

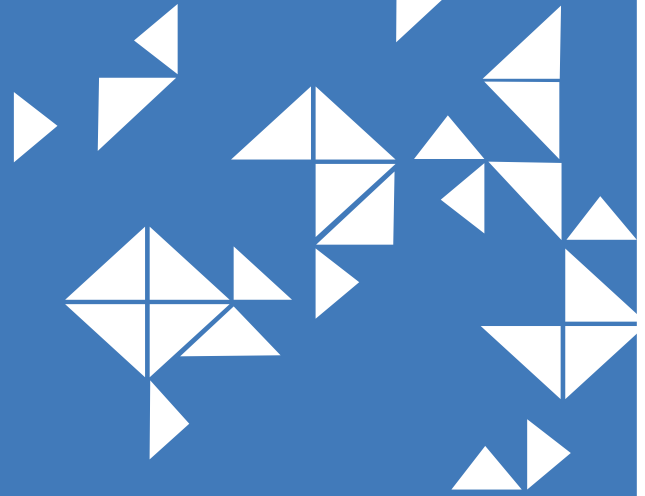


The CIO's Conundrum

When, Where and Why to Choose an Outsourced Data Center Solution

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Tata Communications
The CIO's Conundrum

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Executive Summary

Today's IT managers face a complex technology landscape shaped by exponential growth in data collection and evaluation requirements, along with the continued imperative to do more with fewer resources at hand. True leaders in the space are finding ways to move beyond cost advantages and make IT investments that deliver competitive advantages aligned with key business goals.

Data Center Outsourcing is a consideration for many IT leaders in businesses today. The global market for outsourcing providers continues to grow, and the Asian market in particular is expected to see the highest growth in the next few years. Firms that choose to outsource enjoy tangible and demonstrable benefits, but there are still risks and pitfalls involved in outsourcing arrangements. The traditional model of outsourcing has evolved due to the variety of options that are present in today's marketplace.

IT decision makers must address three key questions: why to outsource, when to outsource, how much to outsource and where to outsource.

Introduction

Chances are that you have heard the saying, “Why buy the cow, when you only need the milk?” The question provides an apt analogy for a key IT conundrum: “Why run your own data centers, when you can pay to have your machines hosted or computing resources supplied as a utility?” Yet despite the parallels, purchasing a dairy farm is frequently regarded as the default choice for information technology professionals, and outsourcing, or buying only the milk, the choice that can alter the status quo.

Information technology decision makers are likely familiar with the first set of questions that come to mind when considering an outsourcing strategy:

- _ What are my benefits and challenges if I decide to outsource?
- _ What are the degrees of outsourcing available to me?
- _ How much control can I maintain in an outsourcing arrangement?
- _ What can I outsource and to whom should I outsource?
- _ Are my competitors outsourcing?

Defining the Sourcing Spectrum

As sourcing options have multiplied, so have the terms used to describe them. For clarity's sake, the sourcing technology spectrum can be divided into three key options that encompass the range of variations.

Outsource

The procuring of services or products from an outside supplier or manufacturer with cost cutting as the key motivator. Common flavors of outsourcing include:

Cosource

Also referred to as "Out-tasking," cosourcing involves farming out discrete or specialized tasks, rather than a whole area. In contrast to outsourcing, the majority of accountability checks remain within the organization, no matter which functions are performed by staff and which are provided through a third-party managed service.

Insource

Also referred to as "Self-sourcing" or "Do it Yourself," this model maintains in-house support and responsibility for all aspects of IT. In-sourcing delivers near absolute control, however it requires much greater effort to maintain technical expertise and to deliver high-quality performance consistently.

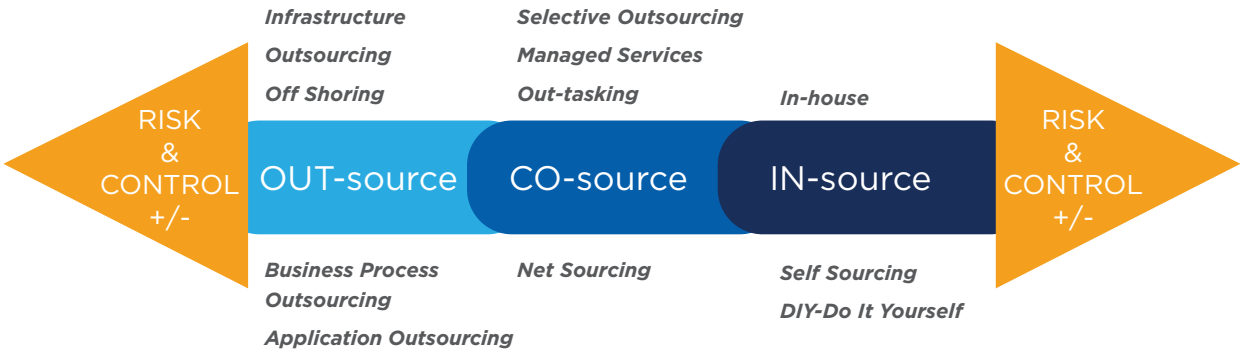


Figure 1. While in-sourcing is traditionally regarded as the high-control option, in fact both risk and control can vary along the sourcing spectrum.

Advantages & Disadvantage of Sourcing Options

Outsource

Advantages

- _ Allows for the best use of internal resources
- _ Provides the maximum utilization of economies of scale and third-party expertise
- _ Can come with a low cost of acquisition and provide the maximum cost benefits
- _ Can reduce the internal management overhead

Disadvantages

- _ Creates a high degree of dependency on a third party
- _ Can potentially become a long (many years) engagement
- _ Allows for little direct control

Cosource

Advantages

- _ Delivers cost savings from using a third party's "assembly-line" processes and scaled environments
- _ Maintains control over key areas of the infrastructure
- _ Improves visibility into cost and service performance levels
- _ Keeps responsibility for infrastructure within the organization

Disadvantages

- _ Limits direct control to areas maintained in-house
- _ Does not maximize cost savings in all infrastructure management areas
- _ Restricts visibility improvements to selected areas that are outsourced
- _ Could lead to complicated arrangement regarding the overall management of areas outsourced and the ones not outsourced

Insource

Advantages

- _ Provides the highest degree of control over the infrastructure
- _ Maintains complete responsibility for infrastructure within the organization

Disadvantages

- _ Maintains complete responsibility for infrastructure within the organization¹
- _ Can lead to high costs to maintain internal skilled resources within a changing environment
- _ Delivers lowest cost visibility

¹ Complete responsibility can be seen as a liability for internal teams that are unable to benchmark or leverage external resources and best practices.

Today's Business Environment— IT Infrastructure Trends

While IT leaders today continue to face the pressure to do more with less, the IT mandate has evolved beyond operational cost reduction. To demonstrate the value of IT investments, more businesses look for opportunities to promote growth, increase flexibility and provide differentiating capabilities. Building on successful IT-enabled efforts to extend the traditional value chain, today's enterprises are transforming to improve focus on their core business. As businesses look to their IT capabilities to deliver competitive advantages, savvy IT professionals are achieving recognition for aligning IT resources to support high-profile business goals.



Figure 2. Demands on CIOs have evolved beyond traditional cost savings initiatives.

Businesses Continue to Generate More and More Data

Today's IT leaders are faced with continuous increases in the volume of data that their business generates, combined with more demanding requirements for data storage and retention, availability and security. Information has become the true universal business currency, placing the data center – the physical and logical environment in which the company's business information is stored, accessed and exchanged – at the heart of the IT infrastructure.

IT leaders are challenged to develop, maintain and manage their data center infrastructure to ensure that their information assets can best support their business. The firm's information must remain secure, available, accessible, scalable and flexible to ensure it most effectively supports the firm's business decisions.

Convergence

In the past, IT was segmented to allow for specialization – hence the network was separated from systems and applications. The result of this was that multiple teams were created, thus increasing the cost basis for IT operations. Today's IT leaders are moving toward consolidating the teams involved in supporting various aspects of their infrastructure. As the lines of delineation between the network and IT realm become blurred, the data center is where it all comes together. Data centers are rapidly becoming the locus of convergence for IT and networking in today's IT-enabled enterprise.

Increasing Efficiency Through Virtualization

Virtualization has become a key trend for the IT infrastructure manager looking to more efficiently utilize their IT systems and assets. Server virtualization aims to maximize the number of operating systems and applications that can be run on a physical system, in an effort to optimize the available system and power resources and effectively reduce cost. Virtualization is moving from server and operating systems to application, network and storage areas as part of an infrastructure-wide drive to increase utilization and efficiency.

Greening IT – Global Energy Crisis Presents More Challenges for IT

Resource requirements, including power, cooling and space, for data centers continue to increase exponentially – proportional to the data growth most firms are experiencing. No matter how much consolidation and virtualization occur within the firm, energy must still be used to house, power and cool the equipment that sustains the IT infrastructure. The worldwide energy crisis has driven an increased focus on energy efficiency within data centers. Green IT initiatives have gained traction both for delivering cost savings and for aligning with corporate social responsibility initiatives.

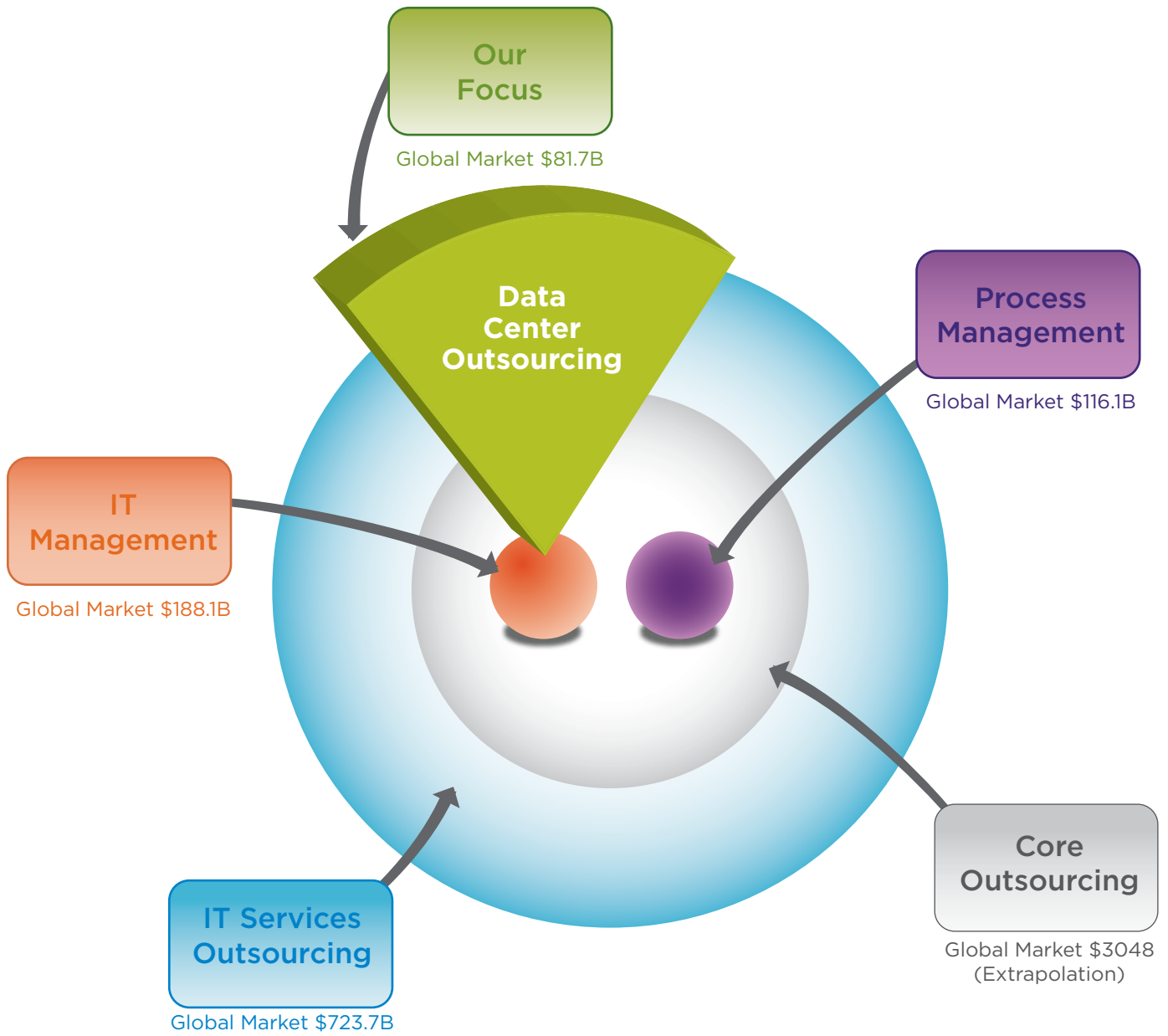


Figure 3. The data center outsourcing market is part of the larger IT management market.

Why Outsource?

Outsourcing Drives Cost Savings

IT infrastructure outsourcing has evolved into a multibillion dollar a year industry, with approximately 30% of businesses outsourcing some components of their infrastructure (Forrester). According to research from Forrester's Paul Roehrig and outsourcing advisory firm TPI, cost savings averaged 12% for firms on the high and low end of deal sizes, while midsize deals delivered average cost savings reaching 17%.¹

But of course there are risks and pitfalls involved in outsourcing, hence the reason why the adoption rate has not reached 100%. As the market grows, enterprises are learning how to navigate the pitfalls to define healthy and profitable arrangements with their outsourcers.

Beyond Cost Advantages

Traditionally, firms have chosen to outsource or out-task their data center activities for cost reduction purposes. As firms look to IT to provide a competitive advantage, enterprises have shifted their outsourcing drivers to focus on strategic enablement through IT capabilities (people, processes and equipment). Investment focus has moved toward choices that will move the business closer to its suppliers and customers and shift IT focus from tactical duties to strategic contributions.

Leading drivers for managed and outsourced IT infrastructure services:

- _ Enabling internal IT staff to focus on more strategic initiatives
- _ Reducing cost
- _ Supporting Business Continuity and Disaster Recovery planning
- _ Enabling business transformation
- _ Centralizing processes
- _ Shoring up limited in-house expertise to support applications and related systems
- _ Complying with executive mandate
- _ Decentralizing processes
- _ Meeting compliance requirements

¹ "Outsourcing Clients Can Expect 12% to 17% Savings" Paul Roehrig, August 2007. Cost savings were calculated by comparing internal costs against the planned costs of outsourcing.

Key Outsourcing Targets

Firms continue to focus on operationally driven targets for outsourcing and out-tasking. Engagements typically begin with trouble ticketing and help desk functions, then continue to other areas such as hardware and network operations and from there to end-user support, disaster recovery and power backup. Many firms test the waters by selectively pushing out operational functions to a third-party provider, and based on experience and comfort will continue to expand the scope and depth of the relationship with their provider. Contract durations vary, but on average last between four to six years, the duration that tends to generate the maximum value from the relationship.

Typical areas delegated to managed and outsourced data center providers include:

- _ Trouble ticketing and help desk
- _ End-user support and infrastructure operations
- _ Hardware maintenance and network operations
- _ Monitoring and management (server, systems, etc.)
- _ Security
- _ HVAC
- _ Disaster recovery, storage management and backup (power, data)
- _ Full functionality and support of all elements within their data centers

Reasons to Insource

Security concerns are frequently the primary drivers for in-sourcing decisions. Many organizations fail to find a comfort level with a third party to securely manage their data (the currency of their business) to a high enough standard. Some firms look toward regulatory or compliance requirements as a reason why they choose to maintain in-house or captive data center environments. Others fail to find a compelling TCO benefit. Occasionally, firms may have highly customized or legacy systems and applications that make it difficult to recruit a third party with an equivalent infrastructure and talent pool to maintain on their behalf.

When to Outsource – Making Your Own Outsourcing Decision

Buy Versus Build

The biggest obstacles facing IT specialists looking to build their own data center capabilities are in the facility construction, outfitting and management aspects of the projects, none of which are generally core capabilities for IT groups.

Consider in particular the following three factors that are common to all who take on the challenge of building and maintaining a data center facility:

1. Real Estate - Every data center facility requires a physical location, which needs to be selected to meet the following considerations:

- _ Availability and cost of land
- _ Proximity to connectivity sources and network service providers
- _ Space and scalability requirements to meet current and future needs
- _ Ownership options including leasing and buying
- _ Statutory approvals and regulations required to support the creation of the necessary facility space

2. Core Infrastructure – The internal environment of a data center facility becomes the next key consideration, including:

- _ Heating, ventilation and air conditioning (HVAC)
- _ Security (manned, access and surveillance)
- _ Power infrastructure and costs
- _ Fire suppression systems
- _ Environmental controls (M&E)

3. Operations – Becomes the last but necessary consideration, as every data center facility and the assets within must be monitored and managed by people on an ongoing basis:

- _ The 3 P's – Pipe (network connectivity), Power (electrical) and Ping (accessibility to assets) must be monitored and managed by staff
- _ 24x7x365 operational support teams, staffing and skill management
- _ Security (physical and logical) must be ensured
- _ Managing technology equipment (hardware and software) in addition to their vendors
- _ Overall facility monitoring and maintenance is required

Finding the Right Service Provider

When selecting the right data center service provider, the following key items should be considered appropriately:

Location

The provider's facility locations should align with your geographic targets. Consider whether the provider has a global reach if this is necessary for your business (and whether their definition of global aligns well with yours). Choose a provider with the ability to deliver services in a consistent manner across all the geographies that it services.

Connectivity

Many data center providers do not own their own network or may build a facility and then provide it with network connectivity. Selecting a provider whose data center facilities lack fully integrated connectivity can lead to costly and service-affecting problems. Look for a provider whose facilities have been integrated appropriately with the necessary network connectivity, thus ensuring higher availability and security.

People

Your provider relies on their people to support your business. As such, a technically competent staff should be evident in your provider of choice. Look for those who have a balance between industry certifications and technology/vendor-specific certifications, as this demonstrates both area knowledge and specialization.

IT Infrastructure Management

Ensuring your provider can support your needs today is not good enough. A viable provider should both be able to support your data center needs today and into the future. Examine the provider during the selection process to understand if their services road map is aligned with technology trends and enhancements. In addition, look for a provider that leverages industry best practices to meet governance and compliance requirements and improve operational conditions to support your business today and tomorrow.

Financial Viability

Recognize that migrating a data center can be a feat in itself. As such, select a provider that is likely to be around for as long as your contractual relationship – if not longer. Look for providers who can demonstrate sound financial health.

Customer Focus

A provider's commitment to quality, flexibility, references, reputation and availability of resources can be powerful factors that contribute toward the success of an engagement.

As important as the selection itself is the basis of the relationship, which should be built on open communications and clearly defined outcomes. Price for service is also crucial, but must play a part in the overall picture before your selection is made.

Understanding Cost Realities

On average, half of firms who outsourced their data centers indicated that their actual cost proved to be in line with their contracted cost. While some of the firms reported higher than expected costs, others experienced costs below their contracted price. Many cost issues result from the pricing models and structures upon which the relationship is based. The majority of clients supported by data center service providers have a fixed price contract, with a minority holding activity-based or cost-plus arrangements. The pricing model selected in a relationship does not need to be fixed or activity based, however it must make sense for your business conditions.

Where to Outsource – Opportunities in APAC

Outsourcing gained its popularity as many companies moved their operational activities to lower cost geographies frequently in the Asia-Pacific region. While cost is no longer the primary motivator for outsourcing decisions, Asia remains a strong player in the outsourcing market.

Why is Asia Still Attractive for Outsourcing?

Businesses recognize that Asia represents the next generation – and critical mass – of Internet users, whose economies (in key countries) and talent pools have experienced a rare form of hyperdevelopment that was caused by the initial wave of outsourcing, coupled with liberalization and foreign direct investments in the region's infrastructure. The combination of developed infrastructure, strong talent pool and proximity to exciting business growth markets make Asia an attractive market for outsourcing initiatives designed to deliver competitive advantage.

Review of the Asia Environment for Data Center Management

Australia and New Zealand represent mature information technology markets in the Asia Pacific region. From these countries, data center outsourcing providers can leverage a strong underlying infrastructure (reliable connectivity and energy availability) to deliver their services. Experienced staffing is available to ensure a consistently high quality of service. However, both Australia and New Zealand are geographically remote from the rest of the region, and feature limited availability of IP routes within the Asia Pacific region and to the world at large. Latency becomes a problematic issue for connectivity from this region to the rest of Asia and the globe.

Hong Kong and Singapore also represent mature and cosmopolitan markets within the Asia Pacific region. Both provide mature information technology and infrastructure capabilities. Data center providers within these countries rely on the availability of highly skilled resources to deliver a high quality of service. Both countries, however, are known for their high labor and real estate costs; as a result, services offered can carry cost premiums when compared against other countries within the region.

South Korea, Japan and Taiwan are maturing outsourcing destinations within the Asia Pacific region. While they offer easy connectivity to China and Hong Kong, they are geographically distant from the south Asian countries. All three are known for high labor and real estate costs, however in exchange they offer a consistent and reliable service quality along with dependable network connectivity and performance.

India and China are the most dynamic growth markets within the Asia Pacific region and provide a majority of the region's population growth and Internet adoption. While both were previously regarded primarily as ideal environments for low-cost labor, the explosion of outsourcing within these countries has led to strong growth in both IT skills and infrastructure. While unreliable service quality remains an occasional issue, much has been done (and continues to be done) to improve the quality and consistency of service delivery. India, for example, has recognized the need to significantly enhance its electrical infrastructure to ensure sustained power availability. Leading India-based service providers are also demonstrating their commitment to delivering high-quality services by undertaking an aggressive push toward attaining international certifications.

The Asia Pacific data center market is growing at a phenomenal rate. In fact the Asia Pacific market will command 20% of the global data center business by 2010, up from 10% in 2009 (Gartner). India and China represent the growth engines for APAC-based data center outsourcing. In India alone, 22.5% CAGR is being achieved not just by outsourcing from foreign companies into India, but also from the migration of captive data centers to third-party outsourced data centers that are housed in India. Over the next four years, out of the roughly 7 million square feet of data center space planned in India, over 90% of the space will be used for outsourced data centers. China is a growing market as well, in terms of the availability of a skilled and competent IT talent pool in addition to the underlying infrastructure that is necessary to deliver a consistent and sustained high-quality service.

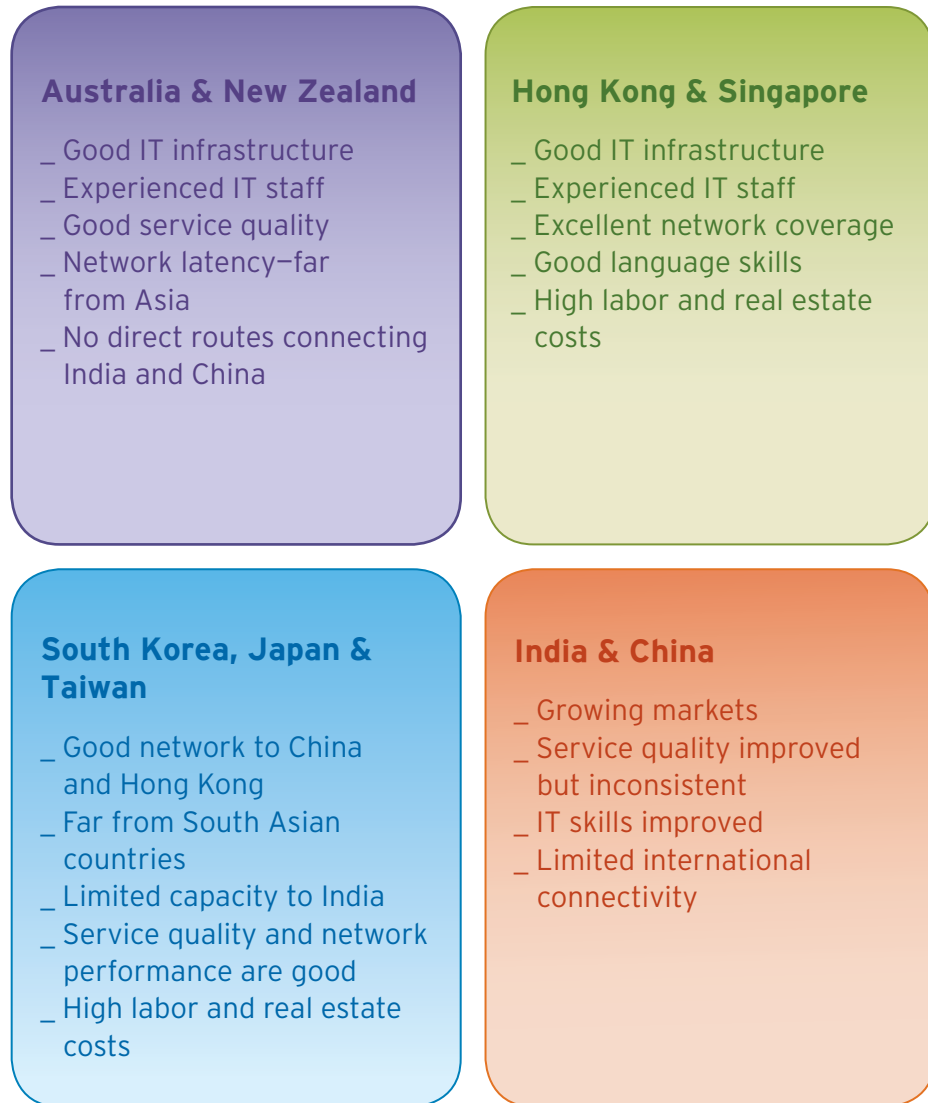


Figure 4. Asia has many advantages as an outsourcing destination.

Conclusion

As businesses are looking at the various data center “sourcing” options, they need to carefully evaluate the providers in various geographies, with a special emphasis on the growing Asia Pacific region. For an IT leader looking to deliver enhanced business flexibility and a differentiated competitive advantage, the right outsourcing provider can deliver the informational advantage you need in quickly growing markets such as China and India. Understanding when, and when not, to look to a service provider to increase your core business focus can enable a level of understanding of your business strengths that can be as valuable as the capabilities you achieve.

About the Author



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Vinay is the Director of Product Management for the Hosting and Data Center Services product line at Tata Communications. In this role, Vinay is responsible for global product management and product development of the suite of Colocation, Managed Hosting, Managed Storage, Business Continuity and Disaster Recovery services that are offered within Tata Communications' Global Managed Services portfolio.

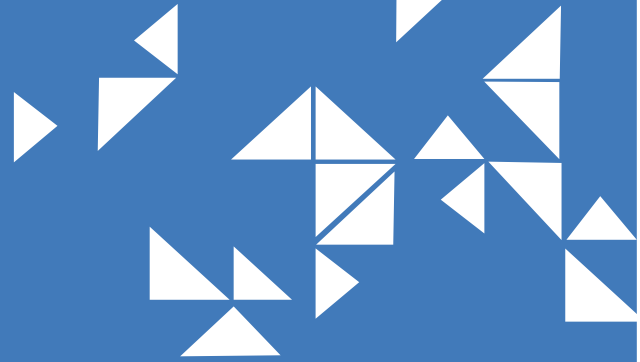
Vinay has more than 15 years of experience in the Hosting, IT Infrastructure and Data Center Outsourcing industry. Prior to joining Tata Communications, Vinay held several positions spanning product marketing, product management and product development responsibilities in the Colocation, Managed Hosting, and IT Solutions at UUNET, WorldCom, MCI, Digex, Verizon Business and Verizon. Prior to Verizon, Vinay was the Internet Technologies Manager at Canwest – Canada's leading international media company. At Canwest, Vinay managed several online media properties including the canada.com online network – Canada's leading and most comprehensive Internet network and portal. Vinay led a team of Internet and networking professionals and managed the Hosting and Internet infrastructure of the canada.com portal and their Internet Data Center.

Vinay has an MBA with a specialization in Information Systems and a Bachelor in Computer Science.

Vinay has authored white papers and industry publications on Data Center Outsourcing and IT Infrastructure. He has been a featured speaker on Hosting and IT Infrastructure and Outsourcing at industry events.

About Tata Communications

Tata Communications Limited along with its global subsidiaries is a leading global provider of the new world of communications. The company leverages its Tata Global Network, vertical intelligence and leadership in emerging markets to deliver value-driven, globally managed solutions to the Fortune 1000 and midsize enterprises, service providers and consumers. The Tata Communications portfolio includes transmission, IP, converged voice, mobility, managed network connectivity, hosted data center, communications solutions and business transformation services to global and Indian enterprises and service providers as well as broadband and content services to Indian consumers. The Tata Global Network encompasses one of the most advanced and largest submarine cable networks, a Tier-1 IP network, connectivity to more than 200 countries across 300 PoPs and more than one million square feet data center space. Tata Communications serves its customers from its offices in 80 cities in 40 countries worldwide. As the number one global international wholesale voice operator and number one provider of International Long Distance, Enterprise Data and Internet Services in India, Tata Communications was named "Best Wholesale Carrier" at the World Communications Awards in 2006 and was named the "Best Pan-Asian Wholesale Provider" at the 2007 *Capacity Magazine* Global Wholesale Telecommunications Awards for the second consecutive year. Becoming the leading integrated provider to drive and deliver a new world of communications, Tata Communications became the unified global brand for VSNL, VSNL International, Teleglobe, Tata Indicom Enterprise Business Unit and CIPRIS on February 13, 2008.



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