



EXCERPT

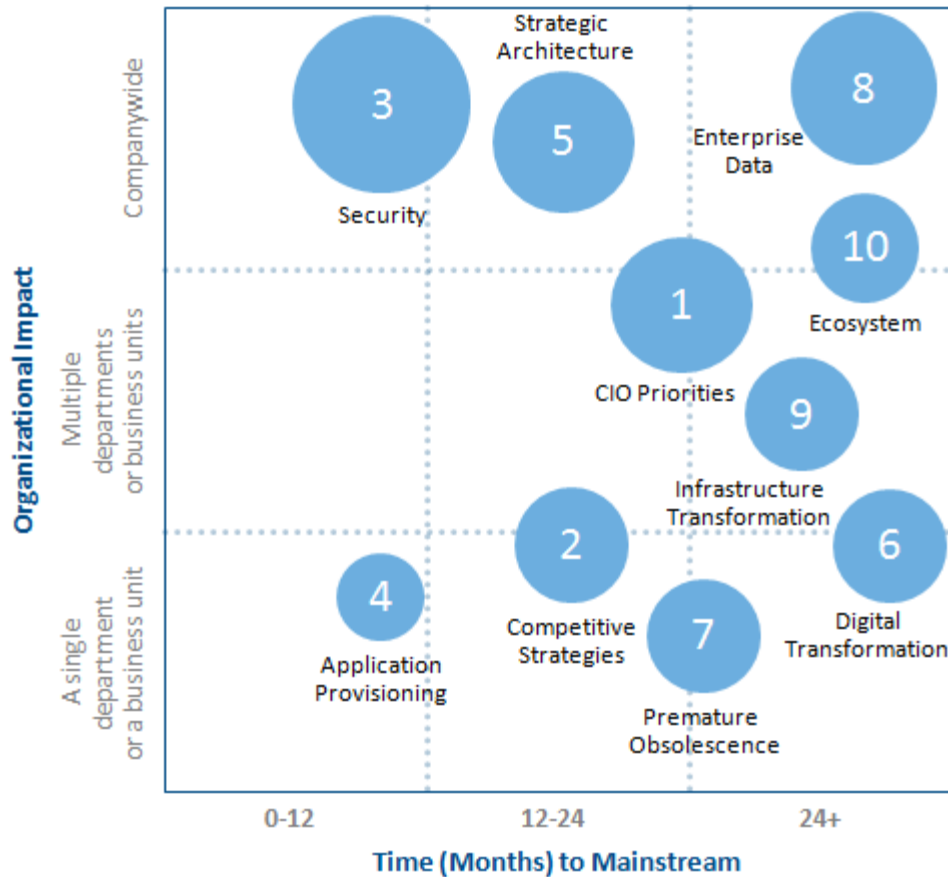
IDC FutureScape: Worldwide CIO Agenda 2015 Predictions

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IDC FUTUREScape FIGURE

FIGURE 1

IDC FutureScape: Worldwide CIO Agenda 2015 Top 10 Decision Imperatives



▪ Note: The size of the bubble indicates complexity/cost to address.

Source: IDC, 2014

Figure 1 presents IDC's CIO agenda top 10 decision imperatives in terms of their likely impact across the enterprise and the time it will take for the decision imperatives to reach mainstream. By

mainstream, IDC means the broad middle of the bell curve of adoption (i.e., the 40-60% of enterprises that are neither the first movers and early adopters nor the last to act). Each bubble's size provides a rough indicator of the complexity and/or cost an enterprise will incur in acting on the given decision imperative.

IN THIS EXCERPT

This is an excerpt of IDC's FutureScape: Worldwide CIO Agenda 2015 Predictions, IDC doc #252235, October 2014, which provides IDC's top 10 decision imperatives for the 2015 CIO agenda. These decision imperatives provide the strategic context to enable CIOs to transform their role and enterprises through the creative and innovative application of technology to business challenges. This document offers IDC analysts' collective understanding of major industry transitions and advice to CIOs to consider in their strategic planning.

EXECUTIVE SUMMARY

10 Decision Imperatives

Decision Imperative 1: CIO Priorities – By 2017, 80% of the CIO's Time Will Be Focused on Analytics, Cybersecurity, and Creating New Revenue Streams Through Digital Services

The use of technology, enabled by the 3rd Platform, will evolve rapidly over the next few years, presenting CIOs with an opportunity to redefine their job role. In their new role as a business peer, CIOs will need to deliver new revenue streams, mitigate business risks, and unleash the value of data. A recent IDC survey of 209 CIOs indicates that 57% expect to be defined in terms of "delivering business innovation to increase revenue, margins, and new products" in order to address the demand for innovation, speed, and agility in competitive markets. Only 10% of CIOs expect their role to continue with the traditional "focus on maintenance and operations to manage cost and risk."

However, one risk that is increasing dramatically and that must be addressed is that of cybersecurity, which will take an increasing percentage of CIOs' (and other executives') attention.

Finally, the use of analytics will drive competitive differentiation, and organizations without both good information management and good analytics will quickly fall behind. The CIO will be required to provide appropriate information management and will then be positioned to provide enterprisewide insights and competitive business value.

IT Impact

- 3rd Platform technologies compel IT to redefine and justify its role.
- Cybersecurity concerns require IT leadership and ongoing CXO accountability.
- Competitive markets demand innovation, agility, and speed.

Decision Imperative 2: Competitive Strategies – By 2016, 65% of Global Competitive Strategies Will Require Real-Time 3rd Platform IT as a Service

3rd Platform technologies are making fundamental changes not only in the way IT organizations work but also in the way business is conducted and how enterprises compete. Already today, and

increasing over the next few years, competitive business strategies will require 3rd Platform capabilities to understand and engage with customers and partners.

But for IT organizations to be competitive with external forces and the cloud, they must provide an equivalent service paradigm. This will require restructuring IT to deliver IT as a service and, in particular, to deliver ITaaS 3rd Platform capabilities focused on realizing the enterprise's competitive strategies. This trend has already started. In IDC's recent *CIO Sentiment Survey*, 83% of CIOs said that they are judged on IT service availability and 61% said they are judged on new IT service creation and innovation.

IT Impact

- Market availability of vast XaaS offerings will transform traditional IT delivery to a service paradigm.
- Defining service interactions and allocating resources require close collaboration with LOBs.
- Service "delivery of everything" supersedes virtualization and software enabling.

Decision Imperative 3: Security – By 2016, Security Will Be a Top 3 Business Priority for 70% of CEOs of Global Enterprises

A week doesn't go by without some sort of security incident in the news. Remember the recent breaches at Target, Home Depot, and JPMorgan? What were the costs? But it is not high school punks who are behind it anymore. Cybercrime is sponsored by governments, corporations, and organized crime – entities with the resources to hire top talent and the patience to pick away until an attack has been successful.

Previous security models that constructed a "fortress" around the enterprise are no longer effective. In addition to the increasingly sophisticated attackers, the proliferation of devices adds millions of new vulnerability points. And even if we are secure ourselves, our partners and global outsourcers might not be, providing a vector into our enterprise.

Liabilities from security breaches damage brands and dwarf other losses. Security is no longer just the concern of a few specialized personnel. It will be elevated to a top priority of CEOs and senior leadership, either proactively or reactively, in response to yet another expensive incident. As in the Target case, executives do lose their job as a consequence of breaches. The CIO is well positioned to take a senior leadership role with respect to security, where the complexity, scale, and scope of the problem leave many business leaders unprepared to respond.

IT Impact

- Accountability for risks elevates IT's relevance and the CIO's opportunity to lead and cannot be delegated.
- Exposure increases exponentially when LOBs, functions, and partners introduce independent solutions.
- Grave potential consequences to the business highlight the enterprise's limited skilled security resources.

Decision Imperative 4: Application Provisioning – By 2015, 60% of CIOs Will Use DevOps as Their Primary Tool to Address the Speed and Sprawl of Mobile, Cloud, and Open Source Applications

The speed and scope of applications are expanding rapidly while at the same time the variety and complexity of technology increase, putting extreme stress on conventional application deployment methods. More and more applications are being sourced from the cloud, requiring quick integration with the enterprise ecosystem.

The pervasiveness of open source and GitHub makes a large repository of code freely available, and the preferred method of application development has been permanently altered. Agile development and deployment of code for improved response to rapidly changing business needs continues to outperform other approaches.

DevOps, the tight integration of development, test, and operations, has been a proven technique for years, but it was typically seen only in agile organizations. The 3rd Platform demands for speed, scope, variety, and different development models are not well served by traditional approaches but can be met by incorporating DevOps into the IT processes. This will be one of the primary tools that IT will have to address these new requirements.

As we have evolved through the 1st, 2nd, and now 3rd Platform of technology, we have also evolved how we focus our teams: from total quality management in the 1980s to Kaizen in the 1990s to agile in the 2000s to DevOps now in the 2010s. The initial goals were to make the systems more robust, reliable, and resilient. The subsequent goals were to provide a closer alignment to business needs and provide speed. We have already seen a new approach emerging: business change management and the antifragile technology environment. The term *antifragile*, coined by Nassim Nicholas Taleb in his book, *Antifragile: Things That Gain from Disorder (Incerto)*, calls for building a system that would not only resist but benefit from dramatics and unexpected changes. With an antifragile approach, you must prepare for the very rare events, which Taleb calls "black swan events." Statistical approaches have been very beneficial for improving quality. However, the assumption that what is outside the interval of confidence will rarely happen is challenged by the explosion of data and the rapid extension of the digital universe. With an increase in numbers, what was rarely supposed to happen will definitely happen. It becomes important to ask "what if?" and plan for it.

IT Impact

- LOB leaders are adopting their own technology agendas, and IT must organize itself to support them.
- Total cost of ownership receives too little consideration in sourcing decisions, increasing the burden on IT.
- Continuous delivery of 3rd Platform services, enabled by an enterprise reference architecture, must be competitive with external sources.

Decision Imperative 5: Strategic Architecture – By 2016, 80% of CIOs Will Deliver a New Architectural Framework That Enables Innovation and Improved Business Decision Making

Architecture is one of the primary tools of an organization for managing complexity, accommodating change, providing consistency, and improving agility. Every one of these characteristics is critically important in an enterprise's ability to survive and thrive in the 3rd Platform. Or to put it another way, the

complexity, scope, and rate of change driven by the 3rd Platform cannot be sustained without a robust architectural foundation.

But, like everything with the 3rd Platform, architecture must also change – not the fundamental principles and techniques but the areas of focus that architecture responds to. IT infrastructure is being outsourced and is less of an architectural concern for most organizations. But decentralization of IT sourcing (to the cloud) exacerbates integration and creates redundancy and complexity. In IDC's *CIO Sentiment Survey*, only 30% of organizations have "established cloud architecture standards for adoption of new cloud services."

The demand for information and analytics will continue to skyrocket and will quickly outrun the organization's ability to provide, manage, move, understand, or validate the data, unless a solid information architecture is in place. And of course, we cannot forget about security, which has to be implemented at every level of the enterprise, technology, applications, information, and business.

To meet these challenges, CIOs will direct their architecture efforts toward providing a new framework, including security, data and information, integration, and ITaaS, that enables business agility and innovation and supports improved decision making.

IT Impact

- Flexibility and agility require quick provisioning of all 3rd Platform services.
- LOB technology acquisition depends on a proactive enterprisewide integration framework.
- Security and data must be expressed in business-oriented architecture perspectives.

Decision Imperative 6: Digital Transformation – By 2020, 60% of CIOs in Global Organizations Will Be Supplanted by the Chief Digital Officer for Delivery of IT-Enabled Products and Digital Services

The 3rd Platform is as much a transformation to new business models as it is about technology. IT is no longer just a supporting function but instead enables the delivery of products or, in the case of new digital services, is the product itself. However, most IT organizations have yet to realize the new opportunity, potential, or imperative. In IDC's *CIO Sentiment Survey*, 64% believe "the primary way IT can drive innovation" is automating or transforming processes. Only 36% identified creating IT-enabled products or services. When asked "what is the primary way your organization can deliver innovation," 60% identified increasing employee productivity, while only 26% cited improving the customer experience.

While this internal rather than external focus for IT is easily understandable given the past 50 years of IT history, it also creates a gap in IT focus. We all know that nature abhors a vacuum, and already we are seeing it being filled by new leadership in the role of chief digital officer (CDO). CIOs will be challenged to either fill this gap with new innovation or see their role diminished and supplanted by the new CDO. Again, as in many of the decision imperatives, the CIO has an opportunity to step up into new areas, leveraging his/her experience in strategy, innovation, relationships, services, and enterprise scope.

IT Impact

- IT organizations must move beyond automating business processes to provide IT services and IT-enabled products.
- CIOs will be challenged to fill the growing gap for the CDO role.

- Some CIOs will find an opportunity to expand their role, leveraging their experience in setting strategy, innovation, and relationships.

Decision Imperative 7: Premature Obsolescence – By 2016, 80% of CIOs Will Accelerate 3rd Platform Migration to Counter Premature Obsolescence of Current IT Assets

Advances in technology have always been balanced against leveraging existing investments. A major challenge of enterprise IT over the past few decades has been the integration of legacy systems into distributed, enterprise environments to continue deriving value from previous investments. However, several forces shift this balance with respect to the 3rd Platform.

In addition to omni-channel "anywhere, anytime, any device" changes, a major characteristic of the 3rd Platform is the rich user experience, tied in with social networks, and the collection of big data. A second major issue is the increasing magnitude and complexity of security threats. From one perspective, any IT system that is no longer supported by regular EOM maintenance and updates is a security risk.

Together, these factors combine to usher in a rash of premature obsolescence of current IT assets, which were simply not built to meet these new requirements and which cannot easily be upgraded to support them. The shift away from existing IT assets can be delayed, at a cost, but cannot be avoided. The CIO can lament the rapid loss of value or grab the opportunity to migrate to new, flexible, variable-cost, service-based solutions to legacy business applications.

IT Impact

- Previous strategic investments are becoming liabilities and constitute a drag on IT's ability to move at the speed of business change.
- Existing IT assets are not designed to support increasingly complex cyberthreats or 3rd Platform user expectations.
- The CIO's credibility is challenged when making the case for ignoring sunk costs and transitioning to 3rd Platform solutions.

Decision Imperative 8: Enterprise Data – By 2018, 30% of CIOs of Global Organizations Will Have Rolled Out a Pan-Enterprise Data and Analytics Strategy

A typical enterprise principle is that "data is a critical asset." With big data/analytics, this statement is more true than ever. If IT and the business accept this principle, it implies that data must be cared for and managed – that the accuracy of data is vital to business decisions, and hence data should have stewards and governance. A key aspect of most IT implementations is the data/information framework that manages the acquisition, storage, movement, transformation, analysis, and governance of data.

However, in today's world, this business principle has a corollary: "Data is a liability." The impacts of security, privacy, protection, and business confidentiality have increasingly large consequences. Data loss or theft can result in brand damage, lawsuits, hundreds of millions of dollars to reissue millions of credit cards, and the loss of competitive intellectual property.

Massive amounts of data are being produced and stored, but less than 20% of the data is analyzed, and IT organizations cannot keep pace with the speed of data growth. Data monetization, and business insights – core to effectiveness and efficiency, directly depends on the transformation of data into information and insight. To meet these new requirements, IDC suggests that data should be

managed with a similar diligence that the business applies to financial or physical assets. Two important aspects to this management are first, a pan-enterprise strategy for collecting and analyzing information, and second, a framework that supports the consistent acquisition, storage, movement, transformation, reporting, and analysis of existing, traditional, and new forms of data.

IT Impact

- Data must be managed as a critical asset and an increasing liability.
- Data management requires the same rigor applied to financial or physical assets.
- As data floods the enterprise, IT must create value by selectively transforming data into information and insight.

Decision Imperative 9: Infrastructure Transformation – By 2017, 35% of Vendor Sourcing Relationships Around 3rd Platform Technologies Will Fail, Causing CIOs to Roll Out New Sourcing Processes

As enterprises move IT sourcing models to third parties, an inevitable shakeout will occur. As with anything new, "stuff happens," but that stuff isn't always good. "What you see may not be what you get" in the deployment of cloud services sourced from unknown origination that may be in potentially undesirable sovereignties. Even when this is not an issue, how do you know that a cloud provider is up to date on all hardware and software updates and is following appropriate security policies and practices from a hiring, entitlement, or infrastructure perspective?

What happens when a third-party supplier doesn't meet SLAs, or is acquired by your competitor, or changes its business model and deemphasizes the product you have? Or if a third-party supplier simply goes out of business because of poor strategy, finances, or mismanagement?

IDC expects to see a failure rate approaching one-third of all sourcing relationships until 3rd Platform vendors mature. Given those concerns, combined with security, legal, and other issues, 3rd Platform initiatives accelerate the need for IT due diligence in the procurement of IT services.

IT Impact

- 3rd Platform initiatives and their underlying risks accelerate the need for IT due diligence.
- Safe harbor and similar regulations require evidence of due diligence to achieve compliance and avoid expensive, crippling litigation.
- Suppliers' poor service, financial failure, changed strategies, or acquisition force IT to take on due diligence challenges.

Decision Imperative 10: Ecosystem – By 2018, 50% of CIOs Will Relinquish IT's Traditional Mode of Technology Control in Favor of an Open Standards-Based Framework

BYOD is pretty much a fact of life for enterprise IT these days. Some organizations will try to resist but will face an uphill battle, particularly with customers and partners. Most organizations have already adopted BYOD or are actively pursuing it. Essentially, companies in a competitive environment will have no choice but to allow consumers, customers, partners, employees, and contractors to use their own device or access of choice, especially at the point of revenue.

The old command and control approach, which could be enforced within an enterprise, will not survive in the extended enterprise ecosystem. Instead, organizations will have to relinquish traditional control

models and shift to a standardize-and-integrate framework based on open standards that allows partners and customers the flexibility they need or desire.

IT Impact

- BYOD and the expanding ecosystem of customers and partners require a rethinking of IT's role and relationships.
- IT's shrinking areas of control require flexible, forward-thinking leadership.
- Standards focused on security and integration but that also support user choice are crucial to IT relevance.

ESSENTIAL GUIDANCE

During the past year, IDC has conducted numerous benchmark studies to understand the impact of the 3rd Platform on the IT organization. What we have found striking is how two largely opposite attitudes are displayed by IT organizations. On one side, still a majority, are the *survivors* who adopt a wait-and-see attitude when it comes to innovation or changing their processes. This approach is essentially reactive and avoids any involvement until there is a proven need or until, against all warnings, a new technology is de facto introduced by an LOB. This is a dangerous attitude with loss of credibility and forcing IT to squander resources to support solutions that were never architected or budgeted for.

On the other side, the *thrivers* decide to make IT more strategic and a true business partner, becoming an innovation champion. These IT organizations are proactive, not afraid to experiment and fail or to make decisions with limited experience in the technology, going beyond their comfort zone. Thrivers seem to take more risk and probably display more visible failure. However, IDC's benchmarks find that thrivers have become rapidly more mature in every dimension of the enterprise IT transformation.

IDC summarizes the following guidance for 2015 to CIOs who want to thrive rather than just survive:

- Champion innovation, and create a 3rd Platform architecture.
- Make security a senior executive concern.
- Streamline processes to provide ITaaS at the pace of business demands.
- Collaborate and educate.

About IDC

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