

The Next Generation IT Function
Towards a Yin-Yang Efficiency-Innovation Frontier

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Executive Summary

What is the organizational model of the 21st century IT function? We set out to examine this question through five in-depth case studies of industry leading firms, interviewing close to thirty senior IT and business executives as well as industry leading analysts. We find that the next generation IT function will seamlessly create complementarities between the two opposing forces of efficiency, via lean-mean standardization of business processes, and innovation, via fostering technology driven business value creation. We idealize a fluid flow-to-work IT organizational design that has a flexible, efficiency oriented, cost-minimizing shared services provisioning core. This flexible core can, on the basis of dynamic global sourcing partnerships, contract or expand in its relationship with decentralized business units to create a complementary innovation periphery. Firms embarking on designing such an IT organizational model find themselves on a pathway from internal optimization to external synchronization to strategic agility and innovation. As with any organizational design problem, the design of the IT organization, in essence, amounts to how the people and their roles are structured to support the business IT alignment. Along with roles, we identify governance and metrics as two other pillars upon which rests the organizational design. Where firms are on this process determines their locational separation from the ideal efficiency-innovation frontier.

How Should Firms Organize their IT Function?

Designing a 21st century IT function in the midst of global economic downturn can simultaneously be justified to be a luxury and a necessity. On one hand IT expenditures are often first in line, in name of cost control, on the chopping block in downturns. On the other hand, the current downturn is encapsulated in a series of technology centric mega-trends, providing opportunities for progressive CIOs to create disruptive capabilities. These mega-trends range from the overall maturity of the global delivery model of IT and IT enabled services (aka business process outsourcing), broadband enabled ubiquitous computing, and the emergence of powerful technology platforms that can be accessed based on a service oriented paradigm. On top of these technical trends, the increasing consumerization of IT and the consummate comfort-level of today's CEOs and board members to make informed IT investment decisions, motivates the need for a radical new look at the design of the IT organization. The old debate between a centralized model of IT decision making, commonplace in the 70s and the 80s, and a decentralized federal model, commonplace in the 90s, has to be recast in a new die that accounts for increased globalization in the production and consumption of IT, increased business volatility and the aforementioned technical and organizational mega-trends.

This research, through in-depth case studies of five industry leading firms and extensive consultations with leading analysts, posits a dynamic flow-to-work organizational model for the next generation IT function. At the heart of this model is a flexible core functional unit whose primary purpose is to provide horizontal shared services that result in globally standardized digitized business processes and an integrated view of corporate data. The core's primary purpose is to be the lean and mean enabler of key external (customer, supplier related) and internal (employee, stakeholder and compliance related) digitized business processes. It is flexible in the sense that as these processes are internally optimized, codified and modularized, they become ripe for global sourcing. This results in a compressive force on the IT core, a smaller IT empire, which can, as the conventional wisdom dictates, and much to the delight of

the CFO, be readily absorbed as cost-savings. However, it is precisely in this approach, lurking a subtle but substantial danger for the IT organization. As a leading CIO in our study passionately told us,

“...the better we get at providing lean-and-mean standardized business processes across the breadth of our firm, the more marginalized and irrelevant the IT organization becomes....”

The visionary CIO heading the next generation IT function will instead divert the economic rents from creating greater efficiencies at to open up multiple peripheral innovation fronts that create value for decentralized business units, and increase the velocity and effectiveness of information flows within the organization. Information technologies today provide the ability for organizations to pursue rapid, scalable low-cost innovation and a failure to leverage these capabilities leaves significant value on the table. Visually, this organizational design resembles a breathing octopus, a fluid flow-to-work organizational model that thrives in the efficiency-innovation duality.

A Historical Perspective of Organizing the IT Function

The centralization-decentralization debate of 70s and 80s resulted in the current dominance of the federal model for the IS organization¹ with some activities centralized and some decentralized among business units. There are two major shortcomings of the federal model that motivate the need to refine the concept.

First, deciding which activities to centralize and decentralize is non-trivial and dynamic in nature, with the key parameters being subject to changing technological and business trends. For instance, while front-line business units may be better positioned to propose new product and service innovations, the feasibility of these innovations to create value that can be appropriated by the firm is contingent upon the firm’s enterprise architecture, an artifact in the custody of the IS organization. Questions such as whether the innovation “fits,” whether they can be modularly attached to existing business processes or to what degree do processes have

to be reengineered, are dependent equally on the nature of the innovation and on the degree of reuse built into the existing enterprise IT platform.

Secondly, a major shortcoming in the implementation of the federal model is that traditional management has continued to treat the IS organization as a back-office functional silo. The result is a barrier of mythical proportions separating business leaders from IS organization technophiles. Designing a humming scalable enterprise architecture that seamlessly supports global business processes is a complex technical and managerial undertaking. Yet, very firms have perfected the science and art of IT chargebacks, resulting in a general sense of dissatisfaction within the IS organization. For instance, at a major global consumers foods giant in our study, we heard from the IT staff of their lack of recognition for implementing, in record time and with significant technical innovation, a novel web-based marketing initiative that won awards for the marketing team.

Three mega trends that are enabling exemplary IS organizations to break these shackles are global sourcing, a process-based view of a shared services and IT driven rapid, low-cost business innovation. In many ways the evolution of component based globalization of contract manufacturing, as exemplified by the sophistication of the original design manufacturers of Taiwan such as Lite-on or Compal, is now being replicated in wider, knowledge-centric, portions of the value chain. For instance, global sourcing of IT and IT enabled services is providing a reference price point for the offerings of the IS organization, helping executives make informed chargeback calculations that were hitherto difficult. Based on these benchmarks, firms are able to make informed objective make or buy decisions for IT infrastructure, applications development and maintenance, back-office processes, and in some cases, knowledge-based innovation services. Likewise, a process based orientation of the IS organization meets the need for firms such as Proctor and Gamble to have standardized global business shared services in areas such as IT infrastructure, Finance and Accounting and HR, and yet maintain local innovation capabilities in the customer-facing market development organizations. These breakdown horizontal barriers within firms and free up capital, time and energy for the IS organizations to facilitate innovations such virtual reality based market research, prediction

markets based forecasting, data mining based customer targeting, crowd-sourced technical R&D with partners such as Innocentive and personalized web-portals for leading brands. Common to these innovations is the fact that they rely on using modern IT to harness information from hidden corners of the organization and beyond. These IT driven business process innovations create substantial value and differentiation for firms adopting them and reposition the IS organization from being a caretaker of the firm’s plumbing towards being centric to the firm’s strategic positioning.

In the next section we details the desirable characteristics of the dynamic flow-to-work model of the IS organization.

The Dynamic Flow-to-Work Model of the IT Function

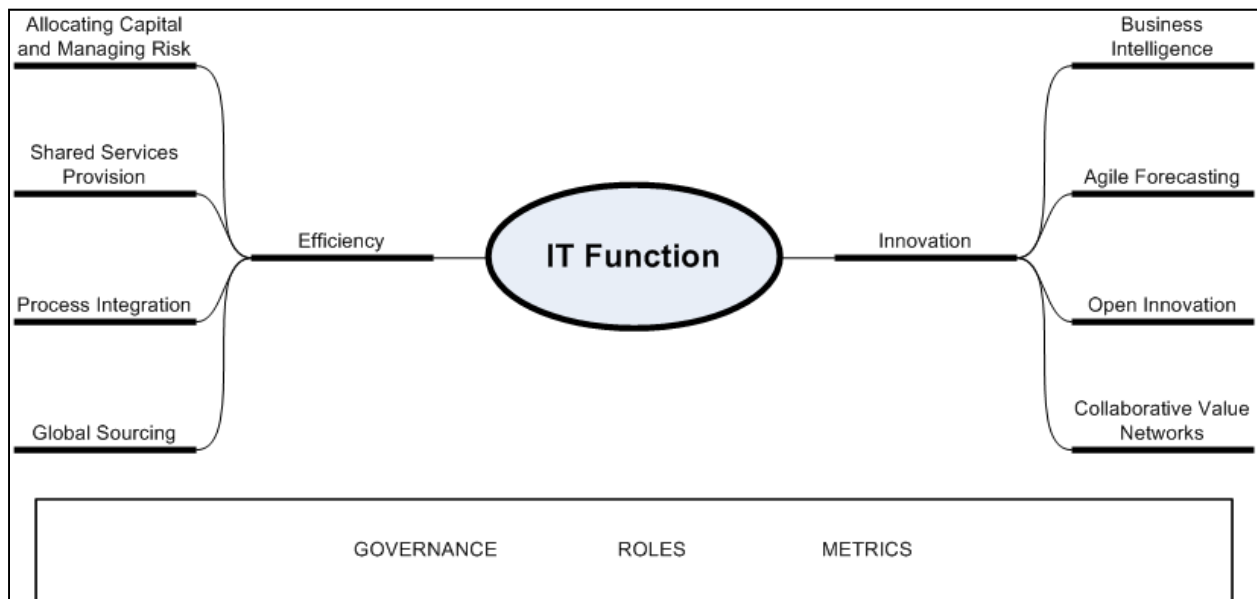


Figure 1- Typical Efficiency and Innovation Activities of the Next Generation IT Function and the Three Enablers

Our vision of the IT organization as breathing octopus (Figure 1 above shows a typical design), a fluid flow-to-work organizational model that thrives in the efficiency-innovation duality is grounded in the emerging theory of the boundaryless organizationⁱⁱ. While achieving “boundaryless-ness” organization wide is a complex and perhaps Herculean task, we believe that a narrower goal of having a boundaryless IT organization within the firm is achievable and desirable. The defining characteristics of such an IT function are:

- 1. Resources flow to strategic imperatives** – In a fluid flow-to-work IT organization IT resources, whether they be in-house employees, strategic sourcing partners or computing capabilities, gravitate towards the strategic needs of the day. Consider a merger and acquisition situation where issues of IT integration are often overlooked, but are increasingly considered to be a key success factor. At Procter and Gamble their centralized and standardized business services and integrated IT platform were prerequisites for achieving integration with Gillette within 15 monthsⁱⁱⁱ. In contrast, compare this with the recent IT integration woes that have plagued the merger between Morgan Stanley and Citigroup. While P&G was able to start realizing the \$1.2 billion of synergies within 15 months, say from a common CRM platform that allowed the sales force to take orders for both Gillette and P&G, IT issues are frustrating some of the 18,500 financial advisors of the merged Morgan Stanley and Citi entity. These advisors have to wait for at least 24 months to be able to sell a full suite of products from both Morgan Stanley and Citi to their wealthy clients^{iv}. A key difference between the two cases above is that P&G was able to have resources flow to work that was of strategic import. It did so by using its strategic IT services partners to flex up its systems integration capacity by 700 people. We consider firms with such strategic partnerships with global sourcing partners to be *externally synchronized*.
- 2. Digitized business processes offered using a shared services paradigm**- Ample research^v exists to demonstrate the value of having digitized business processes^{vi} that are shared across global business units, and that are tuned to the right degree of standardization depending on the business needs. The main sources of these benefits come from cost savings uncovered through reduced duplication and economies of scale. The spillover benefits come from having an integrated view of corporate data – the elusive so-called “one version of the truth” - that facilitates better decision making. At a highly decentralized global food commodities giant in our study we observed firsthand the dynamics of across platform ERP implementation and process redesign. A senior business executive alluded to us the fact that not only was this an exercise in stretching

the frontiers of economies of scale, but equally importantly, “for an incredible knowledge based company such as theirs, an endeavor to make knowledge flow easily across the 27 global business units.”They believe that the end of this multi-year enterprise architecture process IT will emerge out of its comfort-zone and be much more proactive in shaping business by breaking down horizontal (functional silos) and geographical barriers.

- 3. Information is made to flow freely and rapidly across and outside the boundary of the firm** – Having digitized business processes and integrated data does not automatically imply that such data will be shared across the organization meaningfully and will yield information that can be converted into action. Add to this the tacit knowledge that resides within individuals and groups in vast corners of the organization, which, on its own, rarely surfaces for the betterment of the firm. Fortunately, exemplary IT functions are making this a key focus area and are relying on Web 2.0 tools such as Wikis, blogs, social networks and prediction markets to increase the frequency and velocity of intra-organizational information flows. An interesting case in point is the use of prediction markets to harness the wisdom of crowds to surface information buried in hidden corners of the organizations in the form of collective stock-trading game. Stocks correspond to future determinable events, say the likelihood of a project completing on time, or something as simple as a sales forecast. Trading is anonymous and can be carried out by any employee who is part of the market and who is endowed with virtual currency. Under traditional organizational structures, traders who have private information, say about the likelihood of a project getting delayed, would face vertical boundaries of hierarchy, and would prefer not to reveal this information. However, if this information is anonymously tradable and can yield benefits to traders they are much more likely to come forth with it. We see this phenomenon being used at a variety of industry leading firms such as Google, P&G and GE to name a few. It’s an important edge in the 21st century where speed, time to market and agility are key attributes for

success. We consider firms at this level of maturity in using IT to be at the *strategic agility and innovation* stage.

Another facet of harnessing collective intelligence evident in some of the firms in our study is that the best ideas or the quickest solutions to tough scientific questions needed to succeed in today's dynamic environment do not necessarily reside within the boundaries of the firm. This has fostered the popularity of innovation centric marketplace such as Innocentive.com that attract problem solvers from across the globe by virtue of aggregating tough R&D problems and commensurate monetary rewards from firms seeking rapid solutions. This open innovation movement, while highly mature in the software industry (Firefox gets 40% of its code written by non-employees for free) is still in its early stages across the broader marketplace. We find that IT organizations are going to be playing an increasing role in deploying or partnering with such networks.

4. **Model, virtualize and partner across the value chain** - For the IT function play to a predictive role in shaping the future or in evolving business strategy, it is imperative that it builds capabilities to abstract away, model and virtualize key customer, supplier and stakeholder relationships. At a leading IT products giant we studied, where a new CIO was brought in to bring in some governance discipline, the IT function now serves as critical "dog-fooding" partner for stress testing consumer facing products. But this capability extends to other non IT producing firms too. At P&G as well as its competitor Kimberly Clark virtual reality plays a significant role in changing the face of traditional focus group based consumer research. For instance, given the importance of product location and layout on influencing sales in large big-box retailers, these consumer products giants are simulating the entire shopping experience, with shopping cart towing customers, in virtual reality. This permits them to take their digital experimentations with packaging, product design, shelf stocking and locationing to a whole new scale and at a fraction of the cost of traditional focus groups. At Kimberly

Clark's Customer Immersion and Design Centre virtual reality based exercises are provided as a service to retailers, such as Target, and manufacturers. The objective being to demonstrate how virtual reality technology can help retailers more effectively sell its products^{vii}.

5. **Harness corporate data to yield new and predictive insights** – As custodian of the enterprise architecture and the related internal and external digitized business processes, the IT function sits on a virtual goldmine of micro-level data that has the potential to yield new and interesting insights. Most IT functions recognize that operational systems are not optimized for strategic data-driven decision making, and that additional efforts, typically under the label of data warehousing, are needed to create a platform for data-driven and fact based decision making. Where we still see room for improvements is in taking the next step to use the advances in data mining (a field of enquiry at the intersection of statistics, computer science and information systems) to better understand the underlying patterns and relationships in the data. While examples of data mining based successes from Netflix, Amazon, and companies such as Capital One and Harrahs are readily found in the popular press, predictive modelers and data mining experts are few and far between in corporate IT functions. Yet another avenue for making an impact for the IT function lies in providing senior management with insights about employee activities and productivity. In the process of providing an electronic corporate communications infrastructure via technologies such as e-mail, instant messaging and social networking, the IT function is in a unique position to model (without the need for individual identifiers) who employees spend their productive time, with whom do they collaborate, and how formal and informal social networks influence worker productivity^{viii}.

6. **Make human capital more productive** - Smarter, empowered, increasingly collaborative and informed employees are a necessary condition for success in today's fast-paced innovation economy. By creating the necessary infrastructure and by

providing the right incentives (extrinsic and intrinsic rewards are equally important) for data, information and ultimately organizational knowledge to be readily shared across the horizontal, vertical, external and geographic barriers that traditionally exist, the IT function can play a critical role in enhancing the quality of the human capital asset base of the firm. Along with this will come the inevitable decentralization of authority, the diminishing value of the organizational chart, and a 24X7 employee culture that expects ubiquitous access to corporate resources. The exemplary IT function of tomorrow will leverage technologies such as Wiki to democratize knowledge creation, will leverage distance learning platforms to increase online training and knowledge sharing and will provide objective metrics (from the digitized internal processes) for 360 degree performance appraisals.

Together these six mutually reinforcing characteristics define a model for the next generation boundaryless IT function. It is important to note that these are intertwined and complementary characteristics, thereby implying that having these together in an organizational setting can yield super-additive benefits.

The Three Enablers

In order for the above six characteristics to be successfully operationalized and embedded in IT organizations our research has identified three important enablers. These enablers are needed to overcome the historical skepticism that is associated with the IT from those that were at the wrong end of the Internet bust, from those in senior management that have suffered through say a painful over-time over-budget ERP implementation, or from those that have come to believe Nick Carr's thesis that IT is irrelevant^x. At the other end of this skepticism is the raw fact that real stock of computer hardware assets in the economy, adjusting for increasing quality and power, i.e. raw computing "horsepower" held by businesses in 2007 is 30 times that they held in 1990^x. So what comprises the glue that can make the IT function stick together and deliver the six desirable characteristics outlined above?

IT Governance – At the heart of any organizational design problem is the question of structure, namely location of decision making power. IT governance concerns how IT decisions are made, who gets to make them, and who's accountable for what. As a matter of fact, the governance perspective has often been used as a principle for organizing the IT function, with the focus being on decision rights to direct, oversee, and control firm's investment in and use of IT assets, solutions, and services; allocation of rights across IT and business managers; and structures and processes for coordinating the actions of different stakeholders. A key element of this perspective is accountability and visibility across the enterprise of IT related decisions. After all, information processing equipment accounts for half of all business investment in equipment^{xi}. While the importance of IT governance was exhibited by all the companies we studied, there exists significant divergence in the "how" of its execution. Let's examine closely the contrasting governance mechanisms used in two of our case study sites.

One of the firms in our study, a global consumer foods giant, has a widely recognized cost leading IT function. Compared to its peers who spend 2.5% of their revenues on IT this company has an IT budget that is fixed at 1.6% of revenues. Its entire N. American operation runs on a single instance of SAP and it has a high degree of standardization in hardware, software and application platforms. It does not rely on outsourcing and has an exemplary IT-HR function that is proactive about creating interesting career paths for IT employees. Their demand side governance (of IT) is carried out by a strategic council comprising of the VP- IS and business unit heads that meets annually. This body makes the key capital allocation decisions, ensures that the technology environment remains business relevant and minimizes maverick spend. We consider this company to be in the *internally optimized* stage of corporate transformation. Not surprisingly, the outgoing CIO came from the finance function whereas the incoming CIO comes from the supply side of the business. Going forward, we expect to see the IT function play a bigger role in developing innovation capabilities for sales (we heard calls such as "I'm buried in reams of sales data. Can't the IT function provide good insights fast") and marketing and better information sharing with suppliers.

In yet another realization of a governance process at a large healthcare giant we observed two layers of councils for application budgeting and prioritization. The segment layer was aligned with business units and had independent authority to fund application development till a certain dollar threshold. The corporate council dealt with projects that were beyond the purview of the segment layers.

In stark contrast to the above two, the CIO of the global consumer goods company we studied viewed the notion of a strategic council to be akin to abdication of responsibility. Not surprisingly, this CIO sits on the board of the firm. Our research reveals that a potential danger with strategic council based capital allocation and prioritization of IT spends is that they could be inclined to reinforce the status quo. This often arises out of political imperatives at the highest levels of executive leadership that tend to gravitate towards not rocking the boat. A key aspect of the governance at this second company was that it separated investments oriented towards reducing operational costs from investments oriented towards innovation, the latter comprising close to 10% of the IT budget plus any additional savings (above those anticipated) yielded from the operational side.

Business IT Roles – A key element of any successful organizational design is the existence of value creating roles that break down horizontal and external barriers. Almost all the firms in our study had created business facing roles that had their careers in the IT function, but often had dual or dotted line reporting relationships to business leads. A commonly observed role was that of a “business relationship manager” who was co-located with business teams and thereby had first-hand visibility into business needs and was thereby able to shape IT demand. In another case the role of a “client manager” was created so that IT was in constant touch with line leaders and this individual was rewarded in part for business performance. In addition to these responsibilities, the business relationship manager is also typically responsible for monitoring budgets, and project management and delivery.

On the supply side, given the importance and reliance on global sourcing the “relationship manager” role was observed to be salient. The main responsibilities of these individuals are to define, track and monitor service level agreements, initiate new projects and manage related

contracts and also, critically, develop scorecards for vendors and partners. Three of the five companies we studied have offshore captive centers in India. Going forward, it is increasingly likely that vendor relationship management, as an activity, across could well reside in the Indian organization.

We argue that firms thinking about redesigning their IT functions pay close attention to creating business and partner facing roles and staffing them with people who are business and IT savvy. It is imperative that each major business unit have an IT business relationship manager at the table when it conducts its annual or bi-annual strategic planning retreats. This same individual can be the “one throat to choke” – a phrase we heard all too often, but one that could eventually increase business confidence in leveraging IT.

Metrics – Another key element of an organizational design is the use of appropriate performance metrics, as well as the related compensation and reward systems that incentivize appropriate behavior. We believe the judicious choice of these metrics will be an important enabler in reshaping IT from being a provider of technology to IT as a provider of solutions. Broadly our research identifies three categories of metrics that will reflect the value created through the six desirable characteristics of the IT function we prescribe in the previous section.

1. **Financial** – Building a lean and mean digital platform of global business processes that are available, accessible and accurate should be reflected in lowering of operating costs in a broad sense, not just IT costs. At the outset, in-house IT functions need to benchmark themselves against global sourcing alternatives not only to make informed make or buy decisions but also to develop appropriate price points for IT chargebacks that business leaders will accept. Within the IT function, the goal of maximizing business process availability at industry standard costs begins with lowering of defect rates, and through on time and on budget project delivery. Ultimately, IT starts bringing about differentiation if it reduces the hard transaction costs of doing business, say by increasing customer intimacy and supplier profitability.
2. **Strategic impact and innovation** – A key indicator of the IT function’s significance in the firm’s success is the level of involvement in key strategic initiatives and in helping the

creation of new products and services. At the major healthcare company we studied that grows predominantly by acquisition, this meant that IT was deeply involved in doing business process and technical analysis prior to M&A activity and played a key role in post-acquisition. At the IT products major, the IT function is an enabler of strategy through business process simplification. Because it had a unique pulse on information and workflow through the functional barriers of the firms, it was able to bring down the time it took a business unit and legal to come up with a broad licensing agreement for its suite of IT products from 6-7 months to a few weeks. As IT functions start using data mining and predictive modeling to bring about greater consumer intimacy, we suggest that they strive to estimate the overall value or consumer welfare they are creating. At the consumer goods giant we studied IT lives to the motto of, “future scenarios need to be anticipated, planned for, and influenced!” At the healthcare giant IT was measuring its innovation contribution by the number of rapid prototyping exercises (e.g. a mobile telemedicine clinic for rural health care) they carried out per year.

3. **Human capital** – While human capital metrics are not commonly associated with IT function, we believe the ultimately IT is going to make a difference if it increases the quality and productivity of the overall organization’s human capital. This is a vastly under-appreciated role of the IT function. By increasing the quality and velocity of information flows across the organization, by constantly providing employee knowledge-sharing learning and individual growth opportunities, by breaking down vertical and horizontal barriers within firms and by measuring communications infrastructure usage to better understand employees’ social networking and working patterns, the IT function can be hugely influential in improving decision making ability and in improving employee productivity.

Conclusion: It’s a Yin-Yang Efficiency-Innovation Frontier

In conceptualizing an overarching framework to define the next generation IT function we reach back to ancient Chinese philosophy which seems remarkably comfortable in balancing idealism with realism. For the ancient Chinese, heaven and earth, the shiny heavenly Yang peaks and the dark but earthly Yin valleys, have for centuries co-existed in a fluid equilibrium. We believe that the successful IT function of tomorrow will be the one that will thrive in the efficiency-innovation duality. Firms embarking on designing such an IT organizational model find themselves on a pathway from internal optimization to external synchronization to strategic agility and innovation. The major characteristics of these three stages of corporate transformation are summarized in Figure 2 below.

Internal Optimization	External Synchronization	Strategic Agility and Innovation
Seamless, global processes Manage by work process, not by functions Reduce cost and enhance quality of service	Separate commoditizable work processes from strategic processes Leverage assets, capabilities, and knowledge of global vendors	Build capabilities for product, process, and services innovation Build capabilities for continuous innovation

Figure 2- Three Stages of IT Influenced Corporate Transformation

Economic rents earned through bringing about efficiencies from standardized digital processes and integrated data will be redeployed to increasing the quality and quantity of information flows that permeate across the vertical, horizontal, external and geographic barriers that define today’s organizational forms. Put in another way, the IT function, leveraging already available

technologies, has the potential to make any organization a boundaryless organization. In their simplest form, these new and enhanced information flows are the bits and atoms of the modern corporation. These will manifest themselves as value creating new product, service and business process innovations. Together, our six characteristics and three enablers for the IT function have the potential to create organizational capital that results in long-lasting competitive advantage.

As the ancient Chinese wisely said, “every day the earth grows thicker by ten feet the heavens will also rise higher by ten feet.”

Endnotes:

ⁱ Ritu Agarwal and V. Sambamurthy, "Principles and Models for Designing the IT Function," *MIS Quarterly Executive*, Vol. 1, No. 1, 2002, 1-16

ⁱⁱ Ron Ashkenas, Dave Ulrich, Todd Jick, and Steve Kerr, *The Boundaryless Organization: Breaking the Chains of Organization Structure*, Jan 2002.

ⁱⁱⁱ Michael Bloch and Elizabeth C. Lempres, *From internal service provider to strategic partner: An interview with the head of Global Business Services at P&G*, July 2008, available at <http://www.mckinseyquarterly.com>

and our internal notes from case study interviews

^{iv} Francesco Guerrera, *IT woes delay Morgan Stanley and Citi venture*, June 15, 2009, available at http://www.ft.com/cms/s/0/1ac7a28e-5945-11de-80b3-00144feabdc0.html?nclick_check=1

^v Peter Weill and Sinan Aral, *Generating Premium Returns on Your IT Investments*, *Sloan Management Review*, Jan 2006.

^{vi} Brynjolfsson, Erik, "Seven Pillars of Productivity," *Optimize*, May 05

^{vii} Marianne Kolbasuk McGee, *Kimberly-Clark's Virtual Product Demo Center Yields Real Ideas On How To Sell More Products*, *InformationWeek*, September 18, 2007.

^{viii} Aral, Brynjolfsson & Van Alstyne (2007), *Productivity Effects of Information Diffusion in Networks*, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=987499

^{ix} Nicholas G. Carr, *IT Doesn't Matter*, *Harvard Business Review*, May 2003.

^x Brynjolfsson, Erik, Saunders, Adams, **Wired for Innovation**, MIT Press, 2009.

^{xi} Brynjolfsson, Erik, Saunders, Adams, **Wired for Innovation**, MIT Press, 2009.

Methodology

Our research methodology primarily involved five in-depth case studies of industry leading firms for which we had documented evidence of an exemplary IT function, a visionary CIO or IT leader, or an major corporate level strategic IT initiative, the process of which would shed new insights into how today's industry leaders go about bringing IT led change. The list of firms to target was chosen after an extensive short-listing exercise that looked at IT function rankings from CIO Magazine, InformationWeek and through inputs from the senior management of a major global IT services vendor. The profile of the firms in our study are:

1. Company A - \$13.6 billion branded food manufacturer
2. Company B - \$83.5 billion branded consumer goods leader
3. Company C - \$120 billion privately held commodities giant
4. Company D - \$60 billion IT products leader
5. Company E - \$75 billion health care giant

At each of these firms we interviewed an average of six senior IT and business executives, including the CIO, two-three of her direct reportees and 2-3 senior business leaders at the VP level. Each semi-structured interview was done in person by the two researchers and lasted about 60-75 minutes.

In addition to these in depth case studies we had extensive discussion on this topic with senior analysts from Gartner, Forrester and IDC.

(Appendix A provides the questionnaire that was shared with each interviewee prior to the meeting and which formed the basis of the conversation).

Appendix A – Questionnaire

Next Generation Organizational Models for the IT Function

Questions Relating to the Organization of the IT Function

1. Studies indicate that IT organizations within firms range on a continuum spanning across centralized to decentralized models with everything in between. **How would you best describe your organization's IT function?** *In answering this question, think about who drives key decisions about IT investments, where do IT initiatives originate from and what role does IT play in the overall strategy of the firm.*
2. We would like to get a picture of the IT organization's place in the overall organizational structure of the firm. Whom does the CIO report to? Do senior IT colleagues occupy partnership roles with other functional areas such as Strategy, Marketing, HR and Operations?
3. With greater attention being paid to financial and business risk management as well as compliance what are your current initiatives in the areas of program management, portfolio management and governance? How do you see these evolving in the medium to long term?
4. The focus of IT organizations within firms spans the continuum between enabling strategic differentiation and facilitating operational excellence. Where do you lie in this continuum? What metrics do you typically associate to measure strategic differentiation and operational excellence?
5. Traditionally, one of the challenges facing the IT organization at the board level has been that much of the value and in many cases also a significant portion of the costs related to IT have been categorized as *intangible*. How do you measure and judge IT's value and true costs? How are these costs allocated within your firm?
6. Could you elaborate on the desire to have "minimal maverick spend"?
7. Looking into the future, what in your view are the core capabilities that your IT organization must have to be continuously creating value for your firm?

Questions Relating to Emerging Roles Designed to Align Business and IT

8. Many organizations are now splitting IT demand and supply
 - a. What are the roles that organizations see in the IT demand function? Who initiates and who consolidates requests for IT initiatives? How is duplication of requests across businesses eliminated?
 - b. Who is finally responsible for the business' interests in an IT organization
 - c. What sort of governance entities exist to coordinate across business aligned demand entities and common or shared IT and services oriented supply entities?

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9. Many organizations are implementing IT service management as a way to integrate their various technical silos. They also have roles called service delivery managers. How does the three dimensional matrix of process managers, service managers and technology managers function?
 - d. What is the span of control of a process manager
 10. Innovation is a key area of focus for most organizations
 - e. Are there any specific roles that are being created in IT functions to serve as catalysts and integrators for business innovation?
 - f. Are there IT roles linked to or embedded in businesses such that IT can be an initiator of innovation?

Questions Relating to Emerging Business and Technical Trends Impacting the Strategic Use of IT

11. IT investments tend to yield supernormal returns when they go hand in hand with organizational complements, such as business process redesign, increased emphasis on knowledge sharing and management, greater use of IT for internal and extra communication, and digitization of processes to name a few. To what extent do business and IT consciously engage in using IT investments to change bring about organizational level change?
12. How do you attract and retain IT talent? What explains your low attrition levels?
13. With offshore outsourcing becoming a mega trend, how would you describe your global sourcing strategy? What best practices has your group developed in
 - a. selecting IT and business process service providers
 - b. deciding what to outsource
 - c. handling knowledge transfer between onshore and offshore teams
 - d. relationship management with vendors
 - e. tapping potential value-adding and innovation capabilities that may exist with offshore providers
14. Modern IT organizations have to balance their energies between keeping the lights on and building innovative extended enterprises through fostering information based partnerships with customers, suppliers and other business partners. Describe the role your IT organization plays in creating value adding partnerships across your firm's eco-system.
15. Among the emerging technical trends today, "Software-as-a-Service" and what are called "Enterprise 2.0" technologies (for instance, Wikis, Blogs, Social Networks and Prediction Markets) are considered to have significant potential in enhancing the business value of IT. Describe your business' maturity level and future plans in tapping any or all of these technologies.

Thanks for your time. Through our analysis of yours and other exemplary organizations we will uncover what factors are influencing the organization designs that are being implemented to maximize business value of IT.
