



Compuware
UNIFACE®

CLOUD COMPUTING

TRENDS & BUSINESS OPPORTUNITIES



A view of Cloud Computing from Aad van Schetsen, Vice President Compuware Uniface, which looks at why this computing capability has the potential to transform a large part of the IT industry. It specifically looks at the business opportunities that exist for companies and the trends that are making software even more attractive as a service. This is having an impact on Application Development (AD) in general and Uniface, specifically.

DEVELOPMENT FOR THE CLOUD.

CLOUD COMPUTING: TRENDS & BUSINESS OPPORTUNITIES

The importance of having a Cloud Computing strategy is becoming more obvious on a daily basis, as it moves from an interesting to a “must have” technology for a lot of companies, with significant proportions actively pursuing a Cloud Computing strategy by 2012. According to Gartner, 76% of 106 conference attendees answered yes when asked whether their enterprise will be pursuing a private cloud strategy by 2012.¹ This growth is based on real business opportunities and the significant potential that the Cloud Computing business and delivery model presents. That is why Uniface will deliver its Cloud capabilities with its next major release, Uniface 10, in the 2012 timeframe. In the interim it will take a modular approach to the Cloud. The current version of Uniface already enables the development of Web 2.0 Cloud applications.

Driving the need for Cloud Computing is the increasing cost of acquisition, implementation and deployment of IT along with the difficulty of attracting key staff. Combine this with the belief that IT has failed the business through being too slow and inflexible, it is easy to see why senior business heads and CIOs have been seduced by the centralized computing resources and software applications delivered as a service that the Cloud model offers.

Cloud Computing is not just about cost. It can provide a platform for a business to achieve its ambitions of having an “inclusive” IT system that covers the entire supply chain and its customers, enabling and generating business growth more effectively. Large enterprises have invested millions of dollars in these systems, but Cloud Computing offers much of that capability at a fraction of the price and to a much wider audience, therefore also supporting innovative ideas for new Internet services, such as full Cloud web security services that free smaller companies from the need to purchase security software.

There are many advantages and opportunities to be gained from the Cloud Computing model today and in the future that are applicable across the corporate IT and business landscape: from infrastructure right through to tooling, application and business innovation, management and development. The opportunities are well documented and are not only there for enterprise IT organizations, but also for application vendors and service providers alike. Take, for example Zenith, which recently launched its private Cloud Computing Service called Proud. It is a single, centralized computing system, which replaces the need for customers to buy computing and networking hardware as separate components. The customer can run its entire IT infrastructure, saving on cost and maintenance.

In this paper Compuware Uniface makes the case for Cloud Computing, outlining a summary of the key strengths, challenges and solutions, along with the opportunities available to the well prepared business. The Cloud Computing model is still evolving. It will continue to do so as the industry works towards common standards and practices, and patterns of implementation develop and mature through wider adoption and deployments. In helping to guide businesses to take advantage of current established strategies for Cloud Computing, this paper also serves to make them aware of the impact to Application Development and the benefits of adopting a modular approach.

¹ *Gartner Source: Private Cloud Computing Plans from Conference*

MAKING A CASE FOR CLOUD COMPUTING: THE BUSINESS VALUE OF CLOUD COMPUTING

The business models around Cloud Computing play a significant part in its attractiveness to CIOs and the wider business management team.

A significant benefit of Cloud Computing is the move from a world dominated by Capex (Capital Expenditure) with its associated write-downs and depreciations, to a world of Opex (Operational Expenditure), or to put it very simply a 'pay-as-you-go' model. This is more than a budgetary slight of hand, because it means that money is directed towards solving the business needs rather than increasing the business asset pool. The ability to add IT resources when required and to not pay for those that are not being used, has a significant impact on the IT budget.

For large enterprise IT, Cloud Computing is more than just another platform to manage. The renting of software services delivered by the Cloud Computing model, provides an opportunity to better manage budgets, IT maintenance and upgrade programs. This ensures access to any required resources: skills, computing processing power, access to new technologies and the latest updates and patches for servers, tools and applications without the management, licensing and purchasing headache that this would normally demand. For smaller organizations Cloud is about leveling the playing field. It provides access to resources and technologies beyond anything their budgets could ever manage; allowing their IT team to take the business to the next level. Perhaps most importantly, they gain access to the people and processes that enable them to take advantage of all this technology. And all of this at a price point they could never have thought possible.

Ultimately Cloud Computing offers the scalability of pay-as-you-go and pay-as-you-grow.

DEFINING CLOUD COMPUTING

What is Cloud Computing? The answer can be as nebulous as the term Cloud.

From Wikipedia, Cloud Computing is Internet-based computing, whereby shared resources, software and information are provided to computers and other devices on demand, like the electricity grid. It's more a business model than a changing technology, although it has a few important parameters such as: delivery over the web, scalability, elasticity and multi tenancy.

Clearing the clouds away, the Wikipedia Cloud Computing definition above is a good starting place to understand the term. What it doesn't do, however, is define the implementation models of Cloud that we are seeing in the market.



Cloud Computing architecture.

CLOUD MODELS

For any company, Cloud is an enabler of new approaches to IT such as the increasing number of “as a Service” solutions that are available in the market. These range from Infrastructure to Storage, Application to Software Development and Testing.

You can take advantage of the Cloud Computing model for your infrastructure services, application packages, business logic, data storage, development tooling and services. Flexibility is a key feature that Cloud vendors have heavily promoted leading to a range of models such as: everything in the public Cloud; a private Cloud that could be in-house or located elsewhere (e.g. within the data centre of a trusted managed service provider); a hybrid of cloud and in-house computing; and the use of on-demand services and project-based Cloud deployment. This means that there is at least one model for every business unit and businesses can slowly grow into the Cloud rather than rushing in. The advantage of a Private Cloud over a Public Cloud is ownership and control. For many organizations the Hybrid Cloud model will prove to be the preferred choice since this offers a level of on-demand elasticity and control.

Of course, all of this is really just an evolution of other computing models such as utility based computing and outsourcing, as well as advances and evolutions in technologies and architectural approaches such as virtualization and Service Oriented Architectures (SOA). That said, it does provide a clear set of opportunities.



Cloud Computing benefits.

CLOUD COMPUTING AS AN INTEGRAL PART OF THE WIDER EVOLUTION OF APPLICATION DEVELOPMENT

Cloud Computing is not just about new ways of delivering software, it also offers a valuable model for software development and testing. Cloud Computing is offering a new business model for acquiring and managing development tools and a platform by which software development teams can deliver all or part of their developed applications. An emerging trend is the strategy taken by leading development tools and platforms providers, like Compuware Uniface, in providing their products as a Cloud services option either hosted by them or through a third party provider. This allows IT teams to take advantage of more flexible licensing models and ensures that they have the latest and most appropriate versions of the tools as and when they are required.

Just as importantly, the elasticity of the on-demand Cloud Computing model is offering development teams the dynamic scalability to obtain the processing power and environmental set up to carry out all or part of their development and delivery processes.

APPLICATIONS MAKING THE BEST OF CLOUD

One of the key development approaches over the last few years has been the building of web-based applications. These applications are ideal for a Cloud environment because they can be deployed using the Software as a Service model that Cloud vendors are adopting.

Heavy users of websites know that demand can be unpredictable. By building their websites as virtual machines that can be quickly duplicated and deployed, they are able to match demand by duplicating their website across a wider number of servers and then turn off those websites later. From a business perspective this is an ideal solution. After all, who wants to have a successful website that constantly fails under extreme load. There are many hyper-scale and scale Cloud providers who are aggressively building large datacenters above 100,000ft in size that offer better cost efficiencies with larger capacity compared to traditional datacenters. As a result some companies are already making the deployment of some corporate applications into the Cloud a permanent fixture.

The type of application and its data requirements need to be thought through carefully. Applications that can be executed remotely and which have a variable requirement of memory and processor are ideal for the Cloud. But they must be located near to their data so as you move your applications into the Cloud the data must follow. This is because many applications are sensitive to network latency and if the application is running in the Cloud but has to pull the data from the on-premise network before processing it, the time to get and process the data will create a poorly performing application.

The current release of Compuware's Uniface platform provides support for the development of richer and engaging web applications through the new Rich Internet Application (RIA) technology features: templates that enable users to productively create RIA based applications through Uniface's programming model. The RIA facilities embody Compuware Uniface's SOA framework investments. The improved SOA and Web Services support that Uniface 9.2 delivered along with services and utilities for automated performance analysis, test driven development and continuous integration, will allow customers to take a modular approach to getting ready for Cloud Computing. Further improvements in the services architecture and new functionalities are planned for the next Uniface release. Compuware Uniface will help them further with staged delivery of Cloud Computing focused services ahead of the launch of Uniface 10.



Application development and deployment for Cloud Computing.

APPLICATION DEVELOPMENT: GETTING THE MOST OUT OF CLOUD COMPUTING FOR APPLICATION DEVELOPMENT

There are solutions that already provide a fully integrated environment including storage, delivery, application and development but these are based around a single set of strictly controlled tools and a given vertical software market. Many of the on-premise development environments are gearing up to support Cloud deployment and problem resolution services, although appropriate instrumentation and monitoring facilities still need to evolve.

Compuware Uniface Version 10 will launch our Application Platform as a Service (APaaS) offering. It will provide customers with a complete Cloud development service and platform. Uniface 10 will continue to offer a model-driven enterprise development platform with a proven integration framework, enabling clients to continue rapid development of high end complex enterprise applications that interface with multiple technologies and application architectures, which can then be delivered to run in or accessed via the Cloud. With Uniface 10, developers will continue to attain high levels of productivity through the Uniface "Proc Language" as well as the dynamic scalability that the Cloud Computing model offers. Further productivity benefits will come from the ability to reuse the Uniface application model for the deployment of Web 2.0 solutions.

One of the fundamental technologies on which Cloud Computing is based, is virtualization. This is a technology that development teams have been using for several years in order to create larger testing environments and to use real-world data without disrupting the business. Cloud Computing offers IT teams a chance to do extreme testing at a fraction of the cost - when they want and without the long provisioning delays and management bureaucracy.

We know that Uniface customers need to deliver and adapt applications quickly, successfully and with predictable repeatability, without compromising long-term scalability, performance and productivity. They want to leverage as much from existing applications whilst engaging with practices and environments that support the Cloud Computing model.

We are confident that Uniface customers will quickly recognize the benefits of Cloud development services that provide a managed environment where they are not responsible for maintaining the required infrastructure or tools. Uniface's powerful integration framework and model-driven development approach already allows you to focus less on the underlying complexities of integrating new technologies and architectures, and more on the application functionality and alignment to business goals and needs. Uniface's managed development environment delivered as a Cloud service will continue to offer development teams provisions for faster development and delivery of software applications. In addition, by delivering Uniface as a Cloud development service, customers will automatically get improvements to any of the underlying services and software components as they are released by the Uniface team.

Cloud development services are not without their challenges: architecture, lifecycle management and governance. Many of the challenges will lead to a need for new architectures and best practices, especially for delivering applications that target multiple environments at the lowest level of complexity and cost. There can be no doubt that developers are faced with the tough challenges of even more technologies to learn and best practices to master. Clients will find that Uniface's educational services - user groups, the Uniface Academy and YouTube tutorials - will help them make the most of best practices and important design patterns for Cloud Computing and Development.

Like all new technologies, it is all too easy to rush into Cloud Computing and then discover that it isn't right for you or that there are associated costs and management issues that you haven't considered. As with all technologies, Cloud Computing should start out as a pilot project with clearly defined goals and targets. What will also be important are strong monitoring and reporting services and tools to ensure that you are able to measure and validate your investment.

Compuware's acquisition of Gomez and its integration with Uniface provides much needed performance monitoring facilities that will give businesses greater insight into managing their applications in the Cloud and the performance quality of Cloud service providers.

Customers can feel confident that Uniface will continue to help them take on new technologies easily and securely. Uniface has a strong product architecture and roadmap for supporting Cloud Computing that will leverage its strength in developing applications for distributed computing and its support for SOA and Web Services infrastructure. Uniface's reliability and ability to leverage investments and skills is a value proposition lacking in a number of the more high profile tools that many customers would clearly welcome when developing for the Cloud. With its longevity in the market; history in mainframe development; and ability to manage the complexity of distributed computing, Compuware Uniface offers a distinct advantage over other Cloud development services and providers.

Enterprise application development for the cloud... by design

WORLDWIDE



Compuware Corporation World Headquarters
One Campus Martius, Detroit, MI 48226
Phone: 313.227.7300 | 800.521.9353 | Fax: 313.227.7555
compuware.com

All Compuware products and services listed within are trademarks or registered trademarks of Compuware Corporation.
All other company or product names are trademarks of their respective owners, © 2011 Compuware Corporation

