

Innovation Networks: Casting a Wider Net for IT Innovation

Connecting Innovation and IT for Greater Business Value

Innovation is a key ingredient of success in every industry.

Information Technology (IT), by its very nature, lives on the leading edge of ideas, and is ideally suited to be a company's innovation champion. There is no doubt that IT managers want to help their businesses succeed through innovation. There is also no doubt that business executives want to trust IT to deliver the innovation that creates competition advantage. And yet, something seems to stand between the universally shared desire for business improvement through IT innovation and its translation into action.

This paper identifies the theory and practice that will help IT leadership (re)assume its rightful status as a key driver of business value through innovation in an organization. It defines the broad, and rather loosely used, term "innovation". It posits innovation structurally instead of referring to it in the abstract. It provides a strategic and tactical approach for IT to generate, develop, and implement powerful new ideas at each level that can propel the organization (as well as IT's internal reputation) forward. In this context, the paper examines the paradigm of innovation networks and the value they can bring to the organization.

About the Author

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As Chief Technology Officer of TCS, K. Ananth Krishnan directs technology and research in TCS. He chairs the Corporate Technology Board, the governing body of innovation. Ananth has moved the company to an open and collaborative innovation model, forging the TCS Co-Innovation Network (COIN)[™], which is anchored in TCS Innovation Labs and connects to a gamut of entities in the ecosystem such as global academic and research institutions, strategic technology partners, venture funds and start-ups to deliver innovative solutions to customers. He focuses the research efforts of TCS' numerous labs worldwide, which create new solutions in various domains that are of measurable value to TCS' customers.

A member of TCS' Corporate Think-Tank since 1999, Ananth has led several strategic initiatives and influenced business decisions. He has been at the helm of large transformational projects within the company that have proactively met the technology and collaboration needs of over 100,000 globally dispersed employees.

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Innovation — Too Important to Be Left to IT?

Innovation is a key ingredient of success in every industry. To succeed, businesses must continually surge forward and produce new and better ideas. In an era of globalization and the expanding dominance of the Internet, organizations express their fundamental business strategies through information technology. One would expect, therefore, that IT plays an increasingly important role in business innovation, and that business executives turn to IT managers as their innovation partners of choice.

In reality, this is not always the case. The status of innovation is being reconsidered in many organizations. *BusinessWeek* magazine recently reported that while executives recognize innovation as playing a vital role in performance and growth, they are frustrated by their return on innovation, and are making innovation less of a priority.¹ Furthermore, IT is playing a smaller role than it should in business innovation. *The Wall Street Journal*, drawing on a study by Diamond Management and Technology Consultants of Chicago, recently wrote: “Only 33 percent of business leaders surveyed say IT is very involved in developing their company’s strategy, and only 30 percent say the business executive in charge of strategy works closely with IT.”² It is not surprising that this lack of linkage between IT and business strategy has an impact on business performance.

Innovation becomes even more crucial in a period of global economic uncertainty. “Technology remains the best lever for getting more value from everything we do,” the CIO of American Airlines recently told *The New York Times*.³ Smart companies resist the temptation to stop spending on innovation, for a number of reasons. Periods of slower growth have, in the past, allowed more aggressive companies to create or extend their competitive advantage. One global services company spends less on IT today than it did in 2001, even though its payroll has more than doubled to 175,000 employees worldwide. “The reason we could do that is that we invested (in innovation) during the last downturn,” its CIO reported.⁴

The importance of innovation grows through good times and challenging times. It is alarming, therefore, that CEOs are losing faith in IT as a source of strategic innovation. “Business adoption is more difficult when the IT/business relationship is not strong,” says George Westerman, a research scientist in MIT Sloan’s Center for Information Systems Research (CISR), who is currently studying IT-enabled business innovation. “Far fewer CxOs expect CIOs to suggest changes to products or customer-facing processes. Although CIOs have valid ideas in all categories, many CIOs deliberately refrain from suggesting changes to products until they have first proven they can deliver on more modest innovations,” observes Westerman.

In this scenario, it is imperative that an IT department stays cued in on how its company defines innovation, how it can be continually sourced and puts forth a durable strategy on bringing in business value.

1. DERIVATIVE INNOVATION spurs companies to improve their current offerings in current markets and serve their existing business. It is driven by incremental upgrades in technology, business models, and operating processes.

Derivative innovation is about continual improvement, quick responses to external events, and rapid cycle times measured in weeks. There is very little room for experimentation and a relatively low tolerance for failures. From a competitive perspective, time to market is the key driver of creating an advantage. Activities are centered around a specific customer or segment of customers, and feedback is immediate — the voice of the customer is a key driver.

Focused innovations have the best chance of winning. “We’ve found that innovations targeted to a specific business unit or region are less risky than those targeted to enterprise level,” says Westerman. “Projects pursuing incremental innovations or extensions for local goals tend to succeed in delivering value 30 percent more often than those targeting enterprise goals (58 percent versus 45 percent).”

Derivative innovation may sound commonplace, but it is anything but. Meeting expected performance metrics and keeping the business on a consistent upward path is essential to an organization’s success, which is no easy task. In TCS’ experience, many IT shops fail to achieve this level of innovation. The reality is that IT organizations must master derivative innovation before hoping to go on to the other segments of innovation. Only if it facilitates derivative and platform innovation will IT even be considered eligible for a seat at the table when it comes to developing an organization’s business strategy. IT must master the *tactics* of innovation before the business officers will pay attention to IT’s *strategic* ideas.

From an operational perspective, the challenges in executing derivative innovation are enabling and globalizing. Enabling innovation is about ensuring an organizational culture and mindset of “creative dissatisfaction” with current capabilities, and a constant search for improvement opportunities. Globalizing is about ensuring that the better ideas generated in one part of an organization are rapidly disseminated across the whole organization, and reliably institutionalized. This concept involves not only knowledge-sharing systems, but also cultural receptivity to great ideas, whether they were fostered internally or not. A globalized company often finds widely distributed teams — one in Sao Paolo, one in Bangalore, one in Hangzhou, one in Burbank — grappling with challenges that have already been solved elsewhere. Simple openness to sharing is the secret sauce of derivative innovation.

How does an organization know when derivative innovation is working? The key measures are the continuing success of the organization in its current markets and the sustained satisfaction of current customers.

2. PLATFORM INNOVATION induces organizations to expand into adjacent technologies, business models, and markets. Here the focus is on seeking the next-generation of the organization's products and/or customer base, moving beyond selling more products to existing customers to developing new products to reach new customers.

Platform innovation is about developing extensions to the current business, and anticipating and leading changes of significant impact. Cycle times typically will be in months. There is some room for experimentation and some tolerance for failures. From a competitive perspective, the quality and success of the new offerings is the key driver of advantage. Customer feedback is built into the capability creation process, and feedback is iterative. Platform innovations could be along the technology axis (next-generation technologies applied to current markets) or along the market dimension (extending current offerings to new customer segments).

From an operational perspective, the challenges in platform innovation are, first, the challenges of derivative innovation and then "selection" and "internalizing." Selection involves deciding which initiatives have the most potential and should be nurtured.

An ecosystem perspective on innovation is vital to an organization that looks beyond its present customers and current line of products and services. This is why TCS prescribes the Innovation Network. Creating a network of academia, strategic partners, vendors and key customers can get us close to leading-edge research that can move us faster on the information super highway. Innovation triggers innovation. A few years ago mobile phones and set top boxes were devices that were unconnected to the Internet. Today, in the era of convergence, each enriches the other.

If an organization has wisely leveraged the capabilities of an innovation network, its choices are numerous because the innovation network, by its nature, creates a prolific funnel of new ideas. These, however, must be evaluated and managed. The process of selection sounds simple, but it isn't. A good way to do this is to have a team with business stakeholders as well as impartial technology experts decide on when to continue developing ideas and when to kill them.

TCS has found the best way to identify and select a promising idea is by launching a series of low-cost "market probes" — more prosaically, proofs of concept — and to be ruthless in deciding which ideas live or die. The probes phrase was invented by Shona Brown and Kathleen Eisenhardt, authors of *Competing on the Edge*.⁷ It is usually a good idea to enforce go/no-go decisions by requiring those entrusted with an organization's innovation to choose a small number — maybe even one — of probes per quarter for scale-up and implementation.

The internalization challenge is about scaling up the successful probes and making these part of the core business. The best way for an organization to do this is to create a "new capabilities" process to proliferate platform innovations through the business. All new capabilities touch an organization in multiple ways in multiple places in marketing, sales, manufacturing, logistics and other departments. Owners of all functions need to support and evangelize for innovation, or it will fail. One way to promote successful internalization of innovations is to create an organizational mindset of "doing great new things in scale" and "thinking big."

An organization knows platform innovation is working by measuring the range and quality of the growth options. These indicate the richness of the pipeline of proven options for large improvements to the current business and capabilities, or extensions of current capabilities to new segments.

3. BREAKTHROUGH INNOVATION relates to a set of organizational capabilities that are radically different from the current business. These are quantum leaps that create entirely new markets. Breakthrough innovation is about thinking completely differently and understanding technology, customers, and entire business ecosystems to anticipate and create new demand behaviors.

Breakthrough innovation is rare, and the competitive advantage it creates is usually fairly long-lived. For example, TCS pioneered the creation of the India software industry, one that is built on the pillars of high quality, global delivery and competitive cost. It is a breakthrough innovation which dates back more than 40 years and is still going strong!

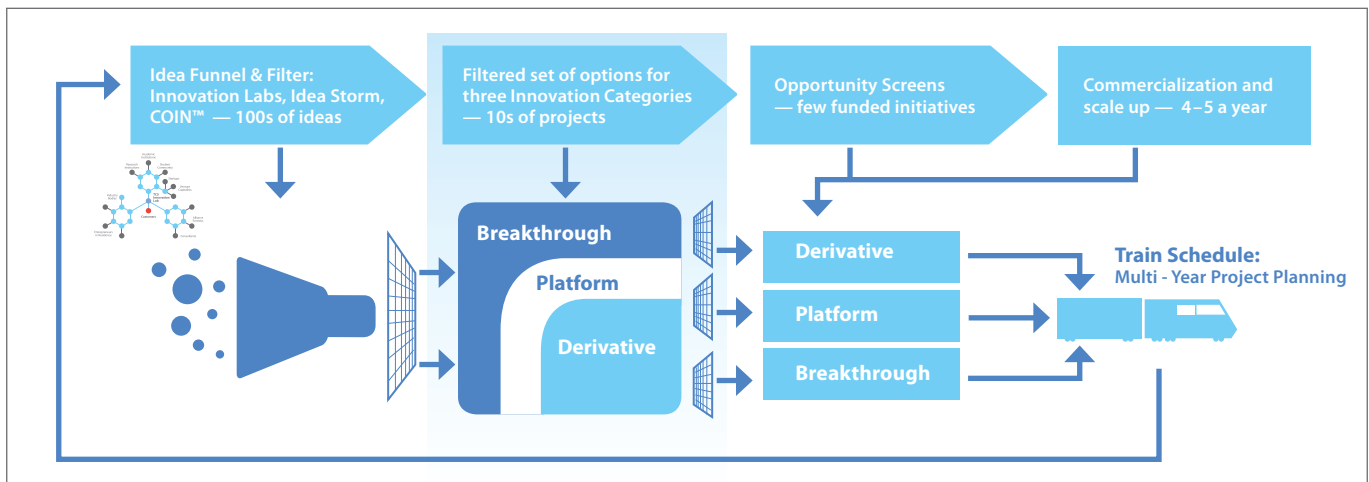


Figure 2: Innovation Life Cycle, adapted from Professor Clayton Christensen’s work

From an operational perspective, the risk challenge in breakthrough innovation is best characterized by the tolerance of failure. The costs of failure are manifold — financial, reputation and the morale of internal and external teams. While the “low-cost probes” of platform innovation are designed to mitigate many risks, the largest risk of all is the cumulative impact of repeated failures. Here is where evaluation of the ideas flowing through the network-fed innovation funnel becomes crucial.

Another risk factor is determining where an organization should position itself along the innovation continuum for maximum return on innovation. If derivative and platform innovation are working well, there is a very high internal disincentive to invest in breakthrough innovation with its inherently higher risks and failure rates.

An organization knows breakthrough innovation is working by measuring:

- The range of radical new options tested and delivered to the business leadership team
- The number of such options actually invested in and implemented
- The degree of competitive advantage achieved over longer time periods (e.g., three years), measured by economic metrics like EVA™

The further an organization moves along the innovation continuum from derivative to breakthrough, the wider it must cast its idea net. In most well-functioning companies, a good internal research and development department working within the organization can achieve derivative innovation. However, as the company raises its appetite for innovation, internal R&D — no matter how talented or well-supported — will not be enough. It is necessary at this point to look outside.

