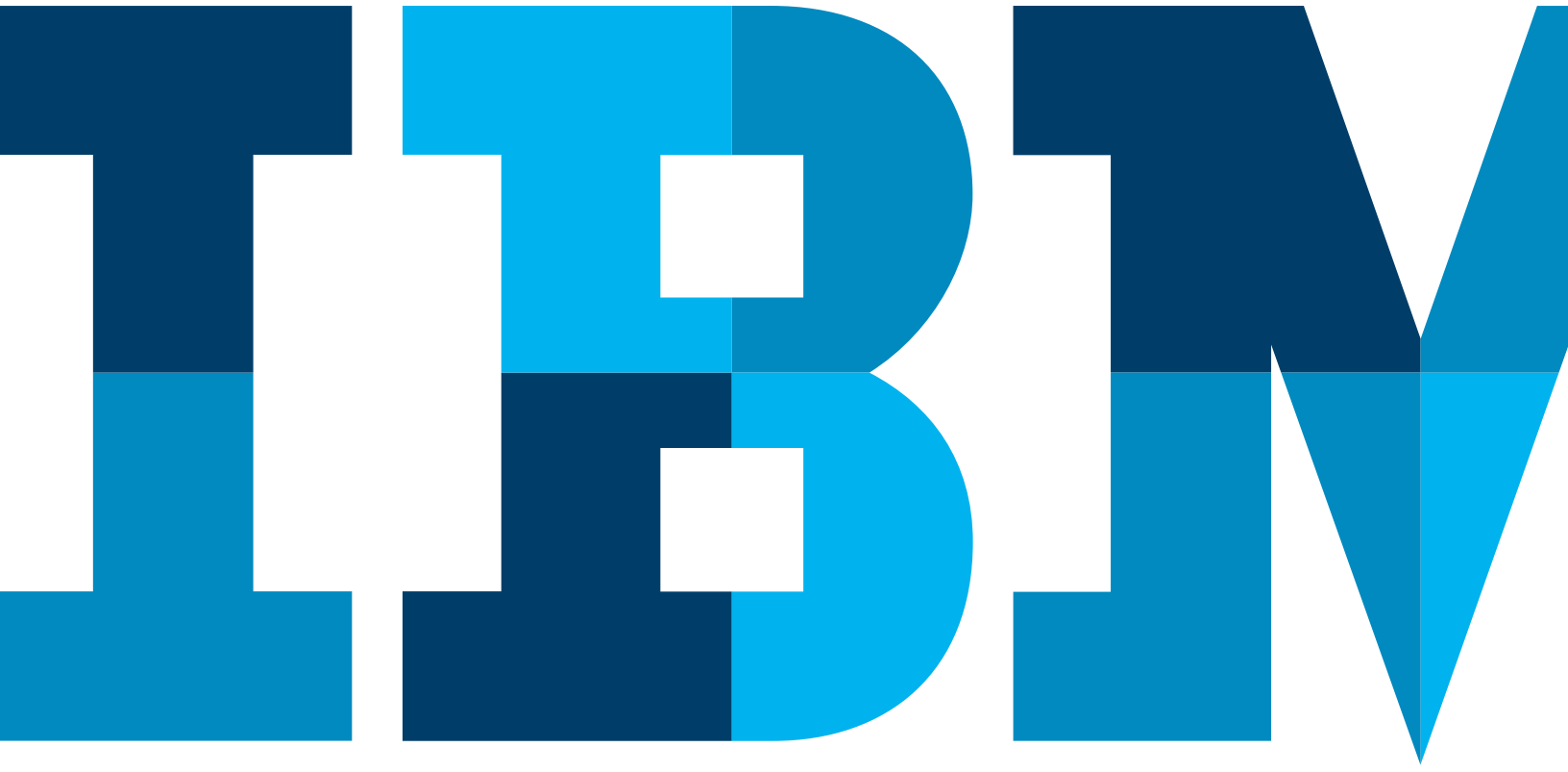
Future-proof your business model with an Enterprise Cloud Strategy Roadmap

An Executive Imperative



IBM

Effective use of technology is a key competitive differentiator in today's global markets. Pervasive mobile connectivity, the advent of social platforms that redefine relationships between business and consumer, and the proliferation of new data streams capturing transactions, interactions and content have created a new business and technical landscape where innovators are leading markets.

Cloud platforms are at the center of this technological transformation—providing the capabilities to host highly scalable applications, engage people with customized experiences, accelerate delivery execution in response to market shifts, and gain deep insights from big data. We're in an age where IT enables business transformation, and corporate executives who fully grasp the strategic potential of cloud adoption can leverage these capabilities to develop innovative business models and transform the execution of their business processes.

Software is pervasive. It is embedded in every critical business process and has become a central factor in leveraging technology for business competitiveness. Our most recent research underscores this point. In a cross-industry survey of over 400 line of business and IT executives, 54% agreed that effective software delivery is crucial to competitiveness. "Outperformers," those businesses whose profitability is significantly better than their peers, were three times as likely as other respondents to leverage software delivery for competitive advantage—using advanced technologies such as cloud delivery and collaboration platforms to deliver software faster and with greater flexibility.

In each industry, market leaders are beginning to recognize the opportunities presented by the cloud. Companies that understand cloud potential are applying it to transform their businesses, optimize execution and surge ahead of the competition. The benefits offered by cloud platforms bring competitive advantage in terms of speed to market, radically efficient processes and new sources of revenue, and those companies that follow business-oriented cloud implementation strategies can increase market share accordingly. Most important, by design, cloud strategies embrace agility, 'future proofing' business models by ensuring the stream of innovation to avoid market obsolescence. Cloud is not just a technical computing model; it is the heart of business model innovation.

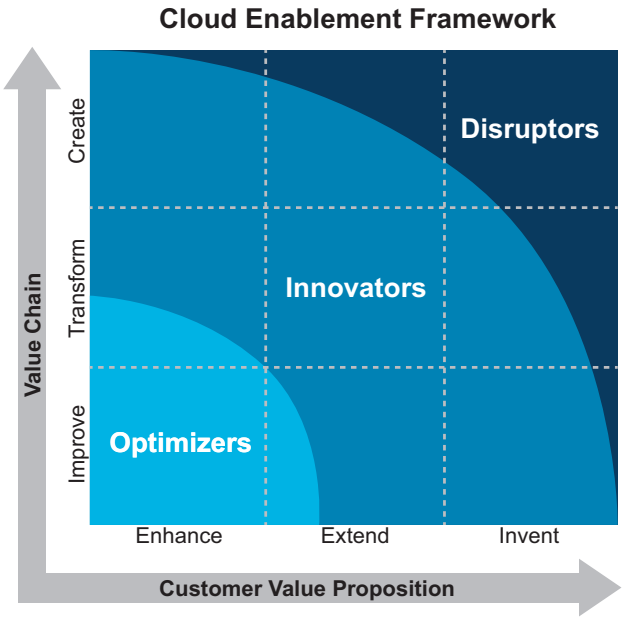


Figure 1: Organizations should determine how and to what degree Cloud can be used to enable their business model.

While the upside for any company is significant, cloud is a complex proposition, and the transition to cloud platforms must be pursued with a careful and reasoned approach. Ad hoc adoption, pursued without sufficient foresight and planning, could lead to unnecessarily complex architectures, integration challenges and more complex system management and governance issues—resulting in higher implementation costs without appreciable gain. Concerns about the apparent loss of control and potential security and quality of service risks associated with moving from a traditional data center model to the cloud must also be addressed. Furthermore, failure to explore and capitalize on the full breadth of cloud capabilities can result in missed opportunities and competitive disadvantage in relation to industry peers.

In today's rapidly changing marketplace, competitive pressures and market dynamics necessitate the exploration of cloud opportunities. A well formulated cloud strategy will evaluate all aspects of cloud value in the context of specific business objectives—identifying the optimal areas of investment and quantifying the expected business benefits. The development of a comprehensive cloud strategy will ensure that new technology capabilities are applied for maximum business gain, creating a clear implementation roadmap that supports business growth.

The elements of a comprehensive cloud strategy

The most common perception of cloud adoption is that it is simply a transition to shared computing infrastructures for servers and storage in a virtual environment. However, cloud actually represents multi-level capabilities enabled by governance, architecture, business model design and integration. Cloud's easily scaled environments, broad ecosystem connectivity, and highly consumable services introduce new options for business processes. More sophisticated patterns of adoption—above the infrastructure layer—allow for more deeply integrated business capabilities and higher levels of performance

A comprehensive cloud strategy requires discovery and creative insight, uniting business opportunity with technical enablement to fully tap into cloud's potential. To be complete, it must cover the entire spectrum of cloud capabilities, incorporating the four key dimensions of cloud adoption:

- **Business Model Innovation.** As noted in the Harvard Business Review, market leaders in any industry excel in one of three value disciplines: operational excellence, customer intimacy or product leadership[1]. Increasingly, effective use of technology is the key factor that differentiates market leaders in these disciplines.

  Cloud provides a number of new business enablement capabilities that can be leveraged for innovative value strategies. In addition to *cost flexibility* and *business scalability*, cloud platforms support *market adaptability*—providing easily provisioned resources for rapid prototyping, development and deployment of new products and services in response to market trends. There's also the benefit of *masked complexity*—giving the end user a seamless experience that improves efficiency for business users and encourages repeat business from customers. The customer experience is further enhanced with cloud-managed *context-driven variability*—storing preferences and history in the cloud so that each user has content and services tailored for their specific needs. *Ecosystem connectivity* in the cloud brings together services, software and people in shared value nets—providing access to a broader range of resources and connections to new customer sets[2].

Companies that are willing to consider transformational strategies to gain significant business advantage will conduct a business innovation analysis that explores how cloud technology can open new value streams. A cloud-enabled business model is developed by applying industry and technology insights to surface innovation opportunities and identify game changing initiatives that accelerate value and improve competitive position. The resulting transformation will target opportunities based on the business model enablers of cloud-helping to establish the case for change. Companies may find that they can be "Optimizers" who use the cloud to incrementally enhance customer value propositions while improving organizational efficiency. "Innovators" will develop a more compelling cloud business model that significantly extends customer value propositions to create new revenue streams and transforms their role within their industry. "Disruptors" discover business models that create radically different value propositions in the cloud, generating new customer needs and segments and even new industry ecosystems.

Business model analysis highlights where cloud enables new initiatives to drive step-change market performance and establishes a business-centered guidepost for developing the rest of the cloud adoption strategy.

- **Data and Analytic Platforms.** The hyperdigitization of society and the vast streams of data that it generates represent a significant source of business insight for companies that are able to manage it effectively. Organizations are challenged with how to innovate for differentiation, grow revenues and reduce costs. Even though the answers may reside in their data, companies often lack the means to access it, understand it and apply that business intelligence in time to have meaningful results.

Cloud platforms provide the means for handling "big data", collating structured and unstructured data from diverse sources into an integrated data model that is useable for reporting. The cloud data architecture is optimized for business intelligence, with the goal of making data consumable and accessible to everyone, optimized for their specific purpose. Data can be directly loaded into information warehouses where possible, or it can be accessed via connectors that bridge disparate systems to create consolidated perspectives. Pre-processing stages can be added to the data flow, applying intelligent algorithms to segregate relevant information from massive data streams.

The cloud also opens access to a broad variety of analytic tools, giving businesses of all sizes the means of applying full-featured data mining, visualization and simulation services to their decision making processes. There's a natural progression followed as companies become more sophisticated with their use of analytics and more effective at turning insights to actions. The starting point is descriptive analytics—trend analysis, visualization and standardized reporting, providing a clear representation of what has happened historically. The next stage is predictive analytics—using historic data to build simulations, forecasts and predictive models to gain a sense of what could happen in the future. The most sophisticated companies are those that can apply their predictive models to build optimization algorithms that prescriptively guide decisions—balancing risks with benefits to optimize business performance.

Cloud's scalability, flexible connectivity, and diverse tool availability provide the critical data and analytic platforms that businesses need at any stage of analytics maturity. Addressing business intelligence needs within a comprehensive cloud strategy ensures that the insights required for achieving business innovation objectives are available.

- **Software Application Platforms.** Corporate enterprises rely heavily on software applications to run their business processes, making the availability and efficiency of software function a critical element of successful operation. Advances in technology capabilities are also creating dramatic shifts in both front office and back office operations, requiring strategic actions to address empowered customers, new engagement channels, and business imperatives around mobile/social presence, connectivity and collaboration.

  Cloud provides a comprehensive platform for transforming IT capability by introducing collaboration life cycle management and automated development tools for software delivery. Development, test and deployment environments in the cloud support agile and transparent delivery, enabling all stakeholders — business owners, developers, testers and system administrators to offer input and track the progress of new application function in real-time. Test-driven development, static analysis tools and continuous build processes verify changes as they are made — creating built-in quality assurances that streamline downstream testing. The cloud also enables more effective governance of the application portfolio by consolidating environments and making all development and deployment activity visible and subject to monitoring.

  Cloud connectivity creates "ecosystems at scale" for application delivery — enabling rich friction-free access to software asset and web service libraries in a highly consumable environment. When new business function is needed, development teams can deliver it more quickly by pulling the components needed from these libraries and assembling them into the required solution. Access to social platforms also provides more informal means for development teams to collaboratively discover software components rather than building them from scratch. Companies that take advantage of this new "API economy" can adopt rapid release cycles for their business-critical applications and experience unprecedented speed-to-market when implementing new capabilities. The heart of a cloud strategy is this rich ecosystem of highly consumable services, which opens new venues of innovation and promotes fast-cycle delivery.

  Software as a service (SaaS) adds new options for the corporate software portfolio and is increasingly being viewed as a driver of business innovation and not just IT optimization. SaaS offers business agility, giving companies the opportunity to implement web-accessible, full-featured software on pay-per-usage basis, avoiding license fees and the ongoing (and sometimes variable) expense of application maintenance. A variety of SaaS providers are already offering enterprise-class ERP and HRM solutions, and the business capabilities offered in the cloud are expanding rapidly — with adoption of commerce, analytics and social solutions increasing.

  An important element of a cloud strategy roadmap is a rigorous assessment of options for the transformation of software application platforms — including opportunities for application delivery enablement and SaaS implementation, identifying those actions that will result in genuine economic impact and enduring value.

- **Infrastructure Platforms.** Infrastructure is the foundation of any cloud strategy, and finding the optimal balance of system adoption, integration and transformation is essential to realizing benefits in all dimensions of cloud capability. Cloud introduces significant new infrastructure capabilities, but it can also complicate the IT architecture, and adoption must be managed to minimize business disruption while achieving business results as quickly as possible.

The starting point for a cloud infrastructure strategy is an analysis of business and IT priorities that identifies opportunities where the introduction of cloud technology is feasible and will provide benefit. Ideally, the priorities will have already been characterized in the context of developing the other three cloud strategy dimensions. The priorities then determine the business and/or IT services that require cloud infrastructure.

There are several cloud deployments to be considered. IBM's SmartCloud Portfolio offers public, private and hybrid deployment models designed for enterprise requirements. These requirements span availability, scalability, security, automation and management levels. Enterprises are looking for choice and control to handle their diverse sets of workloads and This will expose the need for cloud managed services expertise to help enterprises achieve the right deployment model mix.

One of the most significant determinants of success in moving to the cloud is the careful selection of workloads. Workloads must be carefully analyzed in the development of a cloud strategy to weigh potential benefits against ease of deployment. A well-structured workload analysis will evaluate IT service characteristics in terms of technical attributes, non-functional requirements, system complexity, migration complexity, and operational costs—providing a quantified assessment to guide deployment decisions.

Other assessments include the security plan, which identifies all key elements in the security framework based on your business and IT requirements; network analysis—reviewing connectivity and response time requirements of enterprise systems and the cloud network elements needed to support them; and resiliency planning that ensures backup/restore capabilities and disaster recovery capabilities can be established cost effectively.

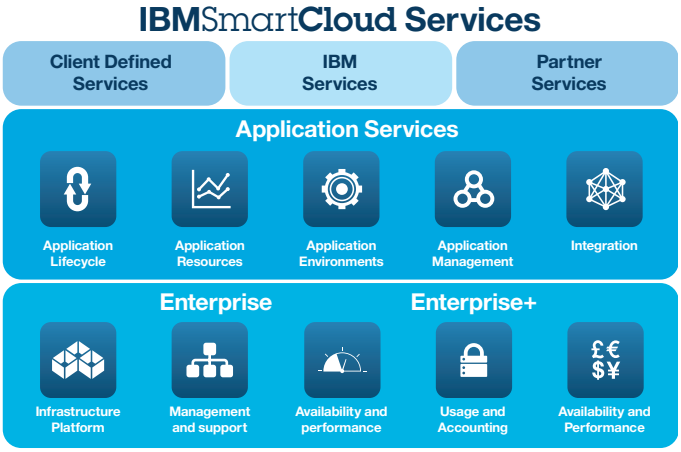


Figure 2: IBM SmartCloud Services enterprise class cloud platform for IaaS and PaaS

IBMs Cloud Reference Architecture helps guide cloud design and implementation plans. It applies cloud capabilities where they are most relevant for operational execution and realization of strategic business objectives. The cloud reference architecture then becomes the technical roadmap for cloud deployment—outlining the infrastructure implementation plan required over time to support the total cloud strategy.

A comprehensive cloud strategy roadmap addresses all four dimensions of cloud adoption holistically, ensuring that planned infrastructure capabilities efficiently support both data and application platforms and that the solutions align with business innovation objectives.

Developing a cloud strategy

Adopting an effective cloud strategy roadmap can have far reaching implications for business success. As noted in this briefing, it is important that any team crafting a strategy bring a multidimensional perspective to the analysis—to ensure that the opportunity is fully assessed and that resources to implement are properly calibrated. Platform providers may only be able to provide infrastructure advice. Likewise, application delivery consultants may overlook SaaS options or be unable to architect a cloud data model that connects to external data sources and fully leverages cloud analytics capabilities.

Case Study

Challenge

A top 20 global bank and financial services institution was looking to sustain double digit growth while also adopting a more competitive cost profile for delivery of applications. The bank was aggressively implementing new technology solutions for customer engagement – e.g., mobile banking, video chat and contextual offers, but application teams were vertically aligned with the lines of business (LoBs) – resulting in redundant services, limited knowledge sharing and inconsistent delivery methods. IT costs were much higher than industry benchmarks, and inefficiencies consistently delayed the introduction of new capabilities – limiting market advantage.

Approach

The bank engaged IBM to develop a strategic IT operating model for supporting business innovation and to create a detailed transformation roadmap for implementing the necessary changes. IBM consultants completed a comprehensive analysis and maturity assessment, profiling IT operations and conducting extensive interviews across the organization to identify capability gaps relative to the industry-standard IT component business model. The investigation revealed significant opportunities for improving effectiveness across the software delivery life cycle (SDLC) and for leveraging cross-organizational delivery capabilities. Working collaboratively with IT executives and delivery teams, IBM developed detailed recommendations built on the implementation of a collaborative, delivery framework and then assembled a phased transformation roadmap that addressed the cultural and organizational challenges associated with this level of change.

Solution

IBM's solution mapped the bank's evolution from an application-centric IT operation model to a collaborative, business-integrated model based on cloud delivery platforms. This included enhanced LoB verticals to provide a better alignment between IT investment and business innovation, along with strong horizontal service organizations (e.g., application development & maintenance, project management/ control) to leverage economies of scale and promote specialization. The matrix organization was centered on delivery communities that applied collaboration platforms to bring together virtual teams and create integrated solution delivery. Cloud platforms allowed pervasive access and drove transparency across the software delivery life cycle, ensuring real-time alignment of IT effort with business objectives. The net result was a 20% improvement in cost efficiency across the entire application portfolio driven, by improved quality and accelerated cycle time.

IBM has the breadth to cover all four dimensions of cloud adoption along with the technical depth and industry experience to develop effective strategies in each.

- Infrastructure expertise from years of technology leadership as a hardware builder, outsourcing partner and cloud provider—running multi-tenant data centers that support the

complex business processes of the world's largest companies.
- Application platform expertise as the world's largest software company and as a market leading provider of application management and delivery services that have brought cost-saving efficiencies and new capabilities to thousands of corporate software portfolios.
- Data and analytics platform expertise with a rapidly expanding array of data management, data integration and sophisticated analytic tools—coupled with business intelligence consulting services that leverage IBM Research innovations and cross-industry expertise to help clients gain actionable insights from their data.
- Business model innovation expertise drawing on the deep industry knowledge of IBM consultants who have shaped customer value and IT strategies for Fortune 500 companies worldwide—'future proofing' their businesses with adaptable and agile capabilities to keep pace with the market.
- Financial and operational models, to help senior executives understand the benefits, investments and returns available to the enterprise through cloud.

Our approach uses IBM's industry-leading Integrated Strategy and Transformation Method, applying comprehensive capability models to the business areas to be addressed. IBM consultants will work with your senior leaders to understand business objectives and explore opportunities where cloud adoption can improve business agility and grow revenue. The in-depth analysis of business function—and the supporting business processes—needed to achieve business objectives will result in a desired state model that shows the gaps between current capabilities and required capabilities. A transformation roadmap is then developed with implementation phases that introduce cloud capabilities when needed to meet business plan timelines.

Implementation in each phase is supported by a sound business case that demonstrates return on investment and clearly articulates quantified benefits to be realized from investment in new cloud capability. It's not investment in new technology for the sake of technology. It is investment in new technology to achieve compounded returns with business results.

IBM cloud strategy engagements are adaptable to specific client situations and business goals. Companies will likely have unique roadmaps that address one or more cloud strategy dimensions first—based on current needs and benefits that are more immediately realizable. IBM will partner with you in developing that initial strategy while also providing an assessment of potential benefits in other cloud dimensions so that the path to greater value realization is evident.

The time for a cloud strategy is now

Cloud technologies are providing a variety of new business enablers for customer interaction, operational execution and product and service innovation. Companies that strategically apply these cloud capabilities will swiftly outpace their competition by responding quickly to market trends and developing new channels for business growth. A comprehensive cloud strategy explores business innovation opportunities across the four key dimensions of cloud adoption—business models, data platforms, software platforms and infrastructure platforms—and aligns transformational initiatives with those adoption patterns that offer the best return for the business. Partnering with IBM to develop a cloud strategy ensures that all dimensions are explored and that a roadmap is developed to realize the most compelling opportunities. Now is the time to develop a cloud strategy that enables your enterprise.

For more information

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Produced in the United States of America
August 2012

1 Michael Treacy and Fred Wiersema, "Customer Intimacy and Other Value Disciplines", Harvard Business Review, January-February 1993, pp. 84-93

2 Saul Berman, Lynn Kesterson-Townes, Anthony Marshall and Rohini Srivathsa, "The power of cloud: Driving business model innovation," IBM Institute for Business Value Executive Report, 2012

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