The Big Network

Why the IT network assumes new importance in the connected world

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Contents

1. Introduction

In this paper, we will attempt to turn your view of the importance of the IT network to business on its head. We argue that the IT network is the place to start creating an architecture which is fit for the new networked organisation.

The world's social and commercial fabric is transforming before our very eyes. This change is affecting our lives as citizens of a globalised, connected world, and we are bringing new expectations of how to interact with one another to work. It so happens that the same ways of interacting at home are also very suitable for a new way of doing business and for delivering public services. The same technologies can be used to enable a much more dynamic, creative and connected way of working.

This is the good news.
The bad news is that corporate IT will struggle to keep up. The constraints on organisations are increasing—regulation is increasing and so are the risks to organisations—whether through loss of personal data, hacking, or failure to comply with legal requirements. The CIO particularly is under pressure because IT is often seen as the cause of problems or a brake on progress. The dilemma is to manage risk while enabling the organisation to connect and innovate.

So, what can be done?
An old friend, the organisation's IT Network, turns out to be a source of salvation. At the intersection between the external and internal networks, it is in a unique position to do more than merely connect. It can help manage in a way which is ever vigilant but unobtrusive. It can also start to interpret activity in ways which are only starting to be recognised and intervene in real-time. Free from concerns for security and compliance, CIOs can turn their attention to adding value to the organisation by providing the necessary tools for users to fully engage in the new world.

The complete solution involves both hardware—the network system—and software as part of a coherent architecture. This architecture needs to start with the network—inverting the conventional architecture stack—and with the assumption of increasing demand for connection and for the unexpected.

We identify eight mechanisms which the network should provide. Some are available immediately, supported by a suitable architecture—whether package or custom. Others will take time to develop.

What is certain is that the benefits will not be achieved by accident. More than ever, organisations need a forward looking architecture—a networked enterprise architecture which is flexible enough for the networked future.

Read on to find out why and to understand where to start.

2. The New Wave of Change

In this section, we examine how organisational complexity is increasing in the world and how the world of IT is introducing its own complexities.

2.1 Business Direction

A brief examination of trends for organisations (see diagram) shows the relentless march of globalisation[1], enabled by travel and increasingly by information and communications technology. This is leading to wider and stronger connections between people, organisations and markets.

The increased effective size of markets for products and services leads to greater competition and more rapid commoditisation. In order to compete, organisations are focusing on innovation as a means to gain competitive advantage. Customers are becoming more informed and aware of the choices which are available to them. As markets have become larger, it has become feasible to serve more specific niches—i.e. the "long tail." IT is enabling personalisation, or tailoring of

A new wave of change is impacting

Globalisation
Exponential globalisation
Mobility
Connected everything
No frontiers automation

Innovation
Co-value creation
Collaborative innovation

Consumerisation
Prosumerism
The long tail

Externalisation
Business model innovation
Information centric
Interaction centric
Mashed up
World 2.0

Virtualisation
Supply to demand chain
Unbundled everything

CSR
Environmental concerns
Corporate responsibility
Diversity and inclusion

Regulation
Risk management

Source: Capgemini

products and services down to the level of individual consumers. In the past, this would have been too expensive, but the inherent flexibility of digital devices means that customisation of both products and services is now cost effective.

Virtualisation involves the abstraction of computing resources so that they may be used more simply and interchangeably. It goes hand in hand with standardisation and gives rise to scalability—the ability to bring in new resources on demand, only when needed.

The topic of corporate and social responsibility is increasing in importance and with it a tide of regulation—in part a reaction to the need to reduce risks which arise from innovation such as the financial innovation which helped drive global economic growth until recently.

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[1] **Globalisation** is usually associated with an economic theme whereby boundaries or restriction between countries become blurred, in the extreme merging a number of national economies into a single international one. This has evolved largely through the increase in trade between countries and deregulation, allied to technological changes that now make communication much easier and cheaper. This is today characterized by, for example, British service sector companies servicing customers from call centres in India or a manufacturing company designing a product in Europe, making them in south-east Asia and selling them in Britain or America.

2.2 Externalisation

Externalisation is the trend towards more activity being performed outside the boundary of organisations. We see this in the publishing of information to the World Wide Web (Web 1.0), in the interaction between individuals and businesses, and between individuals and individuals (Web 2.0[2])—for example, customers rating their purchases or the seller of an item—and in the move towards richer interactions between people and technology, which are not yet possible but which may be foreseen (Web 3.0[3]).

If externalisation is taken to its logical conclusion, the activities of an organisation are broken out to a great extent and networks of organisations collaborate to deliver products and services which previously would have been delivered by a single organisation. In the pharmaceutical industry, for example, at least one company has announced it is moving towards a networked business model. Capgemini has illustrated the concept of a pharmaceutical network at its most evolved form in the diagram below[4].

The externalisation of business activity for a networked pharmaceutical company
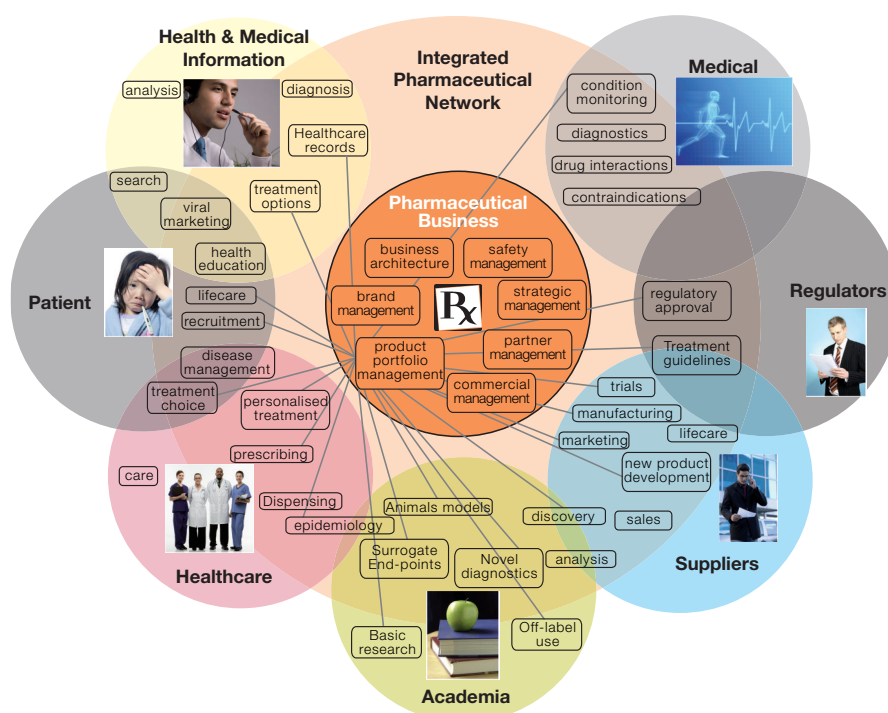
Source: Capgemini

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[2] **Web 2.0** is a term describing changing trends in the use of World Wide Web technology and web design that aims to enhance creativity, secure information sharing, collaboration and functionality of the web. Web 2.0 concepts have led to the development and evolution of web-based communities and its hosted services, such as social-networking sites, video sharing sites, wikis, blogs, and folksonomies. Source: Wikipedia.

[3] **Web 3.0**, a phrase coined by John Markoff of the New York Times in 2006, refers to a supposed third generation of Internet-based services that collectively comprise what might be called "the intelligent Web"—such as those using semantic web, microformats, natural language search, data-mining, machine learning, recommendation agents, and artificial intelligence technologies—which emphasise machine-facilitated understanding of information in order to provide a more productive and intuitive user experience" (http://en.wikipedia.org/wiki/Web_3.0).

[4] One pharmaceutical company describes their progress towards a networked model: **FIPNet** in their 2007 annual report: the company "has made considerable progress in transforming itself from a fully-integrated pharmaceutical company— the old "FIPCO" model—into what we refer to as a fully integrated pharmaceutical network—or "FIPNET." In the new model, we draw on a broad range of resources outside our company's walls—to increase our effective capacity and access to external capabilities, to reduce our level of risk and accelerate development, and ultimately to help lower our average cost of R&D per molecule."

The fact that more activity is taking place outside the traditional organisation boundary is significant because of the challenges in meeting legally defined responsibilities for the organisation and in managing the associated risks.

2.3 The Networked World

Networks are having an increasing impact on the lives of people in their roles as individuals, citizens and customers. Individuals' needs for information, for knowledge and even for social interaction are being met by interconnected networks of people and of organisations. Many of the services which people use, from businesses (such as Friends Reunited) to citizen advisory services (such as the Clinical Knowledge Summaries[5] provided to the public by the UK National Health Service) were not feasible before the advent of the World Wide Web.

Socio-technical networks are becoming more and more global, interactive and extensive, and the range of economic activity generated in this way is also increasing. For example, Web-based organisations now exist to bring together diverse and distributed teams of individuals "off the street" to develop breakthrough solutions to business problems[6]. As we will see, the activity is different in nature—unstructured interactions rather than structured and sequenced transactions—and this has implications for the information systems.

2.4 Organisation in the New World

To succeed as a business or to provide services which are relevant to citizens in this new world, organisations will need to excel at innovating and at collaboration—both with individuals and organisations. In the interconnected, increasingly global world, businesses will need to innovate rapidly and continuously, since any innovation will quickly be emulated. Public services will be valued by the extent to which they meet needs which are shaped by citizens' increasingly networked and informed lives. To deliver products and services which continually change, organisations will need to be more agile—bundling complementary services and products and personalising those services and products. This means cultivating an awareness of the external environment, recognising opportunities and collaborating with partners to create, evolve and optimise supply networks.

Knowledge workers will need to be empowered and informed, and given access to the tools they need in order to work in a more dynamic and unpredictable environment. They will be part of the socio-technical networks described earlier and will use the capability of these networks to find existing knowledge and create new knowledge.

To lead and manage in this environment will require an understanding of how to foster creativity and agility. Operating models and ways of working will need to be more fluid and responsive. This means a move away from hierarchy and specialisation towards peer-to-peer relationships and multi-skilling, and towards networks and other dynamic structures.

At the same time, however, managers will need to align individual efforts with corporate mission and ensure compliance with policies that ensure regulatory obligations are met. Working with this paradox will challenge leaders to find new ways of leading. Managing change will be a continuous process rather than a periodic interruption to business-as-usual and there will be a premium on soft skills in addition to the hard rational skills of scientific management.

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[5] The National Health Service (NHS) describes CKS as follows: "Freely available, the NHS Clinical Knowledge Summaries are a reliable source of evidence-based information and practical "know how" about the common conditions managed in primary care."

[6] For example, www.ideaconnection.com brings together diverse, virtual, teams to provide breakthrough solutions.

Paradoxically, organisations will also need to maintain efficiency and value for money, which will include optimising and industrialising repetitive operations. This optimisation will be achieved by leveraging scale and reach, exploiting the ability of technology to remove the constraints of distance as obstacles to simplification and consolidation.

2.5 Transactions and Interactions

In this section, we look at the difference between business activity in the new world and activity in the old world. IT systems and infrastructure have traditionally been built to deal with old world activity. We will look at how to support the new world at the same time as the old.

How does activity in an externalised network differ from activity in a conventional corporate environment?

Typically, people follow procedures and processes to obtain results in a conventional organisation. For example, to buy a new computer, an individual must complete a form, which is routed to the manager for approval, and subsequently to Purchasing where it is checked for completeness, correctness and compliance with policies. A number of *transactions* take place in a predefined sequence. The sequence is completely prescribed, although there may be allowed variations (for example, when a manager is on holiday). The information provided by the individual is *structured* and to some extent *codified*—the individual provides an identifier for their cost centre into a field on a form.

In the new world, this individual may *interact* with another individual working for a company with whom their company does not yet do business. In such a case, the two exchange information about their objectives—typically *unstructured* and unexpected. The former sees an opportunity to combine their company's products with a service provided by the latter's company to add value to a segment of their customer population. The next step is to develop a demonstration service which *mashes up* the service provided by Company A and a model of the product belonging to Company B. The two try out the idea on a network of interested parties—many of whom belong to neither organisation and this network helps reshape the offer. This sequence is characterized by a set of *interactions* during which the two *collaborate* to understand, and then to co-create a new service. The *events* which take place cannot entirely be predicted and the information which is exchanged is not codified. The two create connections and direction as they progress. The eventual result may not be what was expected to any of the parties involved.

In the new scenario, the purchasing department that checked the individual's purchase request will now be challenged to develop new supply agreements quickly, which might include, for example, a non-compete agreement and a supply agreement, etc. Perhaps the supplier is from another continent and the agreement will be according to another country's laws. This leads the purchasing department to engage in a series of interactions—with lawyers, the purchasing department of another country, a professional translator, etc. In due course, the IT function will need to establish the means of connecting the resource planning systems and processes of the two organisations.

Transactions are handled with traditional "Back Office" systems including ERP for processes such as "book to bill." Here the principle of a strong "walled garden" to protect access, together with minimal technology change to the existing applications and systems, are key requirements. The business requirement is for compliance to ensure that the organisation is operating within the increasing amount of legislation, and for minimum cost. What business value is to be found involves using data mining and reporting capabilities to identify trends and

The relationship between interactions and transactions
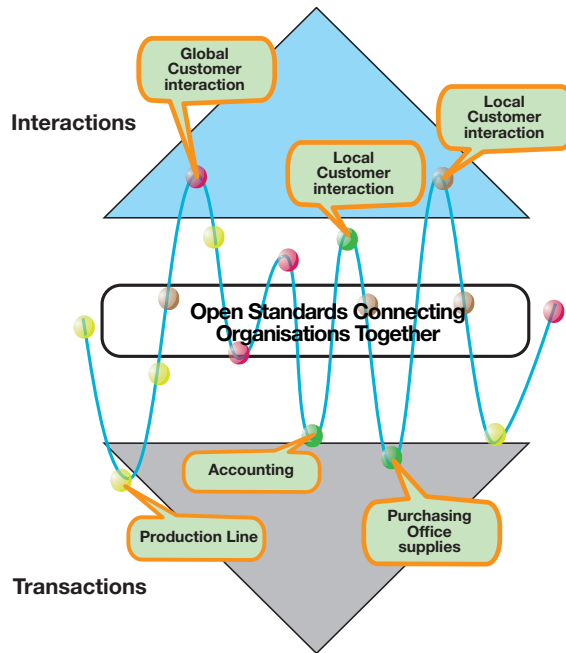
Source: Capgemini

patterns. Overall, the task is to manage at the lowest cost in a stable and reliable manner.

Supporting interactions differs in almost every way from supporting transactions. Success depends on providing a "public" and "open" working environment, in which the organisation meets and does business with its customers, suppliers and partners. Users exercise control over collaboration technologies (such as those involved in Web 2.0), using them to interact with their networks in the way which is most suitable to their needs. The focus is outwards—towards people, markets and events—and towards identifying and managing opportunities or threats.

Both interactions and transactions will occur simultaneously as part of business activity and they will be intricately linked with the thread of initiative passing from one domain to another dynamically, as shown in the diagram below:

Many processes will be collaborative and autonomous in nature; for example, a workgroup may interpret an opportunity and act without any involvement of enterprise or departmental management. A transport manager might consult with a truck driver to decide a different route on the basis of changing traffic conditions. At the same time, processes will ensure departmental records such as a record of the truck driver's hours are kept up to date and that formal enterprise-level transactions such as the "signed" delivery note for the goods delivered are executed.

A further example would be the interaction of a user to determine the best price and delivery for a business purchase. Whilst this process may be with multiple suppliers, it is an interaction with no commitments. But on reaching a decision, it must become an official order logged into the back office systems at the bottom of the "diamond" (in the diagram above).

3. Managing the New World

In this section we examine the challenges of managing a business in the new world, and in particular the challenges faced by a CIO. This allows us to examine a wider role for the organisation's IT Network in meeting these challenges.

3.1 CIO Challenges

The new world is already creating pressures for those with responsibility for IT. These pressures arise from users who wish to exploit the potential of social networks to market and sell services and products, and from innovators who wish to introduce new products and services enabled by IT. There is a general pressure from users who wish to leverage the tools which they use in their personal lives to exploit business information and to support interactions with networks of like minded people outside the organisation. On the supply side, there is pressure to support more business-to-business partnering and changes to the business model.

We summarise these pressures in terms of challenges in three areas:

- Leadership and management
  - How do I maintain sufficient control and visibility over real-time events when many processes and resources are outside the organisation and being reconfigured dynamically?
  - How do I manage complexity and achieve economies of scale?

- Customer-centric innovation
  - How do I maintain awareness of the ecosystem and external opportunities and threats?
  - How can we be a ready partner to exploit opportunities?
  - How do I open up the innovation process?
  - How do I provide the space for experimentation?
  - How do I manage the complexity of a changing network of suppliers, products and services?

- Knowledge worker empowerment
  - How do I support collaboration within dynamic external and internal networks, each with important information to share but with different levels of trust?
  - How do I evolve the range of tools and applications to keep pace with the rapidly changing expectations of the workforce?

3.2 The Big Network

Traditionally, the organisation's IT Network is the means by which it connects its employees and trusted partners. However, Capgemini believes that the network should adopt a wider role in the new world where interaction between networks of people, organisations and groups, sits alongside the traditional world of transactions and procedures.

It's worth pausing here to agree on some terminology. First, for the purpose of this discussion, we'll define something simply called, "The Big Network": "The Internet, World Wide Web and all other forms of digital communication, when considered as a whole, which constitute the-network-of-networks connecting social groups, academia, governments and businesses".

Through the Big Network, organisations and individuals are increasingly using IT resources, both interaction based and transactional, from the so-called "Cloud." The Cloud is changing the way both interaction and transaction IT is delivered— through the Everything-as-a-Service model (aka XaaS).

In this model, IT capability is offered through services, i.e. users make use of a service rather than buying an asset such as computing hardware or software. Services are available on a periodic fee basis (much like telephone monthly billing), can scale to meet peak-load demands, often offer a lower cost of ownership than self-managed and hosted IT and offer the benefits of the addition of new features through mass-market demand (i.e. consumers of the service will benefit from new features without having to specify them).

There are, however, some barriers to adoption of the Cloud model specifically:

1. Concerns over data privacy and data protection and how to ensure the appropriate separation of private (i.e. individual or corporate) and public information

2. The lack of independent metering and control of Service Levels and (the ability for the consumer to hold the provider to an agreed SLA)

3. The potential for vendor "lock-in" due to a lack of competition and the absence of established portability standards between providers

4. The challenge of operating Cloud and in-house services together to deliver an organisation's needs.

Some of these barriers will disappear over time, whereas others will remain into the future. For example, data publication management and service level governance are hard to address.

Capgemini believes these problems will be solved in the fabric of the IT network as they are common to the entire IT landscape and therefore require ubiquitous solutions. The solutions will include:

- Common and commoditised solution to SLA management across all providers
- Common data protection and privacy control that allows the organisation to protect its intellectual property and maintain regulatory compliance when it publishes data externally.

The organisation's IT Network will therefore take a wider role in support of organisations working with the Big Network. The organisation's IT Network is an asset of the organisation and under control of the organisation. It is vital to providing IT capabilities both sourced from within the organisation and from outside. Capgemini believes the organisation's IT Network is the natural place for control of all data, video, voice and other forms of communication. It is fundamentally a data and message orchestrator and channel switch for all digital communication.

4. The Role of the Organisation's IT Network

In the preceding sections we have seen how a more dynamic, unstructured and interconnected world creates pressures for organisations and we have argued that the organisation's IT Network is the logical place for control because of its position at the boundary between the organisation's knowledge workers and the Big Network. In this section, we expand on the role which the organisation network can play in the new world.

4.1 Meeting the Challenges

IT is in a position to enable the organisation to see and manage activity wherever activity is taking place. Capgemini thinks of this role as being similar to that of DNA in living organisms. Biological DNA encodes the basic processes of life. The organisation's IT Network can encode the basic mechanisms to manage organisational use of IT as part of the Big Network. In the new world we see these as:

- Universal **connectivity**
- Virtual **processing**
- Pervasive **identity**
- Secure, boundary-less **access**
- Global **collaboration**
- Instant **event** recognition
- Ubiquitous **sense and respond**
- Real-time **policy** enforcement.

These mechanisms directly support the organisational capabilities which are needed in order to manage an organisation in the new world as described in section 3:

An organisation's **knowledge workers**—through access to information based on their identity and level of trust—in a secure fashion use collaboration facilities to work independently of their location as part of the global community.

Knowledge workers enjoy the freedom to collaborate and mash up information regardless of source to deliver **customer-centric innovation** involving monitoring their ecosystem, partnering, innovating and experimenting. The boundary-less nature of security mechanisms makes it easy to rapidly create, and universal connectivity makes creating and optimising supply chains straightforward.

The disciplines of **distributed leadership and management** are supported by real-time policy enforcement, instant event recognition and ubiquitous sense and respond.

Universal connectivity and virtual processing support all needs for computing in the Big Network.

4.2 The Suitability of the IT Network

As a principle, functions should be located where they can be most efficiently and effectively implemented. In general, this will mean a combination of software products, appliances and services. Capgemini believes all the functions above should be embedded within or supported by the organisation's IT Network for the following reasons:

The network is universal. The network is ubiquitous and mandatory—all transactions and interactions, internal and external, flow through the network.

The disciplines of IT network management are needed for the organisation as a whole. Network management approaches and techniques can be reapplied at the business level.

S**ecurity requires a network approach.** The IT network is the one place to implement Security and Data Privacy Policies and is the best place to manage/conduct user authentication and access rights for an externalised organisation. A Collaboration Oriented Architecture (COA) supports "deperimeterisation" where organisations accept that they cannot shelter behind firewalls but instead defend key data. Capgemini believes the network is the natural place to apply the rules for digital object publication and the access rights of individuals.

The network is scalable. The network is built for real-time operation, peak-load optimisation and massive scalability. It supports any application deployment models including the Cloud.

The network offers a low cost solution. The network is the best place to gain economies of scale and lower costs through commoditisation.

The network can bring consistency. The network is the only place which brings consistency across the Big Network, encompassing the Web, the Cloud and the organisation.

The network understands location. The network is process and application agnostic but location aware. This is necessary to address the challenges of distributed organisational activity and distributed processing; for example, minimising the impact of delay on applications which are delivered over great distances from a remote data centre.

The network can measure service levels. Since all service transactions pass through the network, regardless of origin, it is the best place to monitor Service Levels.

Capgemini believes embedded functions will continue to grow as part of the organisation's IT Network. There is much evidence that this trend has started; for example, the availability of "smart" network devices from the likes of Cisco, Microsoft Whale Communications and the broad family of device manufactures in the RFID/EPC[7] space for object tracking. It is therefore reasonable to expect that there will be broad adoption of such devices across the Big Network and even more so as open standards emerge. This will present new possibilities for managing end-to-end business processes in the "smart" network layer. This, Capgemini believes, will realise the Open Group's vision of "Boundary-less Information Flow" over the Big Network.

Capgemini believes that network systems have a particular role in de-risking the new world of user-led innovation and empowerment. In addition, smart network devices can help control and manage the use of Cloud services. These appliances will in effect make the unmanageable manageable, bringing enterprise disciplines to an unpredictable and virtualised world. They will provide the controls needed for effective governance and simplify the management of the information assets. Such appliances will enjoy the agility, scalability and robustness seen in IT networks today.

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[7] **RFID** refers to "Radio Frequency Identification"; EPC refers to "Electronic Product Code"

4.3 Examples

The use of smart network devices working alongside enterprise software to implement some of the functions required in the new world is illustrated by the collaboration between Cisco and SAP in creating an enterprise risk management environment. This is described in the panel below.

Cisco and SAP have created an enterprise risk management environment that acts instantly upon events in the network facilitating real time event capture and instantaneous analysis and response.

Based upon Cisco Service Oriented Network Architecture (SONA) and SAP Governance, Risk and Compliance (GRC) software the solution provides a defence against breaches of security and data privacy, whilst protecting service level agreements and compliance controls.

The Cisco and SAP collaboration protects against threats and provides an instantly responsive environment whereby activities and events whether from laptops, PDA's, remote VPN connections or IP phones move across Cisco's SONA network and are tied immediately to the appropriate business process. This creates better business opportunity and delivers sound risk management.

This works through Cisco's SONA monitoring network devices, sensors, systems and users; then interacting directly with SAP's GRC to provide immediate notification, escalation and enforcement of business and IT rules or policies.

The strategic importance of integrating business intelligence within the Network event driven architecture should not be underestimated. As Cisco and SAP are widely used already, enterprise applications can be quickly deployed whilst protecting existing investment.

The use of this approach can be seen in the following scenarios:

A pharmaceutical company employee is working collaboratively with a Clinical Research Organisation (CRO). To highlight a data quality issue which they have discussed by phone, the employee attempts to send patient information to the CRO but doesn't realise that he has included documents which contain actual names and SSN's (Social Security Numbers) of the patients. The Cisco SONA technology reads the 3–2–4 SSN character string and detects a potential HIPPA (Health Insurance Portability and Accountability Act) violation. Simultaneously, the Cisco SONA technology updates the SAP Process Controls application. This launches a workflow and notification to multiple individuals. The research director receives one of the notifications and immediately contacts the employee who has received a notice that his email cannot be processed. The director reviews the process with the employee and they determine the appropriate way forward.

A document is sent to a specific country with which a manufacturer does not have an export license. Part numbers in a document are recognised and the fact that no export license exists for the destination country is flagged to appropriate staff.

In the first example, the concepts of pervasive identity—for individuals, countries and products—ubiquitous sense and respond and real-time policy enforcement is at work. In the next example, an architecture based on interaction, collaboration across organisations and secure, boundary-less security enabled by a network system is seen.

Capgemini worked with the UK Government to develop a future-thinking architecture for information sharing across government agencies. It was decided that this architecture would be message-based, document-centric and would take advantage of network device-based channel selection and content filtering.

The architecture demonstrated how network appliances can be used to implement Jericho-style security. This allows standards-based information sharing with the necessary levels of document data protection and privacy controls.

Working in concert with more traditional server-side orchestration software (i.e. BPM and ESB), the network devices implement Channel Publication Policies (e.g. Open or Secure channel selection) and document content privacy, including protective marking determination of the document (i.e. Top Secret, Secret, Confidential, Restricted or No Protective Marking) and selective filtering (aka. Redaction)—this is the partial "white-out" of parts of the text/data).

This conceptual architecture showed how the combination of embedded network devices and horizontal software platforms can provide robust and sophisticated data security without creating unnecessary barriers to information sharing.

This model has since been adopted by the UK Government's Central Sponsor for Information Assurance (CSIA) and has been folded into the Transformational Government strategy for the UK led by the Cabinet Office.

In these examples we see the network systems supporting the functions needed in future to exploit the potential of the new interconnected world.

5. Conclusion

Have we convinced you that the IT network should be the foundation of your next generation enterprise architecture? If not, we predict many of the demands from users who have been brought up on the next generation of IT will be difficult to manage—certainly more of a threat than an opportunity. Even worse, the danger is that complexity will increase as ad hoc solutions with strong business justification slip through the net and build one upon the other without a coherent strategy.

Let us review the argument.

We can already see the huge growth in social networking, which is spreading to the work environment; for example, LinkedIn already has over 20,000,000 users. This is part of a wider trend which puts the individual at the centre of a network of relationships and gives the organisation, whether public or private, the role of orchestrator of networks—of customers, suppliers, employees, and influencers which cross traditional boundaries.

This is creating problems for traditional IT which was conceived for predictable, repeated transactions and defined procedures. The problem is that new style interactions are unstructured, unpredictable and occur in the space between organisations. Traditional IT management is enterprise-centric and assumes that walls can be built to compartmentalise risks and hold the unknown at arm's length until it can be integrated in a controlled fashion. This takes too long and isn't flexible enough because the speed at which organisations can innovate and change is the new basis of competition and for staying relevant to 21st century citizens.

The paradox is that control is still needed—even more than ever because the stakes are higher (more personal data, more sharing, more public concern and scrutiny of failure)—while more empowerment and sharing is the new style of work.

How exactly does the network help? It has a unique vantage point to observe all the communication of interest to an organisation and to trigger intervention—avoiding problems before they occur. In effect, it makes policy enforcement instant. This can remove a great deal of risk arising from the next generation of networked social/collaborative applications without adding the usual delays and overheads.

More than this, it can support or even implement computing models which are now evolving to support networked organisations and people; for example, Cloud based services and Jericho Forum's boundary-less security model.

Leveraging the capability of network systems as part of architecture makes perfect sense, but is it feasible yet?

Already, solutions can be identified which use the network and enterprise software for the purposes of managing organisational compliance. There are also examples of network-centric architecture which use the network to implement security across organisations.

So the answer is Yes, or at least partly.

All is to play for. The decisions which organisations make about IT will decide how well equipped organisations are to compete and to stay relevant. These decisions will be shaped by the strategies and architectures which are developed today. If you believe the network is part of the solution then now is the time to develop with the business the scenarios which highlight the opportunities and threats of the networked world and now is the time to develop a strategy and architecture which focuses on the network.

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