscapes and will require different skill sets.

- Understand the concepts behind security in the cloud and the risks and benefits it provides.[1]

- Standardize all non-differentiating processes across your organization and make sure they are uniformly supported by SAP applications.

By taking these steps, you will be better prepared when your organization commits to a cloud computing scenario. With that commitment in place, you can start building your cloud computing landscape by doing the following:

- Implement a cloud computing and virtualization task force in your company.

- Because accounting and costing in cloud environments is different from more traditional landscapes, prepare cost monitoring and cost allocation tools and processes.

- Prepare your company's mid-term and long-term strategies for security implications related to external cloud offerings.

- Keep abreast of SAP and partner offerings in the virtualized and cloud computing space.

- Educate yourself on local legal requirements, especially those regarding location of stored data.

- Optimize organizational alignment (for both IT and the business) to benefit from proactive peak management. IT can only predict changes in capacity needs by looking at trends and patterns, but the business can more accurately predict changes in IT capacity needs

by measuring the current capacity against the future needs of the business.

- Define your business case. This is, by far, the most important step. You must decide why you want to move to the cloud. Do not get hung up on technical details or carried away by lofty promises. Know what you want to achieve and then draft a reasonable and measured plan to get there.

## The Cloud on the Horizon

Cloud computing is coming — for your company, it's likely only a question of how quickly. At SAP, we've implemented massive reorganizations and reallocations of internal resources to address demands for cloud-based solutions. We are working closely with our partners to make sure your SAP solutions will run on any landscape, be it a virtualized data center of your own or that of a third-party web services company. Across our technology stack, we're making extensive investments to support on-demand applications. And we are embedding protocols so that you can manage your SAP landscape from any device.

> Cloud computing is fundamentally changing the way we build applications, the way our customers use them, and how the entire world interacts.

The growing opportunities to leverage the cloud, combined with the real innovation it will bring, make cloud computing an important channel to deliver new value to SAP customers. We personally believe that cloud computing is the biggest change in our industry in the past 20 years, probably since the adoption of the client/server architecture. It's fundamentally changing the way we build applications, the way our customers use them, and how the entire world interacts. ■

[1] For more information on security in the cloud, look for an upcoming Security Strategies column in the October-December 2010 issue of *SAPinsider* (sapinsider.wispubs.com).

## Additional Resources...

- "Cloud Computing Is in the Air" by Joshua Greenbaum (*SAP NetWeaver Magazine*, Volume 4, Issue 4, **insiderPROFILES.wispubs.com**)

- "Cloud Computing for SAP CRM" by Judith M. Myerson (*CRM Expert*, Volume 6, Update 4, **www.crmexpertonline.com**)

- "Quick Tip: SAP's Path to the Cloud" by Michael A. Moore (*SAP Professional Journal*, Volume 12, Update 4, **www.SAPpro.com**)