

2nd in our series on digital innovation

Digital Transformation in 2015 and Beyond

The Changing Roles of IT, the CIO, Enterprise

Architecture and Strategy

Prepared for IASA

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Executive Summary

Despite years of disruption, re-organizations, budget/staff cuts and questions of value, the IT function and the leadership roles that support it are in a unique position to drive digital innovation and business transformation more than ever before.

This paper highlights a few of the challenges facing IT, the CIO, and the enterprise architecture/strategist functions moving into 2015. It also provides a number of insights for needed change based on recent analyst studies and looks at the impact of a finite set of anticipated transitions on 20 key IT capabilities.

Notable changes to the architect/strategist functions are also highlighted, including recommendations on how IT needs to adapt to specific opportunity areas like Digital Marketing, the Internet of Things (IoT), and Big Data.

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Introduction

A lot has been written about the changing role of IT, the CIO, enterprise architecture (EA), and IT strategy. Much of this focuses on business re-orientation/enablement, innovation and simplification/agility, something many IT organizations have been concentrating on (and/or have known about the need for) for some time. Besides some of the more sensationalistic, headline grabbing prognostications, what's really happening out there? Aside from there being pretty good consensus on what needs to be done, what are the constraints hindering progress? And on a more positive note, what sort of progress is being made?

Putting aside any agenda here, what's the right organizational strategy moving forward that puts the right capabilities and supporting technologies in place for the next few years? What are the dynamics truly shaping the needed shifts and realities constraining them? Are we seeing another pendulum swing towards decentralization? Will we soon see organizations drastically reducing their central IT functions in favor of business shared services and imbedded IT (in marketing functions and individual business units)?

Of course, answers to big questions like these will vary firm-to-firm and perhaps by industry/geography, but certainly its worthwhile to level set on commonly-cited trends and projected IT impacts moving into 2015 to help inform the discussion. As such, this paper lays out some of the current thinking across these topics and makes recommendations on things you can start doing today to manage the ongoing IT transformation in your enterprise.

To address this problem space, this paper is organized into 5 sections, as follows:

- I. The changing role of IT and the CIO
- II. The changing face of Enterprise Architecture
- III. The changing face of IT strategy
- IV. Shifting IT to enable innovation
- V. Conclusions and calls to action

I. The changing role of IT and the CIO

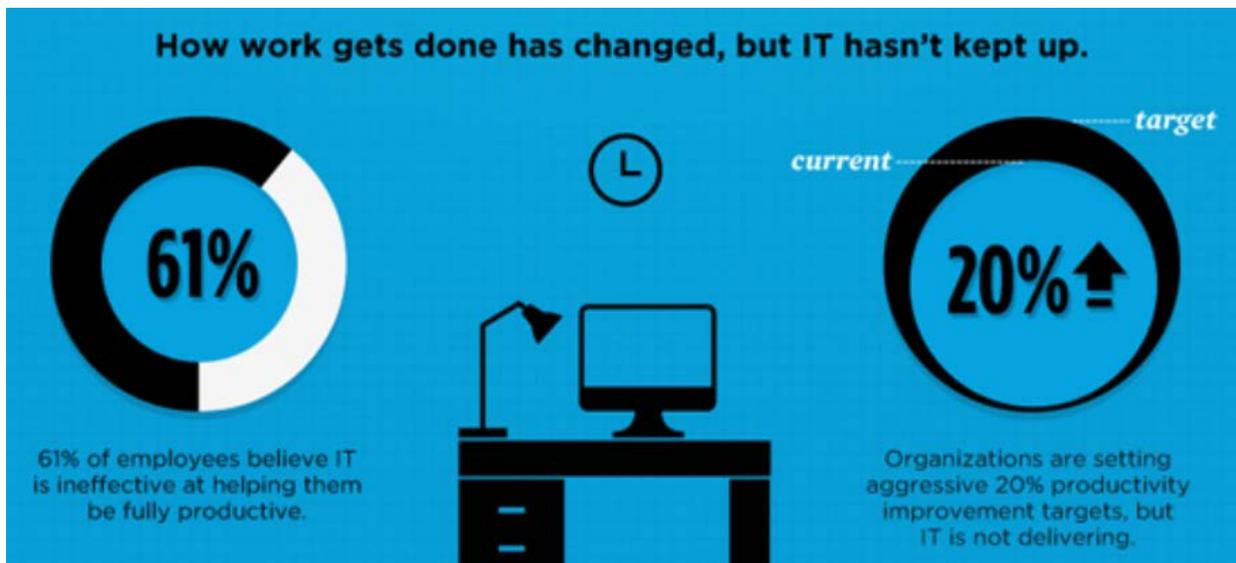
As stated in the Introduction, much has been written about the changing role of IT and the CIO, including everything from negative prognostications predicting their demise to more positive treatments of needed shifts in focus (which are in some cases already happening). Beyond the hyperbole, what's really going on in the world of IT (and the CIO) that's useful to generalize as a baseline, and what does the future hold?

To address this, we start by laying out a few well-known disruptions in IT as well as a few well known analysts' views on the mandate for change.

Challenges Facing IT and IT Leadership

Again, this topic has been covered extensively by analysts and pundits for years, with obvious trends emerging like cloud computing displacing certain IT functions, moves to business ownership of technology, the need for better business alignment and innovation enablement, etc.

In short, a lot has been written about how IT has issues and the CIO is under fire. This sentiment is depicted to some degree in this [infographic](#) from the Corporate Executive Board (CEB), which makes the point that many employees believe that IT is ineffective and not delivering in key areas like productivity enablement.



Other analysts/consultants have reported similar challenges, including Avanade in their report: "[Global Survey: What's creating tension between IT and business leaders?](#)" (April 2014), where they point to growing tensions between IT and business leaders, as portrayed in this infographic and accompanying text.



“There is real tension between IT and the broader business as budgets and control move outside the traditional IT department. In an increasingly digital world, departments outside of IT are taking budgets and decisions into their own hands. Thirty-seven percent of budgets allocated in 2014 for technology investments are now controlled by departments other than IT while 71 percent of C-level executives and business unit leaders believe they can make decisions for their department better and faster without the involvement of IT staff.”

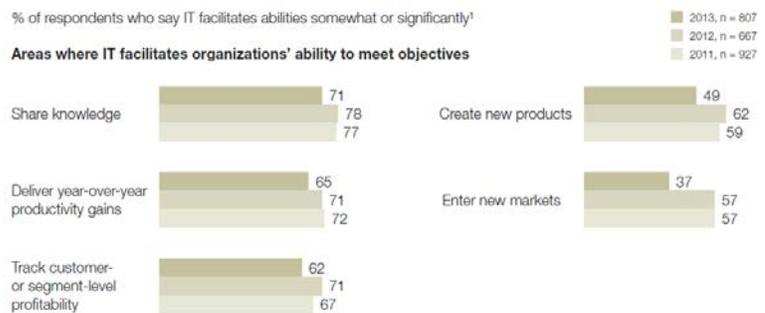
Drilling into this a bit further, McKinsey, in their 2014 report: [“IT Under Pressure – McKinsey Global Survey Results”](#), provides the following insights:

1) IT has become less effective at enabling business goals

- Poll respondents say IT’s ability to enable Knowledge sharing, Productivity, Customer Profitability, New Product Development and New Market Entry all dropped in 2013.

Exhibit 3

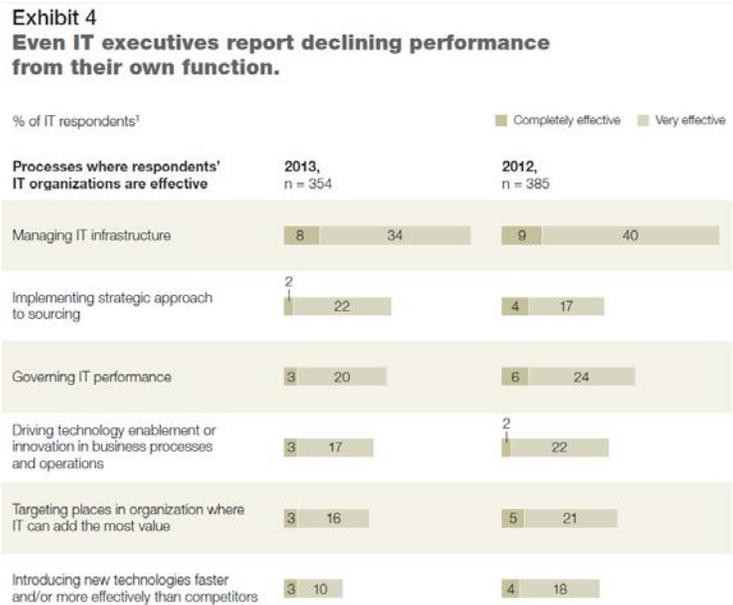
IT has become less effective at enabling business goals.



¹ Respondents who answered “no effect,” “inhibits,” or “don’t know” are not shown.

2) IT executives report declining performance from their own function

- IT itself reported that it was less effective in 2013 (than in prior years) at managing infrastructure, governance, driving innovation, and agility.



As the above research from McKinsey shows, most IT executives are well aware of the challenges, but some feel hamstrung in being able to do anything about it. This is due to pervasive realities like reorganizations, budget cuts, bureaucracy and lack of organizational capability in areas critical to exact change.

To bring this situation home from an insider's perspective, see below from an IT executive friend in the hospitality business, echoing sentiments I've observed on multiple occasions in my own customer base:

*"In a nut shell, the enterprise-level IT function has not been able to satisfy the Business's **speed-to-solution** demands for the technological innovations they need. Therefore, they are forced to go outside IT. The Business units can do this more readily today because the cost of technology and the especially the complexity of implementation is being driven down by SaaS and other industry trends.*

So why can't enterprise IT keep up? The in-place legacy technologies are a constraining force on the [practitioners] and is a major drag on the speed-to-solution. So is the enterprise-level IT bureaucracy one must navigate to get anything done. The [practitioner] is forced to look at a Business need through the lenses of the legacy technology he/she must utilize or compensate for, plus the IT bureaucracy placing hurdles along the path. All this slows everything down and makes IT non-competitive to a decentralized solution offered by outside IT providers. Simply stated, IT is being decentralized because it can be and because it offers a superior product over enterprise-level IT, enabled by lower costs and lower implementation complexity of modern technology. Unless enterprise-level IT changes, this trend is only going to accelerate.

So what does this do to the [IT] function? I've seen the Business rely on [enterprise architects (EAs)] as consultants and as partners to provide a sanity-check on what they want to do. At the same time, I've seen the Business hesitate to engage EAs and IT generally out of fear they will be sucked

back into the IT bureaucracy, therefore having their project die a slow and painful death from starvation.

For [our company], I'd like to see IT and EAs focus on modernizing the environment and replacing all the legacy systems that will do nothing but hamstring efforts for years to come. They need to pull the band aid off quickly. The new IT enterprise would be built around modern and nimble platforms/technology that future solutions could then plug and play on."

Again, while this presents a rather sobering view, a number of insights related to addressing these challenges have been laid out by various analysts that provide guidance moving forward. These are summarized in the following section.

Insights for Change

In terms of deeper level treatments of this subject that offer material suggestions for change, I again turn to the smart people in the analyst/advisory community, which typically has a pretty good pulse on what's going on based on ongoing input from enterprises, field research, and knowledge of technology trends. Problem is, so much has been written about this area – for years and years – that most people aren't really sure how to filter it all or just ignore it as agenda-driven, "heard that before", or conjecture.

Here, in an attempt to highlight the "diamonds in the rough" across the vast coverage of this space, we first net out insights from the likes of McKinsey, IBM, CEB, HBR and others in terms of a current/future state "IT Transition Model", which provides a categorized list of suggested future movements (and/or trends) highlighted in their recent reports.

We then look at the impacts of the predicted trends/changes against a rough IT capability model based on IVI's IT-CMF (Innovation Value Institute IT Capability Maturity Framework) materials¹.

Current/Future State IT Transition Model

The first figure below provides a rough listing of common, high level, current/future state themes extracted from over 500 pages of material from the following reports:

1. Avanade (April 2014): "[Global Survey: What's creating tension between IT and business leaders?](#)"
2. McKinsey (2014): "[IT Under Pressure – McKinsey Global Survey Results](#)"
3. IBM: "[Global C-Suite Study](#)"
4. CEB₂: "The Future of Corporate IT, 2013–2017 - Five Opportunities to Drive Productivity and Growth in the New Work Environment" (available to membership only)
5. HBR: "[Reinventing Corporate IT](#)" (multiple articles), from SAS's HRB article aggregation
6. CEB₃: "[2014 Top Insights for the World's Leading Executives](#)"
7. CIO Journal (WSJ/Deloitte) - "[Southwest's Randy Sloan on his Path to CIO](#)"
8. CIO Forum: "[2015 CIO and CISO Priorities: Cybersecurity, the Cloud and IT Budget](#)"

¹ <https://ivi.nuim.ie/it-cmf/managing-it-capability>



Most if not all of the elements listed were addressed in some form or another in multiple reports, which distinguishes them from lesser trends (or minor themes that roll up into these).

From a current/future state perspective, the graphic intends to show that while the 16 future state elements (those on the right) may already be “in focus” for some firms (thus the yellow area extends all the way to the right), they are projected to be even more commonplace moving forward. This is in contrast to the current state elements listed on the left, which, while not going away, will be less commonplace in terms of *IT’s focus* in the future.

What this means, for example, is that while IT may continue to provide technology delivery in some cases, other alternative provider mechanisms (i.e. cloud) will be increasingly important. Another example: cost management will still be important, but IT organizations solely focused on cost are expected to fall behind those aggressively investing in innovation and value-creation.

Current/Future State IT Transition Summaries

To expand on insights related to each of the future state categories listed on the right side of the above figure, summary statements netting out takeaways from the various studies reviewed are provided below. Note that since many of the studies concluded the same thing, an attempt is made here to surface unique points only. Respecting the fact that many organizations are already working through the transitions noted here (or because of circumstances, the trends aren’t applicable), the style reflects what seemed to be a consensus view on a related future state (vs. providing a presumptuous recommendation). Obviously, this is all very imperfect and subjective, but hopefully useful in terms of netting out the vast coverage of this space into a finite grouping.

Future IT State Theme/Element	Study	Future State Transition Statement
Strategic technology orientation	IBM	CIO:CEO focus areas converge in leading organizations CIOs take on a more strategic role
	HBR	Leaders focus on exploiting IT for strategic advantage and specific business outcomes vs. IT just being an enabler
	CEB	IT strategy adapts to business leaders becoming more ambitious with technology initiatives Focus shifts to building organizational capacity for strategy execution vs. just strategy development
	Deloitte/WSJ	Leading CIOs help peer leaders align their priorities (and technology investment requests) with the overarching strategic priorities of the business.
CIO seat at executive table	HBR	IT has a key seat the table as organizations undergo digital transformation Leading CIOs get seat at executive table by transforming IT from a cost center to a business enabler and innovation incubator Increasingly business-savvy CIOs lead their organization's transformation to integrate with and generate value from new digital business ecosystems
	Deloitte/WSJ	Successful CIOs build trust with the CEO and CFO by closely managing ITs financial performance
Progressive organizational and reporting structures	HBR	In leading firms, the CIO role and IT reporting structures are aligned with the strategic goals of the organization. CIOs and IT organizations more easily shift from infrastructure to integration, intelligence and innovation when supporting organizational DNA, reporting structures, budgets and governance are in place.
Innovation and business transformation	CEB, McKinsey	CIOs focus on innovation and business enablement vs technology/infrastructure
	HBR	As innovation becomes more technology-driven, CIOs move from managing IT systems and cost to creating new competitive advantage, new products, and new services Leading CIOs and their IT organizations shift from infrastructure to integration, intelligence and innovation. CIOs drive the development and support of platforms upon which innovation is encouraged, nurtured, and manifested
Value-focused portfolio management	McKinsey	Organizations make value-focused budget allocations a priority
	HBR	IT projects increasingly rationalized through quantifiable metrics like complexity, breadth of need, and return on investment.

Future IT State Theme/Element	Study	Future State Transition Statement
	Deloitte/WSJ	To create value, CIOs must understand the business model, growth levers, cost levers, P&L, EPS drivers, and shareholder incentives.
Flexible technology management, orchestration and service brokerage/management	HBR	<p>CIOs, IT organizations and other responsible business functions better integrate and collectively focus on information and application orchestration, brokerage and value realization.</p> <p>IT increasingly adopts the techniques of process improvement leaders and optimizes IT resources to make changes quickly</p> <p>CIOs re-focus on how IT is applied and managed at the business level vs. just technical delivery.</p>
	CEB, Avande	IT has reduced technology delivery role but increased service brokerage/provider role
Business alignment, engagement and process enablement	CEB, McKinsey	CIOs in leading firms focus on business enablement and value-focused budget allocations vs technology/infrastructure and cost management
	CEB	IT organizations increase business-enablement leverage by helping business leaders lead their own IT initiatives
	HBR	<p>IT transforms to be viewed as "Competency Center" focused on expertise transfer, process enablement, and scaling via departmental IT</p> <p>Acute impacts of the "CIO Paradox" (essentially the mandate to be strategic and operational; secure and innovative; progressive and conservative, etc.) will increasingly hinder firms who don't simultaneously re-focus on both ends of the spectrum - foundational IT and business entrenchment.</p>
	Avande	IT provides increased business consulting and sharing of best practices
	Deloitte/WSJ	Leading CIOs provide functional leadership and are able to meet ongoing commitments to the business
Shared accountability (w/ executives and business leads)	McKinsey	Business shares IT accountability with central IT
	HBR	<p>As organizations become increasingly digital, senior leadership beyond the CIOs office increasingly understand technology and are accountable for technology successes and failures</p> <p>The bifurcation of IT and business is a myth - CIOs, other executives and business leaders in leading organizations understand the potential of technology for their business and share responsibility for its timely, cost effective and impactful execution</p>

Future IT State Theme/Element	Study	Future State Transition Statement
		Problems with IT don't go away if sourced from the cloud, and accountability for IT strategy, prioritization and funding must be shared by the IT organization itself plus the business units that leverage it.
Departmental IT (and other alternative providers, e.g. cloud)	HBR	Lines of business and corporate functions increasingly get their own technology budgets
	CEB	IT transforms to be viewed as competency center focused on expertise transfer, process enablement, and scaling via departmental IT
		Business leaders find innovative ways to use analytic, social, mobile and cloud technologies and re-allocate their own budgets to technology (up to 40% on top of CIO's budget), blurring lines between IT and business responsibilities
Customer facing + IW/KW needs prioritization, including UX	IBM	IT function re-positioning towards (external) customer-facing activities
		CEB, Avanade
	HBR	CIOs and their IT organizations need to better focus on meeting end-user needs by further developing employee-focused interface roles, adopting product marketing practices in IT, and making user experience design an IT priority.
Talent development and re-tooling	Avanade, McKinsey, CEB	Renewed investment in skill building and talent development is required to adapt IT organizations to new paradigms (highlighted elsewhere here)
		HBR
	CEB	Improvements in strategic execution, growth and innovation require re-thinking of resource allocation and provisioning of adequate employee bandwidth and discretionary effort.
		Companies invest large sums to develop data/analytics capabilities in the employee-base

Future IT State Theme/Element	Study	Future State Transition Statement
		<p>Highest performing CIOs spend more time on talent development than any other activity, with up to a 12% impact on revenue (increased)</p> <hr/> <p>Leading IT orgs develop strategic workforce plans</p> <hr/> <p>Leading companies focus on initiatives that improve workforce collaboration and build skills to implement the changes required to transform to a digital organization.</p>
Flexible, re-thought governance	CEB	<p>Corporate leaders review governance policies to reduce friction from finance, procurement, legal and audit and better balance risk, cost, and benefits.</p>
	HBR	<p>Fundamental reinvention of IT requires that governance is adjusted to ensure that IT has a seat at the table in the organization's digital transformation and the organization can ramp up digital capabilities quickly.</p> <hr/> <p>CIOs continue to deftly enable and constrain the use of technology with appropriate governance mechanisms that re-focus on how IT is applied at the business level (vs. just technical delivery).</p>
	Deloitte/WSJ	<p>In leading organizations, governance is tuned to new shared accountabilities between executives, IT and business units</p> <hr/> <p>Successful CIOs manage mechanisms to provide good governance that simultaneously meets needs across the current operational environment of the organization as well as the strategic horizon.</p>
Information management, analytics and data/integration	IBM, McKinsey	<p>Information management and analytics increase in importance to enable better decision making and other functions.</p>
	HBR	<p>As IT becomes more abundant and alternative delivery mechanisms (e.g. cloud) abound, the central IT org plays an increasing role as an "information" integrator and provider/enabler.</p>
	CEB	<p>Companies invest large sums to derive insight from information streaming in from across the enterprise</p> <hr/> <p>Market insights functions deliver more business impact through multisource synthesis; big data dramatically impacts decision making.</p> <hr/> <p>Organizations with high "Insight IQ" perform significantly better than peers</p> <hr/> <p>Business leaders take a greater role as partners with IT in managing information</p>
Cloud	IBM	<p>Cloud is a top technology investment area in both IT, corporate functions, and in the business units themselves.</p>

Future IT State Theme/Element	Study	Future State Transition Statement
	HBR	Problems with IT don't go away if sourced from the cloud by the business (or central IT itself), and accountability for IT strategy, prioritization and funding must be shared by the IT organization itself plus the business units that leverage it.
Incremental vs. "big bang" projects	HBR	Business agility will increasingly require a move to smaller, incremental projects Fundamental reinvention of IT requires that the organization can ramp up digital capabilities quickly and that governance is adjusted accordingly.
	CEB	Be cautious of "quick wins" undermining strategic execution
Security and Cyber-threat Management	CIO Forum	CIOs and CISOs beef up cyber-security risk management through increased education, network protection, access control, threat detection and monitoring CIOs/CISOs increasingly concerned about security risks (including data theft) related to shared service and/or cloud providers, especially as it relates to the proliferation of data stored across multiple, third-party providers. CIOs modernizing their IT operations may struggle for security-related budget allocations relative to other spend priorities, requiring persistent ongoing education and communication to the C-suite about industry as well as firm-level threats.

IT Capability Impacts

A simplified, high level IT capability model loosely based on IVI's IT-CMF (Innovation Value Institute IT Capability Maturity Framework) materials² is provided below.

² <https://ivi.nuim.ie/it-cmf/managing-it-capability>

		Strategic and Business Planning
	Overall IT capabilities management and skills	IT Leadership and Organization
	Service architecture, management, provisioning and delivery	Business engagement, relationship and alignment
Infrastructure management	Enterprise architecture and IT governance	Change management, user enablement and UX management
Application management	Portfolio, program and project Management	Benefits management
Demand, Supply and Capacity Management	Cost Management	Business Process Enablement and Engineering
Information management (including data, integration, and KM)	Innovation management, incl. R&D	Risk Management
Analytics, BI and Performance Management	Sourcing, Procurement, Contracts and Supplier management	Accounting, Budgeting and Finance
IT Technical Management		IT Business Management

As the figure indicates, IT capabilities may generally be considered to be more technical (left)- or business (right)-focused, or somewhere in the middle, but capabilities considered more technical also have business aspects and vice versa, so the lines are somewhat blurry as to the categorization.

This model is used below to help highlight which capabilities may be most impacted by the noted future state IT transitions noted in the previous section.

Impact summary – most impacted capabilities

Based on a rough scoring of the projected IT capability impact for each of the 16 IT trends/transition model elements³, the capability model shown above was color coded to indicate relative degree of impact, with the darker colors indicating higher impact (note: all capabilities were impacted to some degree or another).

As shown in the figure below, the “IT Leadership and Organization” and “Enterprise Architecture and IT Governance” etc. categories showed the highest degree of impact by the highlighted trends, followed by “Strategic and Business Planning”, “Innovation Management”, etc.

³ A simple impact scoring of 0 (none), 1 (some), 2 (significant), or 3 (major) for each of the trends/transition elements for each of the IT capability areas was performed.

		IT Leadership and Organization
	Enterprise architecture and IT governance	Business engagement, relationship and alignment
	Overall IT capabilities management and skills	Strategic and Business Planning
Analytics, BI and Performance Management	Portfolio, program and project Management	Benefits management
Infrastructure management	Innovation management, incl. R&D	Business Process Enablement and Engineering
Application management	Sourcing, Procurement, Contracts and Supplier management	Change management, user enablement and UX management
Demand, Supply and Capacity Management	Service architecture, management, provisioning and delivery	Risk Management
Information management (including data, integration, and KM)	Cost Management	Accounting, Budgeting and Finance
IT Technical Management		IT Business Management

While trends, capabilities and impacts will obviously vary by organization, this rough assessment indicates that organizations may want to look at all potential capability impact areas and possibly prioritize based on a similar assessment. Note: traditional capability modeling looks not only at degree of impact (to the capability itself) but also weights according to criticality of the subject capability, which was not done here. (I.e., you could have a highly impacted capability that was more or less impactful itself to a business priority.)

Impact summary – most impactful trends/transition factors

Based on the same scoring used in the above-referenced assessment, transition factors with the highest degree of impact on individual elements of the above IT capability model were calculated and then color coded in terms of degree of impact, with the darker colors in the figure below indicating higher impact.

To net this out, the first few trends/transition factors (darkest red) had higher degrees of impact across more capabilities than the ones below.

So for example, the prospect of IT shifting to more of a service brokerage/management-type organization (i.e., away from infrastructure and application management) impacts a large number of capabilities, as does adjusting governance for agility, moving to departmental IT, and more rigorous, value-based portfolio management.

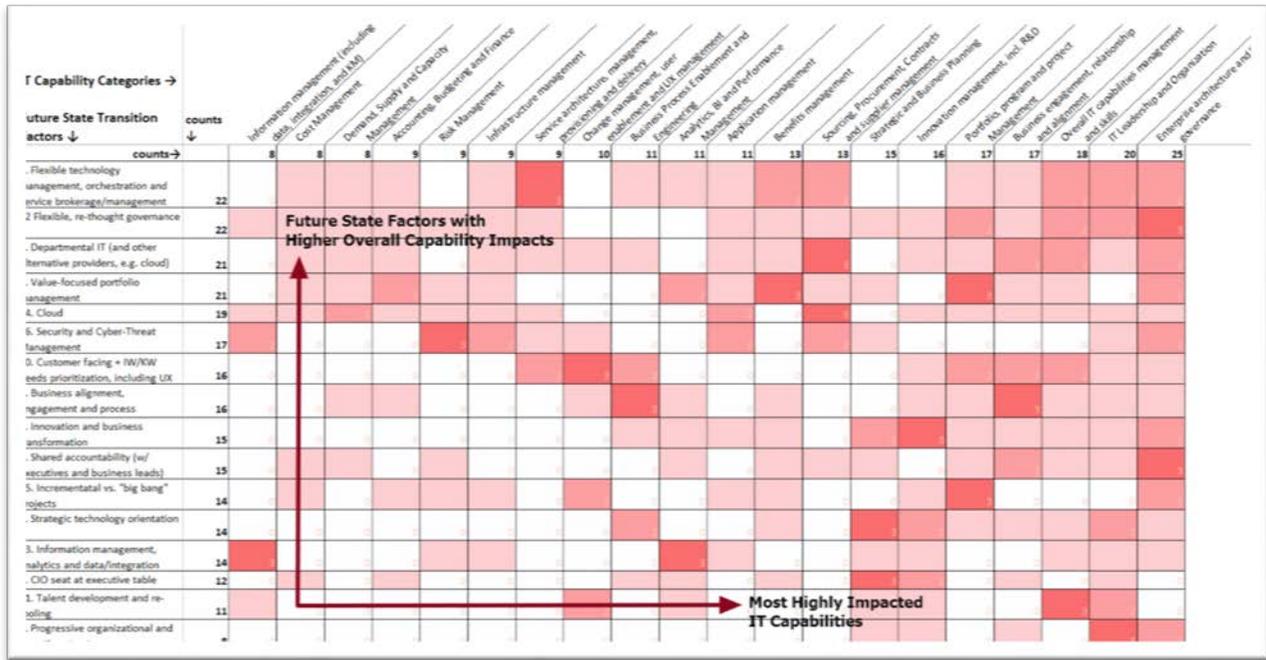
Flexible technology management, orchestration and service brokerage/management	
Flexible, re-thought governance	
Departmental IT (and other alternative providers, e.g. cloud)	
Value-focused portfolio management	
Cloud	
Security and Cyber-Threat Management	
Customer facing + IW/KW needs prioritization, including UX	
Business alignment, engagement and process enablement	
Innovation and business transformation	
Shared accountability (w/ executives and business leads)	
Incremental vs. "big bang" projects	
Strategic technology orientation	
Information management, analytics and data/integration	
CIO seat at executive table	
Talent development and re-tooling	
Progressive organizational and reporting structures	

At this coarse level, factors that didn't score as high overall may have significant impacts (refer to thumbnail diagram in next section – full view in Appendix A), just on a lesser number of capabilities, thus scoring lower overall.

For example, "Talent Development and Re-tooling" scores low overall in terms of capabilities impacted but is anticipated to have a major impact on the "Overall IT Capabilities Management and Skills" capability and a significant impact on "IT Leadership and Management" and "Change Management and User Enablement".

Full Capability Impact Matrix – Thumbnail View and Summary

A thumbnail view of the full "Capability Impact Matrix" (i.e. future state transition factors. Vs. IT capability categories) is provided below. A full view is provided in Appendix A.



(Thumbnail view – refer to Appendix A)

Key:

Color	Impact of Factor on Capability
0	No or minimal impact expected
1	Some notable impact expected
2	Significant or material impact expected
3	Major impact expected

As shown in the diagram, future state factors with the highest overall capability impacts are towards the top, and most impacted capabilities are towards the right.

Netting it Out – Impact of Anticipated Trends on IT Capabilities

Based on the rough, high level analysis provided in the previous section, the principal set of trends highlighted by recent reports that have the biggest impacts on IT capabilities include:

A move by IT to focus on service brokerage/management (vs. infrastructure) in the face of a movement of certain technical services to the cloud; and a shift of certain capabilities to management by departmental IT. This requires a re-thinking of governance and has a significant impact on portfolio management.

It is also worthwhile noting the IT capabilities that will be the most impacted. These include: IT leadership/organization, EA and IT governance, IT capability management, and how IT interacts with the business as a result of the anticipated changes.

While every IT organization will be different in terms of trends and impacts, this method and the models referenced can be used to perform your own assessment and prepare yourself for the anticipated, disruptive change expected in the coming years.

II. The changing face of architecture

Along with the anticipated changes in IT and the CIO function, there's growing evidence that the EA function needs to evolve too.

In the recent IASA article "[Is Enterprise Architecture Completely Broken](#)", the author (Jason Bloomberg) starts by laying out the case that:

"The cost savings and responsiveness benefits that EA has purported to deliver have been few and far between"

(Paraphrasing)...and EA has become all about documentation and framework execution rather than effecting business change; the EA community needs to rethink itself and its role. EAs need to embrace change and work with business stakeholders on business transformation to add value to their organizations, solving business problems vs. producing extensive documentation.

He then calls for the EA function itself to be represented by a new "Agile Architecture". To quote Mr. Bloomberg:

"The field of Enterprise Architecture must itself transform into a new, Agile Architecture in order to drive digital transformation effectively in today's increasingly wired world" ... and

"Today's forward-looking executives seek digital transformations of their organizations – technology-enabled business transformation that requires a more agile approach to architecture than traditional EA has offered in the past. The field of Enterprise Architecture must itself transform into a new, Agile Architecture in order to drive digital transformation effectively in today's increasingly wired world."

Corroborating these points, in my recent paper (available from IASA) on "Digital Innovation and Business Transformation", I laid out the case for EAs taking an increased role in driving innovation in their respective organizations. This is supported in part by two other recent articles - one by Gartner and another from "Architecture and Governance.com". These highlight a number of needed changes in the enterprise architecture (EA) function that are relevant here.

First, in the Gartner article: "Gartner Predicts 2014: Enterprise Architect Role Headed for Dramatic Change (G00258414, December 2013)", they provide relevant guidance moving forward to the increasing role of the EA in business innovation and the bifurcation of the discipline into two areas: (1) foundational, systems focused EAs and (2) "vanguard" EAs that focus on driving disruptive technology-driven innovation. They also make the case that:

- EA teams that do not "refactor" will slip into obscurity.
- Moving forward, leading EA practitioners must provide leadership and vision, responding to turmoil and change caused by business and technology disruptions (technical, economic, market, social, regulatory and environmental).
- Over the next three to five years, EA teams that do not refactor their skill sets from technology artifact generation to business outcome realization will marginalize their value and struggle to remain relevant.

Second, in "The Last Word: Enterprise Architects, Leaders in Innovation (Architecture and Governance Magazine)" <http://architectureandgovernance.com/content/last-word-enterprise-architects-leaders-innovation>), editor-in-chief George Paras makes the case that because the EA function is typically positioned as a cross-function, shared services group available both within IT and within the business, it is uniquely suited to:

- Prepare for, drive and lead innovation and business change
- Provide coherent guidance to the enterprise through principles, standards and models while also providing project enablement, engineering support and value delivery.
- Lead through influence and identify meaningful opportunities, driving discussion and informing the analysis that is driven by the business

In summary, as IT undergoes its needed transformation and companies progress towards true “digital businesses”, the enterprise architect function needs to:

- a. Play an even more critical role in working with leadership to establish strategies and drive execution towards established end-goals.
- b. Better understand the business dynamics impacting technology spend ratios between run, grow and transform the business in your organization;
- c. Understand the organization’s current approach to innovation, including organizational structures and capabilities, leadership, people, process, culture and technology; and
- d. Using influence strategies, make recommendations for change in terms of a long-term roadmap for the EA role that repositions it to more aggressively drive digital transformation.

Finally, in addition to the aforementioned areas, the EA function in a given organization certainly has a mandate to understand the specific trends and dynamics occurring within its purview (see previous section discussion), and the EA role may uniquely own the effort to assess the potential impacts of known shifts on IT capabilities under management.

For example, using the IT Capabilities Impact assessment matrix highlighted in a previous section, the potential degree of impact of the noted trends are stack-ranked against the Enterprise Architecture and Governance capability itself in the figure below.

A rough interpretation of this could be as follows:

It is anticipated that the EA and governance functions will be significantly impact by a number of notable IT trends, including a call for more flexible governance (e.g. to enable innovation), departmental IT, shared business:IT accountability, and a move to broker/shared service orientation.

Future State Transition Factors	IT Capability: Enterprise Architecture and IT governance
Flexible, re-thought governance	3
Shared accountability (w/ executives and business leads)	3
Incremental vs. "big bang" projects	2
Security and Cyber-Threat Management	2
Progressive organizational and reporting structures	2
Innovation and business transformation	2
Value-focused portfolio management	2
Flexible technology management, orchestration and service brokerage/management	2
Departmental IT (and other alternative providers, e.g. cloud)	2
Strategic technology orientation	1
Customer facing + IW/KW needs prioritization, including UX	1
Information management, analytics and data/integration	1
Cloud	1
Business alignment, engagement and process enablement	1
Talent development and re-tooling	0
CIO seat at executive table	0

Again, this assessment and interpretation will vary widely by organization (and perhaps within organizations), but this simple method could be used as a model for your own reviews.

III. The changing face of IT strategy

To complement the previous two sections on needed changes in the IT/CIO and EA functions, here I'll start with a little background (a quick summary of my "Strategy Journey"), go into a bit of detail as to the different facets of strategy as it relates to IT, and then present some noted challenges and recommendations moving forward to evolve the practice of developing (and executing against) IT-related strategies in the real world.

My "Strategy" Journey - 2006-2014

As an early member of Microsoft's "Business Strategy and Consulting Team" (in the mid-2000s) and then their "Enterprise Strategy and Architecture" group (in 2010) - mostly focused on architecture program development and strategy consulting for global enterprise customers - I was able to witness firsthand what was going on in large organizations when it came to their approaches to IT strategy, management, and business alignment (both related to Microsoft technologies and otherwise).

Later, starting an IT strategy practice of my own and mapping our offerings to enterprise needs in these areas, I also gained a unique perspective on the changing face of IT strategy relative to enterprise needs and demand/tolerances for work in this area.

Along the way, I was able to be a part of strategy development for leading organizations with mature approaches to the discipline but also made a number of observations related to some of the difficulties that people were having when it came to "strategy" and IT.

An example of where I've seen a proactive approach to strategy work was for a large oil company I was working with that developed "IT domain strategies" through a strongly governed IT strategy and EA function. Here I worked with different teams to develop separate "above-the-platform" social computing, cloud, BI and content management strategies that were used by underlying platform programs to define their mandates moving forward.

In my experience, however, this level of maturity and discipline is the exception rather than the rule, with many firms running into difficulties when it comes to taking a strategic approach to IT.

In terms of difficulties, one pattern I've witnessed, which I'll term "*Unclear on Concept*" is when various stakeholders in IT don't really realize what it means to develop a comprehensive strategy and (in some cases) confuse the term with developing a "roadmap", an important guidepost for strategic execution but not the "strategy" in and of itself.

A second observation, which I'll call "*Strategic Avoidance*", was something I saw when IT leadership recognized the need for various levels of IT strategy but failed to programmatically invest in it when it came right down to it. This was (at least in part) due to ongoing disruption and chaos in the IT ranks over the years (as well as a lack of funding). This resulted in what I observed to be mostly tactical approaches to programs at the lower levels that suffered from a lack of higher level strategic and business alignment (as well as complexity and cost escalation).

An example of this sort of strategic "avoidance" (and reliance on more tactical methods) was an organization I was working with on a platform upgrade project. This project lacked direction and would have benefited greatly from an over-arching "communication and collaboration" strategy. While the CIO was well-aware of (and sold on) the need to develop a higher level strategy, other executives were a harder sell, and the initiative lingered in limbo for 12 months without funding because of it.

Then there are those who aren't sure how to approach strategy in IT in an efficient fashion and still others for whom "strategy" has a bad name (where you may be better off not mentioning the "S" word at all, or alternatively, using different terminology).

Level Setting Strategy for IT

Due to this lack of awareness of the importance of a strategic approach to IT at multiple levels (and how to approach it), I ended up developing a fairly comprehensive treatment of the subject in a whitepaper published in early 2014 titled: "What's Your Altitude - Navigating the 5 Levels of Strategy Relevant to the Modern Digital Enterprise"⁴.

This included a fairly simple "5 layer model" that provides a concise representation of cascading levels of strategy impacting IT as well as a "10 Step Strategic Planning Model", which can be used as a reference for approaching the strategic planning process moving forward. These are presented and summarized in the following two sections.

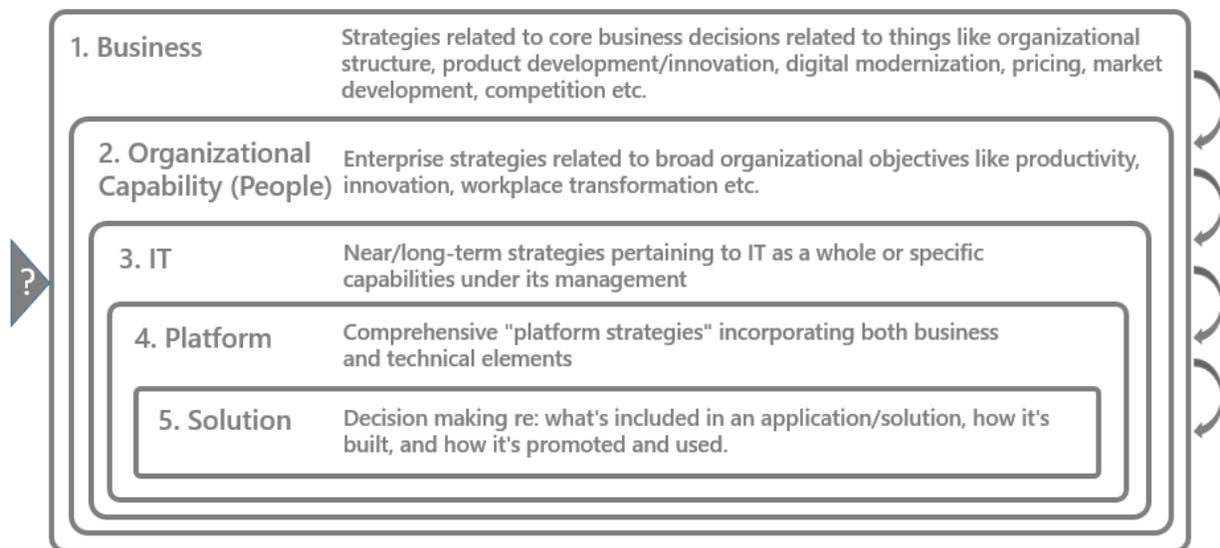
⁴ Contact toddray@alumni.stanford.edu for a copy of the paper

Levels of Strategy - 5 Layer Reference Model

The notion of developing a "strategy" is relevant to multiple types of endeavors in both business AND technology. In other words, strategic development may be applied both at a high level (e.g., an overall strategic plan for an enterprise or an overall IT strategy) as well as at lower levels (e.g. IT platform or initiative strategy).

With that in mind, here we present what we call the "5 Layer Model" of strategy for a range of different contexts.

Note: While this may be overly simplistic and not all strategic development efforts may fit into the boxes neatly, the main point is that there are different levels and contexts requiring different treatment and with different inputs/outputs.



As shown in the diagram, there are certain cascading "strategic influence paths", whereby higher level strategies impact lower level ones. For example, an organization's business strategy may dictate a move to grow digital channel revenue and thus require a revamp of its overall marketing strategy to evolve that organizational capability. This in turn drives lower level digital marketing strategies in IT (or other functions) which would impact platform strategies for things like marketing automation and so on.

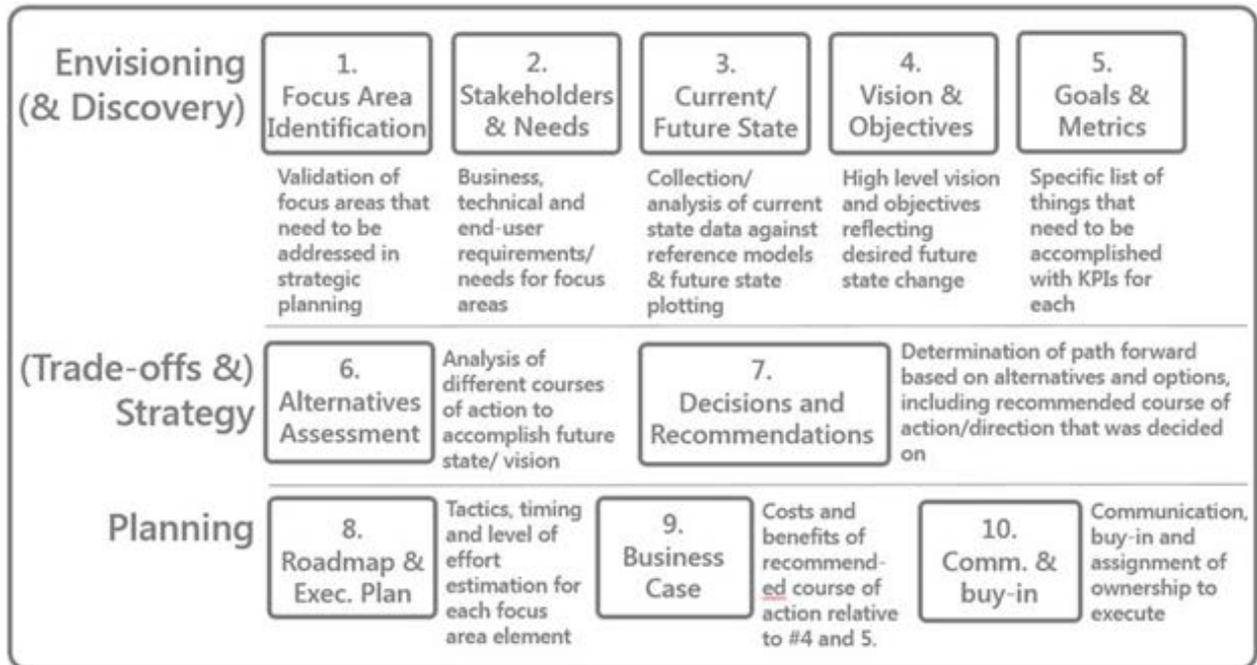
If an organization is developing a strategy at a certain level (e.g. marketing automation platform) and is lacking higher level strategies (e.g. in the Digital Marketing domain), alignment of recommendations to mandates can be tough, calling further investment into question.

For more information on the various levels in this model, please contact me for a copy of the paper.

Strategy Development - 10 Step Strategic Planning Model

Here we present a "10 Step Strategic Planning Model" that lays out the basic steps in strategy development. This attempts to provide a simplified view to what can be a very complex process. Since this topic is well covered in the business world, I won't spend too much time on it here. I'd observe, however, that many strategies fail because of obvious omission of one or more of these critical steps

(along with failure to execute and/or adequately respond to changing conditions - see next few sections).



Re-Thinking Strategy

As I've noted above, many organizations perform some of the steps listed in the 10 step model but many also struggle with the investment of time and resources required for both strategy development and execution. There's a growing skepticism of what strategic planning delivers in many circles. Many have observed that strategy suffers from the same framework/documentation focus and drawn out assessment/analysis (also known as "analysis paralysis) as the EA function (see previous section), with few actionable insights or deliverables produced that are tangible to the business and can effectively be executed upon.

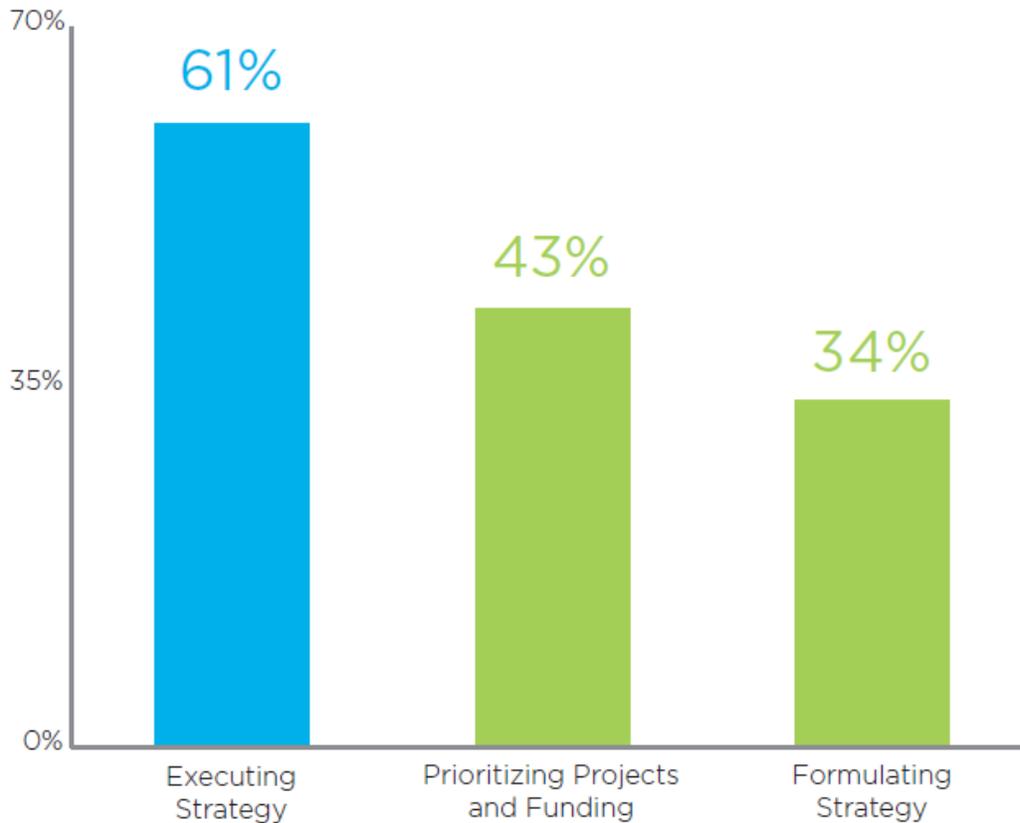
As we point out in the above sections, however, strategic development across the various levels can be critical for the success of the IT function and should not be discounted due to short term thinking. It just needs to be approached differently to ensure that actionable outputs are produced and executed against in a timely, efficient manner, which is typically easier said than done.

Regarding "execution", in the recent (November 2014) CEB report: "[Growth Unlocked: Closing the Strategy-to-Execution Gap](#)", the authors point out that most organizations will fail to realize the benefits of their strategies because they are unable to effectively execute against them, if at all. Here they cite a study reported in The Economist that 61% of strategies dramatically underperform as a result of poor execution (see figure below).

Companies Underperform at Key Strategy Activities Due to Poor Execution

Percentage of Companies

n = 587.



¹ Source: "Why Good Strategies Fail: Lessons for the C-Suite," The Economist, March 2013, www.pmi.org/-/media/PDF/Publications/WhyGoodStrategiesFail_Report_EIU_PMI.ashx.

In terms of guidance on the execution side, please refer to the referenced CEB report and other sources for coverage of effective strategy execution.

Another concern with strategy: it's not responsive enough to changing business conditions. In a recent article titled "[Rethinking the role of the strategist](#)" (with the subtitle: "*Strategic planning has been under assault for years. But good strategy is more important than ever. What does that mean for the strategist?*"), McKinsey research provides the following insights re: "agile" strategic planning:

- Traditional strategic planning processes are insufficient to absorb market disruptions and drive ongoing (vs. punctuated) strategic dialog
- A rapidly changing business world exposes the weaknesses of traditional strategic planning, and what makes good strategy needs to be re-thought (a majority (65%) of strategies surveyed failed McKinsey's gauge of success)
 - Great strategy mirrors the dynamism of the external environment
 - Strategists themselves need to stretch beyond strategic planning and bring to the table additional strengths - domain knowledge for the area in which they're providing guidance

- Some companies have even instituted a more democratic process to collect inputs from across the business (using social ideation and gamification).
- Top performing companies revisit their strategies on an ongoing basis, both scheduled and on an ad-hoc, as needed basis.

Although focused on "business" strategy, these same principles can easily be applied to IT.

So what does the future hold for IT's approach to strategic planning? As with the previous section summarizing the state of the EA function, strategic planning in IT doesn't go away, it just needs to evolve and change.

To wrap this all up, I have four take-away recommendations in the area of strategy, as follows.

1. **Evangelize/Educate.** Make sure sponsors, stakeholders and practitioners are on board
2. **Right Size.** Do "just enough" strategic development work to enable the desired function
3. **Executable.** Make sure that your strategy has enough detail to enable and track execution.
4. **Responsive.** Make sure the strategy is flexible enough to respond/pivot to changes in conditions.

IV. Shifting IT to Enable Innovation

Based on the information presented above re: the IT mandate for change and changes in the EA/Strategist functions, it's clear that all of these entities need to evolve and focus on helping the organization transition to a truly "Digital Business". Moving forward, IT needs to leverage and translate investments in efficiency-type innovations (e.g. productivity) to drive more transformative, disruptive types of innovation (e.g., new sourcing models, new markets, new and different products).

For this to be successful, IT and business leadership need to work together even more closely than ever before to build IT capabilities that drive growth and transformation-type innovation in the context of changing organizational structures, leadership, people, process, culture and technology portfolios.

Sound like a pipe dream? In many cases it's already happening.

This section starts off by highlighting some of the things that CIOs are already doing to adapt their organizations to some of the trends noted here. A number of recommendations are then provided regarding shifting IT's focus to more of a business/innovation enabler⁵. Then, in an attempt to bring some of this back down to earth, we also present a few specific opportunity areas for IT and the CIO to drive innovation – (A) Digital Product Development; (B) Digital Marketing and Marketing Automation; and (C) Big Data, Information Management (IM), Integration and Security, which further support the argument for a positive future for IT if movements in these types of directions are managed effectively.

The CIO Strikes Back

In a recent CIO magazine (online) article, "The CIO Strikes Back: Roles, Perceptions, Making It Happen", the author paints a rather optimistic view on the future of IT and the CIOs office.

⁵ Excerpted from my recent paper (available from IASA) on "Digital Innovation and Business Transformation", where I laid out the case for increased investment in digital innovation programs, including IT's role in that arena.

Here they acknowledge that yes, the CIOs role is rapidly changing from being a technology asset manager to business enabler (which corroborates some of the trends referenced in earlier sections), but contrary to some of the doom and gloom arguments being made, technology is more important to business than ever, and the CIOs office is better suited than anyone to help the business take advantage of it. And those that are able to make the needed shifts in this direction will be rewarded with a seat at the CXO table, helping the organization stay competitive and thrive in the marketplace by aligning with the business, driving business innovation, and refining digital business strategies. In other words, what's needed is a shift from an operational to a strategic role.

In agreement with the CEB findings, the authors also state that IT will continue to thrive if it can become an aggregator and broker of "services", not just technical products (which may be, in fact, provided by someone else).

Finally, the CIO can and should be positioned as an executive partner to enable the other corporate functions and the business units themselves to thrive as a digital business. Oriented properly, the CIO can have a key role in providing technologies and capabilities that enable innovation and create new products and services more quickly.

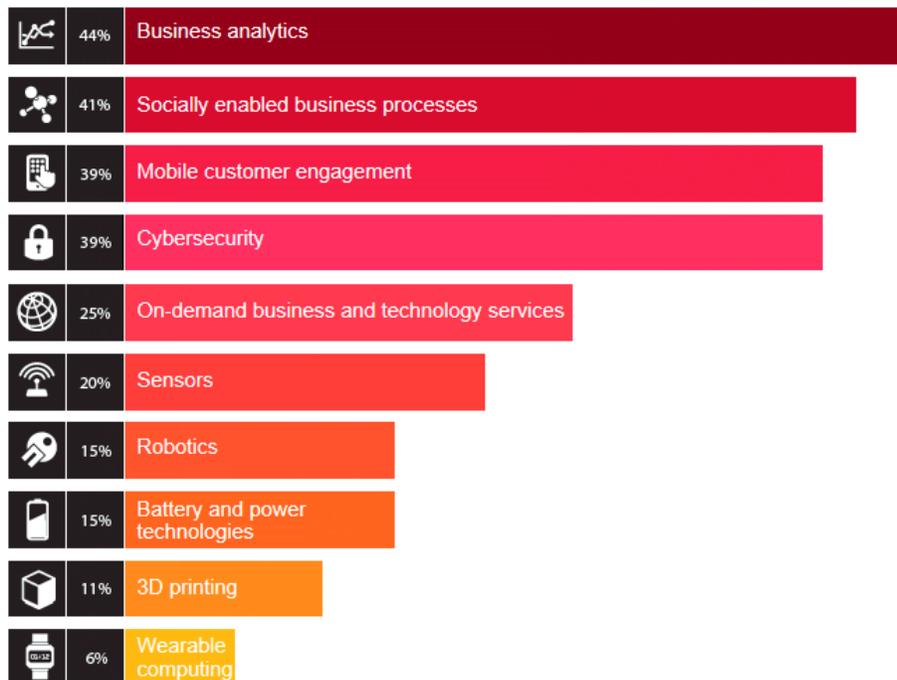
In short, by this view, the CIO is here to stay and can thrive in the new environment with a new mandate.

Given all that, and in addition to the suggestions provided in previous sections (e.g. assessing the impacts of noted IT trends/future state transitions on core IT capabilities), what are some of the specific things that IT and the CIO should be doing moving forward?

Recommendations

Identify Technology Investment Areas

In PWC's 2014 technology trends report⁶, the top 10 investment areas specified by executives (based on a survey) are listed (see graphic below).



⁶ <http://www.pwc.com/us/en/advisory/10-business-technology-trends.jhtml>

As expected, analytics, social, mobile and security top the list, with other investment areas such as sensors, robotics, 3D printing, and wearable computing top of mind.

While not a prescriptive list - every organization will have their own priorities - each organization should think about how their investments map to overall technology investments in the trending areas above and develop their own strategies based on business and technical priorities.

Manage technology spend portfolios to drive innovation

In their June 2008 paper: "Why isn't IT spending creating more value? How to start a new cycle of value creation", PWC reported that most industries spend less than 15 percent of their IT budgets on transformative innovation, and if you look at similar metrics more recently (2012), the numbers remain about the same (still less than 15%).

Here the authors argued that the only way for IT to re-emerge as a competitive advantage—is for corporate leaders to strategically rethink how IT spending contributes to innovation and value creation, requiring the CEO to take the lead in aligning IT initiatives with overall strategy, the CFO to prioritize and understand IT value management, and the COO to ensure that IT initiatives support crucial, customer-facing business innovations.

Apptio, a "Technology Business Management" (or TBM) cloud-solution provider points out in its paper: "IT Financial Metrics Primer – Eleven Essential Metrics for Optimizing the Business Value of IT" that IT needs to focus on how it currently allocates resources to achieve true business growth and transformation goals versus just running the business. Similar to the PWC research cited previously, which shows growth and transformational investments only amounting to about 35% of the total IT spend, Apptio cites research from Forrester showing similar numbers.

At the firm level, these sorts of metrics are not always easy to come by, but at a minimum, IT organizations need to devise ways to baseline the distribution of their spends across running, growing and transforming the business and put longer term goals and measurement techniques in place to track to the overall strategy.

An example application of these principles is provided in the Apptio paper, which provides a case study highlighting how Cisco IT has been able to cost their IT services and report on their IT spend ratios across their categories (similar to the ones listed above), allowing their "run the business" expenses to be minimized and freeing up capital for the other more transformational types. This allows Cisco to rebalance its IT portfolio to provide greater value back to the business.

Shift IT to Business Enablement

- Develop strategies to leverage digital programs that either build competitive advantage in an existing business or create new business and tap new profit pools.
- For organizations facing accelerating competitive pressure for fundamental transformation, further embrace business models and digitalization strategies that not only enable survival but create opportunities that were not possible in the past.
- Complement and leverage investments in efficiency-type innovations (e.g. productivity), to drive more transformative, disruptive types of innovation (e.g., new sourcing models, new markets, new and different products) and stay ahead of the competition.
- Turn the culture of cost-focused IT organizations around to more of a value orientation as part of an ongoing program of change.
- Continue to grow IT's role as a critical partner in executing against the organization's vision and strategy, including repositioning IT to spend more time on customer-related activities, in essence shifting the focus from the back office to the front office

- Continue to educate the C-suite on how digital technologies and platforms can help meet transformational goals using internal and external case studies that showcase impact and value.

Leverage Success Stories to Help Drive Change

Effective implementation of the agenda presented here will require a number of different roles and mastery of influencing strategies to enact the needed change. One part of this strategy should certainly be communicating the opportunity space and needed changes through grounded examples from either your own organization or other organizations, inside or outside your core industry.

Two examples of how IT has contributed to innovation and business transformation are provided below, excerpted from the IASA whitepaper, "Digital Innovation and Business Transformation" (2014):

- **Intel IT - Accelerating and transforming product design (2013-2014 Annual Report)** (<http://www.intel.com/content/dam/www/public/us/en/documents/solution-briefs/it-performance-report-2014-paper.pdf>)
 - Highlights:
 - Create new products, accelerate time to market, expand and evolve a worldwide design organization
 - Provide the technology resources that facilitate the creation of world-class products and services.
 - Run a compute environment to partner more closely with design groups.
 - Provide systems and support to delivering IT best practices, new ideas, and higher-value consultation.
 - Support and drive the pace of change and the rate of progress at every stage of every project.
- **Accenture: 2013-14 IT Report** (<http://www.accenture.com/us-en/Pages/insight-cio-2014-it-report.aspx>)
 - With technology now a critical item on the C-suite agenda, Accenture's proactive IT professionals take responsibility for the broader enablement of enterprise productivity and performance — bringing ideas and innovation to the business, and changing the way they work
 - Enabling Innovation
 - Evolution of Accenture's aggressive social collaboration initiative devoted to using technology to connect our people more effectively
 - 2012 focus was on unified communications; 2013 focus is on social collaboration tools, introducing the "Stream" to the Accenture workforce as a way to bring together content from different channels into a single feed of information and insight.
 - Enabling the Employee
 - Consumerization demands a fundamental rethinking of the IT function as it moves from being a provider and steward of hardware to becoming an enabler of employee productivity.
 - Accenture employees are increasingly making decisions about how and where they work and the devices they require, including ones they already own.

- Accenture’s strategy is to get content and data off devices and into the cloud, enabling employees to access whatever they need from the cloud, using any device.
- Moving content and data off devices and into the cloud radically changes the way Accenture’s professionals will work.

Specific Opportunities

Opportunity Area A: IT 3.0 - Enabling Digital Product Development and Business Models

For anyone who’s read my recent IASA article (and webinar) “Digital Innovation and Business Transformation” - inspired in part by a recent (June 2014) Harvard Business Review article titled: “The Capitalist’s Dilemma” - you’ll sense that I’m a big fan of HBR.

More recently (November 2014), I was inspired by another HBR article “How Smart Connected Products Are Transforming Competition” (by Michael Porter and James Heppelmann) in their “The Internet of Everything – How Smart Connected Products Will Transform Your Business” issue. For anyone interested in the “Internet of Things” (IoT) concept beyond the current media hype, I found this to be an incredibly insightful (albeit lengthy) article that goes deep on how information technology is revolutionizing products; how “smart, connected products offer exponentially expanding opportunities for new functionality and capabilities that transcend product boundaries....disrupting value chains and forcing companies to rethink nearly everything they do, from how they conceive, design and source products; to how they manufacture, operate, and service them; to how they build and secure the necessary IT infrastructure”.

While mostly beyond the focus of this paper, it’s worth noting that the aforementioned HBR article goes deep into defining what “smart, connected products” are, presents a “new technology stack”, touches on a capability model, talks about systems and systems of systems, business dynamics and competition, IoT strategy considerations, etc.

In terms of implications for IT, however, the article concludes with the section “The Larger Opportunity”, where the argument is made that the emergence of “smart, connected products” is changing how value is created, how companies compete, and how they will give rise to the next era of IT-enabled productivity in an era where the impact of previous waves of IT have largely played themselves out.

This era of “IT 3.0” represents an opportunity for the IT function - wherever it lives and however it functions - to drive rapid innovation and growth with very positive economic impacts. Pivoting radically from the past decade of IT cost reduction, cautious investment, muted innovation and slow (or declining) job growth, the era of smart, connected devices promises to change this downward trajectory and re-establish IT as a value creator vs. just a cost center.

This will require business and IT to work together and re-tool for the transformation as well as manage new challenges in the area of architecture, security, integration and information management (see Opportunity Area C – Big Data, Integration and Security).

Opportunity Area B: Enabling Digital Marketing and Marketing Automation

As I highlight in my recent paper (and blog) “Enabling the Rise of the CMT”:

“Digital marketing is rising in prominence in most large organizations, with the CMO function assuming new technical responsibilities and forging much closer relationships with the CIO’s office

than ever before. Taking this even further, over 80% of large organizations (as of 2014) have added a new role called the "CMT" - Chief Marketing Technologist - with joint responsibilities across marketing, strategy and technology.

Moving forward, with CMO/CMT allocations expected to surpass those of their CIO partners within a few years (per Gartner^[1]), they must grapple with CIO headaches like expanding budgets, strategic alignment, technology governance, enterprise architecture, portfolio management and allocation of resources between run/grow/transform the business. And with leading organizations spending over 30% of their marketing budgets on digital initiatives, the number of software/cloud solutions, platforms, projects and vendors will continue to proliferate at both the corporate and business unit levels. This means that the CMT needs to apply holistic, enterprise architecture practices like portfolio rationalization, business alignment and strategic planning to manage complexity and overall performance on an ongoing basis."

So what role does the CIO actually have as an enabler of the newly empowered CMO/CMT function? In a recent article titled: "[CMOs Paralyzed by Paradigm Shift \(and CIOs Aren't Helping\)](#)" the authors make the case that CMOs/CMTs need CIOs to be more proactive in helping them with the deluge of applications data, integration and security challenges.

To paraphrase, CMOs are in over their heads with technology due to: (a) a major marketing paradigm shift (towards digital marketing); and (b) a flood of technology vendors entering the market across a bewildering array of application areas.

In fact, the authors report that success on the technical side in marketing is elusive - only 3 percent of marketers say they're doing extremely well at integrating across marketing functions, and only 16 percent say they have a marketing strategy that's closely aligned with business strategy. In terms of leveraging marketing technology to impact marketing group effectiveness, over 2/3 say they're being held back by technology overload. This is due to the myriad vendors (over 3,000), customer-facing applications, operations and administrative tools, analytics tools, data sources, integration issues, etc.

What this means is that, as we expected, CMOs/CMTs are running into the exact problem space that CIOs have been dealing with for years.

Still, other CMOs/CMTs are adopting IT/CIO best practices and developing strategies and roadmaps for digital marketing, as well as investing in data integration and unification. Just like their friends in IT, marketers need to develop a formalized capability strategy (in this case, for marketing technology) that's tightly coupled with the business as well as marketing performance metrics. And they need to work more closely with the CIO.

While not a panacea, by forming new partnerships between the CIO and CMT and adopting some of the tools and skillsets used in IT, marketing has a much better chance of delivering on its mission.

Opportunity Area C: IM2.0 - Big Data, IM, Integration and Security

It's certainly worth concluding this section with a discussion of opportunities for IT to drive needed capability developments in the related areas of big data, IM, integration and security, all of which have a strong relationship to the previous two opportunity areas. For grins, I'll term this "IM2.0" (im-two-oh).

In the November 2014 article "[2015 Predictions for the Data Economy: Forrester](#)" (Information Management online), the author makes the case that the "data economy" is poised for significant

growth in 2015, enabled by “widespread digitization, mobile technology, the Internet of Things (IoT) and Hadooponomics”. (I assume by “Hadooponomics” they’re referring to “big data”.)

As this “data economy” grows, challenges with managing and integrating disparate data sources, both internal and external (e.g. in the cloud), will need to be considered along with opportunities for exploiting new markets and services related to all the data that is produced.

Along with that, IT will have opportunities to provide needed capabilities in information management (structured, semi-structured and unstructured), integration and security. This means forming stronger relationships with internal organizations like product development, marketing, sales, supply chain/logistics, etc., as well as partners and customers.

I don’t want to get too off topic here, as these are all big areas of discussion, but suffice it to say that IM2.0 is clearly an opportunity area that IT and the CIO should be paying attention to moving forward.

V. Conclusion and Calls to Action

Despite years of disruption, re-organizations, budget/staff cuts and questions of value, the IT function and the leadership roles that support it are in a unique position to drive digital innovation and business transformation more than ever before.

This paper highlighted many of the challenges facing IT, the CIO, and the Enterprise Architecture/Strategist functions. It also made recommendations for change in each of these areas to help adapt these functions to realities of the modern enterprise, as well as to leverage specific opportunities in Digital Marketing, the Internet of Things (IoT), and Big Data.

Specific recommendations include:

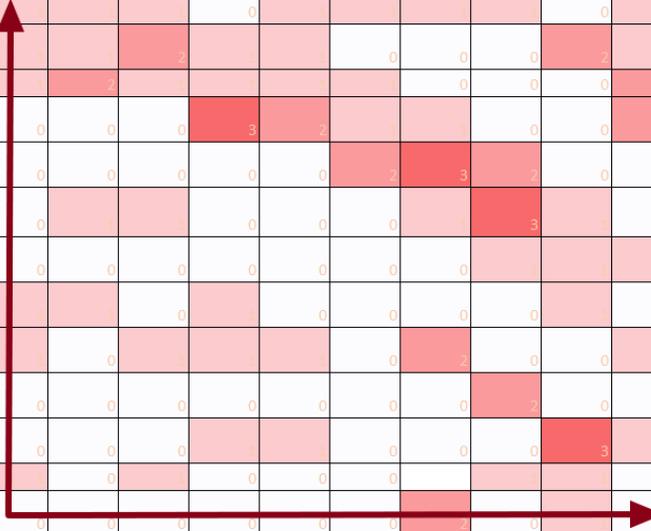
- Re-visit the IT strategy to put it on better footing as its role changes to that of a business enabler rather than a technology provider
- Re-think organizational structures that enable IT to provide value-add services to business service organizations, even if the technology itself is sourced from other (e.g. cloud) providers
- Re-tool IT roles towards the impending changes per strategy
- Re-orient the EA function towards business enablement and innovation (vs. technology rationalization and planning)
- Adjust strategic planning processes to adapt to transient business and technical conditions
- Overall, focus on key opportunity areas like employee productivity, innovation, digital product development, digital marketing and information management, big data, integration and security.

Appendix A – Capability Impact Matrix

IT Capability Categories →	Future State Transition Factors ↓	counts ↓	IT Capability Categories																			
			Information management (including data, integration, and KM)	Cost Management	Demand, Supply and Capacity Management	Accounting, Budgeting, and Finance	Risk Management	Infrastructure management	Service architecture, management, provisioning and delivery	Change management, user enablement and UX management	Business Process management and Engineering	Analytics, BI and Performance Management	Application management	Benefits management	Sourcing, Procurement, Contracts and Supplier management	Strategic and Business Planning	Innovation management, incl. R&D Management	Portfolio, program and project Business engagement, relationship and alignment	Overall IT capabilities management and skills	IT Leadership and Organization	Enterprise architecture and IT Governance	
counts →			8	8	8	9	9	9	9	10	11	11	11	13	13	15	16	17	17	18	20	25
6. Flexible technology management, orchestration and service brokerage/management	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12. Flexible, re-thought governance	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Departmental IT (and other alternative providers, e.g. cloud)	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5. Value-focused portfolio management	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14. Cloud	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16. Security and Cyber-Threat Management	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Customer facing + IW/KW needs prioritization, including UX	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. Business alignment, engagement and process	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4. Innovation and business transformation	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8. Shared accountability (w/ executives and business leads)	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15. Incremental vs. "big bang" projects	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Strategic technology orientation	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13. Information management, analytics and data/integration	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. CIO seat at executive table	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Talent development and re-tooling	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Progressive organizational and reporting structures	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Future State Factors with Higher Overall Capability Impacts

Most Highly Impacted IT Capabilities



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