



Strategic change through emerging IT trends

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Presentation key points

- ▶ Current Business Environment
- ▶ Top 10 Global Business Risks
- ▶ IT Effectiveness
- ▶ IT Business Agenda
- ▶ Strategic Alignment
- ▶ Strategic Options
- ▶ Emerging Trends

We live in a volatile world

*2008 was a traumatic year for the global economy.
2009 continues in the same manner. A decade of
global economic growth has suddenly come to a
grinding halt.*

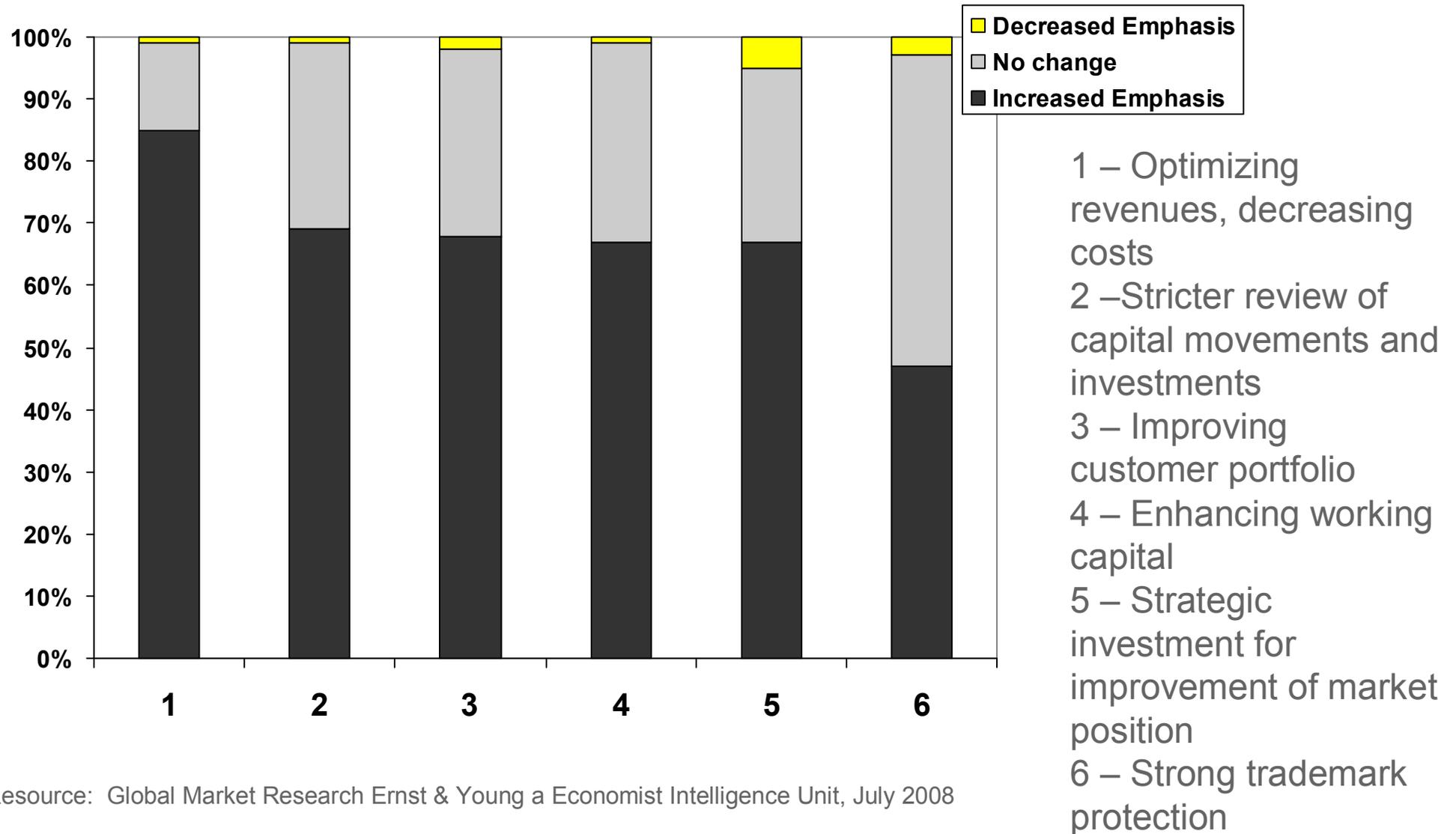
Market Research “Economic crisis 2008”

Respondents: Multinational companies with a presence in Slovakia

- ▶ 78.6% companies have already prepared counter-measures against impacts of the financial crisis :
 - ▶ 57.1% respondents plan to invest in new technologies
 - ▶ 46.4% respondents prepare specific plans for restructuring
 - ▶ 10.7% respondents plan to move to more favorable geographic locations

- ▶ 37% companies decided on use of cheaper materials
- ▶ 63% keep with current structure/ composition of materials
- ▶ 38.5% consider acquisitions as a result of decreased value of companies
- ▶ 14.3% prepare to sell a part of an enterprise

Main activities based on own experience with recession



Resource: Global Market Research Ernst & Young a Economist Intelligence Unit, July 2008

The 2009 Ernst & Young business risk report — Top 10 risks for global business



Top 10 Global Business Risks

1 The credit crunch

The credit crunch and its aftershocks pose existential threats to leading global firms in asset management, real estate, insurance and banking, while capital-intensive sectors such as life sciences and power and utilities are under pressure from a tighter credit environment. (Rising from Number 2 in the 2008 report.)

2 Regulation and compliance

Regulatory risk — last year's number one threat — remains near the top of the list. This risk may not have such an obvious impact as the global credit crunch, but regulatory risks continue to be keenly felt by leading firms in sectors such as life sciences, telecoms, oil and gas and power and utilities. Furthermore, uncertainty regarding the regulatory response to the global financial crisis has caused this risk to become more important in asset management, banking and insurance. (Falling from Number 1.)

3 Deepening recession

The global financial crisis and house price declines have delivered a shock to consumer confidence and sparked a flight of capital from emerging markets, raising the spectre of the retraction in developed economies becoming a truly global recession. (New this year.)

4 Radical greening

Environmental and sustainability challenges continue to escalate, most dramatically in carbon-intensive sectors such as automotive, real estate, oil and gas, and power and utilities. The change of administration in the US raises the possibility of concerted government regulation. (Rising from Number 9.)

5 Non-traditional entrants

New competitors are emerging from adjacent markets and geographically distant areas. National oil companies now compete with the majors in oil and gas; banking, insurance and asset management companies now compete for the same customers; as do internet, telecom and media companies; and emerging market companies are more competitive in the automotive sector. (Up from Number 16.)

Top 10 Global Business Risks

6 Cost-cutting

With the global economy slowing, cost-containment is now crucial to survival in sectors such as automotive, media, and consumer products. It has an impact on both suppliers and consumers. (Rising from Number 8.)

7 Managing talent

What was the “war for talent” is now more complicated: attracting talent is still important, but so is retaining key talent during a downturn and (especially in banking) the growing dissent over compensation structures that are misaligned with risk management or longer-term returns. (Rising from Number 11.)

8 Executing alliances and transactions

Tightening credit conditions have lessened the pace of M&A activity. Yet alliances and partnerships remain crucial to the business strategies of leading firms in sectors such as telecoms, life sciences, utilities and media. Furthermore, the financial crisis has led to dramatic and sudden ‘rescue mergers’ for which due diligence must be undertaken after the event. (Falling from Number 7.)

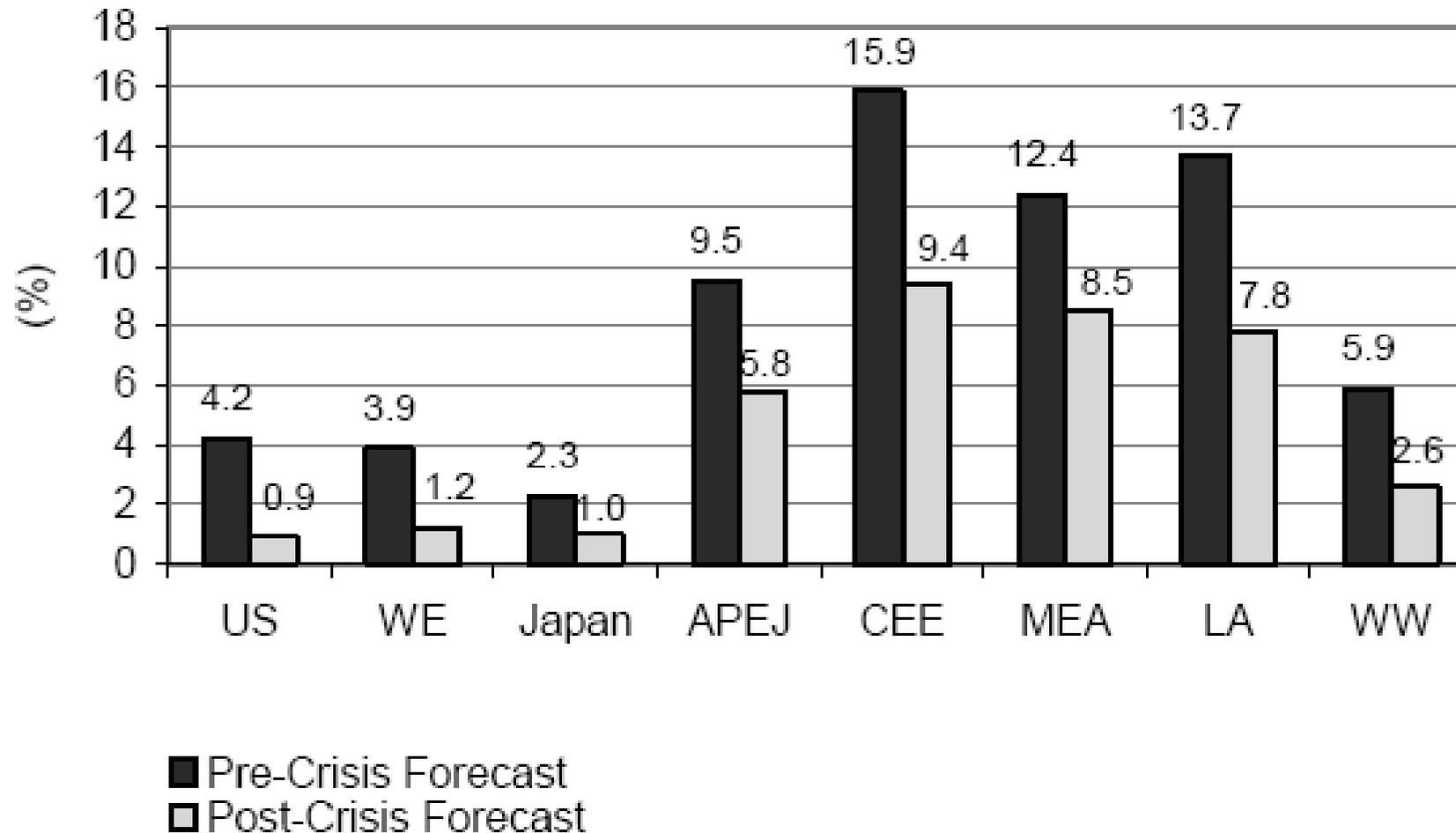
9 Business model redundancy

In sectors such as asset management, life sciences, media, and telecoms, technological change and industry transitions are rendering long-established business models obsolete, forcing industry-leading firms to reinvent their corporate strategies and structures. (New this year.)

10 Reputation risks

Not only the reputations of firms but those of entire industries are increasingly under threat. Environmental and climate concerns threaten oil and gas and utilities companies; pressures to provide wider access to life-saving drugs threaten funding for innovation in life sciences; and the credit crunch is weakening public trust in banking and asset management companies. (Up from Number 22.)

Worldwide IT spending (IDC)



Source: IDC's Q2 and Q3 2008 Worldwide Black Books

IDC's top 10 Outsourcing predictions

- 1. Providers Will Need to Offer a Full Array of Cost-Saving Capabilities to Meet Cost Imperatives**
- 2. Outsourcers Will Focus on Providing Targeted, Value-Added Services via New Offerings and Acquisitions**
- 3. There Will Be an Acceleration in Offering New Technologies and New Delivery Options as Part of Outsourcing Engagements**
4. Deal Making Will Undergo a Makeover
5. Vendors Will Adopt a Conservative Approach to Asset Transfer But Shift Trajectory Toward Asset-Based Service Delivery
6. In HR Business Process Outsourcing, Focus Will Be on Basics in Payroll and Benefits, with a Decline in Talent Management, Recruiting, and Learning
7. There Will Be an Increase in Consolidation/M&A of Outsourcing Market
8. There Will Be an Increased Focus on the "M" in Application Development and Maintenance
9. Partnerships Will Expand Between Traditional and Newer "Web 2.0" Players, with Some Partnerships Likely as Testing Ground in Building New Capabilities
10. The Outsourcing Services Industry Will Enter a New Phase of Restructuring

Strategic risks – Implications for IT

- ▶ As our recent survey of executives showed, **IT** is a major area for potential cost-saving and, since it is critically embedded into all parts of the business, the IT function is probably one of the departments most affected whenever cost-saving initiatives are underway.
- ▶ However, with the current economic situation causing unprecedented trading conditions, putting the IT function under pressure when it is having to adapt the business to respond to those changing market conditions should be carefully considered.
- ▶ For the first time, businesses may want to look to their IT function as a means of creating value, as a way of rationalizing costs throughout the business and as a way of managing the overall risk position.
- ▶ **More than ever, it is crucial that IT continues to be aligned with the business and its overall strategy, improves its efficiency and can measure and demonstrate its ongoing value.**

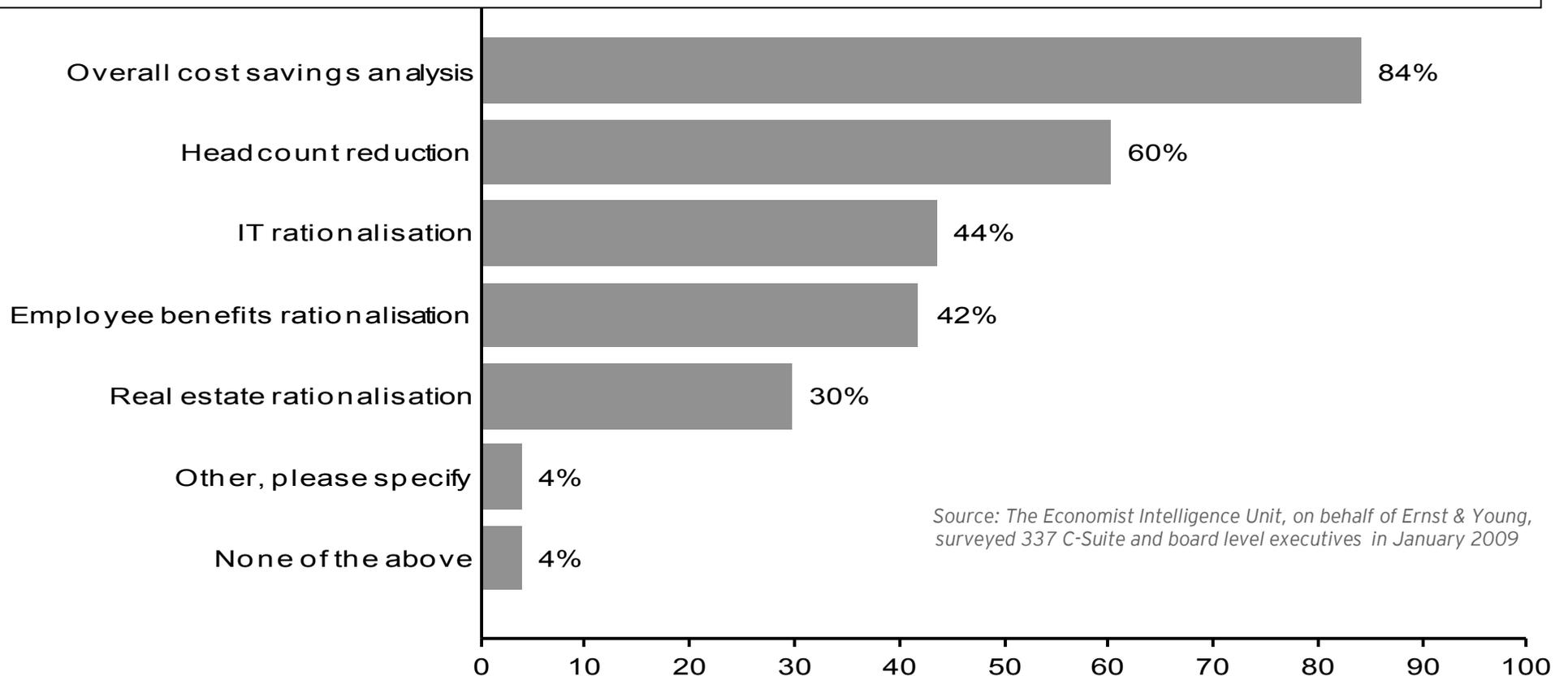


IT Effectiveness

The pressure to reduce costs

- ▶ Pressure originates from changing market conditions, a revised enterprise strategy, business model or other external factors.

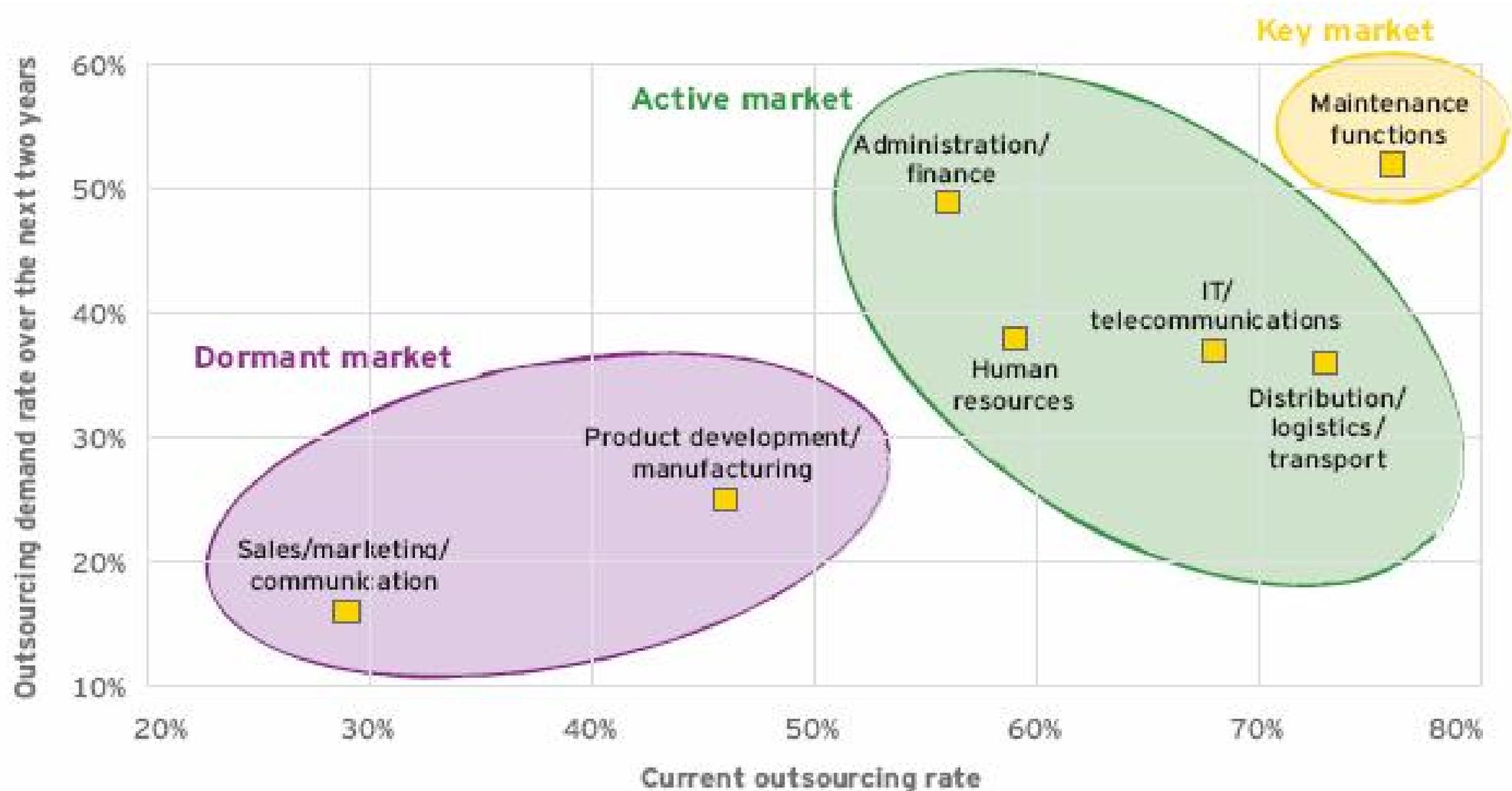
Which of the following cost reduction initiatives have you already implemented or started to implement?



Source: The Economist Intelligence Unit, on behalf of Ernst & Young, surveyed 337 C-Suite and board level executives in January 2009

- ▶ It is imperative to find a balance between improving performance, cost reduction and maintaining effectiveness

Outsourcing market and position of IT



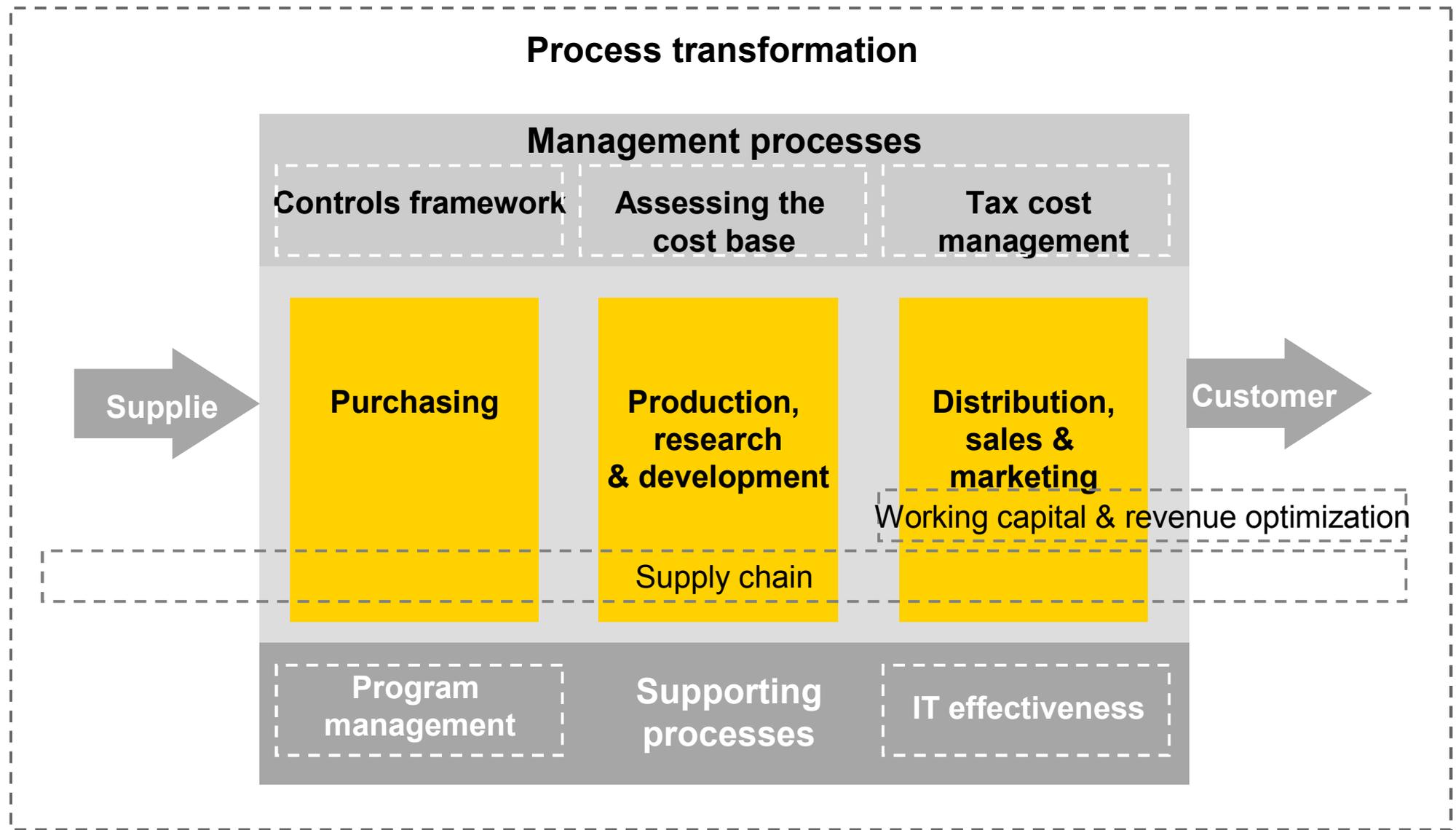
Resource: Ernst & Young Outsourcing survey 2008 (UK, France, Germany, Italy, Spain, Belgium)

Where to look for performance improvement

- ▶ It is tempting to rush into a cost-reduction exercise. However, with the risk of impaired performance or effectiveness, a structured, coordinated and considered approach can minimize those risks.
- ▶ Every business is different, but in a simple business model we can identify the value chain and can see that supporting the value chain and operations are management processes and supporting processes
- ▶ Businesses should start by taking a holistic approach to evaluating their entire cost base and examining their working capital and revenue optimization practices.
- ▶ This should be followed swiftly by a fresh assessment of their core processes, current risks and the controls that are in place, and the management of any key programs.

Improving performance & reducing costs

Where to look within the business model



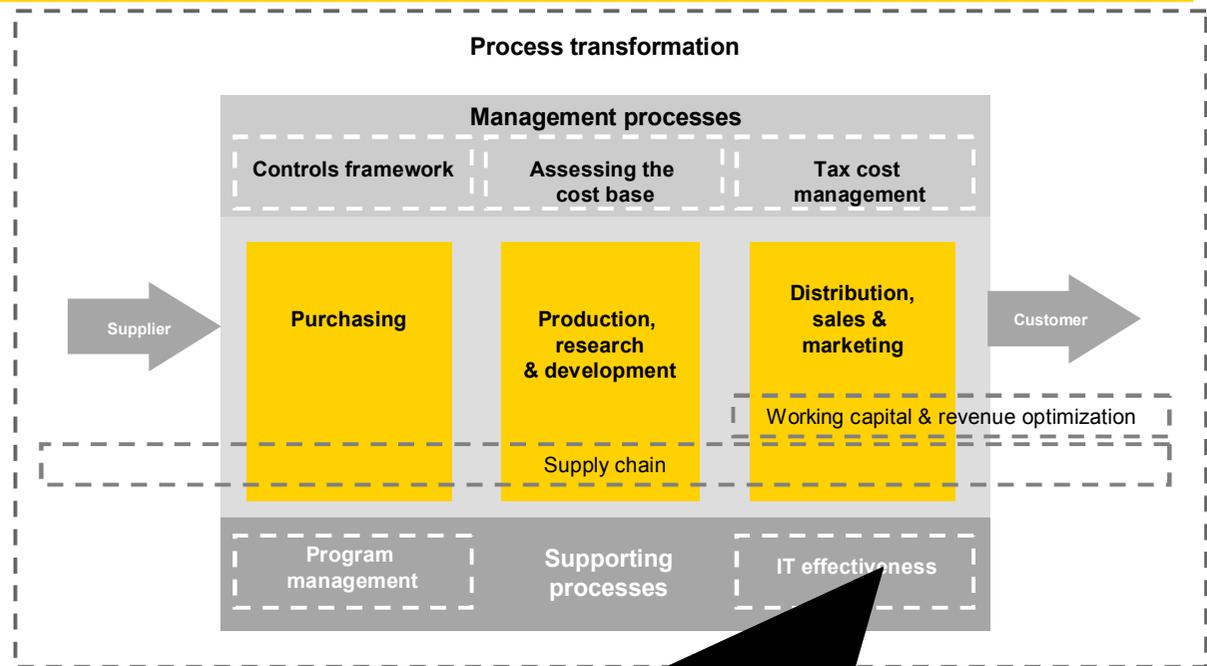
IT effectiveness

Investments in IT and day-to-day running costs are often the first targets for businesses seeking opportunities to reduce spend.

However, seeking to improve performance requires the optimization of IT spending and other fixed investment initiatives.

Before making any changes to IT spend, businesses should ask:

- ▶ which IT-related expenditures can be rationalized without any negative implications on the business, as market conditions continue to change?
- ▶ how can IT meet the financial AND operational expectations from the business?
- ▶ how can these objectives be met in an effective financial and operating model?
- ▶ could the IT function be a means of creating value?



44% of executives indicated IT was a key focus*; however, for the first time, businesses may want to look at their IT function as a means of creating value.

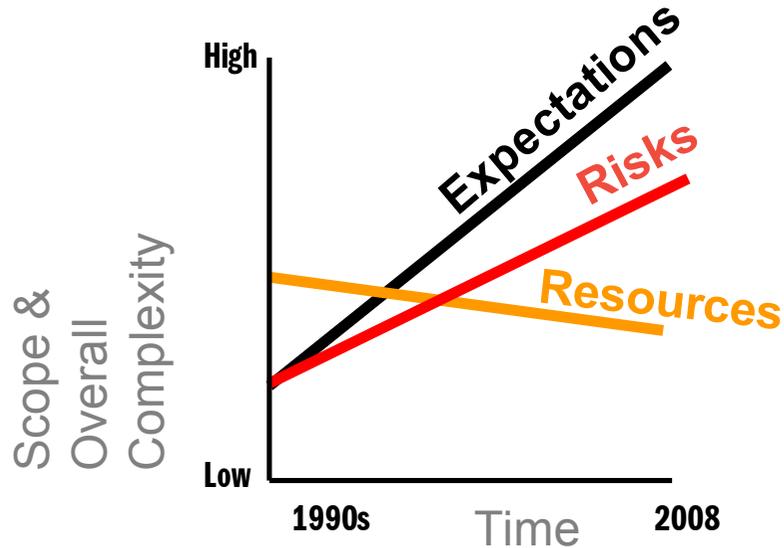
Source: The Economist Intelligence Unit, on behalf of Ernst & Young, surveyed 337 C-Suite and board level executives in January 2009



IT Business Agenda

What we are seeing in the IT environment

Increasing Expectations & Risks



Evolving Business & IT Priorities

Business Expectations Of IT (Near-Term)	IT Strategies For IT (Near-Term)
Improve business processes	Improve the quality of IT services
Control enterprise cost structure	Improving IT governance
Attracting, retaining and growing customers	Improve the link between business & IT
Improve workforce effectiveness	Demonstrating the business value of IT
Grow revenue	Building business skills in IT

Source: Gartner EXP CIO Report: Creating Enterprise Leverage: The 2007 CIO Agenda

Increasing Need For Alignment

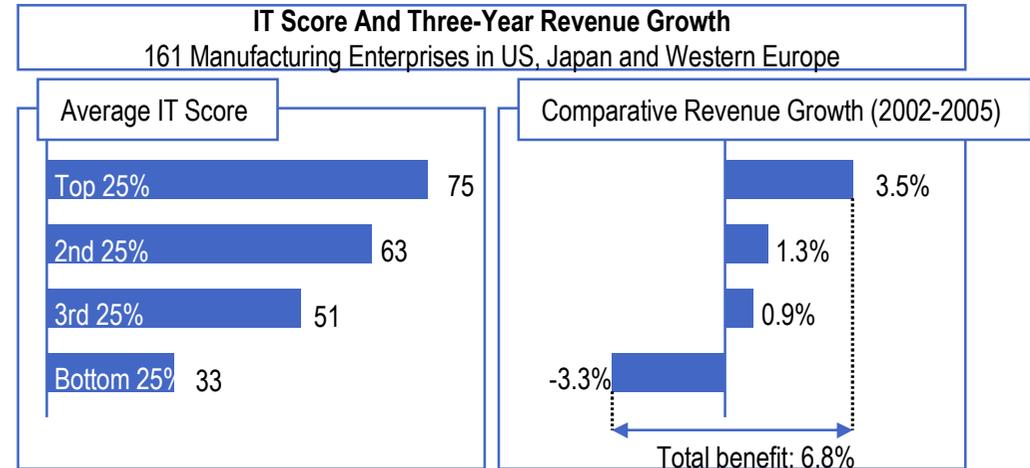
Stakeholders

- Board
- Audit Committee
- CEO
- C-suite
- Business Unit Leaders
- Customers
- Third Parties
- Regulators
- Others

Business Drivers

Revenue and Market Share
Reputation and Brand
Asset and Capital Management
Earnings and Operating Margins

Focus On Delivering Value: Impact Of IT On Revenue Growth



Source: Research study by Keystone Strategy Inc, Harvard Business School and Microsoft

The Enterprise Agenda for IT

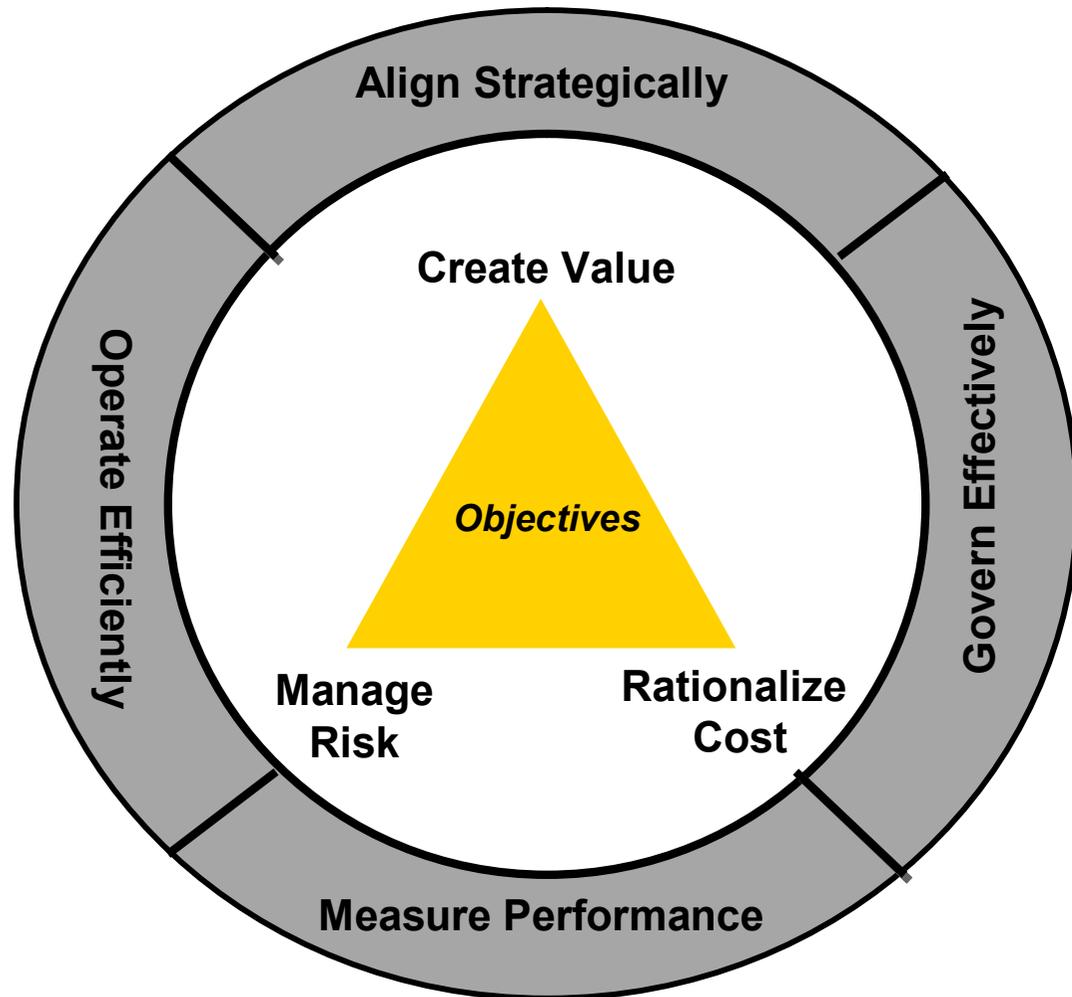
How does IT impact your business?

- ▶ **Value** – how does IT create value for the enterprise?
- ▶ **Cost** – how does IT help rationalize the overall costs of the business?
- ▶ **Risk** – how does IT help the business manage its overall risk position?

IT can be a competitive advantage or a corporate hindrance; the difference between a positive and negative impact is less than you may think.

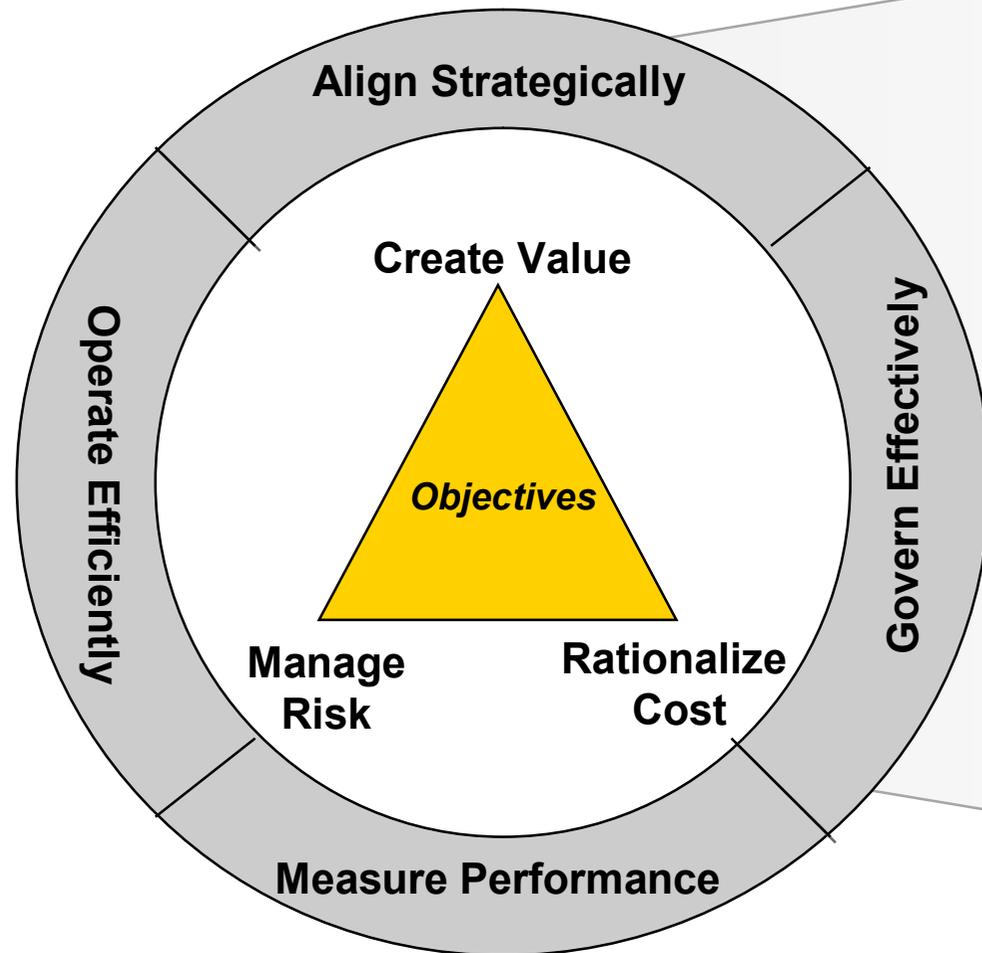
We believe that for IT to create a positive impact, there are four “must do’s” for the enterprise relative to IT:

- ▶ Align Strategically
- ▶ Govern Effectively
- ▶ Operate Efficiently
- ▶ Measure Performance



The IT Agenda: 5 Challenges

An effective IT function usually addresses five key challenges, exhibiting certain characteristics...



LEADERSHIP & ALIGNMENT

Ensures alignment of IT with the key business drivers and corporate strategy, effective IT leadership and addresses overall IT governance issues.

PROGRAM DELIVERY

Ensures the efficient and effective delivery of major IT programs and projects, including overall portfolio management and program reporting, to support key business initiatives.

SERVICE DELIVERY

Delivers required IT support services, infrastructure and applications to support the needs of internal and external customers.

KEY RELATIONSHIPS

Develops, maintains and manages relationships with key stakeholders in and beneficiaries of the IT function, including Board, executive management, internal/external customers and business partners.

DAY-TO-DAY OPERATIONS

Manages the day-to-day operations of the IT function, including resources and budget, staffing and people management, and provides appropriate security and controls around systems, applications and data.

Managing the IT Agenda Framework

Make Our Business Better

Focus on Objectives & “Must Do’s”

Ensure Alignment

Address IT Challenges & Issues



Stakeholders

- Board
- Audit Committee
- CEO
- C-suite
- Business Unit Leaders
- Customers
- Third Parties
- Regulators
- Others



LEADERSHIP & ALIGNMENT

- Enterprise Strategy
- Governance
- IT Spending
- IT Organization
- IT Performance Management
- Value Contribution

PROGRAM DELIVERY

- Program Alignment
- Program Governance
- Business Case
- Program/Project Management
- Program Assessment & Risk Management
- Reporting & Communications
- Benefits Management & Realization

SERVICE DELIVERY

- Service Levels
- IT Infrastructure
- Information Security
- IT Resource Management
- User Education & Training
- Cost Efficiency

KEY RELATIONSHIPS

- Board & Executive Management
- Regulators
- IT Vendors
- Internal Customers
- External Customers
- Non-IT Vendors

DAY-TO-DAY OPERATIONS

- Service Desk
- Configuration Management
- Data Management
- System Availability
- Operations Management
- Compliance Management
- Performance Monitoring
- Security Management

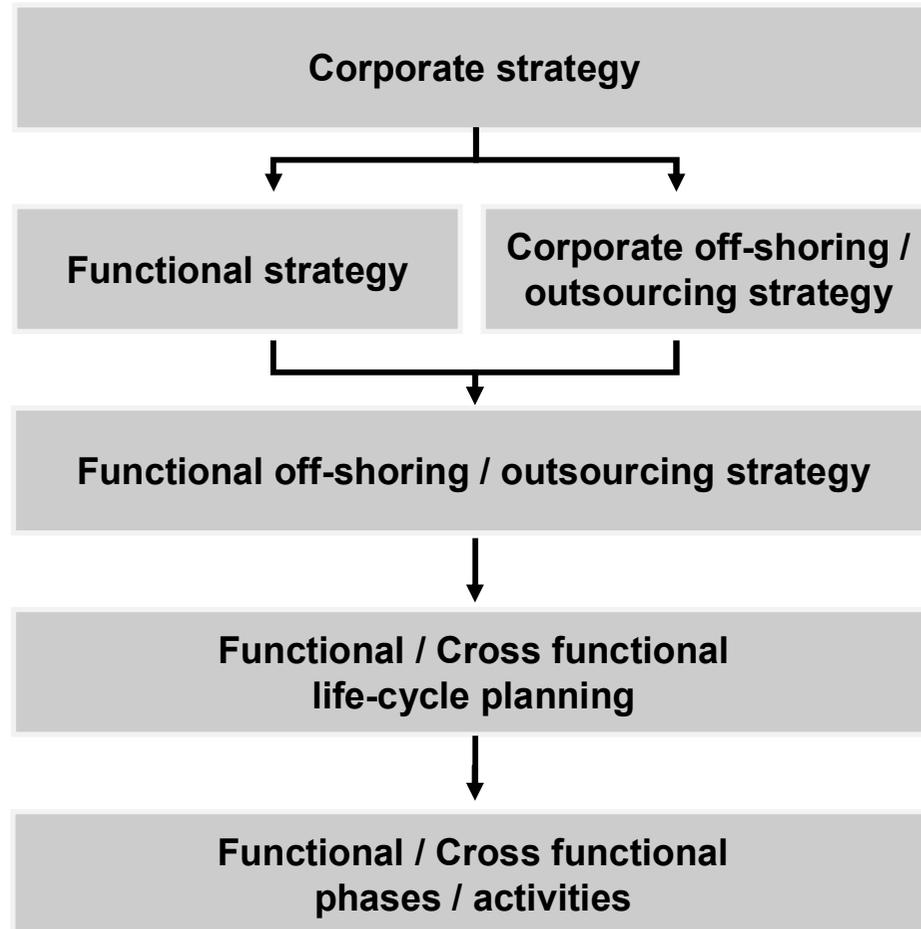
Keep Us Out of Trouble



Strategic Alignment

Alignment to corporate strategy

Off-shoring / Outsourcing Strategy:



Observations:

- ▶ An organisation's functional strategy and sourcing strategy need to be fully aligned to the overall corporate strategy
- ▶ Both the functional strategy and corporate off-shoring / outsourcing strategy will be used to drive an aligned and effective functional off-shoring / outsourcing outcome
- ▶ The functional off-shoring / outsourcing strategy will be implemented through life-cycle planning and detailed phase-by-phase activity planning - this will be performed on a cross-functional basis if appropriate
- ▶ The corporate off-shoring / outsourcing strategy needs to address: i) how opportunities will be assessed; and ii) where appropriate, how to implement off-shoring / outsourcing opportunities, to support the business moving forward

The reasons off-shoring / outsourcing is a viable strategy

Traditionally, the motivation for off-shoring or outsourcing was to cut costs. However, today the decision is influenced by more strategic factors which need balancing against potential costs

Indicative benefits:

Quantifiable:

- ▶ **Reduced operating costs** – (est. 20-55%)
- ▶ **Labor arbitrage** – (est. 10-30%) - reducing cost per head by moving to a low cost location
- ▶ **Process improvement** – (est. 5-15%) - process excellence and IT enablement to improve cycle times, lower cost and increase quality
- ▶ **Reduced overheads** – (est. 5-10%)
- ▶ **Cash infusion** – through sale of assets and / or facilities to the vendor
- ▶ **Reduced capital commitments**

Qualitative:

- ▶ **Improved service delivery** - access to world-class processing
- ▶ **Stronger control environment** – improved controls through process simplification and focus
- ▶ **Platform for transformation** - leverage the transformation abilities of the vendor
- ▶ **Improve focus on core abilities** – retained staff can focus on 'value-added' activities

Indicative costs:

Implementation: (est. \$68-100k per FTE transitioned)

- ▶ Direct costs paid to the provider:
- ▶ Transition costs – charged by vendor to manage the transition
- ▶ Other costs incurred during transition:
- ▶ Internal project costs – internal resource time, travel costs
- ▶ Systems related – IT Integration, network connectivity set-up, system decommissioning
- ▶ Professional services – legal fees, business advisory fees, media relations
- ▶ People-related – redundancy, redeployment, retention payments, training of remaining staff

Transformation:

- ▶ Transformation costs - charged by vendor to manage process improvement activity
- ▶ Project costs – internal resources

Ongoing Management:

- ▶ **Service delivery charges**
- ▶ **Communications – incremental telecommunications charges and network costs**
- ▶ **Supplier Relationship Management**

Aligned to strategic drivers

The key to realising the strategic benefits of off-shoring / outsourcing is identifying the right options for consideration and how these align to the strategic drivers

Key strategic business drivers:

Profitable growth:

- ▶ Cost management through outsourcing or off-shoring non-core processes and services, taking advantage of labor arbitrage
- ▶ Process improvements through access to best practice process
- ▶ Reduced capital commitments to support expansion or transformation of back-office processes and services

Technology and operational excellence:

- ▶ Access to best practice process, service and IT management through investments already made by service providers
- ▶ Ability to leverage the transformation ability and experience of service providers
- ▶ Service delivery governed by contractual service level agreements and, if appropriate, continuous improvement

Strategic considerations:

A - Strategic options:

- ▶ Ensuring that the right options are considered and decisions made in setting the off-shoring / outsourcing strategy to deliver the desired business operating model fully aligned with the corporate strategy
- ▶ Assessing all potential delivery models for in-scope functions, including potential markets, locations, third party providers, and In-House

B - Functional Scope:

- ▶ Agreeing the functional scope to be included, across process, people and technology, and integrating the strategy with other initiatives

C - End-to-end planning:

- ▶ Managing life-cycle program interdependencies and complexities to achieve your off-shoring and outsourcing objectives, whilst minimising transition risks and costs



Strategic Options

Strategic considerations – delivery options

As you consider alternative options for the delivery of corporate functions, a number of key strategic decisions are required

Sourcing options for process and technology:

Process activity Outsourced?	Yes	Business Process Outsourcing In-house IT Delivery	Business Process Outsourcing IT Outsourcing
	No	In-house Process Delivery In-house IT Delivery	In-House Process Delivery IT Outsourcing
		No	Yes
		IT activity outsourced?	

- ▶ As stated, recent BPO / ITO deals have seen a multiple vendor strategy, leveraging solution-specific capabilities rather than a one-stop-shop approach
- ▶ At the outset, need to establish a corporate strategy for off-shoring and outsourcing to help drive the decision-making process:

▶ What are the Enterprise-wide strategic considerations?

- ▶ Bundle BPO and ITO?
- ▶ Adopt a cross-functional strategy?
- ▶ Single vendor or multi- vendor?

▶ Is there a functional strategy?

- ▶ Broad or narrow functional process scope?

▶ Will a BPO deal include elements of ITO?

- ▶ Processes only?
- ▶ Include IT in scope?

▶ What is your preferred transition approach?

- ▶ Lift and shift?
- ▶ Transformation?



The answers to these questions will drive the options for the business operations models for each function

Potential outcomes from strategic considerations

Within the decision-making process of defining the most appropriate way forward, there are multiple outcomes that need to be considered

| Not Exhaustive |

Strategic Consideration:		Rationale / Benefits:	Risk / Implications:
Enterprise-wide Considerations	Wholly owned Captive	<ul style="list-style-type: none"> ▶ Greater control and flexibility, including new hybrid ownership models ▶ Perception- save money by doing it yourself ▶ Can leverage existing offshore operating locations, reducing operational risk and set-up costs 	<ul style="list-style-type: none"> ▶ Requires a critical mass to be viable and effective ▶ Less scalability than the vendor / client model ▶ Investment to establish the captive may be too high to generate a viable business case
	Vendor client (use 3 rd party)	<ul style="list-style-type: none"> ▶ Vendor has established capability that is scalable ▶ Vendor manages most of the operational risk (e.g. employee retention, training, infrastructure) ▶ Short term access to labour arbitrage benefits ▶ Vendor has capability to deliver transformation and continuous improvement benefits ▶ Processes will be subject to service discipline, i.e. standardised to drive benefits 	<ul style="list-style-type: none"> ▶ Potentially concedes too much control to the vendor ▶ The need for competency in strategic relationship management and vendor governance mechanisms ▶ Vendor takes a margin on benefits ▶ Process discipline will result in less flexibility
	Multi Vendor	<ul style="list-style-type: none"> ▶ Best-in-class provider for each function / higher levels of service ▶ Allows greater flexibility in operating models for each function ▶ Commercial risk is spread / managed 	<ul style="list-style-type: none"> ▶ Flexible client-led vendor management processes and systems required ▶ Less commercial leverage with each individual vendor
Functional Strategy - Process Scope	Narrow	<ul style="list-style-type: none"> ▶ Primarily simple transactional, high volume activities are in scope ▶ Impacts of change on staff and internal customers easier to manage 	<ul style="list-style-type: none"> ▶ May not achieve minimum no. of seats required by vendor ▶ Scale may not trigger best pricing from vendor
	Broad	<ul style="list-style-type: none"> ▶ Increased scope of activities, including some of the more 'value-added' activities ▶ Possibly a better commercial arrangement ▶ Vendor can allocate more resources ▶ Pilot or proof of concept transition 	<ul style="list-style-type: none"> ▶ Activities that impact on internal customers no longer within direct control

Potential outcomes from strategic considerations

During the decision making process of defining the most appropriate way forward there are multiple outcomes that need to be considered

| Not Exhaustive |

Strategic Consideration:		Rationale / Benefits:	Risk / Implications:
Domain: BPO and / or ITO	BPO only	<ul style="list-style-type: none"> ▶ Transition is easier ▶ Broader suite of vendors to choose from 	<ul style="list-style-type: none"> ▶ Reduced level of process and IT integrated transformational change and IT systems development ▶ Incremental savings from IT changes not available
	BPO and ITO	<ul style="list-style-type: none"> ▶ Incremental savings from process and IT transformation combined ▶ Vendor becomes responsible for upgrades to applications / access to IT development and management capability ▶ Vendor may offer a more attractive deal for greater scope 	<ul style="list-style-type: none"> ▶ May be more difficult to manage services than BPO alone ▶ Reduces number of potential vendors ▶ Multi-service nature of the transition will mean transition timeframes are longer ▶ Potential change fatigue ▶ Multiple new strategic vendor relationships to transition and manage ▶ Single vendor with considerable supplier power
Transition Approach	Lift & Shift	<ul style="list-style-type: none"> ▶ Benefits primarily driven by labour arbitrage ▶ Transition is easier and faster – less impact on people ▶ Allows a broader set of vendors to be considered 	<ul style="list-style-type: none"> ▶ Service improvements less likely ▶ 'Bad' practices can be handed over
	Transform	<ul style="list-style-type: none"> ▶ Incremental savings from transformation ▶ Transformation or process-change related benefits achieved in shortest timeframe ▶ Re-engineered processes, workflow automation and access to tools ▶ Vendor may offer more innovative pricing 	<ul style="list-style-type: none"> ▶ Timeframes may be longer ▶ Restricts possible vendor short-list

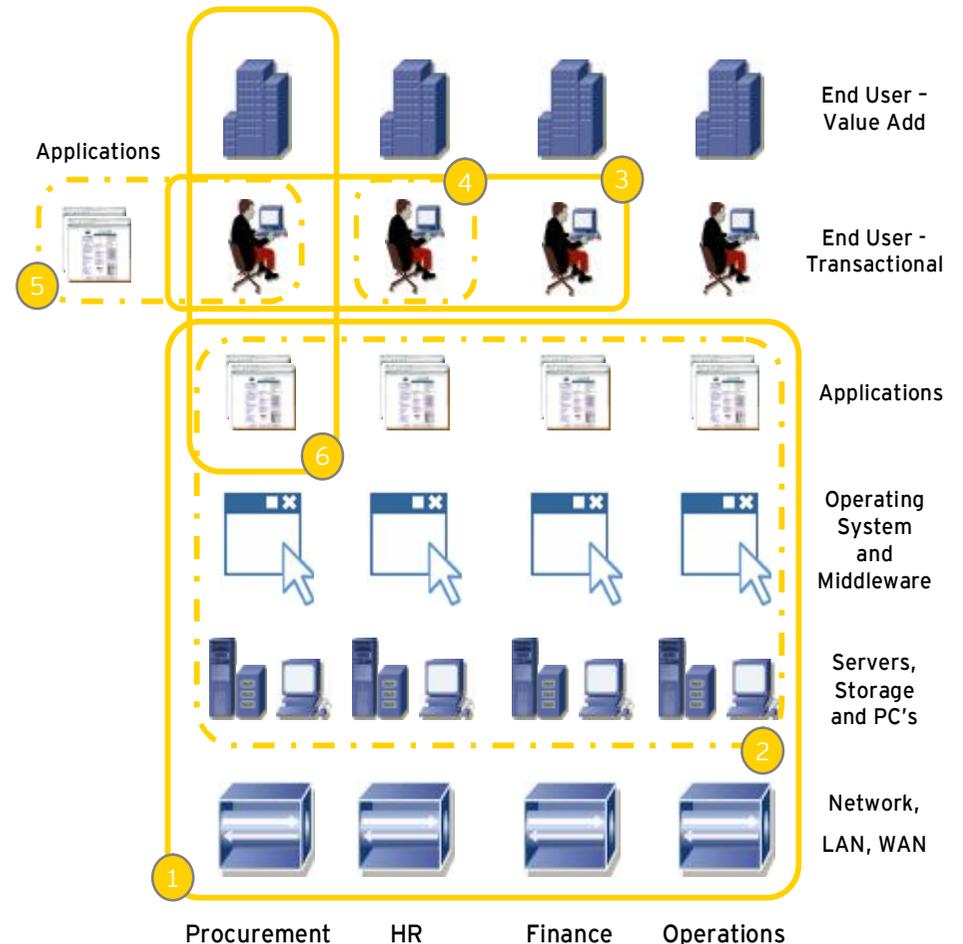
Regardless of the strategy selected, the solution is complex

Whatever the strategic direction selected, the impact on the business operating model, current and future, is likely to be complex

| Not Exhaustive |

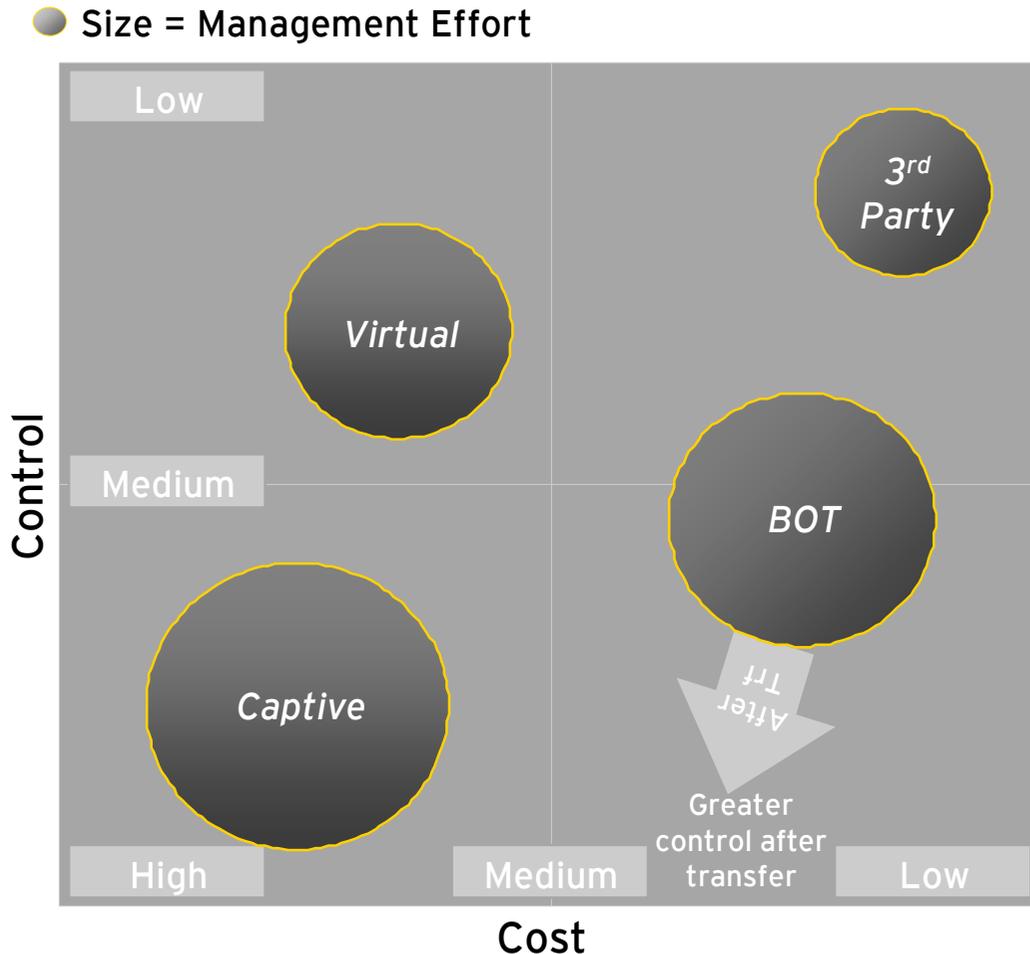
Potential Delivery Models:

- | | | |
|---------------------------|---|--|
| ITO Only | ① | <p>Enterprise-wide ITO:</p> <ul style="list-style-type: none"> ▶ Transfer of the IT function, in full, to an external service provider – single vendor |
| | ② | <p>Enterprise-wide application / infrastructure managed service:</p> <ul style="list-style-type: none"> ▶ Transfer of management responsibility of one or more IT applications or functions – single vendor |
| BPO Only | ③ | <p>Transactional BPO across Corporate functions:</p> <ul style="list-style-type: none"> ▶ Transfer of management responsibility for corporate functions, e.g. training, accounts payable, purchasing |
| | ④ | <p>Single function (HR) BPO – Transaction-related:</p> <ul style="list-style-type: none"> ▶ Transfer management of transactional activities, e.g. pay-roll, recruitment |
| ITO/BPO Cross-over | ⑤ | <p>Single function (Procurement) / transactional BPO including Application Service Provider (ASP):</p> <ul style="list-style-type: none"> ▶ ASP - hosting of a vertical (web-based) application for a specific function e.g. PO application ▶ Transactional functional activities, e.g. Requisition and PO generation |
| | ⑥ | <p>Function (Procurement) BPO including application managed service:</p> <ul style="list-style-type: none"> ▶ Transfer of management responsibility of functional IT applications ▶ Transfer management of end-to-end functional activities, e.g. strategic sourcing to order fulfilment |



Multiple delivery models

There are a number of distinct delivery models which can meet requisite solution requirements, each offering relative advantages and disadvantages, including combinations of the models



Captive:

- ▶ The business sets up its own subsidiary offshore and ownership of all assets and staff is retained
- ▶ Low operational risk and medium to low scalability

3rd Party Service Provider:

- ▶ An entire process or services is moved out of its organisation and managed by a third party service provider
- ▶ The two distinct approaches:
 - **Lift and shift**
 - **Lift, shift and transform**

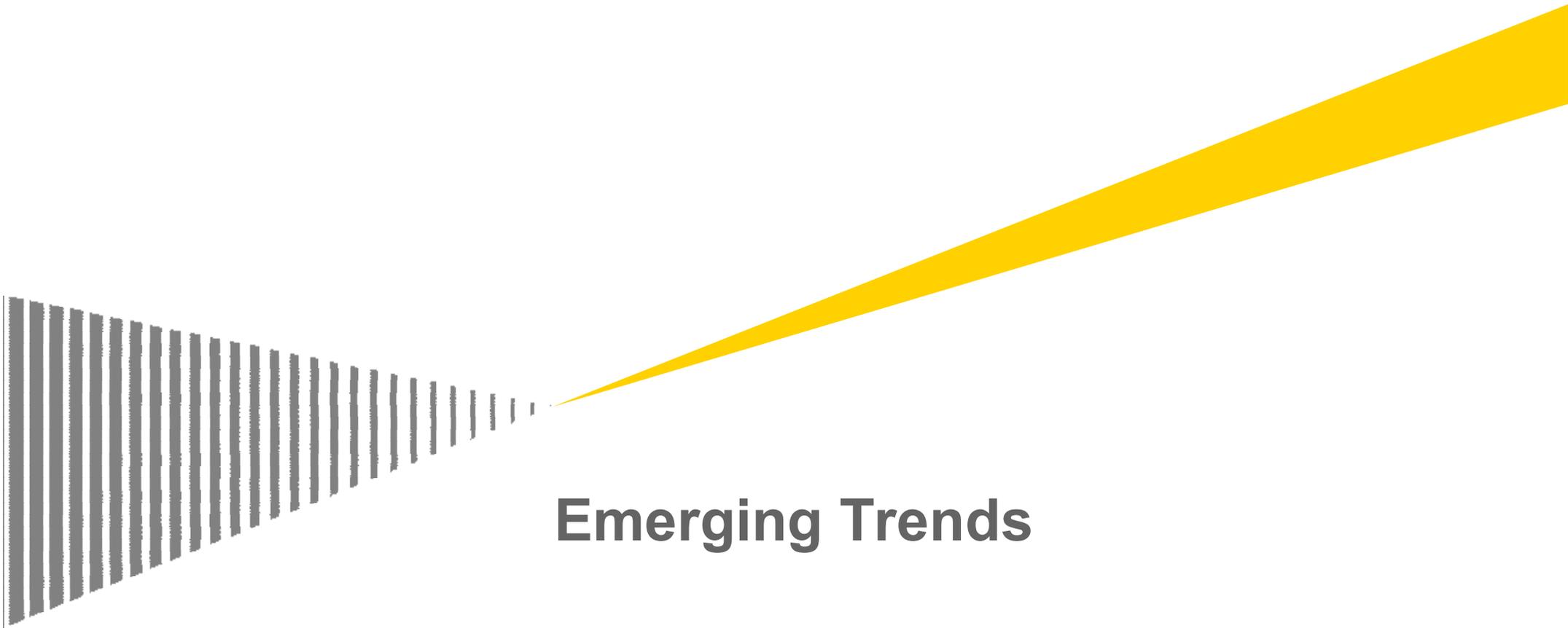
- ▶ High operational risk and scalability

Build Operate Transfer:

- ▶ The outsource provider helps the client set up the centre from start to finish. Management is transferred to the client once the centre is established
- ▶ Medium to high operational risk and medium scalability

Virtual Captive:

- ▶ An entity is formed with a split in investment, revenues and control between client and provider
- ▶ Medium operational risk and medium to high scalability



Emerging Trends

Top 10 strategic technologies for 2009

1. **Virtualization**
2. **Cloud computing**
3. **Computing fabrics**
4. **Web-oriented architecture**
5. **Enterprise mash-ups**
6. **Specialized systems**
7. **Social networking**
8. **Unified communications**
9. **Business intelligence**
10. **Green IT**

Source: *Gartner Group*, survey of IT leaders at Gartner Inc.'s Symposium ITxpo in October 2008

Cost reduction is a “front-of-mind” issue for most business executives in today’s turbulent environment. Many organisations are looking to drive costs out of the IT function, and still others are looking for ways where technology can help rationalize costs across the enterprise.

*This issue covers two important IT trends which have garnered significant attention recently, namely **virtualization** and **cloud computing**. Many business and IT leaders are looking to virtualization — or the more efficient pooling of IT resources, including networks, servers and storage — as a way to drive enhanced efficiency and cost savings. Increasing IT infrastructure costs and demands are forcing IT functions to examine the distribution of computing resources, especially where servers may be operating well below capacity. If virtualization is one side of a coin, then cloud computing is the other.*

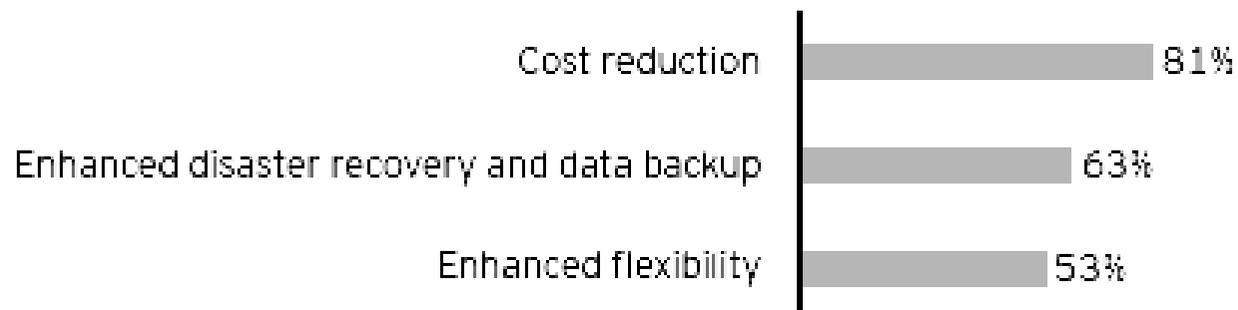
Cloud computing essentially involves the outsourcing of computing capacity to third party services over the internet — as a way to reduce power, storage, hardware, personnel and other related costs. In addition, outsourcing computing capacity can also promote greater flexibility and free up valuable IT resources for more strategic projects.

Virtualization

- ▶ Virtualization is the pooling and sharing of physical IT resources (e.g., networks, servers, storage)
- ▶ Virtualization can cut your energy, hardware and software infrastructure and real estate-related costs
- ▶ Implementing virtualization, however, is not without challenges and risks, most notably around controls and security

Primary reasons for pursuing virtualization

Primary reasons for pursuing virtualization



Source: CIO.com, January 2008 study of 300 CIOs.

Making computing resources virtual and savings real

- ▶ Rising costs and infrastructure needs are forcing IT departments around the globe to examine the distribution of computing resources. In particular, business and IT leaders are investigating whether they would benefit from re-allocating computer processes to machines that might otherwise be sitting idle or operating well below capacity.
- ▶ By migrating IT applications to a virtual infrastructure — virtual servers, virtual network devices (e.g., routers, switches, firewalls), and virtual storage — companies can reduce their operating expenses significantly, especially those related to real estate, data center power, cooling and hardware.
- ▶ Virtualization can also significantly improve load-balancing, application provisioning, disaster recovery and systems management. As a result, virtualization was ranked as the top strategic technology for 2009 by Gartner Group (see Figure 1).

Making computing resources virtual and savings real

While virtualization offers many potential benefits, and is most often associated with cost savings, it needs to be considered in the context of corporate goals and objectives. Since virtualization is a major change effort and can affect the very heart of your company's approach to enterprise architecture, it should be part of a broader IT strategy.

Some of the areas of IT strategy that are potentially impacted by virtualization include:

- ▶ enterprise architecture;
- ▶ identity and access management;
- ▶ application controls and security;
- ▶ hardware maintenance and data storage.

Virtualization - Potential benefits I

- ▶ Reduced costs related to virtualized computing resources. This happens in two ways: the reallocation of unused resources results in an increase in the collective capacity of the current hardware environment, thereby reducing the need for future hardware purchases. A single full-time equivalent (FTE) can often support three to five times more infrastructure components with virtualization than without.
- ▶ Less floor space, cooling and power resources required. Virtualization can result in significant server and storage consolidation, thus making data center consolidation initiatives much more cost effective, maximizing floor space and other peripheral resource utilization (e.g., network ports, network switch and cabling etc.) Achievement of an 8:1 to 20:1 ratio of virtual machines per physical server is common, thus helping to significantly reduce real estate, power and cooling related costs.
- ▶ Reductions in the cost of storage through more efficient use of underused capacity.
- ▶ Effective and potentially more dynamic load-balancing and optimized server utilization. The hypervisor is able to re-allocate computing power to those virtual machines on the network that have more capacity. This helps handle massive computer traffic spikes quickly and efficiently. Similarly, a hypervisor can optimize server utilization, helping companies increase the ROI on their infrastructure capital investments.

Virtualization - Potential benefits II

Enhanced scalability for sporadic application usages and related data surges.

- ▶ Hardware infrastructure flexibility and related cost savings. Because virtualization leverages underused machines, suddenly more applications gain access to new switches without having the need to purchase new “boxes.”
- ▶ Quicker and more cost-effective disaster recovery and damage mitigation. Virtualization may supplant the need for physical servers because of the ability to provision onto virtual resources. Virtual machines can easily be moved to alternative hardware environments in the event of disaster, and this event-driven migration can be highly automated to make it quick and efficient.
- ▶ Virtualization supporting business growth and innovation can provide a much needed agility to react quickly to sudden business changes, freeing up more resources to be invested in innovation-related projects.
- ▶ Effective implementation of virtualization will help enable an enterprise-wide architecture roadmap to facilitate “cloud computing,” which is a cost-saving method of accessing IT-related capabilities “as a service,” over the Internet (“in the cloud”).

Questions to ask

- ▶ Do we have the right personnel to prepare for and manage virtualization?
- ▶ How do we plan to fully leverage all the potential benefits of virtualization?
- ▶ Are our security tools and processes sufficiently robust and updated to accommodate such a disruptive technology?
- ▶ Are we fully aware of all the security issues around virtualization?
- ▶ What costs can we expect to be associated with virtualization?
- ▶ What ROI do we expect?
- ▶ What other technology needs will be required as a result of virtualization?
- ▶ How can virtualization support “cloud computing”?
- ▶ How might virtualization impact our ERP applications, data storage systems and networks?

Key security considerations for virtualization

One of the major concerns in implementing virtualization is information security. Below are some specific security risks and considerations:

- ▶ **Spread the risk** — Companies should spread the critical application instances across physical machines as much as possible. This can be done by combining them with different types of applications, while maintaining an appropriate ratio between physical and virtual machines. This helps achieve higher application availability and reduce security risks.
- ▶ **Limit access** — Inappropriate access to server administrative interfaces can expose numerous production applications at once in virtualized environments. Develop a checklist in accordance with leading practices for securing administrative interfaces, including strict password policies and file permissions.
- ▶ **Use secure networks** — Secure networks should be utilized for data migrations involving virtualization software, since data is not typically encrypted in these migrations.
- ▶ **Monitor threats** — Properly functioning applications on virtual machines can conceal latent security vulnerabilities at the hypervisor level. Thus, it is critical to continuously monitor both the virtual machines as well as the underlying hypervisor for potential threats.

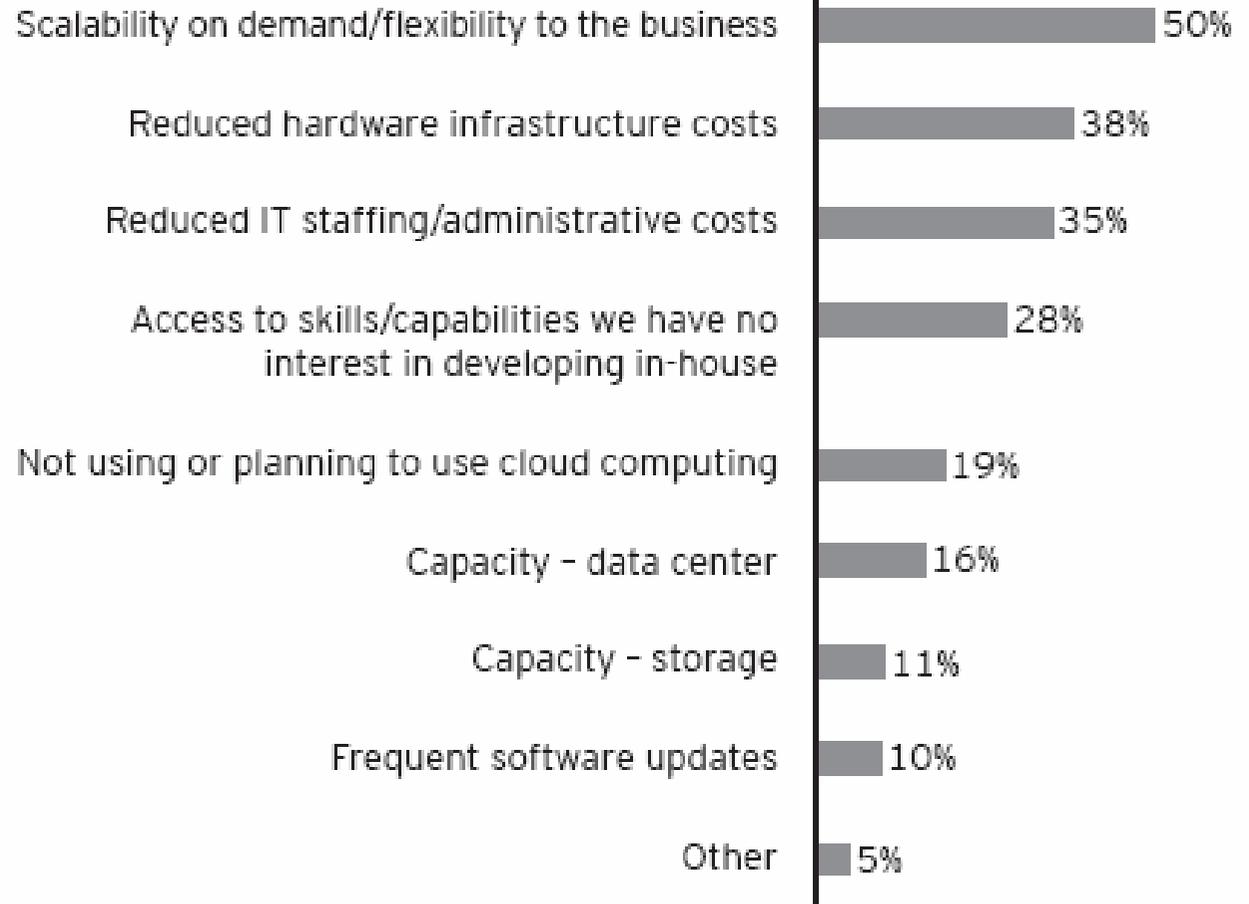
Cloud computing

Cloud computing essentially involves the outsourcing of computing capacity through third-party services over the internet

- ▶ Cloud computing can help cut your power, storage, hardware, personnel and real estate-related costs
- ▶ There are a number of challenges to business and IT leaders in making the move to cloud computing, principally around increased privacy and security risks

Primary reasons for using cloud computing

Spending on IT cloud services will reach US\$42 billion by 2012, driven in part by the economic crisis and companies looking to reap the expected benefits of cloud computing. (Source: IDC, survey of 244 IT leaders released October 2008)



Respondents selected up to three criteria

Source: *CIO magazine* survey involving 173 IT and business leaders, October 2008

Cloud computing information

Effective use of cloud computing can help reduce costs, promote flexibility, free up valuable resources for strategic reallocation, reduce overall expenses, and assign specific responsibilities to outside service providers potentially more capable than existing in-house functions.

This outsourcing of computing capacity — commonly referred to as “cloud computing” — has been enabled by recent technological advances, and is being driven in part by pressures to reduce enterprise costs. The fact that so many companies are considering implementing some version of cloud computing is not surprising. An estimated 80 percent of all business processes are powered by or integrated with IT.

With cloud computing, the computing capacity required for some ancillary functions becomes the responsibility of a third-party company whose excess computing capacity can be provided on an as-needed, “pay-as-you-go” basis. In addition, some companies are also employing a version of cloud computing — known as “software as-a-service” (SaaS) — to help reduce daily technical operations and support business and consumer software.

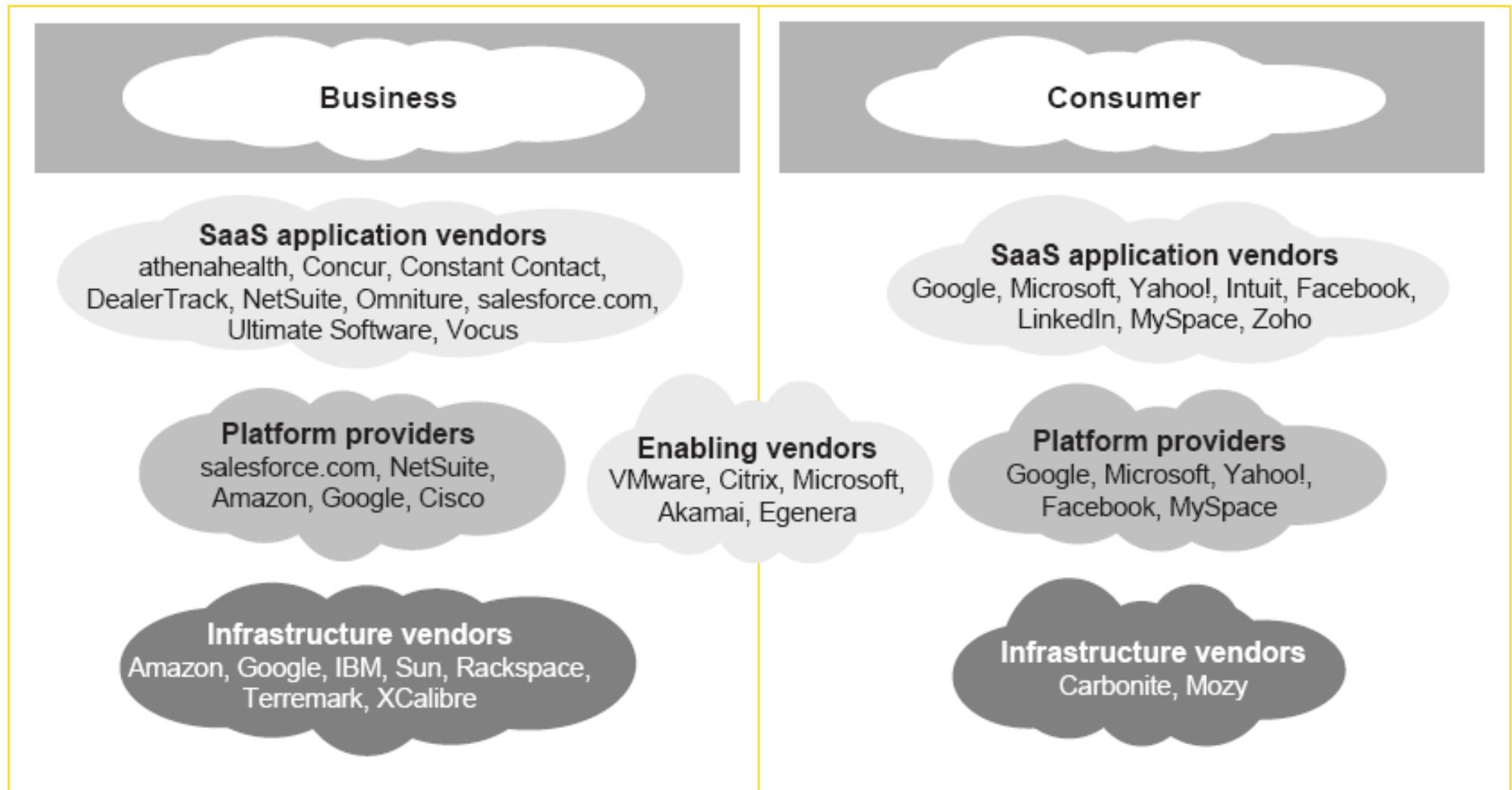
Cloud computing glossary

Software-as-a-service – The ongoing support of applications whose core value to the customer is alleviation of the ongoing maintenance, daily technical operation and support of business and consumer software.

Platform-as-a-service – This is an outgrowth of the software-as-a-service application delivery model. This model makes all the facilities and services required to support the complete life-cycle of building and delivering web applications (e.g., application design, development, testing, deployment, hosting, and application services such as security, scalability and versioning) fully available as an integrated suite from the internet — with no software downloads or installation required for developers, IT managers or end-users. Since everything is delivered through the internet, it is sometimes referred to as “**cloudware**”.

Infrastructure-as-a-service – An IT infrastructure delivery platform used to deliver software application environments; customers no longer purchase servers, software, data center space or network equipment, but instead buy those resources as a fully outsourced service.

Cloud computing market players



Source: William Blair & Company, LLC, July 2008.

Major Impacts

Re-allocating and refocusing in-house IT staff away from day-to-day maintenance of servers and towards activities that add directly to the bottom line; this can help reposition IT functions more as revenue contributors than as cost centers.

- ▶ By leading the way in efforts to reduce overhead costs through computing outsourcing, IT functions help to set an internal tone in support of the company's overall strategic goals and initiatives.
- ▶ Virtualization – the more efficient pooling of IT resources such as networks, servers and storage – is facilitated by cloud computing.
- ▶ Potential reductions in IT staff, budgets and resources – either short term or permanent.

Potential benefits

- ▶ Potential reductions in personnel, software, hardware, real estate, cooling, power, licences and maintenance costs. Companies may no longer need to maintain large, specialized IT staff and resources responsible for the maintenance and upkeep of expensive computing and storage infrastructure. The potential for reduced hardware and software costs means that capital can be freed up for use elsewhere towards strategic corporate goals. In addition, most patches, fixes, browser application updates and other expensive and time-consuming troubleshooting would be performed by the computing hosts rather than by in-house personnel.
- ▶ Minimal start-up costs. Much of the computing capacity available through these third-party providers is available with little more than the flick of a switch. Often, businesses need specific servers to be specifically configured in an application or for only a small amount of time — requiring time and money. A large-capacity third party provider would probably have what is needed instantly available.
- ▶ Better realignment of IT support services and resources. By directing more specialized IT resources away from the relatively commoditized duties of computing and storage maintenance, and toward initiatives that add directly to the bottom line, companies can see the potential benefits of IT professionals better.
- ▶ More efficient IT services focused on infrastructure and non-application services. For many companies, the IT function is a cost-intensive support function. At larger computing outsourcing companies, however, IT is a revenue generator in itself and a core competency. As a result, the IT infrastructure receives the attention necessary to provide faster bandwidth, more capacity and reduced downtime.
- ▶ Flexible infrastructure and capacity. Cloud computing provides companies that need massive amounts of computing capability for only short periods of time with quick and easy access without long-term amortization costs.
- ▶ Improved disaster recovery/damage mitigation. Companies that have onsite or nearby data centers are at risk of data loss and downtime caused by catastrophic occurrences such as hurricanes, earthquakes, fire, or terrorist activities. However, with cloud computing, because the data exists “in the cloud” and usually offsite, the potential of one specific event to cause major problems is significantly reduced.

Potential Challenges I

In today's turbulent economic times, companies are looking to IT to operate more efficiently and to help drive costs out of the business. Implementing cloud computing, however, is not without its challenges. Some of the key challenges include:

- ▶ Potential data privacy and security issues. A recent CIO.com survey indicated that 45% of respondents cited security as the major concern facing cloud computing. The companies that provide cloud computing services may provide those services in different data systems in various data centers in cities around the world. Unlike a more traditional IT outsourcing arrangement, cloud computing clients do not have dedicated servers or dedicated lines. This raises issues about exactly where clients' data exists, and under whose jurisdiction it resides at any one given point. In addition, the possible need to recode data may increase the exposure to errors and security risks.
- ▶ Control and responsiveness. With in-house IT functions, with employees reporting directly to in-house executives, there is little question as to who should be doing what and when. However, when the employees and the servers are far away, there is a risk that the provider's and executive's priorities may not be in alignment.
- ▶ Uncertainty over where the legal line exists concerning data privacy. There is some data that cannot or at least should not — be co-mingled, such as private health and financial information. Which entity bears ultimate responsibility for maintaining data privacy? What kind of public, legal or consumer backlash might occur because of a failure to maintain privacy? Data privacy can be a cross-border issue. For example, the European Union restricts not only the sharing of data but also where the data can be held. These issues need to be considered early in the process.

Potential Challenges II

- ▶ Lack of benchmarking or leading practice experience. Because the use of off-site computing capacity is relatively new, there is insufficient experience from which to draw guidance for companies looking to build an effective cloud computing strategy. For example, there is some uncertainty as to how to incorporate current applications and technology into the cloud platform. Can internal proprietary business applications be easily run using outside servers not configured for this specific purpose? For example, software-as-a-service applications are maturing, but the platform-as-a-service and infrastructure-as-a-service applications are developing more slowly.
- ▶ Ambiguity over how best to quantify, track and communicate the benefits of cloud computing. Because costs are shifted to a third-party provider, benefits tend to be measured more with intuitive and anecdotal feedback than with quantifiable information. This can complicate attempts to accurately measure the return on investment.
- ▶ Potential for a public relations nightmare. Not being able to state the exact location where their computing services are performed, or where data is housed, may leave a cloud computing client open to concerns that its internal controls are insufficient to reassure stakeholders. This issue could arise through consumer product recalls, and workplace or product liability litigation.
- ▶ Threat of potential over-reliance on a single-source IT provider. The relatively easy turnkey nature of cloud computing and the subsequent attraction of cost reduction through its use may promote a company's gradual over-reliance on a particular third-party service provider. This could cause problems at some point in the relationship.

Cloud computing and data privacy

Cloud computing can dramatically increase risks to customer data privacy.

Key risks and considerations include:

- ▶ **Ensure outside organizations comply with your security standards** — Your applications may co-reside with applications from other organizations on same physical servers and/ or operating systems. A security compromise on other applications could potentially expose your own organization's critical data.
- ▶ **Understand privacy laws** — The privacy laws applicable where your application is hosted in the vendor's facilities may not meet the requirements of your local or national regulatory agencies. You must verify the applicable privacy laws and how data privacy disputes will be resolved in the event of an unfavorable incident.
- ▶ **Encrypt your data** — Since data from your applications travels over the internet to the end-users, there is a higher possibility of data privacy being compromised. Adequate security measures, such as encryption, should be implemented to help minimize this risk.

Questions to ask

The following questions are critical for business leaders to consider before implementing cloud computing:

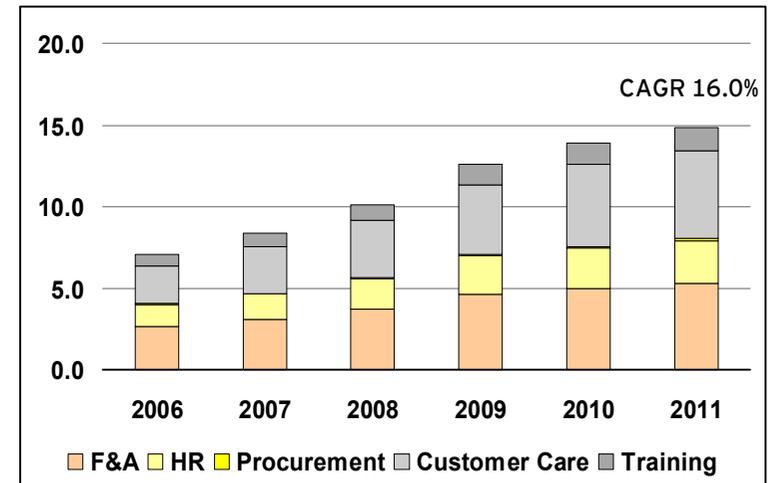
- ▶ What are the implications for our virtualization strategy?
- ▶ What specific areas are most appropriate for cloud computing?
- ▶ What existing relationships do we have with potential third party vendors?
- ▶ What are the most significant data privacy and security issues that we will probably face?
- ▶ What are we trying to achieve through cloud computing?
- ▶ What ROI do we expect?
- ▶ What technology needs will be required with cloud computing?
- ▶ How would existing resources — both machines and people — be reallocated for maximum impact?
- ▶ What are the broader cultural and operational implications of this approach?

Example: Emerging trends in ITO and BPO

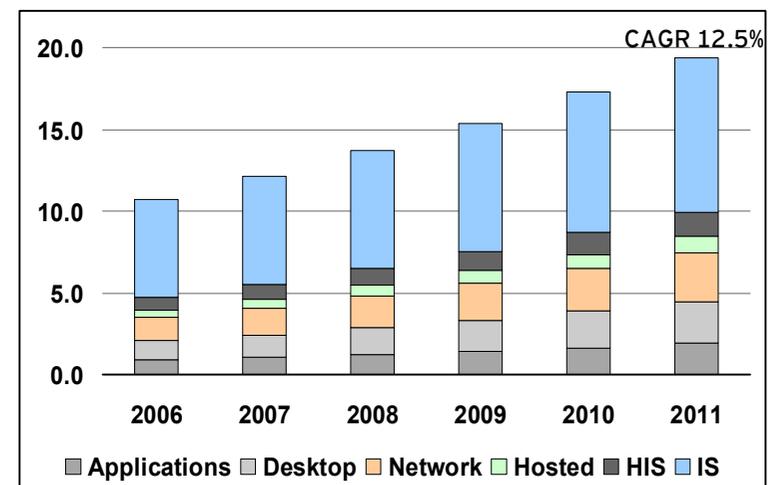
The Asia Pacific* outsourcing market has experienced strong growth to date with the trend expected to continue for the foreseeable future

- ▶ **An expanding scope of services from ITO to BPO** growth is expected in both sectors over the coming years with BPO growth outpacing ITO. Growth is still strong suggesting the market for services has not yet reached maturity and is still in the growth stage, CAGR of 16% for BPO and 12.5% for ITO between '06-11
- ▶ **Organisations are moving away from outsourcing only low value activities**, looking at a fuller range of functions to capture greater benefits, e.g. the strongest growth in F&A outsourcing is in the area of general accounting
- ▶ **F&A and HR remain the most ready adopters of BPO**, while strong potential growth is forecast in areas such as **Procurement** and **knowledge process outsourcing (KPO)**
- ▶ **IS outsourcing services will continue to be dominant** within the ITO market
- ▶ **India remains the major off-shore location** but other locations are progressing well, with strong infrastructure and governmental support, such as China, Indonesia and the Philippines
- ▶ **Leading BPO providers are focusing on technology to release further value**, enhancing process and labour cost excellence
- ▶ **Recent BPO / ITO deals have seen a multiple-vendor strategy**, leveraging solution-specific capabilities rather than a one-stop-shop approach
- ▶ **There have been high profile deal reversals in HR outsourcing**, e.g. UBS cancelled a proposed GBP 1bn deal with IBM and ACS and NiSource, a US energy company brought HR back in-house from a US\$1.6bn multi-tier deal

Asia Pacific* BPO Forecast, 2006 - 2011 (US\$ B)



Asia Pacific* ITO Forecast, 2006 - 2011 (US\$ B)



Source: IDC, 'Asia Pacific (Excluding Japan) Business Process Outsourcing 2007-2011 Forecast and Analysis', 2007

* Asia Pacific excluding Japan

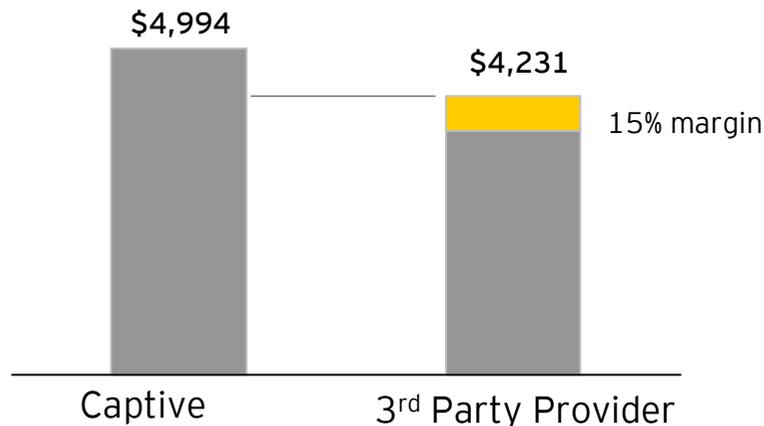
Setting up off-shore captive centres

Vietnam and Indonesia are both potential locations to set up a captive centre. However, it is imperative that some of these key questions be considered prior to adoption

- ▶ What is the value proposition for establishing a captive centre in Indonesia or Vietnam? Is it to operate as a low labour cost centre or to boost market presence and as a stepping stone to tap into the Asia Pacific market?
- ▶ Is the operation in Indonesia or Vietnam suitably sized to enable a captive centre to be established immediately or will it require huge upfront investment costs?
- ▶ Could a third party service provider do it better? More efficiently and at lower cost?
- ▶ Will the captive achieve the critical mass required to justify the cost savings?

Captives are failing to meet expectations

Indian Captive Centre Baseline Costs
(USD per person per month)



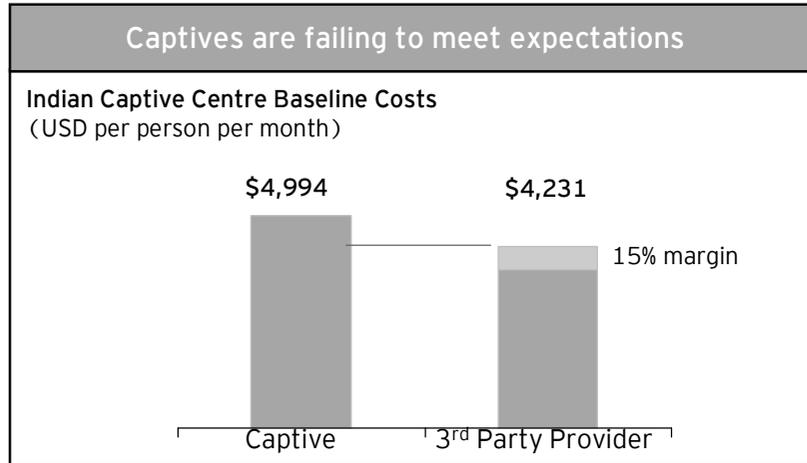
Source: Forrester, 'Shattering The Offshore Captive Center Myth', April 30, 2007

Cost of operating a captive

- ▶ Captives are established to maintain control, protect IP and avoid paying 3rd party provider margins.
- ▶ However, research indicates captive costs per person exceed 3rd party costs per person by 14% after accounting for a 15% margin.
- ▶ The higher costs in the short-term are attributed to:
 - ▶ Employment costs – higher salaries to attract resources with the right skills and additional recruitment fees due to higher attrition rate
 - ▶ Investments in corporate branding and to create a consistent corporate culture
 - ▶ Lower utilisation of resources and facilities during ramp-up period
- ▶ Captives, especially Indian-based, are still growing driven by new entrants and increasing capacity of existing entrants.

Emerging trends in delivery models

Despite growth in the establishment of Captives, weaknesses in the delivery model are driving firms away from Captives to Hybrid models and Third Party providers

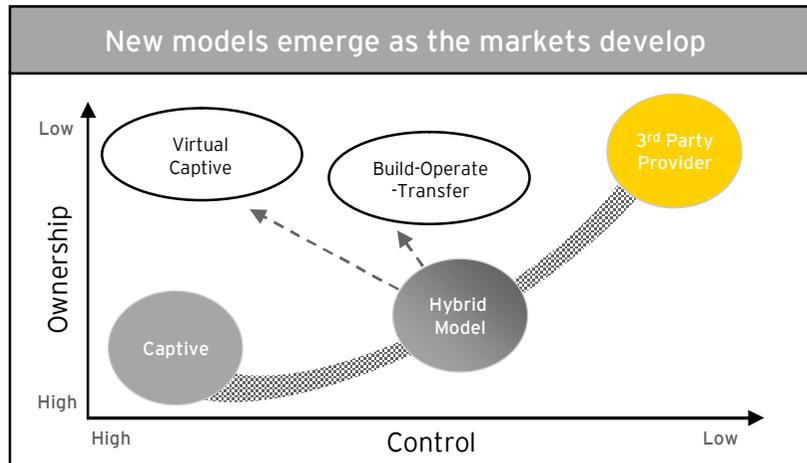


Source: Forrester, 'Shattering The Offshore Captive Centre Myth', April 30, 2007

- ▶ Captives are established to maintain control, protect IP and avoid paying 3rd party provider margins
- ▶ Research indicates Captive costs per person exceed third party costs per person by 14% after accounting for a 15% margin
- ▶ The cost differential is driven by lack of scale - higher staff and facility costs
- ▶ Captives, especially Indian-based, are still growing, driven by new entrants and increasing capacity of existing entrants

Emerging trend ... move away from Captives:

- ▶ Companies are exiting Captives for third party providers or hybrid models to realise greater value at the expense of direct control:
 - ▶ Virtual Captives: third party provides staff and facilities but the client provides management, processes and controls (*Wachovia-Genpact*)
 - ▶ Microcaptives: Captives use third party staff in its own Captive centre or outsource work to existing third party providers (*P&G*)
 - ▶ Build-Operate-Transfer: use the local skills of a third party to establish a centre before transferring management to the customer (*Aviva*)



Source: 'EY Outsourcing Insights'

Main drivers for the future

- ▶ Careful selection of IT strategies and proper alignment to Business Strategy
- ▶ Any strategy chosen has to clearly show value for business, enhanced efficiency and management of business risk
- ▶ Investments to innovative technologies and skilled people provide competitive advantage
- ▶ Suppliers need to offer a full array of service offerings that ensure scalability and flexibility for the business needs
- ▶ Suppliers have to be ready for new hybrid models of co-operation
- ▶ **IT Capability supports the long term viability of the business**



Thank You

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