Cloud Computing on a Smarter Planet

As our planet gets smarter—more instrumented, interconnected and intelligent—the underlying infrastructure needs to capture and analyze increasing amounts of data, deliver results to more users, and respond faster across all devices, without a corresponding increase in budget. In fact, most enterprises have reduced IT operating budgets by an average of 36% over the past year. Many companies are exploring cloud computing, using resources only when and where needed, as a way to reduce the cost and complexity of IT services: 60% of CIOs plan to use cloud which is a dramatic increase from 33% just two years ago.

This reality is driven by three major shifts:

- Escalating customer, employee and partner expectations around self-service, personalization, access to real time information, and service innovation
- An exponential increase in data, users, speed requirements, and the number and variety of connected devices
- The imperative to deliver higher value products and services more rapidly than ever before in order to remain competitive in a crowded, global market

Harnessing cloud is one of the key ways companies can keep pace with ever increasing consumer expectations and competitive pressures. Yet obtaining substantial benefits to address today's marketplace realities is not a matter of simply implementing cloud capabilities – but of how organizations strategically utilize. Too often this vast potential is unmet because cloud technology is being used primarily to make IT easier, cheaper and faster.

IBM has a different point of view

The true promise of cloud isn't just about advancing IT; it's about reinventing business. Leading companies are unlocking the deeper potential of cloud as a way to manage not just their IT but also their businesses. They're discovering that cloud can help them create new marketplaces, smarter business services and profitable new revenue streams.

Today consumers expect every touch point to be valuable, personalized, self-serviced, and tailored to the device they're using. Companies can no longer remain competitive by launching new products and services with incremental features and capabilities on a regular, phased schedule. They must deliver continual innovation, dramatic improvements or wholly new concepts with frequent updates

36%
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FORRESTER

Relationships between buyers and sellers are fundamentally changing as well. The balance of power is shifting from providers – the companies who provide goods and services – to the individual consumer and networks of consumers who procure those goods and services. Personalized pricing, real time consumption information, control and flexibility are the underpinnings of today's buyer-seller relationships. Companies must adapt to the rules of this new world, or be left behind.

Cloud, combined with other key technologies, enables companies to radically change how they service consumers, run their business and outpace competitors. We are at a critical inflection point in the cloud evolution. Enterprise clients are now moving from "sandbox" projects to full-scale production of important IT and business services. The market forecast bears this out: According to IDC, the market for cloud solutions is expected to grow almost five times faster than traditional IT (27% vs. 5%).

Over half of business executives believe cloud enables business transformation and leaner, faster, more agile processes. This is strategic thinking. But organizations that approach cloud in a tactical fashion risk adding complexity and inefficiency due to fragmentation, redundancy and operating silos. In contrast, organizations that embrace cloud strategically—from a business as well as IT perspective—can capture new business value through innovation, flexibility, and speed, with integrity and security – while reducing cost and complexity.

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CIO
C-suite
Studies

Strategic Approach to Cloud Challenges

While cloud opens up immense opportunities, it also introduces challenges, especially in the areas of security, integration and business process management. To fully benefit from a cloud computing, organizations must approach this shift strategically and focus on three key challenge areas:

- **Integration**
  Integrating traditional IT environments with cloud environments and integrating across multiple could environments. Without a holistic approach, it's all too likely that multiple groups in an organization will make independent decisions to deploy services in clouds that are disconnected or cannot interact seamlessly with each other or the traditional IT environment. Integration must be forethought.

- **Business Process**
  To reap the true rewards of cloud computing the organization has to move beyond incremental adjustments and into modeling, simulation, what-if analysis and team-based process management.

- **Integrity and Security**
  Ensuring data or intellectual property is not leaked, privacy is maintained and the data the business relies on can be trusted.

These challenges mean that, if not careful, companies could end up trading old problems for newer, bigger ones. For example, cloud projects that are "secure by design" apply the right level of security depending on the requirements of the workload – the cloud has the potential to be more secure than traditional environments. With a strategic, well-managed approach by IBM, it is possible to tackle these challenges and build an environment that is as solid as it is flexible and efficient.

Business Value of Cloud Computing

With a strategic approach to cloud computing, including managing the integration, business process and security obstacles mentioned, cloud opens up fundamentally new ways of doing business. Ways that are not just more efficient and lower cost, but would be impossible without cloud. Ways that enable companies to keep pace with ever increasing consumer expectations, competitive pressures and capture business value in new ways. The true promise of cloud isn't just about rethinking IT; it's about reinventing business.

There are three core areas where the value of cloud computing can be more readily seen:

IT without boundaries

By removing the barrier of location, cloud enables tasks and workloads to be delivered with massive economies of scale and by experts best capable of undertaking them – whether they are within the company, or beyond. By empowering customers, suppliers and employees to self-serve based on their own specifications – to bypass traditional layers of process and to get what they need more readily – cloud step-changes satisfaction. Cloud helps enable new IT and business processes that break down traditional silos and simplify access to information in order to deliver better business outcomes. This breaks down the boundaries of traditional IT allowing individuals to manage their own resources.

True Value used cloud to help transform the management of its supply chain across 5,000 hardware stores in 54 countries, reducing lead time by 56% and back orders by 85%— a leap forward in its ability to deliver products to its customers.

Speed and Dexterity

In a recent McKinsey survey, when asked about the most significant value drivers for cloud, 70% of respondents identified "increased business flexibility" 55% identified "increased ability for IT to scale up (or shrink) to meet business needs," and only 29% indicated "lower unit cost of IT." Cloud enables organizations to deliver new offerings far more rapidly and gives end-to-end visibility into the business revealing insights from data, no matter where it sits.

Creating new business value

By enabling broader collaboration, cloud helps companies to innovate collectively. Computing in the cloud is fundamentally different because it's largely about providing technology services and making them available to a community of users to combine and consume in ways that the provider likely hasn't even thought of, this puts an unprecedented power to innovate and deliver business in the hands of computing consumers.

Through a development cloud, China Telecom is offering customers new revenue-generating smartphone applications faster by reducing time to market from more than three weeks to less than three days. The company is growing its customer base while cutting IT costs by 50%.

The City of Wuxi creates an engine for economic growth by using a cloud infrastructure for local government projects and providing flexible cloud environments for start-ups, thereby lowering barriers to entry for innovation and accelerating the growth of the region.
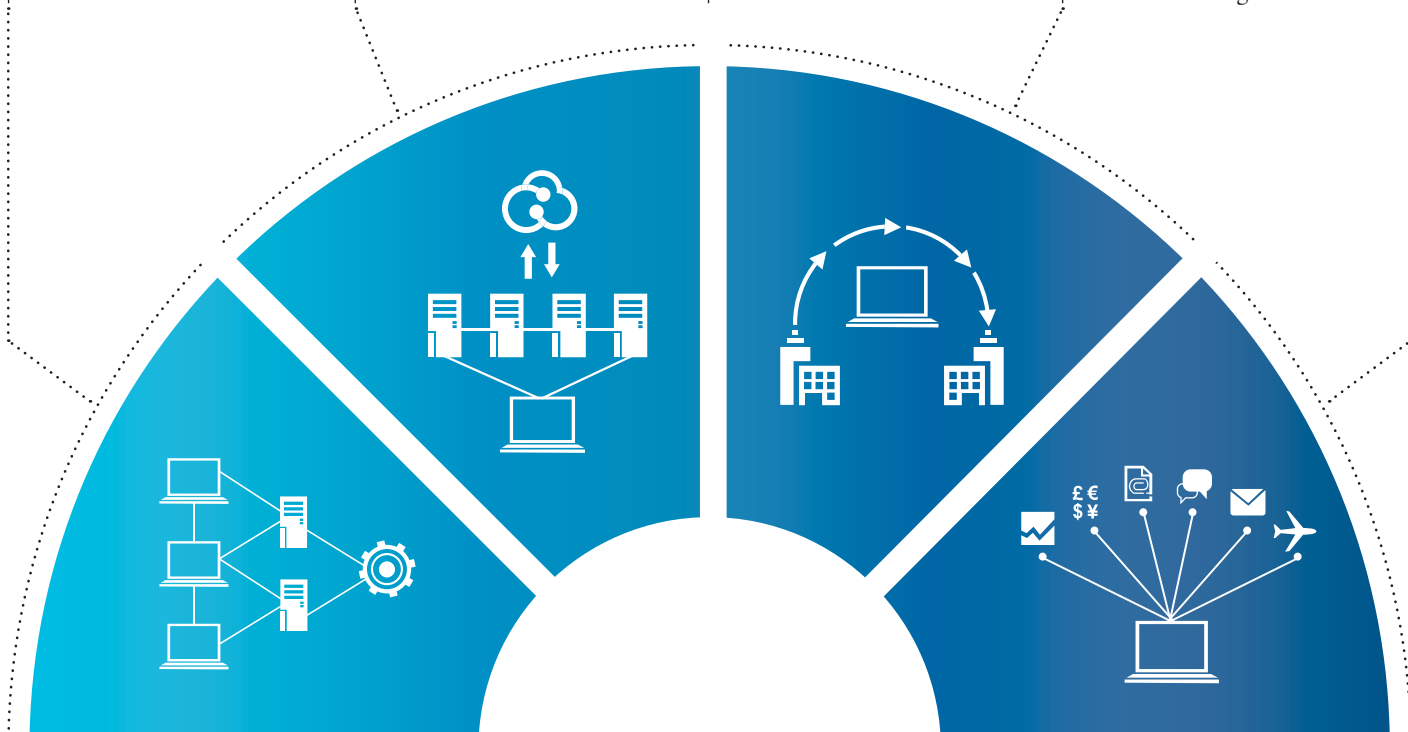
Cloud Computing Adoption Patterns

As cloud computing becomes pervasive, clear and well-defined approaches that consistently deliver tangible results are emerging. These patterns of adoption emerge as repeatable formulas for success that deliver tangible value to organizations in the most efficient manner possible. Their common underpinning is cloud computing, and range from using applications from another company's cloud over the internet, cutting expenses by cloud-enabling your datacenter, accelerating time-to-market with cloud platform services, all the way to sharing and monetizing your applications as cloud services and becoming a cloud service provider.
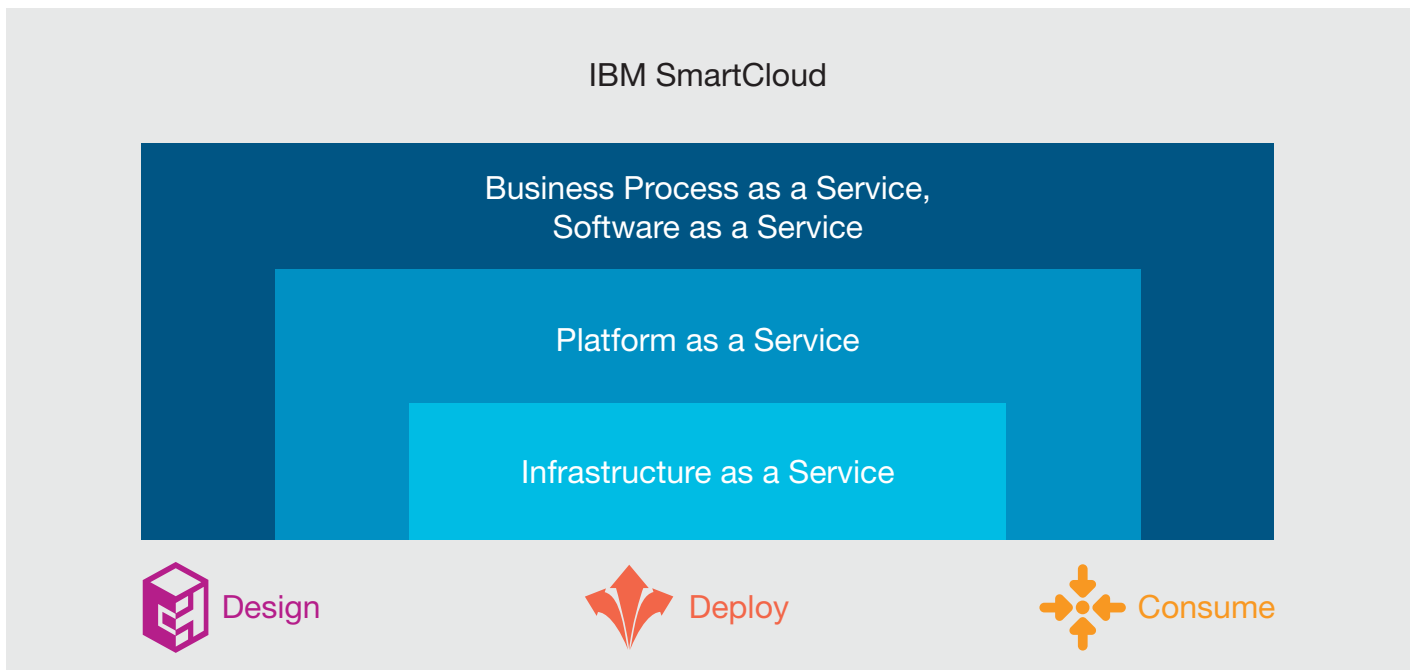
Cloud enabled data center addresses immediate needs for cutting IT expense and complexity while improving efficiency of service delivery. Typically these projects include significant elements of consolidation, virtualization, standardization and automation.

Cloud platform services solve the need for **accelerating time to market** for new services and increasing profitability and competitive advantage. Typically these projects are characterized by standardized and automated provisioning of topologies for pre-defined workloads.

Cloud service provider patterns are for organizations that want to capitalize on new business models and revenue sources by offering cloud-based services to others. Examples range from core cloud service delivery to industry-specific integrated service management with storage, networking and security.

Business solutions on cloud is about gaining immediate access to enterprise class solutions while minimizing risk and capital expense. Some solutions include collaboration, business process management, analytics, application management, email, integration, order-to-cash, B2B, dev/test, service desk, and marketing.

IBM SmartCloud

Business Process as a Service,
Software as a Service

Platform as a Service

Infrastructure as a Service

Design   Deploy   Consume

Why IBM?

IBM's comprehensive capabilities make the cloud promise a reality. We have helped thousands of clients reap the benefits of cloud computing – With over 2,000 private cloud engagements in 2010, we manage billions of cloud based transactions every day and million public cloud users. IBM itself is using cloud computing extensively and experiencing tremendous benefits – such as accelerated deployment of innovative ideas and **$15M a year in savings** from their development.

Whether you are searching for a way to take your organization to an established cloud, create a smart cloud inside your organization, or integrate across clouds, IBM can lend its expertise and technology.

Getting started with IBM is easy no matter what your needs and priorities are. We can supply the resources you need to build your own private cloud, the expertise and skill to build it for you, or the option to host a private cloud in our environ-

ment. We offer world-class public cloud capabilities across infrastructure, platform, software, and business process as a service categories. And we offer a range of business and technology professional services across the full lifecycle of cloud initiatives from design to deployment to consumption.

What we do is simple: Bring together key cloud technologies, deep process and industry knowledge, a broad portfolio of cloud services and solutions and a network of global delivery centers – All focused on your success. But what makes it really interesting… what makes it smarter… what matters most to our clients, is that IBM helps leading companies use cloud to go beyond improving efficiency and cost-effectiveness. We help them use cloud to transform business models and capture new business value. Seize the opportunity to rethink IT – and reinvent your business.

To learn more about Cloud Computing , visit:
www.ibm.com/cloud

1 36% lower budget: Source: Forrester, Base 695 NA IT organizations

2 60% of CIO: Source: IBM's Institute for Business Value 2011
   CIO Study

3 IBM Factoid savings: http://www-01.ibm.com/software/success/cssdb.
   nsf/CS/LWIS-827U3J?OpenDocument&Site=default&cty=en_us

4 Wuxi External: http://www-01.ibm.com/software/success/cssdb.nsf/CS/
   STRD-7YJM5P?OpenDocument&Site=default&cty=en_us

Please Recycle