

SOFTWARE TAKES ON NEW ROLES IN THE CLOUD

SaaS Shapes the Future of Cloud Computing

MANAGED CLOUD SOLUTIONS FOR YOUR BUSINESS

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EXECUTIVE SUMMARY

Cloud computing currently claims a larger share of IT spending worldwide than all other IT services combined – and Software as a Service, or SaaS, now generates more than half the total revenue from cloud computing overall. Cloud computing is expected to become the dominant model for business computing across all sectors by the end of this decade, and that model will be driven by SaaS. As cloud computing becomes the norm for efficient and economic business computing, the role of software will also expand and evolve, separating from hardware and infrastructure to become an integrated ecosystem with the potential to marginalize other kinds of cloud based services.

SOFTWARE AS A SERVICE: THE CORE OF CLOUD COMPUTING

For many users of cloud computing services for both personal and business needs, Software as a Service is nearly synonymous with the cloud. It is the first and simplest way of accessing the cloud with a variety of remotely hosted apps and data management tools that don't need to be stored on local systems. Software as a Service is one of a number of cloud based "XaaS" services that also include Platform as a Service (PaaS), Infrastructure as a Service (IaaS), and Data as a Service (DaaS).

But some cloud computing experts point out that service models such as IaaS and PaaS may be an interim solution for businesses seeking to bridge the gap between existing local legacy systems and the world of the cloud. In all these service models, software still has a central role to play – and SaaS can be offered as either a standalone tool or part of a package that includes other "XaaS" offerings as well.

THE EVOLVING ROLE OF SOFTWARE IN THE CLOUD

But as the cloud evolves, so must its services. Software-related services and tools claim a larger share of cloud computing than other services combined, so cloud computing trend watchers predict that both the role and the nature of software in the cloud will change dramatically and rapidly in the coming years. As a result of these changes, SaaS may absorb IaaS, PaaS, and similar services and become the default structure for cloud computing in general.

SOFTWARE TAKES ON TRAITS OF SOCIAL MEDIA

In local systems, software packages exist as individual entities with a defined set of features. But in the cloud, software takes on characteristics similar to those of social media, which is a kind of cloud-based software familiar to people around the world. In that environment, software can be made available "per requirement" in whatever combination users need at a particular moment, without the need for a full structure of servers, storage, and other infrastructure elements.

For example, cloud-based software such as Microsoft's Office 365, a version of its widely used software package Microsoft Office; Adobe's Creative

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Cloud, which offers versions of Adobe's well-known suite of design tools; and the accounting software QuickBooks, can all be accessed from any device at any time, and are constantly updated by service providers for the best and most efficient user experience.

Standard software versions of all these products can still be purchased and installed on individual machines. But these can have specific hardware requirements, exist only where installed, and need periodic updating to the newest versions for efficient functioning.

Software tools exist only to complete the task at hand – and other tools can be accessed for different tasks within the same application. Apps can be “mixed and matched” to achieve a suite of tools capable of carrying out the specific functions an individual user needs. They can be updated any time, so users won't need to buy new versions or update hardware to accommodate changes.

THE RISE OF CLOUD NATIVE APPS

As cloud services claim an ever-increasing share of business computing revenue, software development is also becoming cloud-based. There's a growing movement toward “cloud native” apps, which are built in and for the cloud as opposed to adapted from existing versions intended for use in local systems.

Designed for rapid access across all platforms, cloud native software is not created for use on a single, specific machine. Unlike standard software packages that must be installed on a user's computer and periodically replaced or updated, cloud native apps are made to run on multiple devices at any given time from a central data center. They can cost less, work more efficiently, and be available at need to many users at any one time, from any location.

SOFTWARE SEPARATES FROM HARDWARE

Software and hardware traditionally have been inseparable. Users who adopted a new kind of software had to install it locally on designated machines that needed to meet specific hardware requirements for running the new program. Over time, both software and hardware could require periodic updates in order to remain useful.

In the world of cloud computing, hardware still has a place – but that place may be diminishing in importance. Hardware in local systems may still be needed to access cloud-stored data and run apps today. But forecasts envision a virtually hardware-free environment in which cloud native apps can be accessed and used on any device and any platform, with no specific hardware requirements needed. As cloud-based computing becomes the default mode for businesses around the world, the only hardware needed on a local level may be a device able to connect to the Internet.

SOFTWARE BECOMES AN ECOSYSTEM

As Software as a Service becomes the dominant model for cloud-based computing, standalone apps and software packages may become obsolete. Cloud native apps are designed to integrate with other apps. They are written in meta-languages that allow related apps to communicate without the intervention of interfaces designed for that purpose. In this environment, software also becomes highly automated; it is able to learn and respond in specified ways without much human input.

Software networks can also become self-contained ecosystems as they become integrated and automated. These networks are capable of communicating and carrying out tasks through a variety of devices at any time. In this way, cloud-based software networks become a core feature of the emerging Internet of Things – a vast digital world in which devices of all kinds are able to exchange information and perform tasks on their own. These evolving, self-contained software networks can be updated and modified in real time from a centralized database so that changes can ripple outward through the system as needed to keep the entire ecosystem functioning as a seamless whole.

IMPLICATIONS OF A SOFTWARE-CENTERED CLOUD

SaaS is claiming an ever-increasing share of the “as a Service” market. It signals new directions and new benefits for businesses seeking to move some or all computing operations to the cloud.

The shift to platform-agnostic, cloud native apps eases the burden of installing and maintaining local hardware, which reduces costs and makes business computing functions more accessible and

efficient. Software can be accessed and used whenever and wherever needed without the need to install standalone apps on individual machines. And each company can assemble a unique software ecosystem of compatible apps whose components can be added or deleted when necessary without disrupting the network's functioning. The whole system can be accessed by any user, with little or no IT knowledge required.

In a software-based cloud, Software as a Service has the potential to become the only "XaaS" needed to carry out a company's cloud-based computing functions. Other cloud-based services such as Infrastructure as a Service and Platform as a Service may no longer be needed, since their essential functions can be carried out by software as it evolves into coherent ecosystems capable of supporting the computing needs, large or small, of businesses and enterprises of all kinds.

CONCLUSION

Within five years, cloud computing may simply become "computing" – the default standard for business computing on all levels. As cloud computing moves in that direction, software is expected to take on not only a larger role, but also a new and different one. The shift to cloud native, platform-independent apps and on-demand functionality accessible from any device may allow SaaS to absorb the functions of related services such as IaaS and PaaS – and render hardware largely obsolete. This emerging, software-centered cloud has the potential to provide more accessibility, affordability, and efficiency for business users worldwide.

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