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**Aneesh Zutshi**
(e-mail: aneesh84@gmail.com)

# Importance of Global Co-innovation Networks: A TCS Case Study

**IET**
**Research Centre on Enterprise and Work Innovation**
**Centro de Investigação em Inovação Empresarial e do Trabalho**
Faculdade de Ciências e Tecnologia
Universidade Nova de Lisboa
Monte de Caparica
Portugal

# Importance of Global Co-innovation Networks: A TCS Case Study

**Aneesh Zutshi**
*Masters in Industrial Engineering and Management, Faculty of Science and Technology, New University of Lisbon*
*Email: aneesh84@gmail.com*

## Abstract

Today all kinds of innovations and research work is done by partnerships of competent entities each having some specialized skills. Like the development of the global economy, global innovation partnerships have grown considerably and form the basis of most of the sophisticated innovations today. To further streamline and simplify such cooperation, several innovation networks have been formed, both at local and global levels. This paper discusses the different types of innovations and how cooperation can benefit innovation in terms of pooling of resources and sharing of risks.

One example of an open global co-innovation network promoted by Tata Consultancy Services, the TCS COIN is taken as a case. It enables venture capitalists, consultants, research agencies, companies and universities form nodes of the network so that each entity can play a meaningful role in the innovation network. Further, two innovation projects implemented using the COIN are discussed. Innovation Networks like these could form the basis of a unique global innovation network, which is not owned by any company and is used by innovation partners globally to collaborate and conduct research and development.

**Key-words**: innovation partnerships; co-innovation network

**JEL codes**: D85; L14; L22

# 1. Introduction

Gone are the days when innovation was a guarded secret which corporates kept discretely hidden. Research labs would work in isolation afraid that if competitors would get to know about their programs, and innovate faster, the millions spent on current projects would go in vain. But those were the times when the benefits of global collaboration had not been understood and its economic incentives hugely underestimated. Now is the era of globalization and there are no boundaries.

If we dissect a new PDA, digital cameraphone, notebook PC, or cable set-top box, we will probably find a virtual U.N. of intellectual-property suppliers. The central processor may have come from Texas Instruments (TXN ) or Intel, and the operating system from BlackBerry (RIMM), Symbian, or Microsoft. The circuit board may have been designed by Chinese engineers. The dozens of specialty chips and blocks of embedded software responsible for the dazzling video or crystal-clear audio may have come from chip designers in Taiwan, Austria, Ireland, or India. The color display likely came from South Korea, the high-grade lens from Japan or Germany. The cellular links may be of Nordic or French origin. If the device has Bluetooth technology, which lets digital appliances talk to each other, it may have been licensed from IXI Mobile Inc., one of dozens of Israeli wireless-telecom companies spun off from the defense industry.[1]

Companies today are looking more than ever before to market new products, better and faster. Companies which do not take the advantage of local specialization from across the globe, lose out on the race. No one company can effectively undertake the innovation process single handedly. Even if large corporates can manage to do so, the economic and technological benefits that specialization and collaboration offer at a global level are too strong to be undermined.

Business and technology leaders' say the most critical factor in their company's success is innovation - far outweighing wage and tax issues - according to the Cisco Innovation 2005 Study.[2] Although most companies realize that investment in innovation is critical to long term growth of companies, there is still a fear of investing in innovation. It is considered as a high risk, high investment venture where the return on investment is not guaranteed.

This spreading out of R&D is a boon to innovation. By mobilizing global R&D teams around the clock, nimble companies can accelerate development cycles, bringing new technologies to consumers and industry faster, cheaper, and in more varieties. Multinationals can reach deep into once-cloistered university labs in Shanghai or Moscow for help in advancing everything from genetics and molecular research to alternative energy. Besides employing several thousand in India, France, Germany, and the U.S. to develop chip sets and software, Texas Instruments taps brains at 100 info-tech companies from Berlin to Bangalore. This has been vital to maintaining TI's dominance in the $5 billion global market for digital-signal processors for cell phones and consumer electronics. "The more we can leverage outside talent and companies with great ideas, the

more product we can get out," says Doug Raser, who oversees TI's global strategic marketing. [1]

This paper tries to fulfill the following objectives:

a) Briefly describe key concepts of innovation
b) Stress on the advantages of global innovation networking
c) Describe Tata Consulting Services and its Co-innovation Network (COIN)
d) Through two case studies, explain the COIN in action

## 2. Three Degrees of Innovation

The ultimate in innovation is not merely to come up with new products and services. It's to create entirely new markets where none existed before, and if possible provide something that changes the way we live and work. Such innovation is dramatic but rare. Many mistakenly consider this as the only kind of innovation whereas this is the most extreme form of innovation and is considered revolutionary. Innovation can be categorized into 3 types:[3]

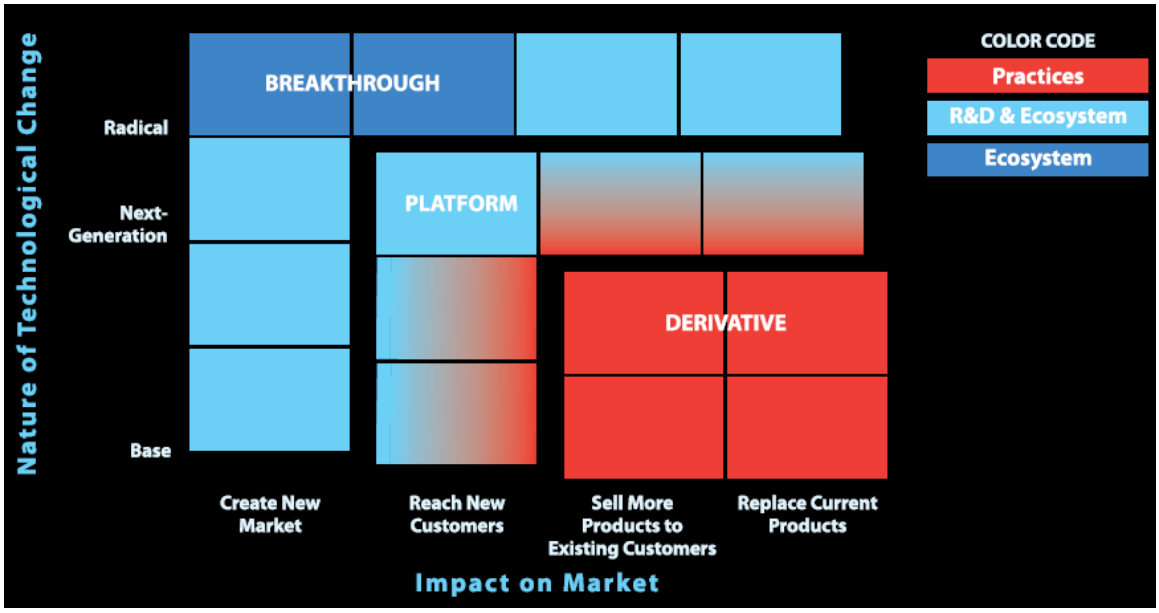


**Figure 1** Technology Market Map [4]

### *2.1 Derivative Innovation*

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.

Innovations targeted to a specific business unit or region are less risky than those targeted to enterprise level. Infact, Projects pursuing incremental innovations or extensions for local goals tend to succeed in delivering value 30 percent more often than those targeting enterprise goals.

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. Organizations must master derivative innovation before hoping to go on to the other segments of innovation.

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.

#### Performance Measurement

The key measures are the continuing success of the organization in its current markets and the sustained satisfaction of current customers.

## *2.2 Platform Innovation*

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).

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. 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. The internalization challenge is about scaling up the successful probes and making these part of the core business.

#### Performance Measurement

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.

## *2.3 Breakthrough Innovation*

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.

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.

#### Performance Measurement

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™

# 3. Processes in Innovation

Rapid innovation requires an effective innovation process. The process of innovation is a rhythm of search and selection, exploration and synthesis, cycles of divergent thinking followed by convergence.[5]

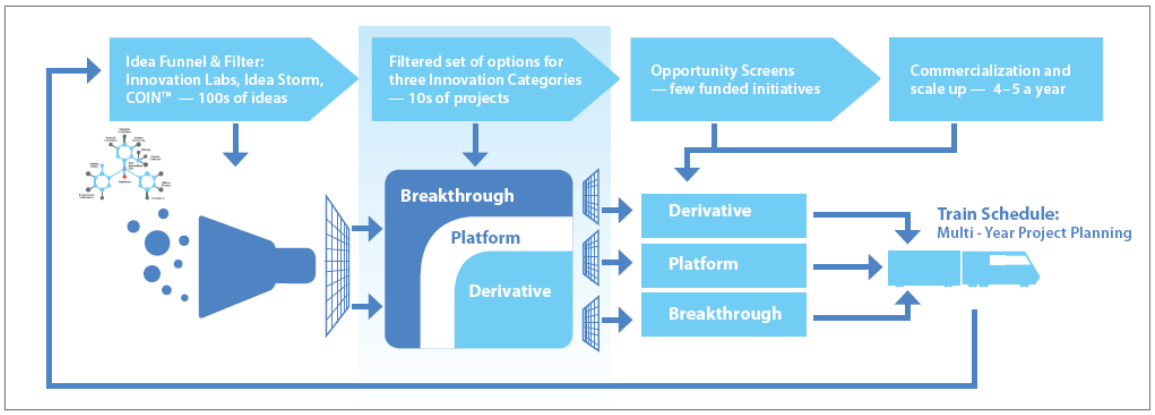


**Figure 2** Innovation Life Cycle, adapted from Christensen's work

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 where an Innovation Network proves vital. Creating a network of academia, strategic partners, vendors and key customers can get us close to leading-edge research that can move partners 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.

Selection of relevant ideas from a host of available options is also very critical. 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.

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. 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 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."

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.

#### Risks

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.

## 4. Tata Consultancy Services

Tata Consultancy Services Limited is the largest IT services, business solutions and outsourcing organization based in India that delivers to global businesses. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled services delivered through its Global Network Delivery ModelTM. TCS has over 108,000 IT consultants in 47 countries.

TCS Innovation Labs are working across domains and new technologies to deliver a range of solution frameworks. They work on diverse technology areas like next generation software processes, human-computer interface, bio-informatics, nanotechnologies, embedded solutions and next generation IT infrastructures. Some of its labs work on applying these technologies innovatively to create domain specific solutions in Travel and Hospitality, Retail, Telecom, Insurance, Media and Entertainment and Financial Services businesses.

| | |
|---|---|
| 1. | Bangalore, India |
| | TCS Innovation Labs - **Bangalore** |
| 2. | Burbank, USA |
| | TCS Innovation Labs - **Telecom, Media & Entertainment** |
| 3. | Chennai, India |
| | TCS Innovation Labs - **Chennai** |
| | TCS Innovation Labs - **Retail** |
| | TCS Innovation Labs - **Travel & Hospitality** |
| | TCS Innovation Labs - **Insurance** |
| 4. | Delhi, India |
| | TCS Innovation Labs -**Delhi** |
| 5. | Hyderabad, India |
| | TCS Innovation Labs -**Hyderabad** |
| | TCS Innovation Labs - **Business Systems** |
| | TCS Innovation Labs - **CMC** |
| 6. | Kolkata, India |
| | TCS Innovation Labs - **Kolkata** |
| 7. | Minneapolis, USA |
| | TCS Innovation Labs - **Performance Engineering** |
| 8. | Mumbai, India |
| | TCS Innovation Labs - **Mumbai** |
| | TCS Innovation Labs - **Performance Engineering** |
| | TCS Innovation Labs - **Telecom, Media & Entertainment** |
| 9. | Naperville, USA |
| | TCS Innovation Labs - **RFID** |
| 10. | Peterborough, UK |
| | TCS Innovation Labs - **Peterborough** |
| 11. | Pune, India |
| | TCS Innovation Labs - **TRDDC** |
| | TCS Innovation Labs - **Engineering & Industrial Design** |
| 12. | Sydney, Australia |
| | TCS Innovation Labs - **Banking & Financial Services** |

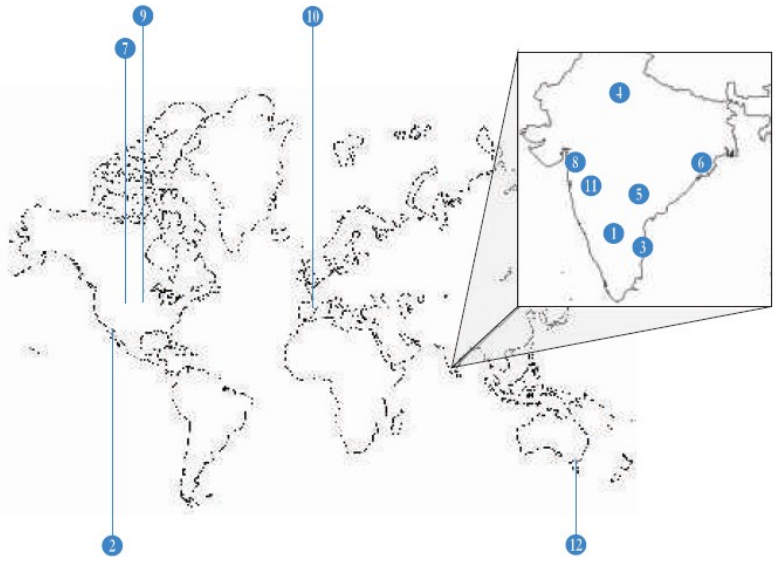


**Figure 3** TCS Global Innovation Labs

# 5. The need for Cooperation

Traditionally, wealth generation and economic growth of society has always been attributed to trade and cooperation. When small hunting and food gathering groups settled in larger communities and villages, their wealth increased greatly. The reason for this is quite evident. As people begin to specialize their activities, and trade with each other it is natural for the wealth of a society to increase. While in the former case everyone was involved in search/production of food alone, now a handful of people could produce enough food for a much larger society. Other people could specialize and produce other products and services for the whole society. Thus each individual could have access to a much larger portfolio of goods and services than just food alone.

In time it was realized, that the larger the cooperation, more wealth and prosperity, and bigger nation states were formed. In fact much of the exponential increase of wealth and prosperity in the last century has been attributed to globalization, trade and economic cooperation at a global level.

Several, studies have shown that there is a high degree of correlation between trust and cooperation and the economic development of an economy. This is true at corporate levels as well as individual levels. Cooperation leads to sharing of knowledge, further specialization, and evolving strategies for development. In 1996 a major survey was conducted across a number of countries asking people, “Generally speaking, would you say that most people can be trusted, or you need to be too careful in dealing with people?” The results show that, barring certain exceptions, wealthy and rapidly developing economies seem to have a culture of higher trust. [6]

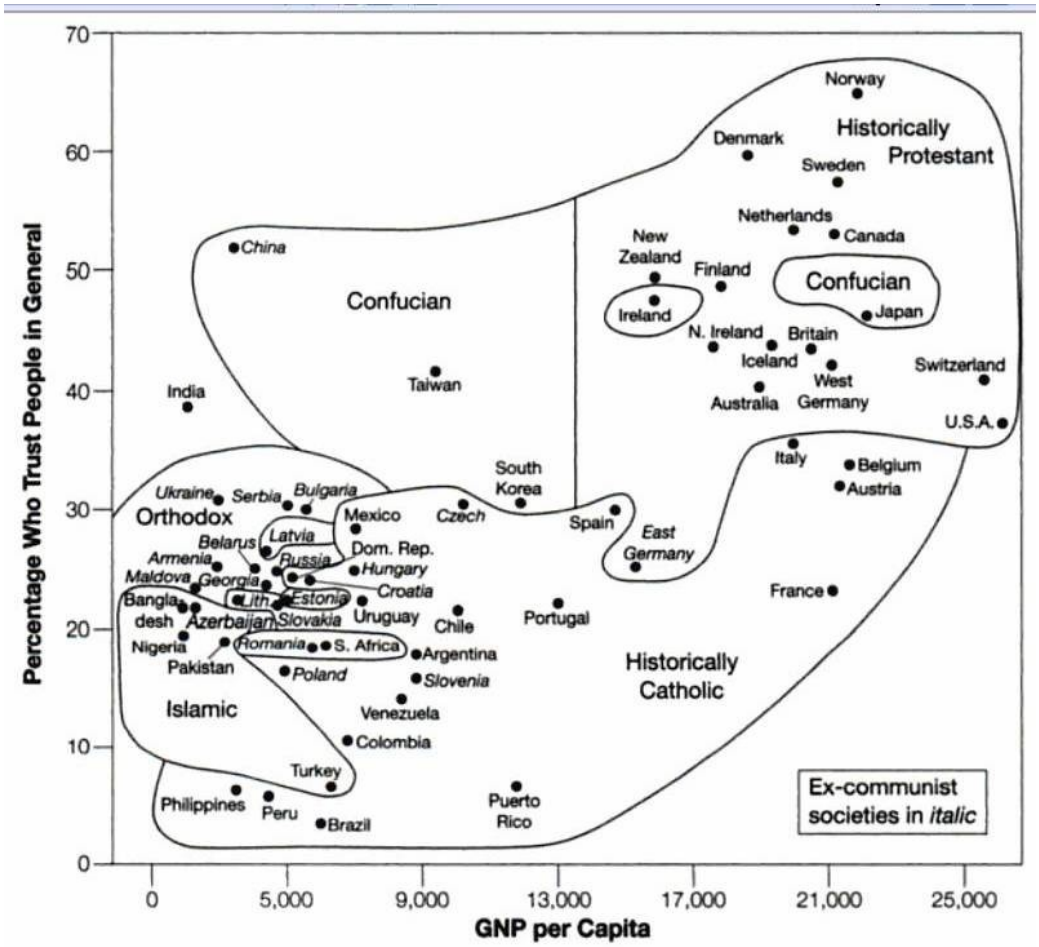


**Figure 4 The relationship between trust and economic performance.** *Source: Harrison and Huntington (2000)*

The same principles can also be extended to innovation. Cooperation pays several times more dividends in knowledge based enterprises because the replication of knowledge costs next to nothing. Duplication of research leads to lower performance and significant waste of resources. Hence global innovation networks try to harness the skills and specializations with a spirit of global cooperation to the mutual benefits of all partners. According to a study in Sweden, The odds getting a patent application approved are in the range 1.1 to 1.5 times better if an application is a result from research collaboration.[7] Proper implementation of Intellectual Property Rights and agreements will lead to a development of trust and discourage free-riders.

# 6. TCS Co-Innovation Network (COIN)

Globalization has lead to higher competitions, in which competitors quickly imitate sources of competitive advantage. Hence, it becomes necessary for companies to successfully innovate on a sustained basis. Advanced Information and Communication Technologies (ICT) have made it feasible for companies to collaborate and do Globally Distributed Work (GDW).[8]

The continued progress along the GDW journey combined with the need for tapping capabilities from other companies and the challenges of innovation delivery helped Tata Consultancy Services (TCS) move to the next level i.e. 'IT Services Partner' to 'Innovation Partner'.

Disruptive innovations are not a result of a single technology invented by a few people but a combination of various innovations along the entire spectrum (idea generation to consumption) thus making it necessary to collaborate. The framework of 'Innovation Network' is perhaps the only sustainable way to deliver innovation in today's environment. Innovation networks as a concept is not completely new. Typically it has been the technology delivery entity, e.g. Microsoft, IBM driven innovation networks, or the research entity, e.g. Gartner, Google driven innovation networks that has been controlling the network and thus being the principle beneficiary. Client companies end up being customers of the innovation initiatives coming out. In the case of TCS, it is one of the few instances of a client driven innovation network where the research and delivery elements are participants.

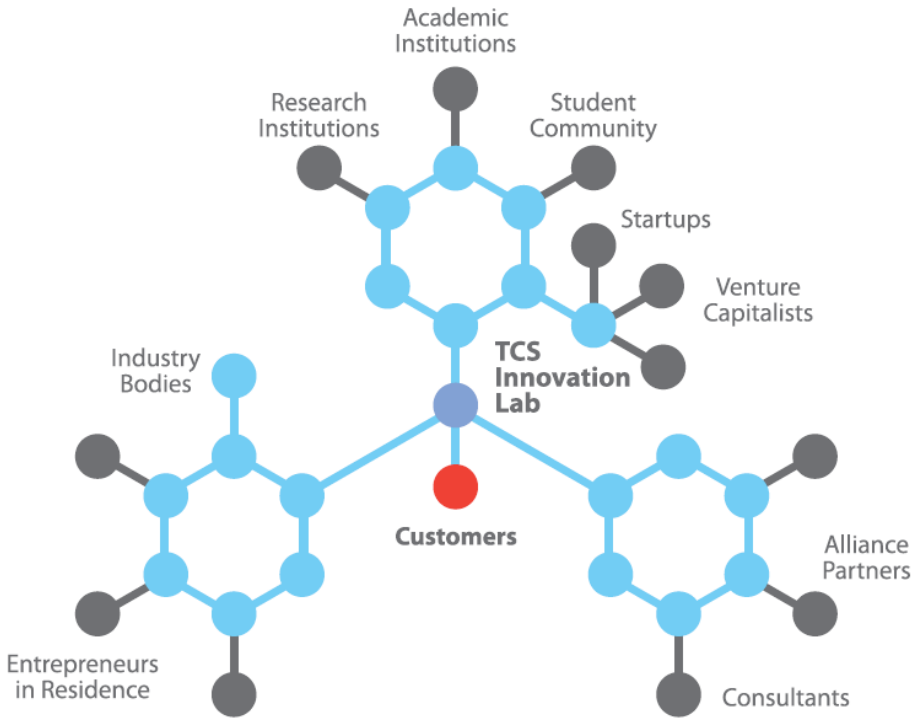

**Figure 5** TCS Co-Innovation Network (COIN)

With that 360-degree outlook in mind, TCS has convened a global, interconnected innovation ecosystem — the Co-Innovation Network, or COIN — that links businesses large and small, well-established and new, with a broad network of partners, suppliers, leading-edge vendors, outside consultants, academic institutions, and venture capitalists. The prime purpose of COIN is to create for IT and the business it supports the largest possible "funnel" of innovative and profitable ideas from numerous, collaborative sources inside and outside an organization.

The key to generating, sustaining, and profiting from innovation is to participate in a multi-organization innovation network that creates a funnel of ideas full and rich enough for some of them to survive the journey from thought to business-transforming action. A true COIN framework needs to be developed to strengthen two key aspects — the ideation perspective and the execution capability.

One of the principle benefits of COIN is spreading the risk of new undertakings across multiple partners to reduce each partner's individual risk, while spreading the search for new ideas across multiple partners to increase the flow of ideas into the funnel and the flow of innovation back to the partners. Once the funnel is filled with ideas, management can take ideas from concept to implementation.

According to TCS, COIN possesses the key attributes of an efficient and valuable co-innovation network. These are listed below:

**a) True R&D partnerships beyond joint marketing and sales activities:** Too many so-called innovation networks are just marketing alliances between, say, enterprise software companies and IT service providers, with the service providers acting as systems integrators selling their partners' products and solutions. A true innovation network is defined by partners who collaboratively develop innovative intellectual property, then proliferate the innovation throughout the network and to the network members' partner and customer ecosystems.

**b) A broad and inclusive agenda:** Proper innovation networks go beyond the basics of the industry context. In the IT industry, for example, it must go beyond application development and infrastructure to include broader areas of focus across multiple domains and industries (as with supply-chain optimization, vertical process stacks, security and unified communications).

**c) The highest level of innovation possible:** New business models deliver greater competitive advantage than new products and services, according to a survey of 4,000 C-level executives by The Economist.[9] In other words, business executives are looking for breakthrough innovation above all, and the innovation network must be tuned accordingly.

**d) A quick time to market process:** Proper innovation networks eschew innovation and R&D for the sake of pure, ivory-tower ingenuity. The point of these networks is to speed the best ideas from concept to business value.

**e) Creativity in financing innovation:** Spread the risk. Spread the cost. Spread the benefits. Each member of a good innovation network brings different capabilities to the ecosystem, from academia's theoretical insights to venture capital's access to funding. An innovation network lives up to its name by drawing on those capabilities as needed.

**f) Capacity to simultaneously democratize and automate business process:** Properly-designed innovation networks can add tremendous momentum to the twin industry-wide drives:

1. Automate IT processes that require little human creativity (which also saves money).

2. Simplify IT to the point where non-technical business users can make the changes required for organizations to function best (which, as a side benefit, makes business users appreciate the innovation of their colleagues in IT).

Several times a year, TCS renders the COIN concept visible, specific, and educational for the business and IT executives who attend its several Innovation Forums organized in different parts of the world. Detailed presentations by various members of its Co-Innovation Network, improve knowledge sharing.

Various members of the COIN play four major organizational roles:

**a) Inventors** create new ideas for products, services, or business models
**b) Transformers** convert the pure ingenuity of Inventors into market-relevant products or services
**c) Financiers** fund the activities of Inventors and Transformers
**d) Brokers** find and connect the first three — Inventors, Transformers, and Financiers — and facilitate their global interactions

The following table shows how the partners can maximize the benefits of both internal and external resources.

| Role | Internal Resources | External/Innovation Network |
|---|---|---|
| Inventor | In-house R&D | Startups, contract labs, academia, freelance experts, consultants, creative customers |
| Transformer | Supply chain, operations, sales, marketing | Contract manufacturers, channel partners, consultants, lead users |
| Financier | CFO, business units, corporate venture capital groups | VC firms, economic development agencies, risk-sharing B2B clients |
| Broker | Business development, IP licensing, CIO, CTO | Trade associations, community leaders, NGOs, online IP/talent marketplaces, solver network portals, loyal customers |

**Figure 6** How COIN helps expand possibilities for its partners

Organizations such as TCS COIN are always open to adding additional nodes…not only as consumers of innovation but also as contributors of innovation.

## 7. Case Study – Norwich Union Life

Norwich Union Life (NUL), a leader in the UK life and pensions market, employs around 10,000 people and serves six million customers, with a market share of 11 percent. The company is part of Aviva – the world's fifth-largest insurance group.

In the highly competitive insurance sector, innovation is an important source of differentiation. By their nature, the outcomes of innovative activities are uncertain, and very few ideas make it to production. NUL IT sought to minimise these risks by engaging partners such as Tata Consultancy Services (TCS), and using TCS Co-Innovation Network (COIN)™ to help build a delivery framework that would improve the number of innovations they could explore and review.

NUL decided to engage TCS to help create the roles, processes and roadmap required to develop a culture of innovation within its IT department. This foundation would be used to help inform the wider company innovation agenda.

"What differentiates TCS is its Co-Innovation Network (COIN) approach," explains Matthew Palmer, Head of IT Futures at NUL. "COIN recognises that innovation happens everywhere – in universities, research centres, industry bodies, start-ups and so on. TCS links these innovation resources together with its own innovation labs across the world, forming a network that we can leverage, and providing a world-class delivery capability that gives us access to the latest technologies ahead of our competitors."

TCS began the engagement by working closely with the NUL IT Futures team to define objectives and create an environment for innovation. This was followed up with some 'quick win' incremental innovations to help increase buy-in among business stakeholders. Further research into potential innovations and continuous dialogue with

the business resulted in a book-of-work detailing the business and technology areas that offered the greatest opportunities for innovation.

With the groundwork laid, NUL and TCS began leveraging COIN to deliver proofs-of-concepts and pilots for a number of projects – ranging from small incremental improvements through to more ambitious innovations. A major success has been a podcasting site aimed at Independent Financial Advisers. There are also a number of other successful initiatives like text mining, user-interface innovation, data as an asset (data-mining), Wiki-based collaboration, and speech (natural language) processing. These support NUL's "Value Innovation" agenda, a concept seeking to identify ways to improve the company's operations.

Through TCS COIN, NUL is able to harness a prioritized stream of potential business ideas that can be reviewed by the business. By involving numerous focused labs and partners, the network effect created by COIN exponentially increases "Think" and "Ideation" capabilities, and therefore the number of ideas available to the business to consider. TCS investment in COIN labs provides the infrastructure for organisations like NUL to "Test & Learn" from such ideas.

Equally, COIN provides an innovation process that encourages filtering of ideas based on strict evaluation criteria and measures, allowing those with the highest potential to progress, and thereby maximising the value of investments in innovation.

## *7.1 Partners in COIN*

The heart of the innovation network was in its entities and setting these relationships was perhaps the most critical part of the framework. The innovation network was formed to bring together the business, the research and the technology elements together. The innovation team provided the environment to identify and bring these elements together as well as manage them to deliver innovation on a project basis. The life of each network ends with the project but the relationships with the elements are sustained. TCS and other global sourcing partners were approached for the IT delivery capability, while a premier UK university was engaged for the research capability.

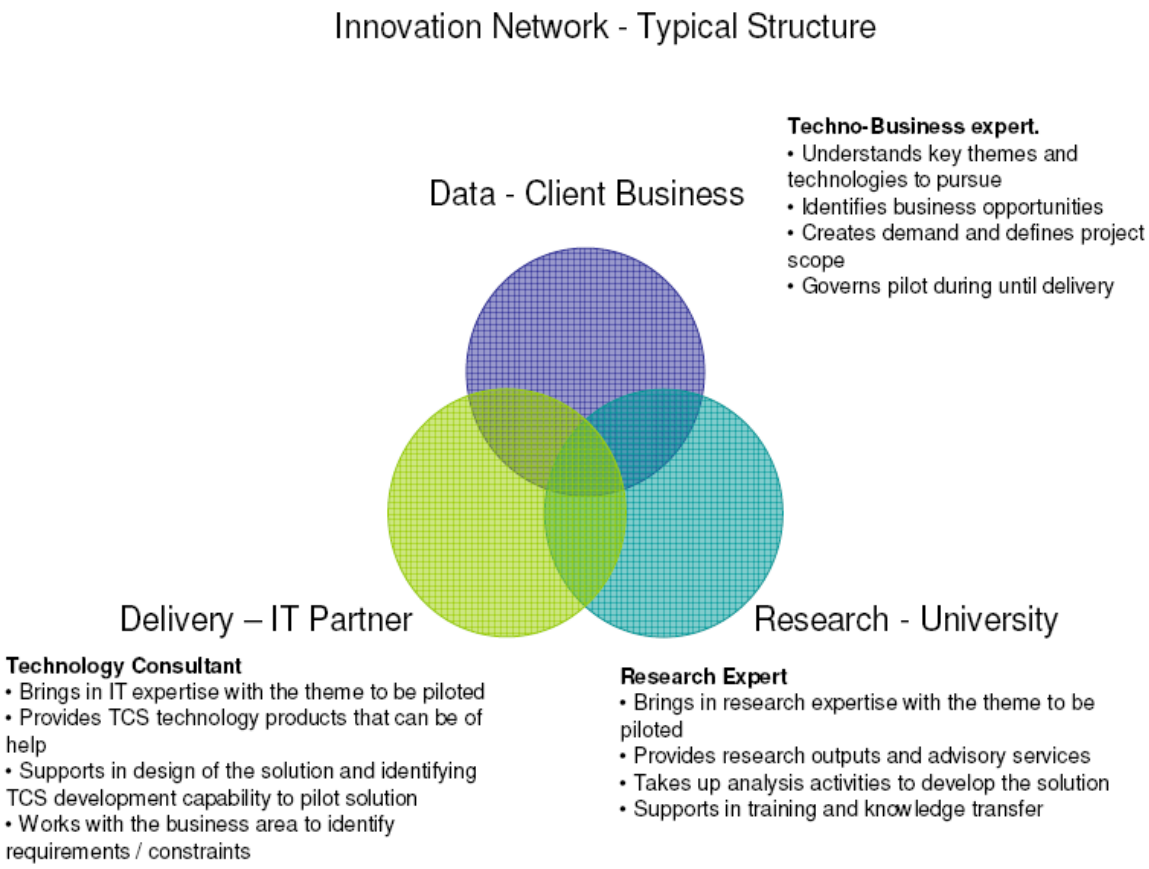


**Figure 7** Role of different partners in COIN

This partnership between the various elements of the COIN is a win-win situation for all the concerned parties. Figure 8 depicts the various inputs provided by each partner and the benefits received by each partner.

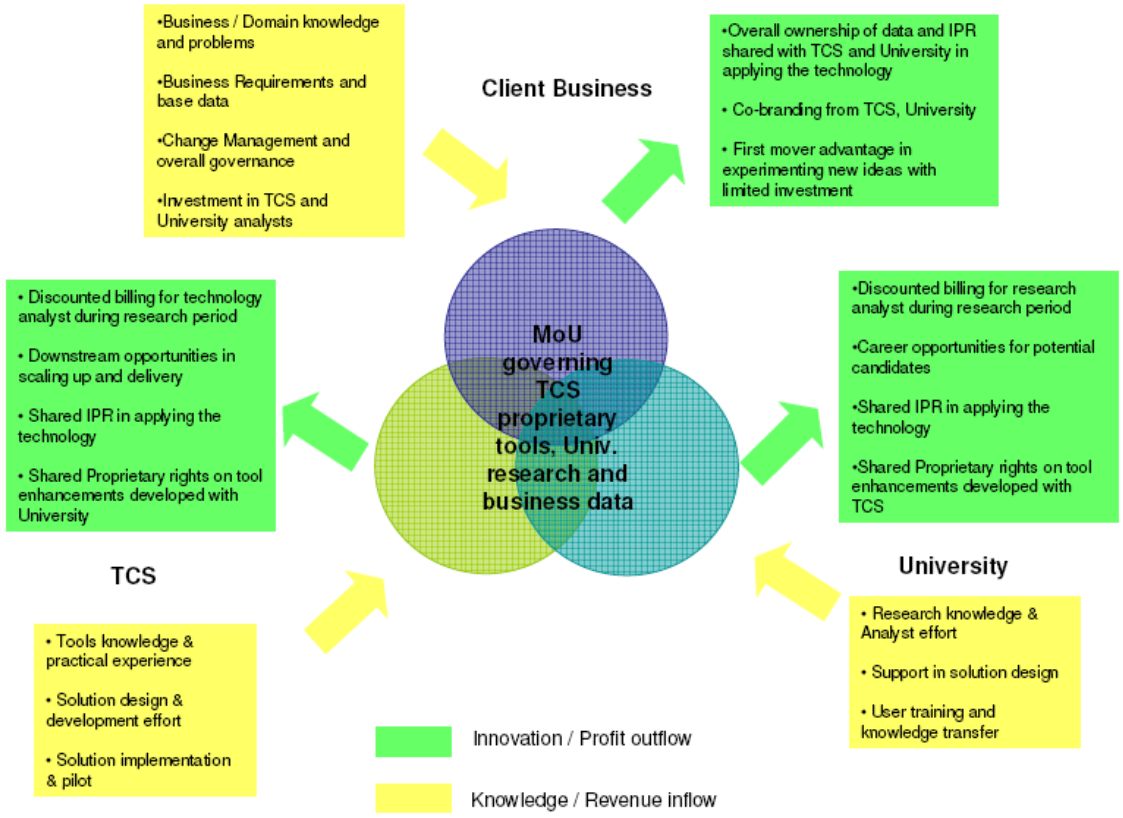


**Figure 8** Inputs and benefits for each partner

The innovation network involves diverse entities and dispersed capabilities spread across geographies. Naturally, innovation network is a mechanism of delivering innovation through globally distributed environment. However, this poses challenges like-communication, cultural diversity and daily management. The innovation team with presence of TCS had a floating and flexible onsite-offshore approach while interacting with the technology tools teams. Also, existing offshore infrastructure such as shared intranet and telecommunications was leveraged to extend the virtual team to offshore.

As the outsourcing concept demonstrated benefits the client slowly moved towards outsourcing areas like call handling for certain products through an Indian Business Process Outsourcing (BPO). The group set up its own call centre for a larger portfolio of products in India and trained it with the business knowledge to provide better service.

On the IT front, as technology went deeply embedded in the business process, more strategic elements of business were made accessible to global partners. Global sourcing partners moved up the value chain and got involved in analysis and consulting type of work.

With time Globally Distributed Work (GDW) evolved along 3 dimentions.

1. Geographical dimension– from regional to global.
2. Functional dimension– from outsourcing to distribution.
3. Level of involvement– from non-critical to strategic.

## 7.2 Project Case Study 1: Innovation Network for Text Mining

The objective of this initiative was to demonstrate the potential of text mining in extracting insight from natural language and trigger wider opportunities within customer experience part of client business. The context chosen for the purpose of the prototype was within the customer advocacy team. This team conducts Voice of Customer (VoC) survey to get feedback on service levels. This survey contains structured attributes as also text attributes against a set of questions. Currently manual analysis is done to prepare management information reports. The prototype intended to use text mining technology to analyse this information and explore wider opportunities.

In order to create buy-in for such an emerging technology, it was essential to first create a prototype. The innovation network was the vehicle to prepare the prototype. The university did preliminary research based on the requirements and identified a set of mining techniques that could be applied. TCS used statistical analysis to identify a small area where its text mining tool 'Information Extractor' can be applied. This tool takes free text as input and converts into structured text. Mining techniques such as clustering were applied to organise the output and represent it graphically. The inferences drawn were shared with client to generate interest. Some of the important features demonstrated by this prototype are –

- Uses a structured approach from 'Information Extractor' of free text into structured text and then data mining, for generating insight.
- Helps in automatically identifying keywords and converting natural language into structured output which can then be subjected to mining.
- Automates the process of analysis of free text information – improving accuracy and speed.
- Combines text mining and data mining techniques to apply in various forms.
- Can scan free text information to identify specific ideas of importance

Based on the preliminary interest generated in text mining through this prototype, the client innovation team secured business sponsorship for running a pilot project on the entire database.

**Key Learnings:**

**1. Early involvement of network entities:** Involvement of TCS and University experts was required from a very early stage. The process of defining the problem and setting up the network is interlinked and iterative in nature.

**2. Role of 'Innovation Broker':** The role of the innovation team was more of an 'Innovation Broker' helping bring the right entities together and creating the environment to innovate.

**3. Leveraging Software as a Service (SaaS)** to develop an emerging technology: Once the application of text mining in analysing free text is proven, it is proposed to continue the innovation network and provide an 'On Demand' text mining service to business. This shows how the concept of SaaS can be leveraged to slowly scale up emerging technologies like text mining. This is mainly because the full scalability of text mining tools may not have sufficient business demand and accompanying technology uncertainties might make it non-viable as commercial solution.

## *7.3 Project Case Study 2: Innovation network for Web 2.0*

Web 2.0 is based on very lightweight scripting languages enabling a very open, decentralised and distributed environment in real time. Web 2.0 based portals encourage greater user participation and offer more intuitive interfaces. The initiative described here is User Interface (UI) innovation. The context chosen was a customer front end system that is used in contact centres to support call handlers in answering queries. This is a very critical system for the client business and existing front end has a lot of scope for improvement directly impacting customer experience.

The problem definition phase was very collaborative in nature. Since the technology was itself centered on harnessing end user intelligence, call handlers (end-users) were engaged in not only understanding what the current navigation and UI issues they were facing, but were also empowered to actually design how they would expect the interface to look like. The most critical screens were taken for sample policies and redesigned with their content in simple office tools to get an idea of the future state. The key drivers captured from this phase were:

- To have better navigation and fewer windows on call representative's desktop.
- To create customer centric view at a distributor level.
- To create customer friendly language for smooth communication.
- To have some feedback loop between call representatives and admin teams.
- To have real time management information to support decision making.

- To have better ability to search and retrieve information.
- To set a platform to enable self service for customers.

The innovation teams in the group company of the client had also engaged in developing Web 2.0 prototypes. TCS identified them as a key entity for tapping into the knowledge and skills and took the lead to develop the prototype. An offshore team of five members was supported with an onsite team of three members to liaise with the client innovation team. Though the team did not have any prior experience of developing in Web 2.0, the group innovation team was helpful to set the initial directions.
It was proposed for this network to form a joint 'Centre of Excellence (CoE)', so that the Web 2.0 capabilities transferred to TCS would be useful for the client and other groups in the company in getting scalable Web 2.0 applications in future. TCS also proposed to develop more Web 2.0 prototypes for the group innovation team. Figure 9 shows the innovation network for Web 2.0.

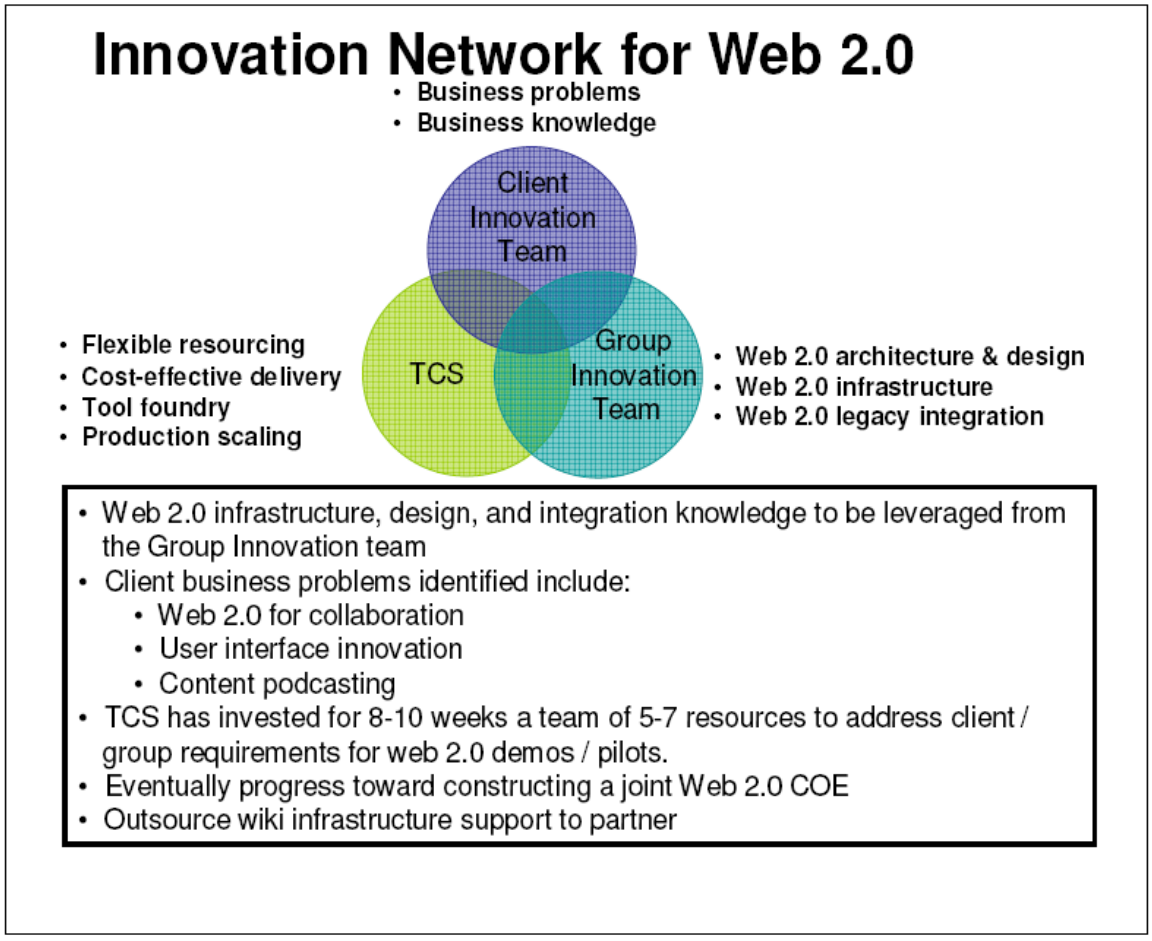


**Figure 9**

Preparing for Web 2.0 was challenging as the involvement required from the end users was high. The offshore delivery team selected the AJAX framework and the software requirements with support from the group innovation team. Unlike traditional software-

development where one begins with development and User Interface (UI) is decided at the end, Web 2.0 begins with the UI. The innovation team was in constant interaction with the onsite and offshore members to feed the business inputs. Once a draft version of the prototype was ready, the iterative process was initiated where end users were engaged to experience the look-and-feel and their feedback was used to update the prototype.

The purpose of the prototype was mainly to create awareness about leveraging Web 2.0 for enhancing UI. It was made very clear that the objective of using the customer front end system was merely to demonstrate the art of the possible using the customer-system as an example.

The demonstration helped getting buy-in from business stakeholders on the potential of Web 2.0 and its features. Across the company, more Web 2.0 initiatives have followed since then including rolling out of pilot for an enterprise wide wiki for collaborating as well as launching a new customer portal with very intuitive UI and easy navigation.

**Key Learnings:**

**1. Technology as an enabler:** The Web 2.0 UI innovation initiative involved a much larger team. The end users, the innovation team and many more stakeholders were indirectly involved in the initiative. The delivery approach itself was iterative in nature and as such demanded far greater collaboration in the GDW environment. Web conferencing (Web-Ex) and virtualisation of desktops (remote sharing of desktop) were used to share the draft versions. It is thus important to realise that technology can be a very critical enabler to bridge some collaboration challenges of GDW.

**2. Creating a 'Shared Vision':** The innovation network in this initiative was different from the generic network described earlier. Here the role of the client innovation team was not as much to control and drive the network as much as to manage and participate in the network. As such the network did not have a single controlling entity. The fundamental value proposition binding the entities together was the shared vision of having a Web 2.0 excellence centre which required scaling up the Web 2.0 skills in the IT partner. It is important to note that a shared vision can indeed help in creating a mature collaboration and eliminates conflict of interests.

**3. Reduced costs of delivery:** From a client perspective, it is important to realise that one can get discounted rates from IT partners using the innovation network framework. The Web 2.0 initiative was carried out by TCS resources at a discounted cost. In general, the costs are lowered for innovation assignments especially at prototype stage as the business case is evolving and the risk are shared by the entities in the network.

# 8. Conclusion

This document described a single example of how innovation networks in action can be a win-win situation for all parties in the network. However the benefits of global cooperation and co-innovation networks have been barely scratched. While attempts by TCS to develop a client driven but open and uncontrolled innovation network has no doubt been commendable, many argue that a linking together of all regional and corporate networks into a truly unique and global giant network could be the holy grail of innovation network development. This would be similar to how linking together of all information networks led to the formation of the World Wide Web. However, many questions on the sustainability and management of such a vast uncontrolled network towards delivery of the perceived advantages, remain.

But one thing is for sure, that we should brace ourselves for a future revolution in global innovation networking.

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