

WHITE PAPER

The 3rd Platform: Enabling Digital Transformation

Sponsored by: Tata Consultancy Services (TCS), Digital Software & Solutions Group

Frank Gens

November 2013

INTRODUCTION: A TIME OF UNPRECEDENTED OPPORTUNITY AND RISK

Today, CIOs and line-of-business executives find themselves in the midst of unprecedented opportunity and risk as the IT industry shifts to a new set of core technologies that — taken together — form a new platform for industry and enterprise innovation and growth.

The "3rd Platform" is built on a foundation of cloud, mobile, social, and Big Data technologies. It will enable the all-important digital transformation, evolution, and expansion of every industry over the next several years and beyond. Business strategists, IT leaders, and solution developers are already conceiving and building disruptive new business and consumer services and business models, effectively reinventing their industries.

Major new sources of competitive advantage are being built by creatively leveraging cloud, mobile, social, and Big Data technologies. Enterprises and organizations alike are grappling with how to address the impact of these technologies not only on their decision-making processes, operations, product rollouts, and promotions but also, most importantly, on how they engage with their customers. To respond to these dynamics, enterprises are undertaking digital transformation initiatives. This is already happening today and will accelerate over the next three to five years. Your future and the future of your organization depend on your ability to master these 3rd Platform technologies and use them to your advantage.

This white paper was written to provide a greater understanding of the disruption caused by the onset of the 3rd Platform and how it is enabling critical digital transformation today, describe ways that organizations in five different industries are using the 3rd Platform to develop new sources of competitive advantage, and provide IDC's recommendations to help you transform your IT organization into a "3rd Platform IT organization" and your business into a "3rd Platform enterprise."

The "3rd Platform" is built on a foundation of cloud, mobile, social, and Big Data technologies.

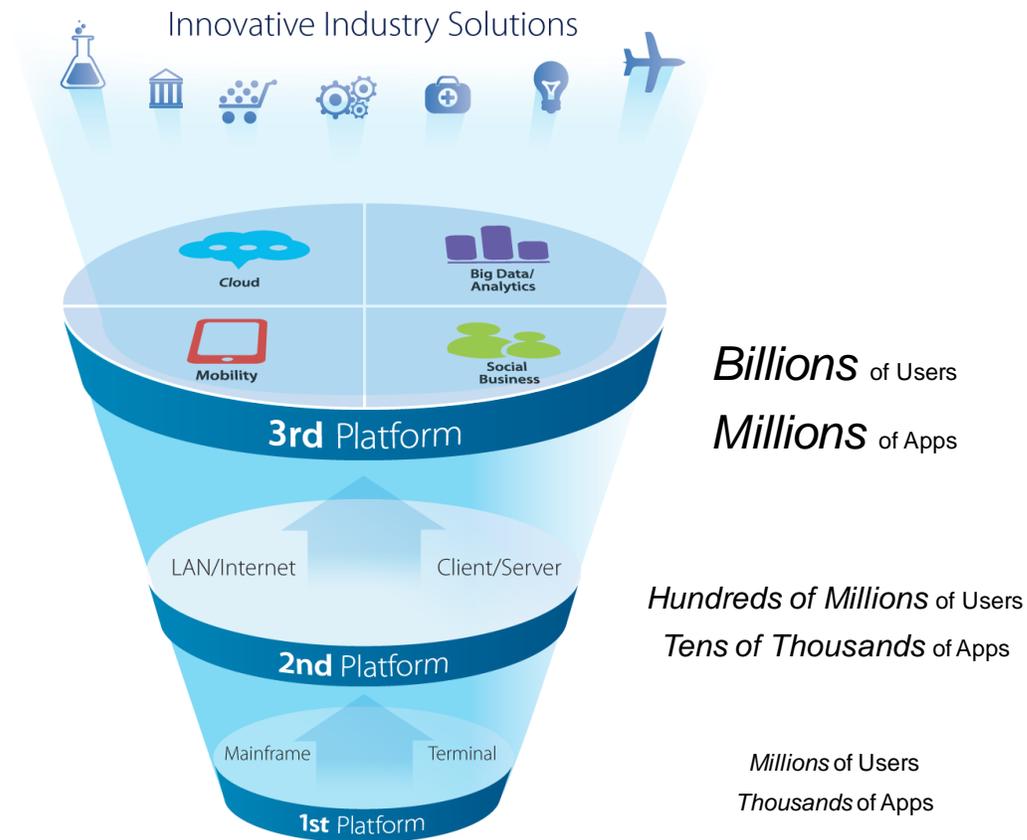
SITUATION OVERVIEW: THE 3RD PLATFORM IS THE NEW BASIS OF DIGITAL TRANSFORMATION

Figure 1 displays the three platforms of IT growth. The 1st Platform, dating back to the dawn of computing, was based largely on mainframes and terminals. The 2nd Platform emerged with the birth of the PC in the 1980s and was defined by the client/server model, Ethernet, Wintel servers, RDBMSs, and a new class of business applications.

Today we are in the early stages of a whole new platform, with mobile devices and apps extending the edge, cloud taking the place of client/server at the core, Big Data enabling analytics that create deeper insights much faster, and social technologies bringing human brains into digital, automated processes.

FIGURE 1

The Three IT Platforms for Business Innovation



Source: IDC, 2013

Each growth platform is defined not so much by the technologies but by the scale and scope of users and uses that the technologies enable. The 1st Platform touched millions of users, with applications and solutions in the low thousands. The 2nd Platform involved hundreds of millions of users and tens of thousands of apps. And the 3rd Platform is already touching billions of users (with over 2.4 billion people, or 36% of the world's population, currently connected to the Internet, more than half through mobile devices), and millions of new applications and solutions (with over 1 million apps available for iOS and Android devices alone).

Each growth platform is defined not so much by the technologies but by the scale and scope of users and uses that the technologies enable.

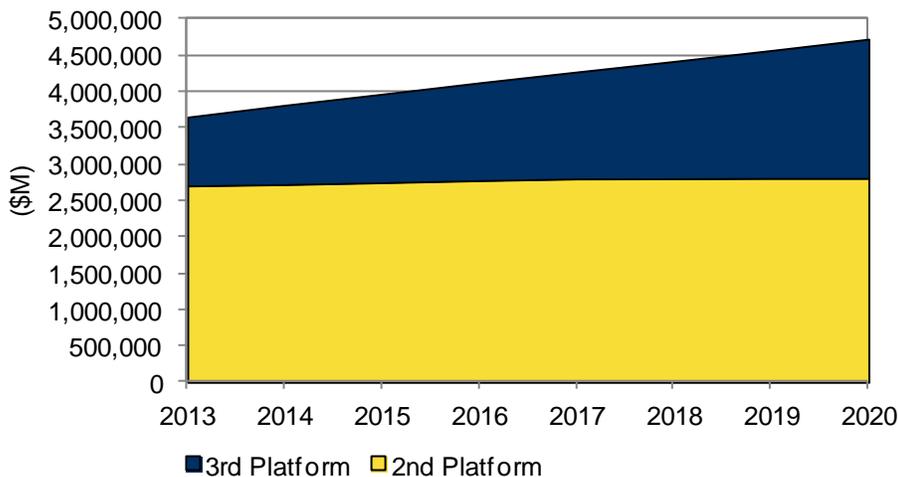
The name of the game over the past 25 years was intelligently leveraging the 2nd Platform. Over the next 25 years, the 3rd Platform will represent the basis for solution development and business innovation.

Most Innovations Are Being Built on the 3rd Platform

Figure 2 illustrates the magnitude of the shift from the 2nd Platform to the 3rd Platform. IDC estimates that 2nd Platform technologies account for 74% of worldwide ICT spending and over 80% of the infrastructure and applications in most datacenters today. But the focus is shifting, and by 2020, the 3rd Platform will account for over 40% of IT spending.

FIGURE 2

Worldwide ICT Spending, 2013–2020



Source: IDC, 2013

Even more remarkable is the difference in growth rates between 2nd Platform and 3rd Platform technologies. IDC projects that organizations' spend on 2nd Platform technologies will grow at an 0.5% CAGR — only slightly higher than flat — between 2013 and 2020. During that same period, organizations' investment in 3rd Platform technologies will grow at a 10.6% CAGR, over 20 times faster than the investment in 2nd Platform technologies, and the 3rd Platform will account for 95% of the cumulative growth in investment. Business innovation budgets are increasingly centered on 3rd Platform technologies, and IDC expects they will continue to be the basis for the next generation of digital innovation strategies.

From 2013 to 2020, organizations' investment in 3rd Platform technologies will grow over 20 times faster than organizations' investment in 2nd Platform technologies, with the 3rd Platform accounting for 95% of the cumulative growth in investment during that period.

Most Valuable Solutions Will Be in Industry-Specific Cloud Platforms and Marketplaces

Cloud service platforms and marketplaces are key enablers of 3rd Platform solutions. Also known as platform as a service (PaaS), cloud service platforms provide a home in the cloud for 3rd Platform solutions. Cloud service platforms, marketplaces, and developer communities will be where the most sought-after solutions live, and the choice of cloud service platforms will either expand or constrain a company's ability to find and leverage the best new solutions.

Cloud service platforms, marketplaces, and developer communities will be where the most sought-after solutions live.

The best-known cloud service platforms are those from IT leaders such as Amazon, salesforce.com, Microsoft, IBM, and Google. These platforms are generally horizontal in nature and were designed to serve broad, cross-industry communities and needs. But since the platform model enables shared deployment and development, the barrier to entry for new solutions is significantly lower. This is enabling an explosion in the number of solutions and the development of industry-specific marketplaces.

As a result, we're seeing a new species of cloud platforms that IDC calls "industry cloud platforms." With these industry cloud platforms, major players in specific industries are developing and offering services tailored to the needs of their industry. These platforms are where the highest-value, industry-transforming solutions will be developed.

Industry cloud platforms have already emerged in a wide variety of industries, including finance, retail, healthcare, and manufacturing. Examples include the New York Stock Exchange's Financial Trading Platform, Illumina's Genomic Platform, Johnson Controls' Panoptix Platform for smart buildings, and GE's recently announced Predictivity Platform for apps that link industrial equipment.

The Benefits of Being the First to Offer a Cloud Service Platform for Your Industry

The emergence of industry cloud platforms not only helps the industry as a whole but also can enable new types of digital transformation for the player or players that host these industry-specific cloud service platforms. The industry benefits by having a place where innovators can release products and services to their target customers, and industry participants can leverage these innovations to improve their business model. The player or players that host the service platforms benefit by being the place where the "real" industry-transforming solutions are housed.

You should think not only about how to use cloud to address your business' traditional IT needs but also about whether and how to expand your business model to become a cloud platform provider yourself. Businesses that get there first can extend their leadership and can build an ecosystem that can provide new sources of revenue and competitive advantage. Cloud technologies not only can open new ways to add value to customers but also can open new lines of business and business models.

This makes platform as a service a strategic choice for CIOs and their IT teams and a business strategy decision for C-level and other line-of-business executives looking to expand and evolve market opportunity and revenue. The 3rd Platform provides an excellent point of focus for strategic collaboration between CIOs and their line-of-business colleagues.

3rd Platform Expands Value from Silos to New Integrated Industry Solutions

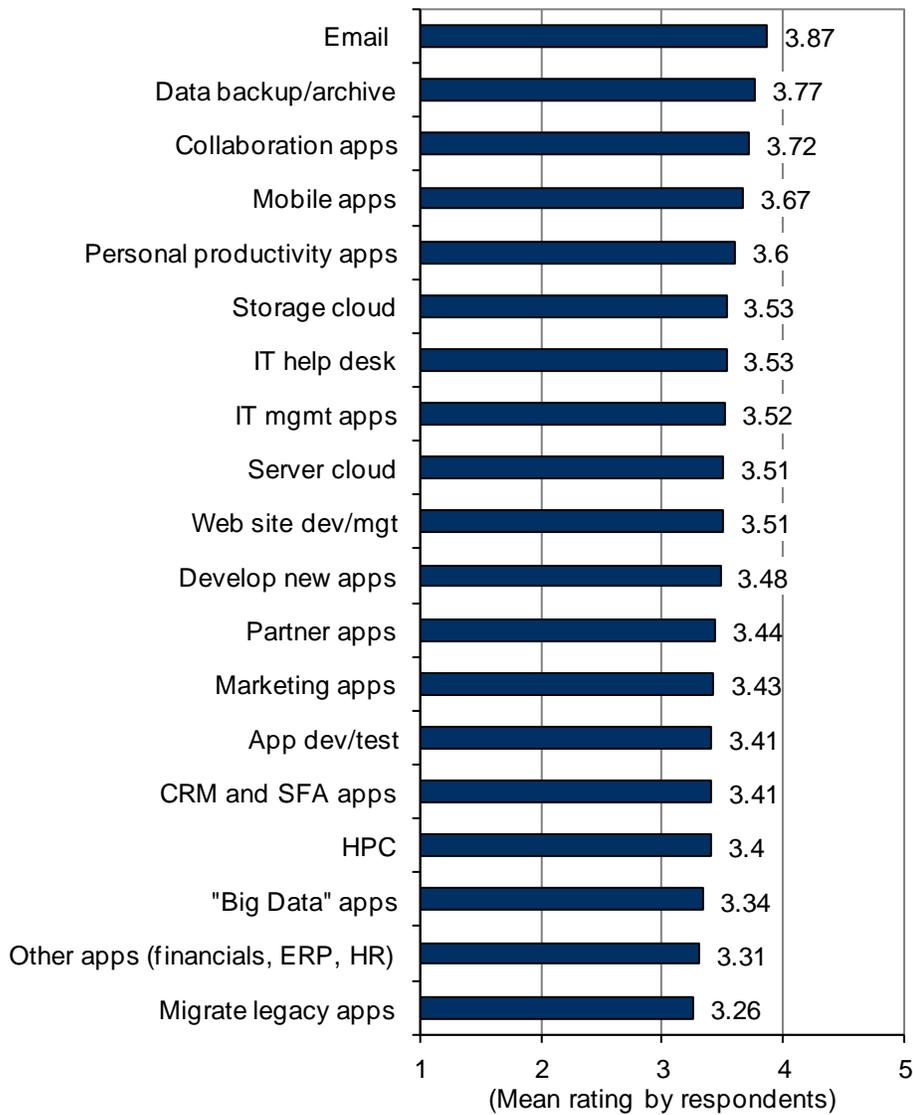
A key aspect of the 3rd Platform is that it's not just about mobile, social, cloud, or Big Data taken in isolation. The real key is weaving together two or more of these technologies to create *high-value industry solutions*.

The real key is weaving together two or more of these technologies to create *high-value industry solutions*.

Figure 3 presents a great example of the value of these "mashups." In a recent IDC study, we asked users to identify which IT applications and workloads they are most likely to shift to the cloud. Two of the top 3 drivers of cloud are social solutions (email and collaboration apps), two of the top 6 drivers are Big Data solutions (data backup/archiving and storage cloud), and the number 4 driver is mobile apps. These three technologies are all heavily dependent on the cloud services model. The obvious message is that customers can already see the greatest value in cloud, social, mobile, and Big Data not as standalone technologies but in solutions that are mashups across all four technology silos.

FIGURE 3

Likelihood of Moving IT Workloads to Public Cloud



n = 493

Source: IDC's *CloudTrack Survey*, winter 2012

3rd Platform Is Reinventing Established Digital Models

There's nothing new about technologies such as digital commerce, customer analytics, or intelligent infrastructure; each technology has been around in some way, shape, or form for over a decade. What's new is that 3rd Platform innovations are enabling new types of digital transformation, in effect creating a "second chapter" in each area.

☒ **Turbocharging digital commerce.** Digital commerce already accounts for a huge percentage of the economy. According to IDC's New Media Market Model, total worldwide digital commerce spending (B2B and B2C) was \$12.0 trillion in 2012, representing fully 17% of global GDP. But 3rd Platform innovations are ushering in a new era and being used to reinvent digital commerce. In its first incarnation, digital commerce was all about creating Web sites with online shopping carts, gathering eyeballs, and optimizing transaction close rates. Now Big Data is enabling analysis of customer and transaction data in much greater depth than ever before, while social network data is honing understanding of consumer preferences and driving recommendation engines. And of course, more and more transactions are coming from mobile devices and being driven by the cloud. The result is greater customer engagement, sustained relationships, and real-time insights.

The result is greater customer engagement, sustained relationships, and real-time insights.

☒ **Faster time to insight.** Big Data is enabling businesses to use customer intelligence on a wider scale and in far more granular fashion than was previously possible. Even more importantly, the scalability of cloud is enabling companies to gather and apply insights in real time, providing a significant source of competitive advantage. By using mobile devices, which consumers take with them everywhere and can yield a tremendous amount of behavioral, preference, and location-based data, companies can obtain deeper insights than ever before. Social networks provide a unique view into customer intelligence. None of this would be feasible without the use of cloud.

The scalability of cloud is enabling companies to gather and apply insights in real time.

☒ **Enabling intelligent infrastructure.** IDC forecasts that by 2016, more than 5 billion intelligent connected devices will be shipped worldwide — more than twice the number of PCs, tablets, and smartphones combined. These devices include cloud-connected cars, CCTV security cameras, Bluetooth-based traffic monitoring systems, thermostats and energy regulators for intelligent buildings, and even networked microscopes. Companies will need to expand their vision of what mobility means and consider how to leverage 3rd Platform technologies to take advantage of the "Internet of things" to open new business opportunities.

Companies will need to expand their vision of what mobility means and consider how to leverage 3rd Platform technologies to take advantage of the "Internet of things."

INDUSTRY VIGNETTES

The lion's share of new 3rd Platform solutions for the enterprise will focus on industry-specific needs. These solutions will target not just top-level industry classifications such as retail, financial services, and healthcare but also the dozens of subindustries within those industries and even the dozens of industry-specific processes and subprocesses within each of those subindustries. Add to that the hundreds of countries and languages and thousands of legal frameworks, and the number of new solutions rolling into the market will be in the hundreds of thousands.

These solutions will encompass technologies from two or more of the 3rd Platform technology pillars, and since they will target the needs of individual subindustries, they will represent much greater sources of value than purely horizontal solutions. These solutions would not have been practical or profitable before — but they become possible with this new platform.

This section describes a few of the innovative new solutions that leaders in the retail, financial services, telecom, healthcare, and government industries are using to revamp their business models, enable digital transformation, and drive new sources of competitive advantage.

Retailers Are Bringing the Benefits of Online and Mobile into the Store

Some of the world's largest retailers are using 3rd Platform solutions to transform their business models. One example is emerging to combat the "showrooming" phenomenon, in which customers visit a physical retailer to get an in-person look at products and compare prices, then make the purchase online. Retailers are taking an "if you can't beat them join them" approach to bring the online world into the physical store.

A leading retailer is developing a mobile shopping app designed to transform its customers' in-store experience and bridge the divide between physical and mobile/online. The app provides an "in-store mode" that allows users to find products and scan QR codes for prices and discounts. It also provides the ability to find physical stores and access the consumer's online cart. New capabilities will include a predictive function to automatically generate shopping lists based on customers' weekly purchases as well as product recommendations based on specific user criteria.

These solutions use a combination of 3rd Platform technologies to completely rethink the customer's experience. Future plans call for the retailer to use Big Data to view the shopper's history, the products purchased in combination with other products, the impact of promotions, and the day of the week and time of day purchases are made. It will tap into social technologies to make recommendations based on what customers' friends or people with similar characteristics purchased. Of course, this is all powered by cloud technologies.

This 3rd Platform approach has already begun paying benefits. By providing contextually aware information to customers on their mobile devices, the retailer believes it is delighting customers — and increasing its share of wallet. Customers with the app make two more shopping trips a month and spend 40% more per trip; those most highly engaged with the app make nearly four additional trips per month and spend 77% more. Further, mobile already accounts for one-third of the retailer's traffic, a figure that rises to 40% during the holidays.

By providing contextually aware information to customers on their mobile devices, the retailer believes it is delighting customers — and increasing its share of wallet.

Financial Services Companies Are Revamping Payments Using 3rd Platform Solutions

The 3rd Platform is also having a profound impact on the financial services industry. A good example is the payments subindustry. Payments have traditionally been built on a simple premise: providing a set of "rails" to move money from one party to another while performing an accurate risk assessment and charging accordingly. But today, providers are starting to use the information available through payment operations as a source of competitive advantage.

Owning the payment relationship and data gives financial services providers an important link to the customer, and 3rd Platform payment mashups are emerging to leverage this information. Providers are using Big Data to gather and analyze vast quantities of information, including information obtained through social networks, and taking advantage of cloud as a deployment mechanism. And they are increasingly offering payment services through customers' mobile devices.

Owning the payment relationship and data gives financial services providers an important link to the customer, and 3rd Platform payment mashups are emerging to leverage this information.

Cloud is playing a critical role in the development of mobile wallets. Whereas retail payments were once defined by the use of a credit or debit card at a point-of-sale terminal, providers are now offering digital wallets that store the value in the cloud (and not as data on the phone). Customers need carry only credentials to prove their identity, not a specific piece of plastic. This can reduce security and fraud risks and limit the amount of financial services providers' out-of-pocket costs as a result of lost or stolen cards.

Many industry players are scrambling to adapt to the disruptive influence of the 3rd Platform, while others are adapting more quickly. Financial services companies are also using the 3rd Platform to team up with retailers to offer banking services through mobile phones, offer mobile-only services such as "mobile phone transfers" (using the counterparty's mobile number to designate the destination of the transfer), and partner with Twitter to "pay by Tweet."

Telecommunications Firms Using 3rd Platform to Gain Greater Relevance

In previous decades, it was sufficient for telecommunications companies to exact economic rents simply by charging for the pipelines that carry voice and data. But today telecommunications providers are fighting not to become a commodity and are looking to digital transformation to better monetize their unique role in the value chain.

One innovative initiative being pursued by a United States–based carrier consists of a mobile advertising service designed to make advertising more personalized and relevant to customers. This service uses a combination of 3rd Platform technologies, including Big Data, to package information on its tens of millions of customers (on an opt-in basis) into demographic data, behavioral data, and location data. This enables advertising agencies to develop better-targeted campaigns and provide more relevant ads to consumers. Advertisers can better ensure that they are reaching the right audience in the right context — improving the experience for consumers and driving greater value to the advertiser. The solution has been in the market for about a year and has proven successful as evidenced by the fact that the provider has already struck strategic deals with a number of major advertisers.

One innovative initiative being pursued by a United States–based carrier consists of a mobile advertising service designed to make advertising more personalized and relevant to customers.

In another example, a major European-based mobile operator is working to remain relevant to subscribers who are engaging in "over the top" social network sites. This provider is partnering with social networks, using Big Data to help social network providers better understand the profile of the telco customers who use their sites. The provider leverages this knowledge to target "best fit" customers within its customer base to get them to sign up with the social networks in return for a cut of the proceeds. Similarly, a number of mobile operators around the world have begun promoting materials (such as images) to customers that can be posted on Facebook or Twitter in exchange for operator-pocketed micropayments.

With these new offerings, telecommunications companies are carving out a niche unique to their role in the value chain, deepening their relationship with customers, and increasing their average revenue per user (ARPU).

Healthcare Using 3rd Platform Solutions to Provide Information to Patients at Key Decision Points

The healthcare industry in the United States is currently undergoing a rapid transformation, driven by new business models inspired by the introduction of government incentives for meaningful use of IT, the implementation of electronic records and technologies, and the passage of healthcare reform legislation in 2010. These changes moved business models from fee-for-service models toward fee-for-value incentives, inspiring more collaboration between providers and payers.

3rd Platform solutions are playing a key role in this transformation. Industry-specific solutions are being developed leveraging cloud-based portals, analytics, and mobile to tighten patient engagement and drive surprises out of the process. The goal is to improve the quality of care and outcomes while reducing costs.

Today's healthcare industry does a good job of addressing sudden and serious health issues, including emergencies and accidents, and has made broad strides in public health. But the primary cost challenge is treating chronic conditions found in aging populations who are living longer. Treating these conditions is difficult and expensive without appropriate technology, but new 3rd Platform solutions are beginning to make a real difference.

3rd Platform mashups are being used to engage patients with information to help them make the best choice with regard to key health-related decisions. Using predictive analytics enabled by Big Data, mobile, social, and cloud services, healthcare providers are helping patients change their behavior through the use of reminders, social influence, and education.

3rd Platform mashups are being used to engage patients with information to help them make the best choice with regard to key health-related decisions.

In the past, providing individualized care was an expensive proposition for healthcare providers because their staff had to individually manage each patient's regimen. Now 3rd Platform technologies provide much more cost-effective ways for providers to automate these processes and provide proactive care such as prenatal information services and tailor regimens to the needs of the individual. Nearly every large health system around the world and a large number of U.S. private payers are experimenting with these technologies to provide population health management.

Leading-Edge Government Agencies Using 3rd Platform to Improve Services and Reduce Costs

Government agencies contain some of the most advanced and some of the most lagging IT systems in the world. While government sectors such as defense, security, and space are among the earliest adopters of 3rd Platform technologies such as Big Data and cloud, other agencies are firmly rooted in the 2nd Platform paradigm.

Many agencies' IT environments contain duplicate legacy systems, resulting in low asset utilization, resources with fragmented demand and that do not scale, and systems that are difficult to manage and maintain. In response, a number of government agencies are beginning to implement 3rd Platform technologies in a bid to address inefficiencies while improving government service delivery.

A number of government agencies are beginning to implement 3rd Platform technologies in a bid to address inefficiencies while improving government service delivery.

One example at the national government level is the U.S. Department of Agriculture (USDA), which recently launched a private cloud service for other federal government agencies that need to implement IT solutions consistent with federal information security standards. By offering other government organizations the benefits of cloud computing, including on-demand provisioning, resource pooling, elasticity, network access, and measured services, the USDA is facilitating the ability of government organizations to efficiently meet demand from citizens for better services delivered more quickly.

An example at the state/regional level is a recent initiative by the Washington State Department of Labor and Industries, which is using Big Data to analyze data sets across multiple government systems and agencies to detect possible instances of fraud in its workers' compensation program. The initiative has been so successful in its ability to recover millions of dollars each year that it is on track to pay for itself in less than 24 months.

At the local government level, the Domain Awareness crime monitoring system was recently developed by New York City in conjunction with Microsoft. It uses Big Data to better collect, disseminate, and analyze data in real time using a series of mobile and intelligent devices including cameras, license plate readers, and other resources around the city. This system not only is improving the ability to fight crime but also is providing an innovative new revenue stream for the city. Under the deal, Microsoft has the rights to remarket the offering to other cities and local governments, with New York receiving 30% of the proceeds.

IDC OPINION: BEST PRACTICES FOR THE 3RD PLATFORM

IDC recommends that you consider the following best practices as you look to new digital transformation initiatives using 3rd Platform solutions:

- ☒ **Refresh IT competencies.** Most of today's IT organizations were built around 2nd Platform technologies, and implementing innovative 3rd Platform solutions can require skills and expertise that they currently lack. IT organizations must revamp themselves with the goal of becoming "3rd Platform IT organizations." You should refresh your technologies, skills, and business practices in the areas of cloud, Big Data, mobile, and social technologies — the new core IT competencies for the next two decades. You should look to become leaner and in the process become comfortable outsourcing noncore activities so that you can remain focused on your core competencies.

- ☒ **Rethink the core business model.** The changes enabled by the 3rd Platform extend well beyond the IT organization and touch upon your company's very business model. Organizations with new digital transformation initiatives will need to decide whether to maintain old models such as keeping their most important assets behind the firewall, work closely with a small number of partners, or leverage 3rd Platform innovations to enable a community of potential partners to work with them and leverage their core IP. The 3rd Platform enables new business models and lets companies amplify their value by using cloud service platforms to distribute their products and services and enable partners to deliver their own value-added solutions.

- ☒ **Leverage industry-specific cloud platforms.** You should look to leverage one or more of the new generation of 3rd Platform solutions being developed that serve your specific industry's needs. As noted previously, IDC expects there will be hundreds of thousands or more industry-specific cloud platforms — as well as next-generation replacements for current core applications — and that they will offer levels of value that go well beyond the value of the past decade's largely horizontal core business systems such as ERP or CRM. You should move quickly to take advantage of these new services.

- ☒ **Extend the business model to become an industry-specific platform provider.** Beyond the idea of merely *using* industry-specific cloud platforms, there is also a significant opportunity for companies to transform their business by *becoming* industry-specific platform providers. A variety of business models support this concept, including using the cloud as a place to market and distribute your company's intellectual property content and using your platform to enable a community of innovative players whose goal is to create, market, and distribute their own services. By becoming a center of innovation in your own industry and enabling other companies to distribute their content through your portal, you can increase visibility and viability within your industry. This is very similar to the iTunes model.

- ☒ **Fast track with preintegrated industry digitization solutions.** Vendors are providing a variety of approaches to support enterprises' digital transformation. At one end of the spectrum are generic technology platforms for cloud, analytics, social, and mobile solutions. At the other end are a new generation of narrowly focused point solutions. Both of these approaches require customers to do quite a bit of integration. IDC believes that we will increasingly see the emergence of preintegrated industry solutions in key areas such as customer analytics, digital commerce, supply chain management, management of intelligent infrastructure (including the "Internet of things"), and more. Keep an eye out for these new 3rd Platform–based industry solutions; they can provide a fast track to digitization of critical and fast-evolving processes.
- ☒ **Engage in new levels of dialogue.** With the 3rd Platform model, the role of IT is changing. IT organizations must partner with line-of-business executives to transform their businesses into "3rd Platform enterprises" capable of competing and winning in the new economy. As an integral part of the offerings, services, and support provided by the company, IT will need to partner with the rest of the business while breaking down organizational silos.
- ☒ **Revamp digital commerce, customer analytics, and intelligent infrastructure.** 3rd Platform solutions are being used for a wide variety of digital transformation initiatives, including reinventing the ways companies reach customers, learn about customers' preferences and behaviors, and develop new innovations. The 3rd Platform is disrupting business models and enabling the "Internet of things." Organizations that can move quickly to leverage these new opportunities will find themselves in an advantageous position relative to competitors.
- ☒ **Find appropriate partners.** Even as IT organizations add new skills to their in-house teams, an important component of the 3rd Platform is that enterprises should not try to do everything themselves. They should focus on their core competencies while sourcing noncore activities from world-class partners and take advantage of partners' expertise to accelerate their journey down the 3rd Platform road to innovation and growth; however, selecting the right partners is an important piece of the equation. You should seek partners that not only provide world-class competence in 3rd Platform solutions but also have the best practices and business consulting acumen to help in this transition.

CONCLUSION: THE TIME TO ACT IS NOW

The 3rd Platform has become the dominant strategic priority for enterprise IT leaders and will represent 95% of the growth in strategic IT investments over the next seven years. But the change from the previous computing paradigm does not come without cost or risks, and IT organizations need to be prepared.

The 3rd Platform is being used to digitally transform entire industries and develop major new sources of competitive advantage. Hundreds of thousands, if not millions, of industry-specific cloud service platforms and marketplaces will emerge, and the highest-value technologies and solutions will be found in these locations. Combinations of 3rd Platform technologies will transform — and already are transforming — industries such as retail, financial services, telecommunications, healthcare, and government.

Organizations looking to maximize their use of 3rd Platform innovations must reinvent themselves to become not only "3rd Platform IT organizations" by retooling their skills and practices but also "3rd Platform enterprises." Any organizations that have not already embarked upon a digital transformation path must consider doing so urgently — before the competition leaves them behind. The 3rd Platform will be the essential basis for competing in every industry on the planet, and IT organizations must lay the foundations — and select the right partners — to succeed in this new world.

Copyright Notice

External Publication of IDC Information and Data — Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2013 IDC. Reproduction without written permission is completely forbidden.