IBM B2B enterprise service solutions

Helping communications service providers create new revenue streams by delivering the next generation of communications and IT services

Highlights

- Cloud technology helps communications service providers (CSPs) offer customers a valuable new class of services, netting new revenue and decreasing churn in the process.
- Participating actively in the API economy turns developers into an engine of service demand.
- By providing enterprise-grade mobility, CSPs can help their customers implement secure bring-your-own-device programs for their employees.
- CSPs can go beyond M2M connectivity to serve the growing Internet of Things market as providers of profitable applications, platforms and end-to-end services.

It's no secret that the world in which CSPs operate today is significantly different than the one they inhabited just a few years ago. Groundbreaking new technologies are creating a whole new set of challenges for CSPs, as well as many new opportunities. The commoditization of voice and data are causing once-dependable sources of revenue growth to dwindle, while over-the-top providers claim an increasing share of customers' communication budgets. Many CSPs have been left with revenues that are either declining or growing too slowly to keep up with network utilization and operating expenses.

To thrive in this challenging environment, CSPs have to find new revenue sources and hold onto their highest value customers. A strategy that can help CSPs achieve both of these goals is to expand their offerings to meet the growing enterprise demand for services like cloud computing, enterprise mobility, and the Internet of Things (IoT). Moving "up the stack" into solutions that appeal to both IT and line-of-business buyers presents an excellent opportunity for CSPs to partner with IBM, bringing together their foundational services with the technologies and solutions that make IBM a globally recognized leader and innovator. Teaming with IBM is a proven strategy for managing the risks and costs associated with delivering new services and service bundles.

Cloud computing and the API economy

Many enterprises are looking for ways to simplify how they buy and consume IT resources. Procuring cloud computing and communications services from a single vendor is one way to do this, and CSPs are well positioned to become that single vendor. By bundling cloud computing with business communications, CSPs can retain customers who are consolidating their purchasing and provide differentiated solutions to win customers who are seeking secure access to public and hybrid clouds.

The cloud services that CSPs can add to their portfolios include infrastructure-as-a-service offerings such as compute and storage, platform-as-a-service offerings for creating a development and runtime environment, and software-as-a-service offerings that can perform a wide variety of use cases, from business productivity to IoT applications.

While cloud and communications can be synergistic services, pursuing cloud-based IT services also presents a number of risks for CSPs. Cloud operations are complex and evolving quickly, skills are in short supply, forecasting is difficult, and branching out into this business pits CSPs against new types of competitors, such as managed service providers. By sourcing the cloud services externally (acting as a service aggregator), CSPs can enjoy a lower cost of service delivery, minimize operational risks and earn predictable profit margins.

IBM cloud solutions

IBM cloud services can help CSPs deliver exceptional value, with technology and expertise that encourage rapid adoption and help form lasting customer relationships. IBM offers a broad portfolio of leading cloud services that CSPs can resell and/or embed into their own offerings.

SoftLayer

Infrastructure as a service is a highly competitive market, and IaaS offerings from SoftLayer®, an IBM company, can help CSPs stake a place in that market. SoftLayer is known for its hyperscale, global presence, low prices, and fully automated management platform. When CSPs offer IaaS from SoftLayer, their customers can choose between shared virtual machines, dedicated virtual machines, and dedicated bare metal servers, selecting the combination that best balances costs and performance.

IBM Bluemix

With IBM® Bluemix®, a platform-as-a-service DevOps environment, CSPs and their customers can get everything they need to develop and run born-on-the-cloud applications for smartphones and other connected devices with unprecedented speed and agility. Bluemix is a digital hub for IT professionals that simplifies application development and encourages innovation by giving users all the tools, services and infrastructure they need to build, test, secure and deploy great apps quickly.

By reducing cycle time and supporting a continuous release approach, IBM cloud solutions allow CSPs and their customers to conceive, construct and improve applications with less investment and more direct involvement of business users in the creative process. CSPs can use Bluemix to build applications for their subscribers and/or resell Bluemix to their customers who could benefit from advanced DevOps.

IBM API Management

DevOps is also a natural jumping-off point for CSPs who want to participate in the "API economy": the phenomenon of applications electronically interfacing to generate demand for services across industries. CSPs are increasingly offering their services—from connectivity to messaging to operational services—as APIs. Exposing telco APIs on Bluemix allows developers to incorporate those services directly into their new applications.

Available within Bluemix or independently, IBM API Management software is being used by CSPs to give their customers (and other players in the ecosystem) opportunities to create digital assets that automatically generate traffic as they are used. With API Management, CSPs can design, secure, publish, monitor and manage their APIs. These APIs open a key route to market for both core services and complementary services, allowing CSPs to monetize their operational competencies (such as billing and trouble ticketing).

Open source

IBM Cloud offerings are built with support for open technologies, allowing CSPs and their customers to feel confident about the portability of their workloads. While many cloud providers make it difficult to move assets among environments, IBM does the opposite: by offering support for OpenStack, Docker, Cloud Foundry and more, IBM simplifies and automates the processes organizations can use to deploy their apps anywhere and scale them dynamically.

In short, by working with IBM and the IBM Business Partner ecosystem, CSPs can get all the products, services and expertise they need to build a strong cloud portfolio for their customers, and position themselves as leaders that can offer value to businesses customers of all sizes.

Enterprise mobility

Recent estimates hold that by the year 2019, there will be 5.2 billion mobile users in the world, along with 11.5 billion mobile-ready devices and connections. While the continuing global proliferation of mobility is certainly not news, CSPs do have the opportunity to capitalize on an emerging dimension of the boom.

Savvy organizations have recognized that mobility is revolutionizing the way they operate and connect with their customers and suppliers, and that employees are more productive when they can work from any place, at any time. However, extending corporate applications to mobile endpoints presents a number of specific challenges for businesses. CSPs can help address these challenges, amplifying the value of mobility while also minimizing its risks. This, in turn, can allow CSPs to maintain more of their high-value business subscribers.

Enabling safe BYOD

Bring-your-own-device (BYOD) programs are increasingly popular with organizations of all sizes. Workers appreciate being able to consolidate personal and professional uses on one device, while business leaders enjoy the fact that BYOD can lead to higher morale, accelerate decision making, and let employees spend more time with customers.

However, organizations must have effective security measures in place before they allow employees to access sensitive corporate data on their personal devices. The challenge behind BYOD is securing access to company data and systems on unmanaged devices. CSPs that help their customers navigate this concern by offering comprehensive enterprise mobility solutions are in the strongest position to drive new revenue sources and keep customers happy. IBM is helping CSPs make that happen.

IBM is already managing an estimated 600,000 smart devices worldwide, and has a proven track record of delivering mobile technology and management capabilities in a manner that supports positive business outcomes. In fact, IBM was named a Leader in both the 2015 Gartner Magic Quadrant for Managed Mobility Services and the 2015 Gartner Magic Quadrant for Enterprise Mobility Management Suites, reflecting our broad knowledge and experience across the entire mobility marketplace.

IBM MobileFirst

IBM's focus on mobility is reflected in the IBM MobileFirst™ product family. By providing modular capabilities in a single easy-to-deploy architecture, we allow CSPs to get all of the mobility capabilities they might need to complete their business service offerings, from initial strategy all the way through to ongoing device management. IBM can also help CSPs integrate enterprise mobility with other new initiatives, such as cloud computing and the Internet of Things, to support new business models and achieve competitive differentiation.

The IBM MobileFirst platform includes the following solutions:

- **IBM MobileFirst Platform Foundation (formerly known as IBM Worklight®)**: Provides an open and comprehensive platform to build, test, run and manage apps, automating adaptation for various mobile operating systems and screen formats
- **IBM MobileFirst Protect (formerly known as MaaS360®)**: An enterprise mobility management suite that ensures security and productivity by managing devices, applications, and expenses, and securing mail, documents, content and browser access
- **IBM MobileFirst Platform Cloudant® Data Layer Local Edition**: A highly scalable database management system designed specifically with the data management needs of mobile applications in mind
- **IBM MobileFirst Platform Quality Assurance**: A platform for testing apps and analyzing user feedback throughout the app lifecycle
- **IBM Presence Insights**: Enables customers to gain insights about mobile users in or around a physical location, and use those insights to deliver engagement in context

Internet of Things and machine-to-machine solutions

According to the analyst IDC, there will be about 30 billion autonomously connected devices in the Internet of Things (IoT) by the year 2020, which will account for as much as $8.9 trillion in total business value. This is up from only $4.8 trillion in 2012, a compound annual growth rate of 7.9 percent. Clearly, this expanding market is one that CSPs want to be a part of.

There are a number of ways that CSPs can position themselves to be at the heart of this rapid growth, including providing IoT connectivity, providing IoT applications or platforms, or providing end-to-end IoT services. The business model a CSP adopts when it comes to the Internet of Things should take into account the organization's existing strengths and reflect its strategic aspirations.

The solutions that IoT subscribers want address the five keys things all organizations must be able to do in order to derive maximum value from the Internet of Things:

- Connect to and control devices
- Collect and manage device data
- Analyze and understand the data they collect
- React based on the insights provided by the data
- Build or obtain apps to harness the potential of the insights

With IBM's integrated technology, platforms and multi-industry expertise, CSPs can help their customers achieve all of these objectives. IBM has capabilities that complement CSPs' portfolios, and a common interest in helping grow the IoT. In fact, IBM is investing $3 billion over four years to help our clients and partners build new IoT solutions.

IBM MessageSight

The first concerns in providing IoT networking are scale and device diversity. IBM MessageSight provides a purpose-built platform for scalable machine-to-machine messaging using MQTT, a protocol that IBM helped invent and deliver to the open source community more than a decade ago.

As the number of connected devices and sensors continues to grow, organizations that use MessageSight will have the performance and security needed to continue providing rapid bi-directional messaging between those devices and the databases and applications that can use their data. The appliance supports more than a million simultaneous connections in a small appliance that efficiently links the network to the data center.

IBM IoT Foundation

Many applications that help subscribers get value from connected devices are delivered from the cloud, and partnering with providers of platforms and applications, as well as device providers, can allow CSPs to provide one-stop shopping for the solutions that command most of the spending in the IoT space.

One of the best ways for CSPs to offer more than connectivity is to bundle data storage and analytics that can pull insights from the device messages with the data transport. The IBM Internet of Things Foundation provides integrated, easy-to-use tools that give organizations everything they might need to connect a diverse range of devices, collect data from them, visualize the data, and then draw value from it.

IoT Foundation handles messaging, time series database storage, analytics and device management, with open APIs to access the functions from any application or development platform. IoT Foundation's powerful web dashboard makes it simple for organizations to add and manage devices quickly. In addition to drawing out real-time data from connected devices, IoT Foundation also provides its users with the opportunity to store data for as long as they choose. This allows users to compare real-time data with historical data, opening up a whole new level of insight.

IBM Intelligent Operations Center

CSPs with local government customers will be able to benefit from IBM Intelligent Operations Center, an analytics and data visualization platform that helps city leaders enhance the efficiency of operations, plan for future growth, and coordinate and manage event response efforts. These same solutions can also provide value for a variety of private organizations, such as transportation facilities, universities and stadiums. CSPs can also complement their IoT offerings with IBM Maximo®, the leading solution for tracking the lifecycle of connected devices.

Cognitive computing for enterprise services

At IBM, we believe that a new age of business is upon us. It's an age defined by systems that can rapidly ingest unstructured data, reason about that data to generate educated hypotheses, and grow and learn from experience over time. We call it cognitive computing, and we think it's about to revolutionize the way CSPs operate. We're not alone in our opinion, either: according to one report, 89 percent of telecom professionals believe that the cognitive era will have an impact on the future of their business.

Cognitive solutions such as IBM Watson™ have direct applications to all of the enterprise services use cases presented in this document. With the IBM Watson Developer Cloud, CSPs can easily enable their customers to add cognitive elements to their apps, including Watson's natural language processing, vision, speech, and data insight APIs.

From an IoT perspective, cognitive computing from IBM is uniquely positioned to help CSPs and their customers prepare for the coming deluge of machine-to-machine data. This noisy, unstructured data is difficult to make sense of using traditional analytics measures. With Watson, users can cut through the noise to start drawing insights from this data, allowing them to take advantage of one of the most important opportunities that will hit the business world in the next decade.

In order to start taking advantage of the benefits cognitive computing can offer, you need the right infrastructure and talent in place, and an overarching cognitive strategy to support them. IBM has everything needed to help you implement these elements and get started with cognitive computing. Visit **ibm.com**/watson to learn more.

Why IBM?

IBM has decades of experience helping CSPs succeed in new endeavors, combined with a comprehensive portfolio of integrated cloud, mobility and IoT offerings. In addition, our global partner ecosystem helps us connect our CSP customers with some of the most brilliant talent in the technology industry.

IBM can serve as a supplier of hardware, software, and professional and managed services for CSPs that want to own and operate cloud resources, or aggregate cloud services in order to build high-value offerings on top of them.

Our open and flexible architectures mean that you can choose the entry point that's right for your organization, without having to limit your future options. Smart small, and then grow your investment over time to support the changing needs of your customers.

Our proven track record when it comes to transformation and integration projects uniquely positions us to support the entire lifecycle of your project, from the initial design phase all the way through the final implementation. In addition, taking advantage of the strength and legacy of the IBM brand can help you instantly build credibility with potential enterprise buyers, while also paving the way to go-to-market partnerships.

Finally, your project will be supported by IBM Research, the world's largest private research organization, and our global network of telecommunications solutions centers. This allows us to come up with new and innovative telecommunications offerings all the time, while also connecting our customers with the latest in best practices and industry expertise.

For more information

To learn more about business service innovations from IBM, contact your IBM representative or IBM Business Partner. You can also learn more about IBM solutions for the communications industry by visiting **ibm.com**/industries/communications.

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1 Cisco Visual Networking Index, *Global Mobile Data Traffic Forecast*, 2014-2019. February 2015 (www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html)

2 "The Internet of Things Is Poised to Change Everything, Says IDC", Business Wire, (www.businesswire.com/news/home/20131003005687/en/Internet-Poised-Change-IDC)

3 "*Welcome to the Cognitive Era: A new era in technology, a new era in business.*" IBM, October 2015.

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