TECHNOLOGY BUSINESS RESEARCH, INC.

IBM Cloud Services

How IBM is shortening the gap between customers and development value

Author:
Allan Krans
Senior Software and Cloud Analyst, TBR

Spring 2011

This report was developed by TBR with IBM assistance and funding. This report may utilize information, including publically available data, provided by various companies and sources, including IBM. The opinions are those of the report's author, and do not necessarily represent IBM's position.

Cloud can provide a shorter, less costly route to development value

Development and test is optimally suited for cloud service, given the security and demand variability characteristics of that key workload.

In addition to cost reduction, CIOs and development managers should consider the value cloud services can provide during the development lifecycle, and how cloud can help an organization become more agile and responsive to business demands.

ADOPTION OF CLOUD SERVICES PROVIDES AN ALTERNATIVE OR COMPLEMENT TO TRADITIONAL DEVELOPMENT AND TEST IT SOURCING

CIOs and application development managers procuring development and test IT assets have been forced to walk a fine line between costs and benefits balancing time to market, quality and agility. Development and test are functions optimally suited for cloud computing services. Whether the development is performed by a large corporation, midsized business or small software development house, the objective of any development initiative is to deliver business value. The infrastructure supporting development and testing is a means to an end – the end being a fully completed high-quality software application that produces tangible benefits for the enterprise.

While all IT assets can be seen as a means to an end, several unique characteristics of development and test lend themselves to cloud delivery models. Cloud-delivered development resources can provide a relief valve for the tension between the value of a new application and the cost of procuring and deploying the requisite IT assets. Cloud can deliver the resources developers need to speed application delivery, while also meeting the budget and time-to-market requirements of business stakeholders. In addition to avoiding upfront investments, cloud can help customers address the variable demand associated with development and test functions. Particularly with testing, matching or exceeding the volume or traffic requirements of a production environment can identify issues and improve overall quality; however, peaks in the testing cycle are followed by valleys of significantly lower utilization. Procuring traditional IT assets to meet this variable demand requires customers buy to meet peak demand, while assets subsequently sit idle during slower periods during the development and test cycle. In a function that is already resource constrained, cloud can widen the tightrope CIOs and application development managers walk in regard to development and test. Using cloud resources, developers can access the resources necessary to deliver quality applications quickly, while avoiding costly buildouts or maintaining underutilized assets.

This white paper examines the challenges CIOs, IT managers and application development managers face as they attempt to select a cloud computing vendor that can help them address development and test requirements.

PUBLIC CLOUD COMPUTING IS ONE PART OF A COMPLETE SPECTRUM OF IT DELIVERY AND PAYMENT OPTIONS

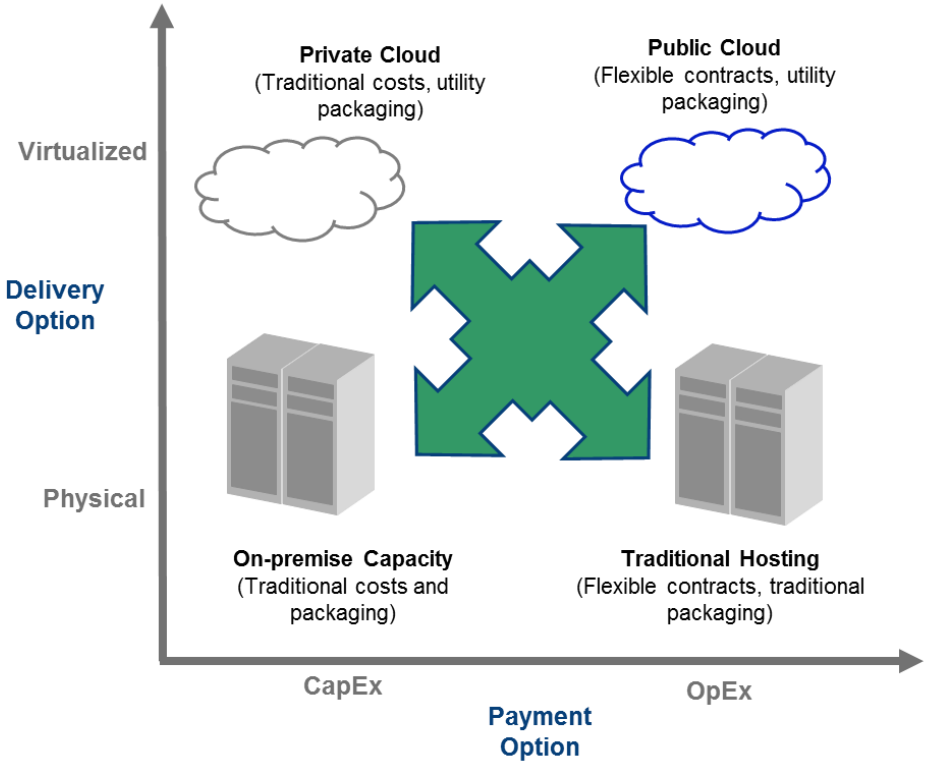
Three key purchasing scenarios emerge for cloud development and test functions.

However, customers should know that not all cloud development and test offerings have the same amount of continuity with development tools and deployment flexibility.

Public cloud computing with its virtualized delivery model is one of many options CIOs and development managers can choose from to address their development and test IT resource needs. These offerings can be categorized using two dimensions:

- Delivery model – to what extent is the vendor providing or committing physical resources to a client?
- Payment model – how is the client being asked to pay for those resources?

Figure 1: Packaging differs from payment



SOURCE: TBR

The characteristics of public cloud, including pay-as-you-go payment and scalable cloud delivery, create a unique value proposition for development and test functions. The cost and timeline for delivering development and test IT capacity through both traditional on-premises IT or private cloud delivery can be extensive.

Additionally, for customers with traditionally-delivered development and test functions, public cloud services can provide a seamless way to extend and leverage existing investments. While an internal private cloud may be on the long-term horizon for development resources, public cloud is a delivery

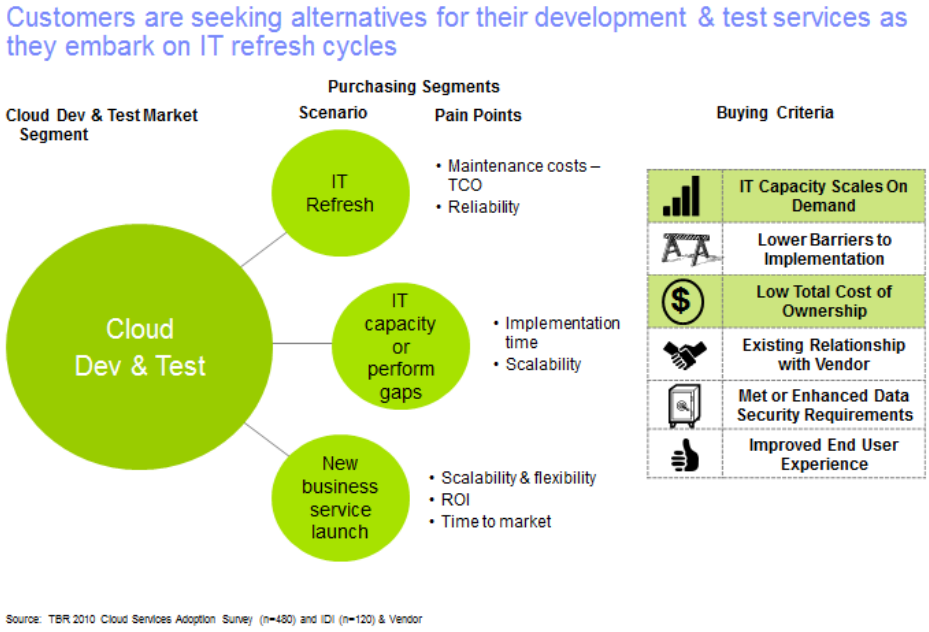
method they can adopt today to optimize and rapidly extend their development and test functions.

For most customers with complex development and test requirements, the ideal solution will likely encompass elements from all four delivery categories. The specific requirements and associated delivery method will vary by project, making the vendor that can deliver across all four categories and guide customers toward the right mix for their business the optimal development and test provider.

PURCHASERS OF CLOUD-DELIVERED DEVELOPMENT AND TEST ARE ADDRESSING COMPLEX REQUIREMENTS

Customers who have purchased cloud-delivered services for development and test are not all alike – they purchase cloud-delivered capacity to address unique requirements or scenarios. TBR recently completed a global study of cloud purchasing behavior that included both 960 quantitative surveys and 240 in-depth interviews. Overall, the drivers of customers' cloud development and test purchases fall into three categories: 1) customers evaluate alternatives to current infrastructure during standard IT refresh cycles; 2) their existing compute infrastructure is aging and actually inhibits business operations; and 3) IT is launching a new business service and cloud compute capacity allows customers to develop and test the new service without investing or maintaining traditional IT infrastructure.

Figure 2: Cloud Development and Test Customer Purchasing Scenarios



Source: TBR 2010 Cloud Services Adoption Survey (n=480) and IDI (n=120) & Vendor

THE PURCHASE SCENARIOS – WHAT LED CUSTOMERS TO CLOUD DEVELOPMENT & TEST EVALUATION?

The purchase scenarios outlined below provide a look at why customers begin evaluating cloud development and test services. During the course of TBR's research, three scenarios were cited most frequently:

1. *IT refresh*

Customers in this scenario have an existing development and test IT infrastructure that is meeting their needs, but is aging and being evaluated for upgrade or replacement as part of a normal refresh cycle. For these customers, the costs and inefficiencies involved with sourcing development and test IT assets in a traditional manner are apparent after both maintaining existing infrastructure for a period of years and evaluating the costs to refresh those assets. As one IT Manager from India stated:

> "We did try to upgrade our hardware infrastructure and purchase additional storage space; however, this solution was quite expensive, as buying physical storage space is very costly and maintaining the infrastructure also increases the cost with time."
>
> – IT Manager, India, Small Enterprise

2. *IT capacity or performance gaps*

For customers in this category, the urgency associated with development and test services is much more pronounced. These customers also have existing development and test assets, but either lack sufficient scale or the performance needed to support development processes. Manual work-arounds are often in place to fill the capacity or performance gaps in existing solutions, as cited by one Head of IT from Brazil:

> "Our business processes used to require manual process because we were working on lots of homegrown tools to support development functions."
>
> – Head of IT, Brazil, Midsized Enterprise

3. *New business service launch*

To ease into the use of cloud development and test adoption, many customers use a specific business service launch as a testing ground. For this purchase scenario, customers may already have a development and test process, but wish to use cloud for a specific new project. With many development teams now globally distributed, cloud development and test provides a common platform that can align teams around a new development project. In some cases, time to market was particularly important and the customer wanted to avoid delays associated with procuring traditional development and test assets.

> "We did not want to make investments in servers and other hardware necessary for this new website; we wanted to start with cloud service which we would use for testing and development services."
>
> – IT Manager, U.K., Large Enterprise

THE BUYING CRITERIA – WHAT ARE THE PIVOTAL PURCHASE FACTORS?

After analyzing the purchase scenarios that led customers to consider cloud development and test services, the buying criteria cover which factors were most influential in the final purchase decision. Three factors were most often cited by customers:

1. *IT Capacity Scales On Demand*

Scalability was one of the most frequently cited pain points by customers in regard to development and test functions. Peaks in the development cycle are a challenge for customers to meet in a cost-efficient manner. Customers using this buying criterion often have existing solutions that are not scalable.

> "We needed a scalable system that replaced the limitations of existing system."
> – IT Manager, U.S., Midsized Enterprise

2. *Low Total Cost of Ownership (TCO)*

In addition to avoiding capital expenditures, customers are using TCO as a buying criterion for cloud. Traditional development and test assets must not only be acquired, but also have to be managed, maintained and upgraded, which requires resources and investment. Many customers used the entire cost associated with the cloud solution as the key buying criterion.

> "We evaluated many options which included in-house, hosted and cloud-based alternatives and we found that apart from cloud, some of them were too expensive and would require hiring additional staff."
>
> – IT Manager, Germany, Large Enterprise

3. *Lower Barriers to Implementation*

Time is money during the development process, and customers in this category used the lower barriers to implementation of cloud development and test services as the pivotal decision factor. Customers cited the time to get the cloud service itself up and running, as well as the time needed for developers to become proficient as purchase decision factors within this category.

> "We had specific requirements based on budget and the total implementation time, as our business cannot afford to lose time upgrading the system."
>
> – IT Manager, India, Small Enterprise
>
> "Cloud provided a very cost-efficient option and the best part was that the existing tools could be aligned with the new system, which means less time for the employees to orient themselves."
>
> – IT Manager, Brazil, Midsized Enterprise

VENDOR CONSIDERATION: THE USE CASE SHOULD DRIVE CLOUD DEV & TEST PURCHASE DECISIONS

All cloud development and test services can provide a cost savings and speed time to market by avoiding the time and expense associated with acquiring traditional IT assets. Once customers get beyond the initial cost savings, however, there are significant differences in the level of development and deployment support cloud development and test services can provide.

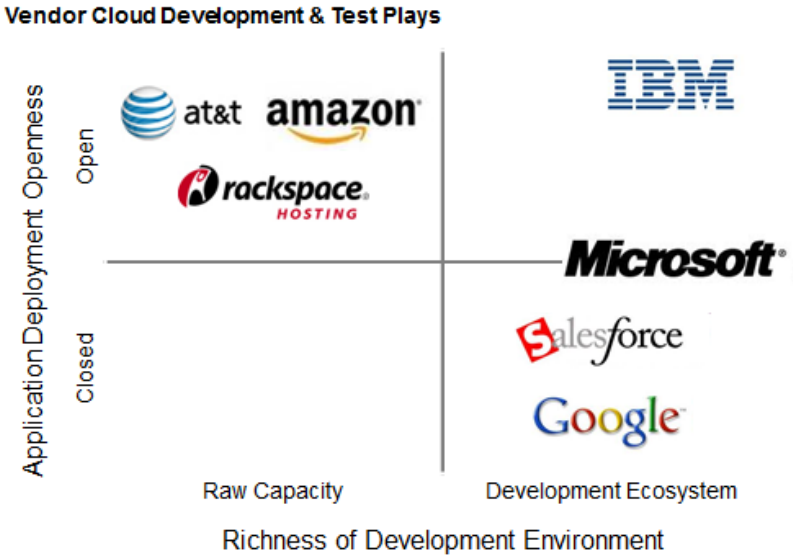
TBR research reveals that vendor cloud development and test offerings fall into three basic use cases:

- **A proprietary cloud infrastructure** that is focused on pure cloud deployment that is not portable to other environments or deployment options
- **Raw cloud capacity** that requires customers to bring their own toolset and knowledgebase to operationalize development and test on that environment
- **Full-service open cloud platforms** that provide customers the IT capacity, tools and processes needed to support development and test functions

Certain cloud service providers, such as Salesforce.com and Google, which provide development and test functionality, use unfamiliar and untested development toolsets that provide little carry-over from broadly used tools and processes for most customers. Furthermore, deployment options are limited to cloud-based models within that environment. This niche focus limits the value for large enterprises with diverse IT assets and deployment needs, as well as for small development shops that wish to address the broadest set of potential customers with new applications. In both cases, these cloud development platforms are intended to bolster the vendor's position as a platform versus providing resources to benefit the customer.

Other development and test providers, including Amazon, AT&T and Rackspace, are delivering a baseline of cloud computing capacity, but providing little in the way of deeper development resources. For these vendors, development and test is more of a use case for their cloud computing services than a full-fledged development platform.

Figure 3: Vendor Cloud Development & Test Plays



SOURCE: TBR

In the final category, vendors like IBM and Microsoft bring a holistic approach to cloud development that combines compute resources and tools to deliver a cloud development platform. Despite the similarities, multiple differentiation points exist between IBM and Microsoft cloud development and test services:

- Flexibility of deployment: Whereas Microsoft Azure is targeted at Windows-based deployments, IBM supports an agnostic **develop-in-the-cloud, deploy-anywhere** model.
- Barriers to entry: IBM provides lower barriers to entry for all sizes of customers with development requirements. In particular, IBM provides Independent Software Vendors (ISVs) developer use-only licensing for select packages, and users pay only for the compute resources required to support their initiatives. Customers of all sizes can benefit from IBM's **bring-your-own-license (BYOL) model**, which provides license portability for a broad portfolio of existing IBM software licenses deployed in on-premises environments to the IBM SmartCloud.
- Development efficiency: Code standardization and image reuse can dramatically increase the efficiency of development within large corporations, improving application quality and reducing cost. To facilitate the sharing of code within organizations, IBM provides security-rich, private communities within an account. This capability can be used by globally distributed development teams to quickly align and collaborate on development projects. To facilitate the sharing of knowledge across the entire development community, IBM developerWorks is tightly integrated with the cloud development and test service. In addition to

facilitating sharing and collaboration within teams, IBM also provides transparency to effectively manage development processes within a cloud environment. With IBM cloud-based offerings, an application development manager has comprehensive enterprise-level visibility into the organization's cloud development projects – providing a key tool in managing and mitigating risk.

CONCLUSION

DEVELOPMENT AND TEST ON THE IBM SMARTCLOUD DELIVERS CUSTOMER VALUE, NOT JUST COST SAVINGS

As this white paper illustrates, development and test on the IBM SmartCloud:

1. Can deliver significant cost savings by allowing customers to avoid traditional IT investments associated with development and test functions.
2. Delivers enterprise development tools with instant-on access. IBM allows developers to use familiar and proven development tools and processes, helping maximize productivity. Developer use-only licensing for ISVs and bring your own license models in general lower barriers to entry for business of all sizes.
3. Supports the full spectrum of application deployment options, leveraging open systems, allowing customers to develop in the cloud and then deploy anywhere.
4. Delivers the tools and communities developers expect from a full-fledged development platform, including security-rich private community tools for enterprises and an expansive set of online resources from developerWorks to facilitate sharing of knowledge. Additionally, it enables effective management by providing a holistic, transparent view into development and test workloads running in the cloud.

Cloud computing will be a journey for customers, not a destination. For customers grappling with the shortcomings of their existing development and test infrastructures, IBM can provide an on-ramp to cloud development and test services that maps to existing assets and processes. In this respect, IBM can deliver the on-demand IT infrastructure that meets budgetary controls, but also provide the tools, processes and value that satisfy the Development Manager.

With instant-on access to development tools, broad deployment options and flexible licensing options, IBM has cleared the barriers to cloud development and test that remain inherent in many competing services. With the risks and costs minimized and significant development value to be generated, customers should leverage the development and test service from IBM as part of their next development project or new business service launch.