Business and IT Alignment: Removing the Barriers to Real-time Operation

Industry Context

It is no coincidence that the majority of enterprise CIOs regard closer alignment between the business and its IT organisation as a top priority. To achieve business objectives relating to, for example, finance, quality control and customer satisfaction, companies are turning to technologies such as automation, Web 2.0 and collaboration. Although the performance of CIOs, and the organisations they manage, is already measured in terms of business success, the growing dependence of the business on technology is raising the bar for CIOs at both an organisational and a personal level.

Other factors are increasing the pressure on CIOs to bring about a closer alignment between IT and the business. Since 2005, business growth has been replacing cost reduction as the over-riding objective of enterprise CEOs. Enabling business growth, with underlying cost control, has therefore become the primary goal of many CIOs.

Yet providing support for growth brings a new set of challenges to CIOs and IT organisations.

- First, budgetary constraints remain a problem. Innovative projects, such as the introduction of new technologies or applications, are required to support business growth. Yet the IT sector suffers from a budget imbalance, with a high proportion of funds being used to keep the business going while a small percentage is allocated to innovation. It is Cisco's experience from meeting customers in financial services that as much as 90 per cent of that sector's IT budgets might be spent on 'keeping the lights on' and only 10 per cent on assets and innovation.

  At the strategic level, therefore, aligning IT with the objective of business growth will require a shift in the allocation of funding. At the same time, CIOs will be asked to maintain a firm control over expenditure and to continue reducing costs wherever possible. The reality, however, for many companies is that the drive for revenue growth is often seen as being divorced from the IT infrastructure. CIOs must make this connection clear to their business colleagues, and provide a bridge from business needs into IT solutions, if they are to avoid becoming order takers instead of innovators.

- Second, innovation is not just high on the enterprise agenda, it has broader commercial implications as well. This is because business models are changing, driven by a globalised economy and Web-enabled consumer power. Traditional hierarchical structures with vertically integrated functions are disappearing, to be replaced by organisations that consist of a network of virtual teams. Instead of being located in one place, or even in the same geographical region, those teams are often widely distributed across different continents and time zones.

  Companies are not only structured differently, they also operate in ways that could not have been imagined just a few decades ago. New technologies, such as RFID (radio frequency identification) and Web 2.0, have given people direct access to information that used to be controlled by companies and their suppliers. As a result, customers can now check the status of their orders online, for example, instead of having to rely on the manufacturer or distributor for information.

  This unprecedented degree of transparency creates new pressures on companies to automate their processes and communicate effectively at all stages of the supply chain, both internally and externally. Due to the growing dependence on technology throughout the enterprise, service provider and public sectors, the responsibility for introducing new levels of agility and responsiveness rests largely on the CIO. More than any other group, it is the IT organisation that will equip a company to operate in real time.

- Third, many companies are prevented from becoming real-time operations by the barriers that typically exist between the business and the applications and infrastructure groups. These barriers can be broken down by service-oriented and collaborative technologies, and CIOs are well placed to support this process because their role straddles business and IT.

The Cisco Perspective

Cisco has taken steps to break down many of its own barriers to business and IT alignment. In doing so, it has focused on three main themes:

- Decision-making
- Growth and value
- Time to deliver.

Decision-making: one of the gaps in alignment that Cisco identified was that the business tended to focus on its needs (the 'what?') and the IT organisation focused on delivering solutions to meet those needs (the 'how?'). There was no 'middle ground' on which to promote a better understanding between business and IT that would improve the company's decision-making.

Business units are only able to ask IT for what they know, which may be only 20 per cent of what is possible. By gaining a clearer understanding of what the business is trying to achieve, the IT organisation is better able to recommend the most appropriate technology solutions. There is the added benefit that the business might be able to set more aggressive targets as a result of this process.

The Cisco IT department has already proved that it can help improve operations and drive down costs. As the company's main business focus switches from cost reduction to growth, the IT department has proactively taken on a leadership role to enable Cisco to move successfully into a new growth phase.

Growth and value: it is important for Cisco to understand the value that its IT department can bring to the business. This is relevant both to the decision-making process and to the end benefits that IT generates. As a technology company, Cisco is better placed than many organisations to understand the capabilities that technology can bring to the business. However, understanding the business value of those capabilities is a different challenge. In the decision-making process, for example, part of that value could lie in the IT department's ability to communicate effectively with the business, to explain how technology can support business objectives.

Time to deliver: like many companies that report in quarterly and annual fiscal periods, Cisco looks for rapid results from its activities. The IT organisation recognises its responsibility to be flexible and agile enough to deliver the value that the business needs, when it is needed. By using technology as a cornerstone of its innovation strategy – particularly through the use of web-based customer and employee self-service – and by acting quickly to implement projects that align business and IT, Cisco has been able to avoid an additional spend of more than US$2.4 billion on its annual operating costs.

An End-to-end Process Approach

Cisco has also achieved better alignment between business and IT by adopting more end-to-end processes. Previously the company would solve problems in turn, as they arose, without considering the overall efficiency of its operations. This approach led to duplication and wasted resources, with the same problem being solved in different ways in different parts of the organisation.

Cisco has addressed this issue by identifying five processes that support its main business activities, and a sixth process that covers support functions such as finance and HR (see Figure 1). Each of the five processes cuts across several business units: for example, Quote to Cash involves manufacturing, sales, finance and customer service. Whereas previously, each of these units would have had its own IT resources, they are now supported by a single IT organisation that binds together the entire Quote to Cash process. What makes this work is close collaboration and cross-functional teamwork, based on a new alignment alongside end-to-end processes. Those processes help Cisco to simplify, standardise and globalise its operation.
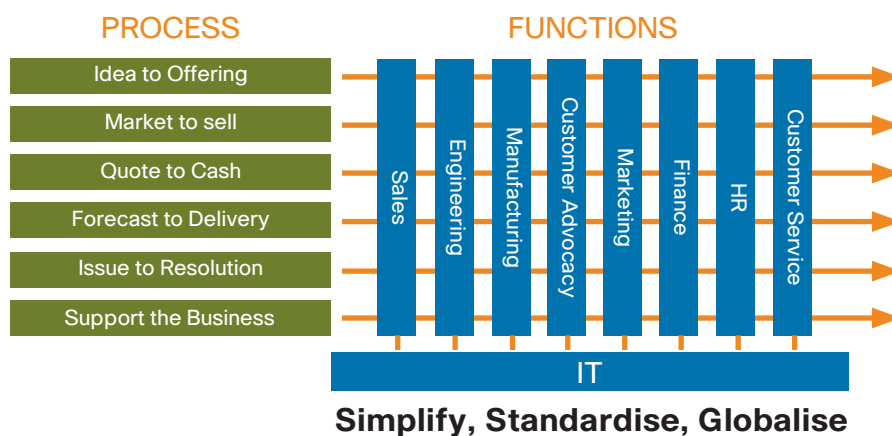

Figure 1:   The Cisco approach to end-to-end processes

A direct result of improving business and IT alignment within Cisco has been a sharpened focus on supporting business objectives in the IT organisation. In the fiscal year that ended on 31st July 2007, for example, the business was seeking growth by entering new markets and promoting advanced technologies such as Unified Communications. Each of these activities presented the IT organisation with different challenges, which it was better able to meet thanks to a clearer understanding of the specific goals and requirements of the relevant business units.

How Technology Can Help

As companies adopt new business models, the technologies that support them must also change. The shift towards real-time operations with virtual organisations is mirrored in a similar shift towards service orientation in the enterprise IT environment. Virtualisation is the central tenet of a service oriented approach, and it is equally critical to the creation of an agile real-time enterprise (see Figure 2).

Virtualisation in the infrastructure is typically associated with technologies that help remove the physical boundaries and one-to-one relationships that exist in a traditional infrastructure. Virtualisation can relate to physical assets such as storage, server processing capability and contact centres, and it can also be applied to the way in which a company organises its main campus, data centre and branch network.

Above the infrastructure, the service oriented application (SOA) layer takes a similar approach to virtualising processes and applications. SOAs and service oriented infrastructures (SOIs) are not mutually dependent; however, a SOI enhances the benefits of SOAs and, together, they are better able to support a real-time enterprise.

Within this context, two trends are currently creating unprecedented opportunities for supporting the real-time enterprise through business and IT alignment. The first trend is infrastructure convergence. This is no longer just about transporting voice, data, video and even traffic from mobile devices on the same network; it is the ability to run applications on the network which combine elements of data, voice, video and mobility. Unified Communications is a good example of this type of convergence: applications such as multi-service contact centres which help create a better customer experience, or videoconferencing which helps improve productivity by enabling more effective decision-making and collaboration.
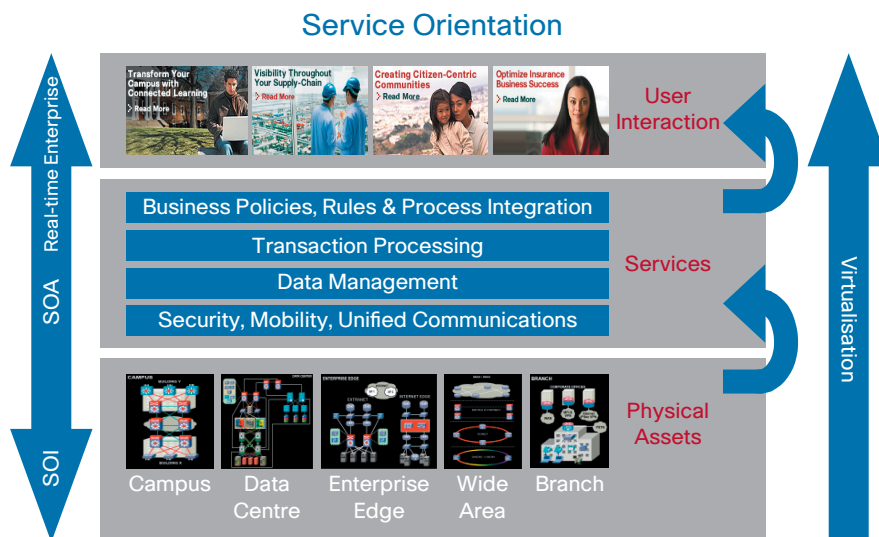
Service Orientation

Figure 2: The process of virtualisation, a central tenet of service orientation, can be introduced in the infrastructure or applications layer to support a real-time enterprise

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The second trend is a growing emphasis on the importance of the role of the infrastructure within service orientation. As the common factor that is present throughout an organisation, the networking infrastructure is potentially the ideal tool for breaking down the barriers that exist between the infrastructure, the applications and the business. Consequently, adding greater intelligence into the network is one way of achieving the levels of virtualisation and automation that are necessary in a real-time operation.

The Cisco response to these trends is to see them both as part of a broader perspective in which the network is the platform for delivering converged applications on an intelligent infrastructure. In this vision, the network is the platform for providing all the flexibility, reliability and security that a business needs to grow, to improve productivity and to enhance the customer experience.

Technologies Offered by Cisco

From the perspective of a CIO seeking to align business and IT more closely, the challenge of breaking down barriers between the infrastructure, the applications and the business is further complicated by the existence of such barriers in the IT industry as a whole. Vendors typically focus on infrastructure or applications, while the CIO has to consider both in the context of the broader IT environment. The industry also tends to approach business and IT alignment via the applications layer, which seems to be the most logical place to locate intelligence.
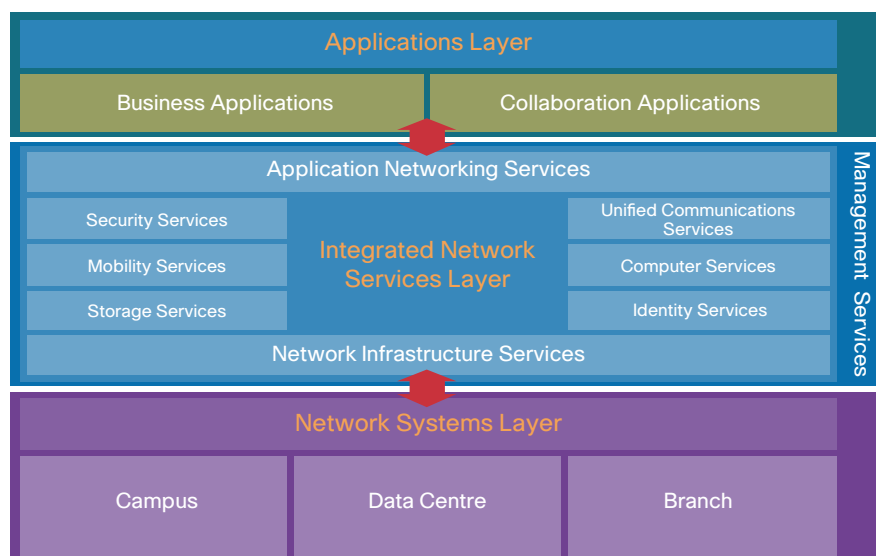
Cisco takes a different view, believing that intelligence should be placed in the most appropriate location, whether that is applications, middleware, infrastructure or sometimes all three. As collaboration and business process become more reliant on the infrastructure, however, intelligence will gradually move into the network. This progression brings intrinsic benefits because the network:

- Is the one element that unites every function and department
- Is already in place
- Is distributed throughout the organisation
- Offers many opportunities to place the intelligence much closer to the network edge. This is a huge advantage to a real-time operation in terms of performance and availability because it cuts down unnecessary network traffic and improves the response times to users' requests
- Is a versatile resource that companies can use to free up valuable space on servers for revenue-generating applications.

One example of storage virtualisation illustrates some of the advantages of placing more intelligence in the network. Instead of assigning IT staff to allocate and re-allocate storage space, companies could send the storage request into the network and let the network decide where to place it. This approach improves automation, thereby helping to create a real-time operation, and it can also reduce operating expenses significantly by enabling IT staff to be re-assigned to more value-generating work.

Cisco believes that, by placing more intelligence in the network, it is possible to take a much more integrated approach to a company's entire operation, including the infrastructure, applications and business processes. The Cisco Service-Oriented Network Architecture (SONA) was designed to provide such integration (see Figure 3). Compared with the illustration in Figure 2, it has an additional layer called the Integrated Network Services Layer, which is where the intelligence resides. There are services in this layer to improve the service orientation of both the infrastructure and applications, including technologies such as Unified Communications and TelePresence which support collaboration and customer interaction in a real-time enterprise.

Service Oriented Network Achitecture

Figure 3: The Cisco SONA enables service delivery to all parts of an organisation in an integrated manner

The rationale for the Cisco SONA is to enhance an organisation's IT and business operations by supporting the performance and delivery of applications to users, especially remote workers, in an integrated manner. This eliminates the need to bolt on additional solutions, albeit best-of-breed, and integrate them so that they can work together. It also addresses the need for CIOs, and real-time enterprises, to see the full picture and, in doing so, helps companies achieve a higher degree of business and IT alignment.

The Cisco Experience of Virtualisation

The Cisco IT department has introduced an aggressive strategy of virtualisation to support the company's business objectives of growth combined with cost control.

With SONA as a framework, Cisco has achieved excellent results by using the intelligence it has built in to its networking solutions. By automating the allocation of storage via the network, for example, Cisco now has only one tenth of the number of IT staff working on storage that companies typically need. The industry average is estimated to be one storage administrator per 38 Tb of information; Cisco employs one administrator per 380 Tb.

Virtualisation of storage and the introduction of storage area networking technologies have also helped Cisco to increase its utilisation of storage assets from 39 per cent in 2003 to 65 per cent in 2005. This represents a substantial reduction in capital expenditure and an even bigger reduction in operating expenditure, combined with more flexible and efficient use of investment capital. It has therefore contributed significantly to the ability of Cisco to allocate a higher proportion of its IT budget to innovative projects that support growth, while reducing the amount that is spent on maintenance.

These examples illustrate the kind of quantifiable benefits that can be achieved by leveraging intelligence in the network to bring about the business and IT alignment necessary to become an agile real-time enterprise. CIOs can use Cisco's architectural approach as a roadmap for their own planning, to determine their companies' current status in terms of business and IT alignment, and to identify the technology solutions that are best able to deliver the capabilities that the business needs to meet its goals.

Achieving Closer Business and IT Alignment

Taking into account that all companies are different, the following three strategies are likely to apply to the majority of enterprises and CIOs who are seeking to bring the business and IT into closer alignment:

- Ensure the IT group has business knowledge and is able to translate business strategies into actionable IT initiatives
- Adopt an architectural approach at both the enterprise and technology levels to engender agility and flexibility
- Focus on releasing operational IT budget to innovation which can help grow the business.