

Cobbling Tools Together To Manage Your BT Agenda

Tools And Technology: The Business Technology Agenda Playbook

by Bobby Cameron

January 11, 2016

Why Read This Report

As the chief tech exec — and the only exec with visibility into all of a firm's digital assets — CIOs must provide the crucial end-to-end perspective on these assets used for the BT agenda. To do this, CIOs need a toolkit with visibility into digitally enabled customers' outcomes. But today's tools fall short, isolated, standalone solutions targeting limited technologies. This report shows how the current state of tech management tools and data must change in the age of the customer — and how CIOs' must assemble their own toolkit to manage customer outcomes.

Key Takeaways

CIOs Must Manage Customer Outcomes

Customers expect a coherent experience -- across the enterprise, distribution channels, and their entire journey. CIOs must manage the digital technologies to enable this experience.

Vendors Aren't Providing The CIO's Toolkit

Tech management tools vendors remain focused on standalone digital technologies or the teams that manage them. They have yet to provide the tools to manage firms' end-to-end solutions.

CIOs Must Assemble Their Own Toolkit

To manage the digital technologies that enable customer outcomes, for the next three to five years CIOs must assemble multiple vendors' tools into their toolkit.

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Forrester interviewed vendor companies, including Aptio, Be Informed, BWISE, Cherwell Software, Mvine Limited, Neo Group, Numerify, OpenConnect, OpenText, Pegasystems, Planisware, Planview, Rocana, Rsam, Software AG, Verint (KANA), and VMware.

Related Research Documents

- [CIOs, CX, And End-To-End Tech Management](#)
- [How Ecosystems Fuel Digital Business](#)
- [The Top 10 Technology Trends To Watch: 2016 To 2018](#)

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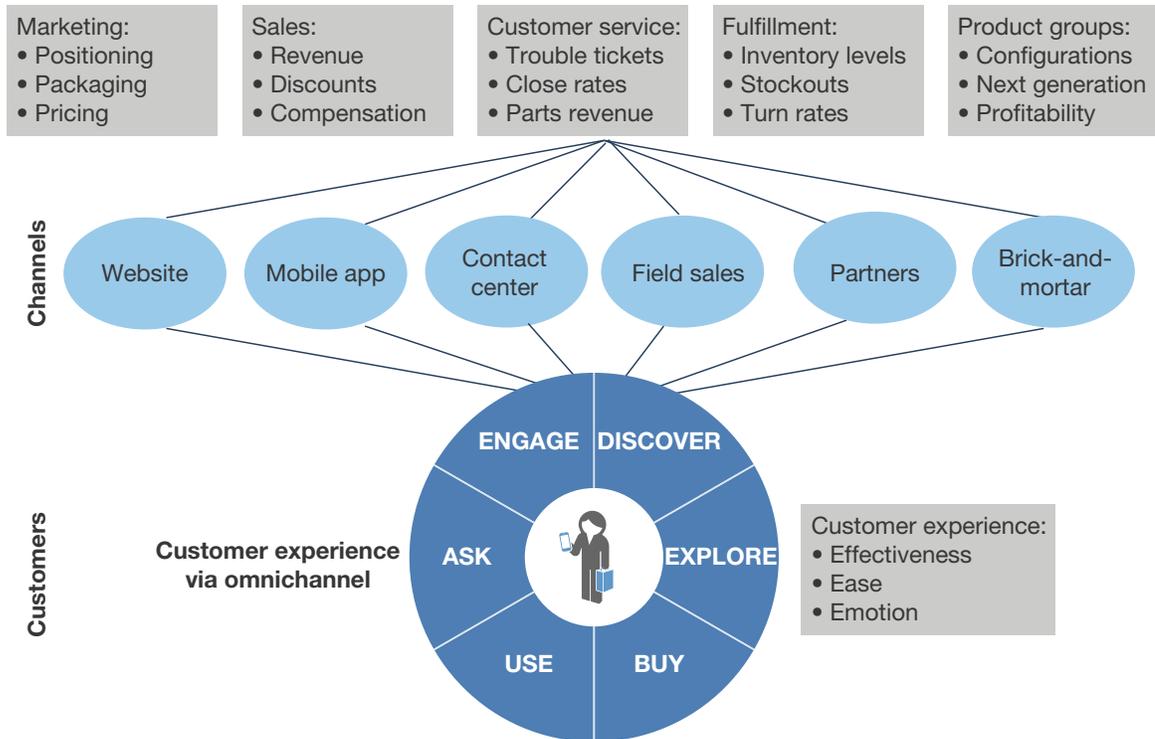
You Must Oversee Your Firm's Digital Assets — End-To-End

Digitally empowered customers want coherent digital engagement from the firms with which they do business. Their expectations have been evolving; from an initial fascination with cool individual touchpoints toward a high quality, total life-cycle experience. This includes omnichannel engagement, consistent across their journey and through every touchpoint, end-to-end — whether direct or indirect. Who is in the best position to oversee the digital mechanisms that increasingly provide end-to-end experience? The CIO. As a result, you must (see Figure 1):

- › **Step up and lead governance of digital assets.** The CIO's broad responsibilities mandate that they interact with all of the digital assets that affect customer experience (CX). They drive the internal plan, build, run, and securing cycles. And they manage integration and runtime support of third-party services not delivered internally — like sales and marketing automation through Salesforce or product fulfillment through distribution partners and resellers. They may not “own” management of all digital assets, but they have to play a central role ensuring that digital assets are properly governed.
- › **Obtain a toolkit to manage your customers' end-to-end digital outcomes.** The CIO's accelerating BT agenda focuses on applying digital assets to win, serve, and retain customers. But digital is a multi-edged sword: It's easier to integrate, cheaper to run, and can provide superior brand fidelity, but it's also easier to copy, steal, and corrupt. The exploding complexity of these digital assets will kill the business if not orchestrated effectively.

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FIGURE 1 Customers Expect Coherent Experience Across The Enterprise, Their Ecosystem, And Their Journey**CIOs Must Oversee End-To-End Delivery And Capture Of Customer Value**

Your business is going digital, which means your business model is evolving to apply technology to deliver value (by creating, embedding, or complementing offerings with digital), capture value (mainly in the form of revenue and customer insights), and turn those activities into sustainable profits (by automating and optimizing operations with plastic systems). This is a significant challenge, and you must undertake it with concerted purpose and end-to-end governance. That's where you as the CIO need to step in. As CIO, your end-to-end management charter requires that you:

- › **Monitor and respond to technology through a CX lens.** As businesses across all functions and activities leverage new technologies to enable effective CX, CIOs must also expand their ability to see and act on behalf of customers' experience, across the entire customer journey. This includes engagement on mobile devices, third-party as-a-service platforms, and distribution channel partners' technologies. But this isn't happening for many CIOs. In a recent Forrester survey of infrastructure and operations respondents, 55% report that they receive information about CX problems ad hoc and directly from customers and not programmatically from internal sources.¹

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- › **Track and orchestrate end-to-end services across sources.** The quality and coherence of customer experience requires a design and runtime governance framework capable of orchestrating complex development and operations efforts across internal groups, suppliers, and channel partners. Spaghetti applications do damage to a firm's systems of record, but they can kill a firm's systems of engagement.² The CIO's focus must extend beyond the firm's four walls and has to include oversight — tracking, monitoring, and managing digital asset life cycles. But the other business organizations' roles are changing as well, and they need the CIO's help to see and understand the full customer experience.
- › **Drive governance based on customer value delivered.** Traditional cost-benefit models expand to include risk and the flexibility to support future strategies — what Forrester calls the Total Economic Impact™ (TEI).³ Cost doesn't go away as a primary concern, but growth and agility take at least an equal position. This broader perspective must be driven through a governance model Forrester calls outcome management — a fast-cycle approach that uses a continuous investment model to fund outcomes, not projects.⁴
- › **Represent implementation of digital business transformation to the board.** With exploding top-down emphasis on digital, CIOs must show digital plans and successes, tracking digital transformation daily — especially digital CX. Of course, many CIOs report the performance of isolated tech management assets when presenting to the board. But this focus on costs, like reduction of surplus capacity, or isolated issues like security breaches, misses the bigger CX picture linked with business outcomes.

Tech Management Tools Aren't Ready To Manage Your BT Agenda

Unfortunately, today's CIO has no toolkit to execute this end-to-end management role. Today's technology management tools focus on technology asset performance — the CIO's traditional role. As a result, the tools tie to specific technologies or the tech functions responsible for those assets — like server utilization and performance for server management, resource demand management for development teams, or process cycle times for service desk. They provide data for these isolated tasks but seldom address the role that these technologies play in CX. For example, tools that manage call center and customer-service-representative productivity look at data like first call close rates. But these tools don't integrate factors that would provide the bigger context for CX — like poor public network performance that leads to inadequate mobile application performance. Instead they:

- › **Only create tools to manage point solutions.** Responding to the solutions users build, the tech management tools vendors perform targeted tasks. Today's tech management tools only handle tasks specific to the assets or the tech management teams that manage them. And while many tools vendors are expanding their focus to reach into the business functions that interact with customers — like sales, marketing, customer service, fulfillment, and product/service development — the vendors remain targeted on technology productivity, not customer outcomes. Individual tech management

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teams — like the PMO, security management, or app development — use these tools to meet their teams' specific needs. As a consequence, any management data generated by these tools focuses on local, tech management outcomes like costs, cycle times, and utilization rates.

- › **Have yet to recognize the CIO's need for an end-to-end toolkit.** As firms weave their digital investments into a coherent, end-to-end set of services for customer engagement, the tools vendors have yet to provide a toolkit for managing these new services. The tools have to connect the customer outcome with the multiple technologies involved in helping deliver that outcome. This connection includes the performance of each of the component technologies but the outcome determines the end-to-end-solution's performance. For instance, the B2B customer of an office furniture manufacturer may be using a configuration tool that runs on a laptop to do the planning. But that the customers' ability to design and place an order would depend on back-office customer information, configuration, pricing, and availability in order to optimize the customers' experience.

Tools Vendors Must Move Beyond Their Traditional Roles And Markets

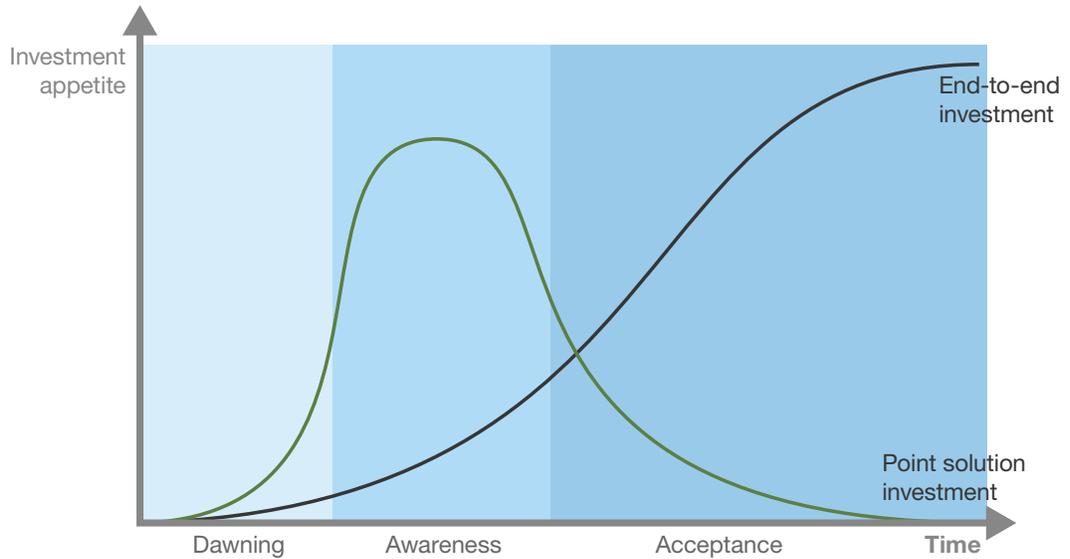
To complete their charter for end-to-end management, CIOs need a toolkit that reflects the outcome of tech-based services on customers — reliability and repeatability — at the lowest cost. The CIO's attention is shifting to aggregations of technologies that together provide an end-to-end solution — like Home Depot's checkout service, packaged as a continuous business services (CBS), used by all customer channels and connecting with a variety of systems of record.⁵ These aggregations behave as services that persist and whose success depends on the services customer impact and not the performance of any individual technical asset.

The money is there. Firms spend a lot on BT, reaching 29% of overall US tech purchases by 2016.⁶ Most firms have made these initial BT investments as standalone point solutions (see Figure 2). But as firms mature their CX solutions, BT investments reach end-to-end — like managing omnichannel value delivery and enabling CX across the customer's entire journey.⁷

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FIGURE 2 Technology Trends Move Toward End-To-End Digital Investments In Three Phases



	Dawning of investment	End-to-end awareness	End-to-end acceptance
Appetite for investment	High appetite for ad hoc point solutions	Growing appetite for end-to-end solutions; point solutions peak and begin to decline	High appetite for end-to-end solutions
Focus on innovation	Driven by new inventions and experimentation	Driven by a mix of experimenting with new inventions and innovating on existing inventions	Driven to solve complexity, mostly by innovating on existing inventions
Enterprise-wide engagement	Delivered by individual organizations	Delivered by a mix of individual and ecosystem-wide organizations	Mostly delivered as part of ecosystemwide operating models
The CIO's engagement	Little tech management involvement	Increasing tech management involvement	Significant tech management involvement

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Vendors Must Expand Beyond Their Isolated Roles Or Become Second Tier

To understand the current state of tech management tools — and the mindsets of tech management tool vendors — we interviewed 17 across a spectrum of capabilities. Most automate specific functions like security, portfolio management, or development (see Figure 3). A few focus at a tech-management-leadership level by aggregating data for service-level agreement (SLA) or financial management (see Figure 4). All of the vendors we interviewed could play a role in the CIO's toolkit — either providing data and tools at the foundation layer of the CIO's toolkit or evolving to be the toolkit itself — providing visibility across tool sets. But none of today's tools come close to providing the end-to-end view necessary to oversee digital customer engagement

In this research, we looked at the tools meant to manage the technology as well as tools meant to manage business activities — like security, process flow, and service delivery. Much of the data required for the CIO's BT agenda toolkit exists in individual applications that monitor and manage isolated technologies and processes. For example, Mvine provides a platform for bringing together data from multiple systems of record into a business context within social media. And OpenText handles a wide variety of content for customer activities across multiple devices. But even the best vendors play in isolated markets, with growth focused on market adjacencies and not on the overall BT agenda.

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FIGURE 3 Current Tech Management Tools Are Way Too Granular To Help CIOs

Tool category	Sample of tool capabilities
Resource/demand management	<ul style="list-style-type: none"> • Project portfolio management (PPM) • Application portfolio management (APM) • Business services management (BSM/ITSM)
Tech management performance	<ul style="list-style-type: none"> • Balanced Scorecard (card development, management) • Portfolio options management • Tech management asset management • Business case development/management
Service design and delivery	<ul style="list-style-type: none"> • EA artifact/content management • Solution design management • Solution development management • Project management • Quality management • Test and learn discovery
Service performance management	<ul style="list-style-type: none"> • Technology service management (ITSM) • Infrastructure management (networks, servers, and storage) • Application performance and business transaction management (application management, DBMS, end user experience) • Dashboards and analysis (events, incidents, trouble tickets) • Capacity, provisioning, and virtualization management • Process and workload automation (including job scheduling) • Discovery and configuration management systems (including change) • Security management • Storage management
User service and process management	<ul style="list-style-type: none"> • Service desk • Tech management process management • Tech management catalog • Complex event management
Service support and resource management	<ul style="list-style-type: none"> • Service-level management (business services management, SLA management) • IT asset management IT asset management • Service portfolio management • Service catalog management • Workforce management (time sheets) • IT financial management (cost recovery as well as usage showback) • Data center resource management • Vendor management (contract, tiered management, SLAs)

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FIGURE 4 Vendors' Participation In CIOs' BT Toolkit

Vendor	Target users	Value delivered	Potential role in the CIO's toolkit
Apptio: Apptio	TM leadership: CIO, finance, governance, strategy, service management	Tech management performance <ul style="list-style-type: none"> • Support strategic, value-centric analysis and actions • A business services, variable-cost governance model — with flexible sources of services • Roll-up of infrastructure, operations, applications and business services 	Expand beyond financial data to get the full picture of the experience-based outcomes
Be Informed: Business process platform	Primarily customer-facing BPM developers	Service design and delivery <ul style="list-style-type: none"> • Time-to-benefit • Non-standard • Independent of slow-cycle TM 	Breaking through cultural resistance — to make BPM tools a common solution element
BWise: BWise GRC Platform	GRC solution developers across the enterprise	Service design and delivery Common platform that supports point solutions — but can, then, enable the broader view	Help drive the end-to-end GRC POV — especially including third parties
Cherwell Software: Cherwell service management	TM leadership	Service performance management <ul style="list-style-type: none"> • IT service management • Integrates easily with other vendors • Data around user sentiment, customer satisfaction, productivity • Customers have extended flow for facilities, product management, etc. 	<ul style="list-style-type: none"> • Continue to package expanded use of the core tool • Reach beyond the internal systems • Expand the vendors they work with
Mvine Ltd: Mvine	B2B web and mobile developers	Service design and delivery <ul style="list-style-type: none"> • Social-business networking — a single view into multiple systems of record • Robust — secure, external, and branded side of social • A single source of stored/managed attributes and provide audit or state 	<ul style="list-style-type: none"> • Prebuild integration links and user interfaces for specific solutions • Expand access capabilities to be the aggregation layer of a four-tiered architecture

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FIGURE 4 Vendors' Participation In CIOs' BT Toolkit (Cont.)

Vendor	Target users	Value delivered	Potential role in the CIO's toolkit
Neo Group: Supply wisdom	<ul style="list-style-type: none"> • CIO • Strategic sourcing • Vendor risk management 	Service design and delivery <ul style="list-style-type: none"> • Supplier risk monitoring & analytics as a service • Data analytics linked to actions • Alerts tied to recommended actions 	Extend the metrics and supplier universe to focus on customer-impact
Numerify: Numerify 360	<ul style="list-style-type: none"> • Service desk • Call center • TM operations • TM leadership 	Service performance management <ul style="list-style-type: none"> • Prebuilt analytic apps • Tracks and reports on service management SLA performance (e.g., change, release, configuration) • Correlate resource utilization (e.g., assets and people) with value delivery 	<ul style="list-style-type: none"> • Already brings data together from multiple apps • Could combine value and performance to focus on outcomes
Open-Connect: WorkIQ	Claims processing users	Service performance management <ul style="list-style-type: none"> • Healthcare payers' back-office claims efficiency • Sit in the network and interpret process flow, times, protocols 	Expanding to include health and outcomes from other activities
Open-Text: Misc. ECM, BPM, CEM, info exchange & discovery	Target customers, partners, and employees	Service design and delivery <ul style="list-style-type: none"> • Multi-device — especially mobile • Managing information for increasingly mobile users • Bring together rich content 	Reach beyond departmental solutions to work that supports/enables the partner and customer users
Pega-systems: Pega 7 platform; sales & marketing apps	Users automating sales, service and marketing	Service design and delivery <ul style="list-style-type: none"> • Agile, "no code" process automation • Platform and apps built on that platform 	Expose meta data and analytics for analysis of end user state and experience
Planisware: Planisware	<ul style="list-style-type: none"> • Product-side PMO • Primarily in pharma 	Service design and delivery <ul style="list-style-type: none"> • Early/new product development, R&D, innovation management • Innovation management — ideation to post-launch and retirement — planning-to-execution • Portfolio goals and analysis — including an options model 	Build a perspective about long-term product performance — from customer/market in and linked to the ideation and development processes

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FIGURE 4 Vendors' Participation In CIOs' BT Toolkit (Cont.)

Vendor	Target users	Value delivered	Potential role in the CIO's toolkit
Planview: Planview Enterprise, Projectplace, and Troux	<ul style="list-style-type: none"> • TM project/program/portfolio managers • Enterprise architect • Product development • Corporate finance 	Resource/demand/innovation management <ul style="list-style-type: none"> • Rich data about projects, resources, and plans • Integrate with other data sources — like ServiceNow 	<ul style="list-style-type: none"> • Continue to expand family of data that is integrated • Reach out to third-parties and customer/partner users • Focus on time-to-benefit for customers • Rich data about projects, products, resources, and plans
Rocana: Rocana Ops	TM operations	Service performance management <ul style="list-style-type: none"> • Continuous, near-time operations monitoring • Packaged visualizations • Predictive analytics • Comprehensive view 	<ul style="list-style-type: none"> • Continuous, comprehensive view • Open architecture • Flexible anomaly detection
Rsam: Rsam GRC	CISOs within the CIO's organization	Service performance management <ul style="list-style-type: none"> • Security alert and incident management • All accountable people use a leaderboard for how they're doing • Point-in-time and trending — tied to KPIs and thresholds 	<ul style="list-style-type: none"> • Include adjacent information and activity to customer performance • Expanding GRC's link to speed of business
Software AG: Alfabet, ARIS, web-methods	PMO, developers	Service design and delivery <ul style="list-style-type: none"> • Bridge gap between TM and other business organizations • Plan-to-execute — business outcomes, process models, integration 	<ul style="list-style-type: none"> • Continue to expand the use of the Alfabet and ARIS models to broader business issues • Bring in more customer data and models from other vendors' tools
Verint (KANA): KANA Enterprise	Development for customer-focused service and support roles	Service performance management <ul style="list-style-type: none"> • Actionable intelligence • From structured and unstructured data — from apps and devices • Configurable systems/rules • Customers and customer-touching employees 	<ul style="list-style-type: none"> • Continue to expand — reaching into the broader set of BT-functions • Reach beyond agents and customer service into service desk and other TM roles
VMware: VMware	Infrastructure and operations leadership	Service performance management <ul style="list-style-type: none"> • Simplification — moving away from customization • Time-to-production — DevOps 	<ul style="list-style-type: none"> • Need software defined enterprise approach to IT • Speed and agility — architecture down

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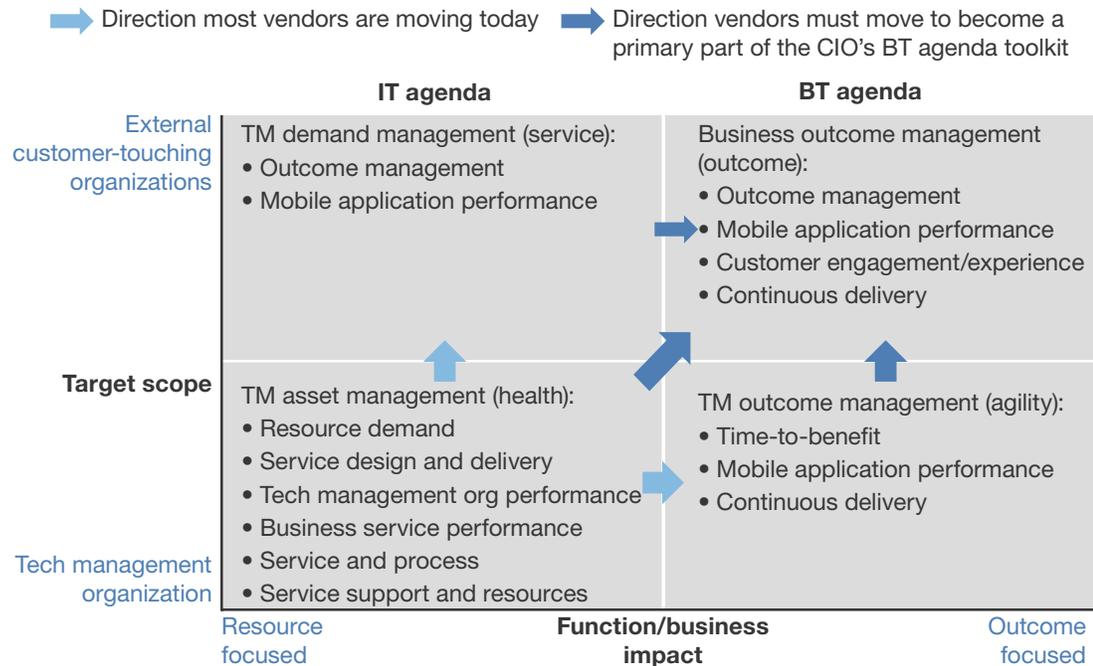
Create Your Own Toolkit While Pushing Vendors For More

Given their unique charter as the exec to manage end-to-end digital technologies that enable customer outcomes — and the absence of a toolkit fit for this purpose — CIOs need to weave their own toolkit from what's available. CIOs must initially work on their own to integrate data from today's best-of-breed tools — until point-solution vendors transition to deliver the CIO's toolkit for the digital age and the BT agenda. This shouldn't be a stretch for tech management. Handling the complexities of end-to-end solutions fits within the organization's traditional skills and experience — like working with enterprise ERP or global infrastructure and operations. And emerging tools categories will help to fill in the holes (see Figure 5). To make this work, CIOs must:

- › **Follow the data from existing point solutions.** Start your toolkit design by identifying what data you need to meet your digital asset objectives. You can use a variety of approaches — from centralizing the data in one place to flowing data together in services that address specific integration needs. Don't base this solely on the federated data models provided by tools vendors. Instead, emphasize tagging the event data generated by customer's activities, using language aligned from customer journey maps.⁸ For example, a manufacturer's CIO integrates inventory and work-in-process information with a distributor's mobile app that customers use to place orders. To oversee the digital assets for placing an order, the manufacturer's CIO toolkit must aggregate events from the mobile app as well as his inventory and work-in-process systems. These could be in a data warehouse or in a service that provides the event data on demand.
- › **Appoint a CIO toolkit manager to handle governance and integration.** You will continue to purchase point solutions to manage technology — that won't go away. But your digital oversight role requires you to purchase and implement tools in such a way that they work with your CIO toolkit data warehouse. This is necessary for a consolidated, simplified, and contextualized view into the BT agenda, and that will necessitate a move toward standardization of how you manage tools vendors. The pace and complexity of digital business requires immediate and broad visibility and can't wait for slow, procedural mechanisms to manually execute integration.
- › **Link the toolkit to business KPIs as a digital context for the board.** At the CIO's level, the toolkit must show current status and performance against business objectives — including CX and digital investments as well as costs. And because these BT agenda KPIs constantly change, the tools have to be dynamically linked to the KPIs — providing both point-in-time reports as well as trending information. For example, specialty printer Vista Print maintains a continuous display of customer experiences from around the globe, tracking cycle times across all of the technologies involved in designing, placing, and shipping an order.

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FIGURE 5 The CIO's Toolkit Must Focus On Customer Outcomes**Update The CIO's Toolkit Continuously To Match Ongoing Customer Engagement Changes**

Digital business isn't a mature and stable world — not by a long shot. Your CIO toolkit must therefore address the changing world of customer engagement. This relatively small technology footprint provides the core of your digital asset oversight — especially your customers' mobile solutions, hybrid cloud environments (from you and your trading partners), and the growing number of end-to-end solutions. As a result, as you assemble your toolkit, you must:

- › **Keep up with the pace of business change.** The tech management organization must participate in selecting and integrating tools that play a role in planning and executing continuous delivery's test-and-learn environments.⁹ The growth of new capabilities outpaces the use of existing ones in the world of digital CX. This makes the task of tracking, monitoring, and managing ongoing CX one of dealing with new technologies and constant change — like collecting experience information in mobile apps or service levels across hybrid solutions.
- › **Deliver a continuous and current view, beyond batched or sampled data.** Digital CX data must be captured continuously at the point of engagement. The richness of digital customer experience is continuous, created by the interaction of multiple factors — many of which aren't in the CIO's control. As a result, key events occur randomly, making CX data part of a flow of engagement

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activities and technologies and not the average anything. The oversight of digital assets for customer outcomes, therefore, requires real-time dashboards in order to understand and resolve issues before they affect customers or business users.¹⁰

- › **Work in an open architecture to support the ever-growing raft of new providers.** You'll need third-party help as you define and compose your CIO toolkit, from both vendors and other users. Your customers constantly change what they do and how they do it, using a changing set of technologies. As a result, your toolkit must continuously assimilate new point solutions that vendors build to measure and manage new engagement platforms. Make your CIO toolkit open and flexible — with active involvement across your organization as well as other user companies and across the vendors. For example, minimize custom-built APIs for accessing federated vendor tools, and instead work with the tool vendors and their other customers to come up with a shared, supported interface.

What It Means

With An Effective Toolkit, You Will Thrive As A Digital Leader

The move to become a digital business promises to make or break firms — establishing digital leadership as a primary role in most companies. As a result, many leaders pursue digital leadership — some out of anxiety about digital success while others aggressively pursue digital leadership as the next power center in their firms. But no one can effectively assume digital leadership unless they have deep visibility into their digital assets and the operations that create and capture customer value — end-to-end.

This raises a key question for you as CIO: What is your future as a digital leader? If you have a toolkit that provides you, personally, with end-to-end visibility of customer outcomes across digital assets, you'll help your company and help yourself because the:

1. **Well-designed CIO toolkit helps you deliver on digital leadership.** You may still require an MBA to gain official recognition as a business leader, but that won't assure your success as the digital leaders. But build a great CIO toolkit — and you can use it to oversee customer outcomes while diminishing your need to know the minutia of all the digital assets. And the act of using it will help you learn about and lead your digital business. Get started by using point solutions like Apptio to manage the financials and to learn accounting, finance, and asset management. But then create your CIO toolkit, focused on customer outcomes, and it will help you move into digital leadership.
2. **Move to digital business accelerates cost-cutting simplification.** You don't have to choose between cost-cutting simplification and pursuit of the digital business transformation through the BT agenda. With the CIO toolkit, you can interpret the performance of digital assets — the

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BT agenda — to establish clear priorities for what should be simplified and to reduce costs and improve customer outcomes. The toolkit will provide direct evidence of what's working and what isn't, pinpointing failures and providing a lens to target simplification.

Tools vendors will adapt to get into the CIO toolkit game as they:

1. **Understand the CX side of the tech management puzzle.** Some vendors already voice the concept of the CIO's toolkit for the BT agenda — they just haven't delivered on that concept. The game is afoot. The vendor delivery of CIO toolkits will happen quickly as vendors come up to speed on end-to-end digital business.
2. **Try to gain pole position — the first out of the gate can define the game.** No single vendor will own all of the tools across the entire digital arena for a long time — just as CA's consolidation of mainframe tools occurred only after the market matured. Instead, the vendor that first delivers a solid CIO toolkit can create momentum that will be hard to beat.
3. **Engage the CIO directly.** This may sound obvious, but to date most tech management tools vendors have little direct interaction with CIOs. While the vendors didn't create this predicament — few CIOs have direct experience with the current tech management tools, relying instead on their targeted organizations to know and to apply the tools. But as CIOs awaken to the need for overseeing digital assets, the vendors able to help them become digital leaders will be in the power position.

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Supplemental Material

Companies Interviewed For This Report

Apptio	Pegasystems
Be Informed	Planisware
BWise	Planview
Cherwell Software	Rocana
Mvine Limited	Rsam
Neo Group	Software AG
Numerify	Verint (KANA)
OpenConnect	VMware
OpenText	

Endnotes

- ¹ Source: Forrester's Q4 2014 Global Modern Service Delivery Benchmark Online Survey.
- ² Digital ecosystems are accelerating the pace at which firms can innovate and deliver products and services. Ecosystem-enabled businesses, like Airbnb, Lending Club, and Uber, have emerged and achieved huge market valuations in record time. Traditional firms can embrace the same disruptive mindset. Companies like Airtel, Volvo Cars, and Walgreens are developing ecosystem strategies to reposition their own services, deepen customer relationships, and find new revenue streams. This report examines how eBusiness executives can assemble ecosystems to offer new services that will create new value. See the "[How Ecosystems Fuel Digital Business](#)" Forrester report.
- ³ Underlying any investment is the ever-present question of "What am I going to get for my money?" To answer this question, Forrester developed the Total Economic Impact (TEI) methodology. TEI provides a rigorous cost and benefit analysis framework that explicitly incorporates an evaluation of future technology and business flexibility and associated risk. As technology platforms increasingly influence the ways in which companies do business, often providing strategic direction and differentiation, it becomes more important than ever to utilize a consistent, repeatable evaluation process to make the best decisions to achieve the desired results. This report is an update to "The Total Economic Impact™ Methodology: A Foundation For Sound Technology Investments," originally published on August 4, 2008. See the "[The Total Economic Impact™ Methodology: A Foundational Framework For Investment Decisions](#)" Forrester report.
- ⁴ CIOs must redefine tech management governance for planning, sourcing, and managing resources to support the business technology (BT) agenda. The traditional IT approach of locking resources annually to extended initiatives won't work under the constraints of BT's complex, fast-changing, customer-driven needs. For BT, CIOs must commit to delivering business outcomes, based on a variable set of resources and managed through fast-cycle governance and continuous discovery and delivery. This report shows how outcome management is the superior governance approach to address the BT agenda. It lays out how the CIO's resource focus has shifted to business outcomes — like brand value and customer loyalty — adding to IT's traditional approach of optimizing asset performance and juggling competing stakeholder demands against static resources. See the "[Manage BT Outcomes, Not IT Assets](#)" Forrester report.

Cobbling Tools Together To Manage Your BT Agenda

Tools And Technology: The Business Technology Agenda Playbook

- ⁵ Digitally empowered customers are redefining how business is won, forcing firms to become digital businesses that leverage digital technologies across the ecosystem. Winning in this fast-paced digital era requires CIOs to adopt a new approach. Traditional solutions fail to support the ongoing changes that customers demand and can't keep up with the compounded complexity of customer-journey moments through multiple channels and across multiple organizations. This report looks at the emerging use of continuous business services (CBSes) to bridge this complexity. A CBS is a discrete business service that is managed to continuously provide a specific outcome and that can be composed into customer-journey-moment solutions by the specialists skilled in channel technologies like mobile, Web, and call center. The success of the CBS model is as much about addressing the business challenge of cross-organizational work as it is about the technologies and development methodologies used to build CBSes. See the [“Bridge Complex Customer Journeys With Continuous Business Services”](#) Forrester report.
- ⁶ This is the time of year when CIOs and their business partners are preparing their 2016 tech budget plans. To help, this report provides our current forecast for the US tech market in aggregate, by tech category, by business technology (BT) versus information technology (IT), by new project spending versus tech MOOSE, and by industry. We also provide our preliminary tech budget benchmarks for tech spending as a percentage of revenues by industry as well as the distribution of industry tech spending in 2016 by category and by BT versus IT. See the [“2016 US Tech Budgets: The Outlook For Tech Spending Overall And By Industry”](#) Forrester report.
- ⁷ Five years into the age of the customer, investments in mobile, cloud, big data, predictive analytics, and social technologies are booming. But unlike previous technology cycles, tech investments will continue to grow rather than diminish throughout the refinement period. This year's top 10 tech trends demonstrate why; a shift is underway from cyclical, invention-led spending on point solutions to investments targeting customer-driven, end-to-end value. Enterprise architects should read this report to understand the trends that are enabling continuous customer value innovation from end to end — across journeys, channels, and the enterprise. See the [“The Top 10 Technology Trends To Watch: 2016 To 2018”](#) Forrester report.
- ⁸ This approach will seem similar to that of a configuration management database (CMDB). And you are trying to achieve the ITIL 3.0 services portfolio goal with the CIO toolkit data warehouse. But avoid the temptation to create the data warehouse in the sky — the challenge that frustrates many CMDB efforts. You must produce tech management services data, tied to customer outcomes, end to end.
- ⁹ Firms are investing hundreds of millions of dollars in the wholesale transformation of their customer experience, organization structures, processes, technology platforms, and measurement structures in order to achieve a new level of customer centricity and agility. eBusiness professionals on the digital business journey are seeing very positive results. This report outlines some of the tips, techniques, and frameworks that help justify digital business investment; it also shares some real-world examples of the results that firms are seeing. This is an update of a previously published report; Forrester reviews and updates it periodically for continued relevance and accuracy. We revised this edition to factor in new data and examples. See the [“The ROI Of Digital Business Transformation”](#) Forrester report.
- ¹⁰ Infrastructure and operations (I&O) organizations are in various stages of adopting the DevOps methodology. Where does your organization fall in comparison with other organizations? This report presents strategic benchmarks that I&O professionals can use to see where they are in their DevOps adoption compared with their peers. These benchmarks represent a subset of data collected by our Q4 2014 Global Modern Service Delivery Benchmark Online Survey, which highlights six major trends. Although the data tells us that I&O professionals have the essentials in place for success, DevOps execution is lacking in some key areas. I&O professionals should use this data to determine what DevOps methods to adjust, attack, or continue so that they can make significant headway in 2015 and beyond. See the [“Six Trends That Will Shape DevOps Adoption In 2015 And Beyond”](#) Forrester report.

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