

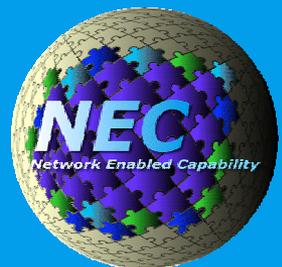
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Lessons learned from commercial transformations to network centric operations

C Macklin, P Phillips and P Louvieris

ICCRTS 2004 Paper 127

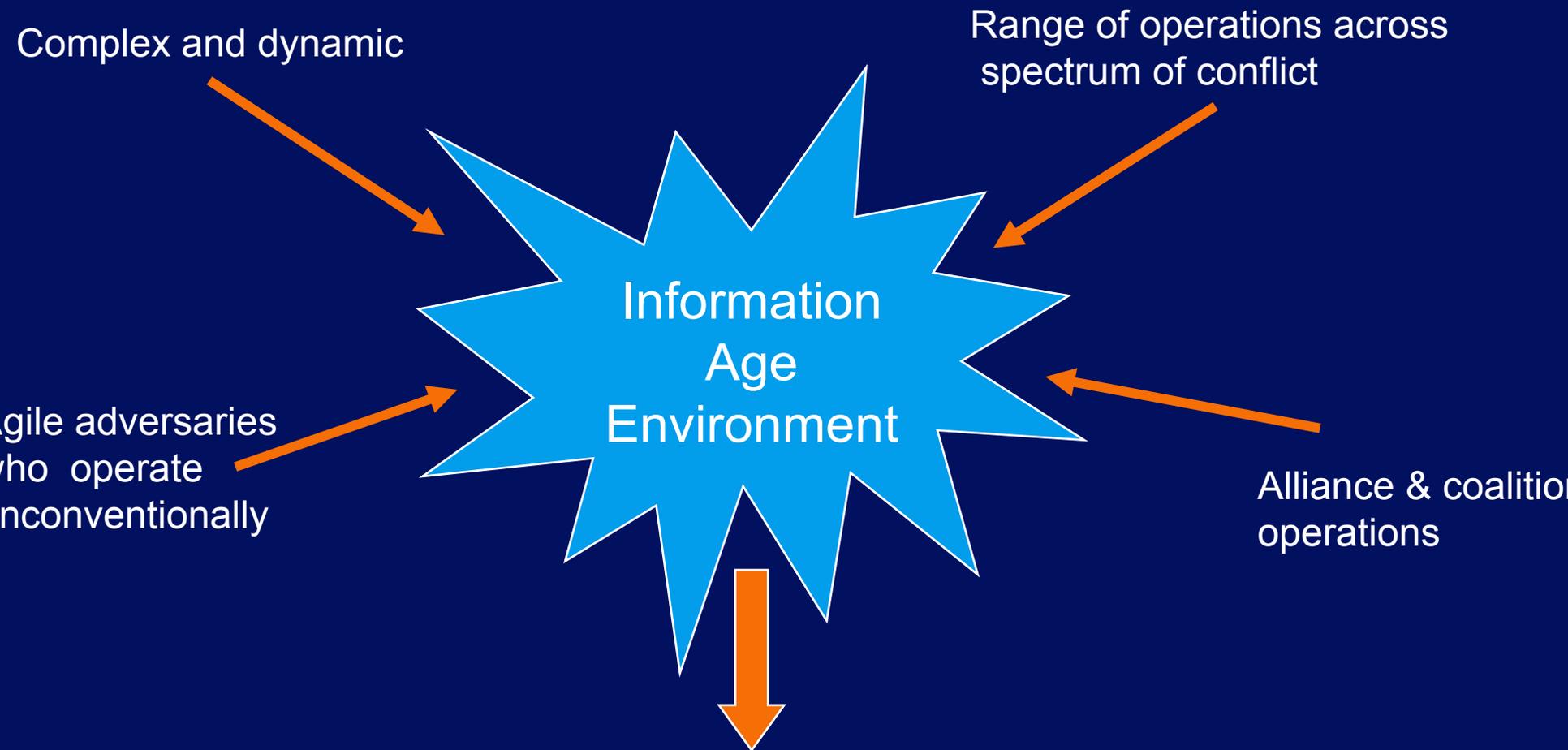


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Contents of presentation

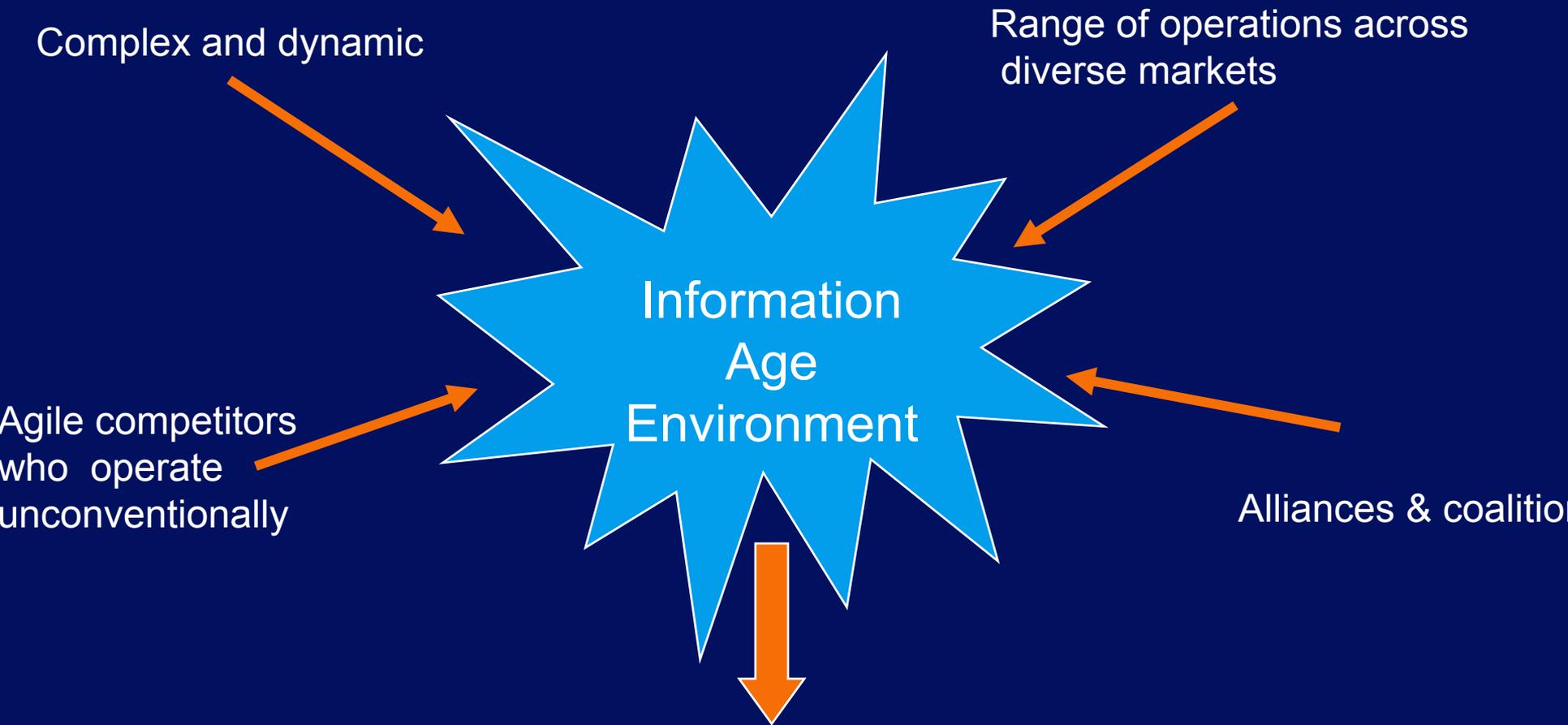
- Introduction
- Relevant concepts – network-enabled organisations
- UK MoD-funded research into lessons learned from commercial organisations
- Discussion of findings
- Critical success factors in the networked age
- Conclusions

Issues facing **military** organisations



Appropriate response requires:
flexible, adaptable and innovative organisation

Issues facing **commercial** organisations



Appropriate response requires:
flexible, adaptable and innovative organisation

Effectiveness in the information-age environment

- Develop **agile** organisational processes and structures to deal with variety of environmental challenges
- Use technology to support new ways of organising and communicating
 - e.g. geographically distributed operations, alliances/formation of virtual organisations, new internal and external processes
- **Exploit** information effectively to provide competitive advantage
 - technology as **enabler**

Organisational effectiveness in the information age

What are the
Critical
Success
Factors of
commercial
organisations
? ? ? ?

Whilst maintaining
reliability

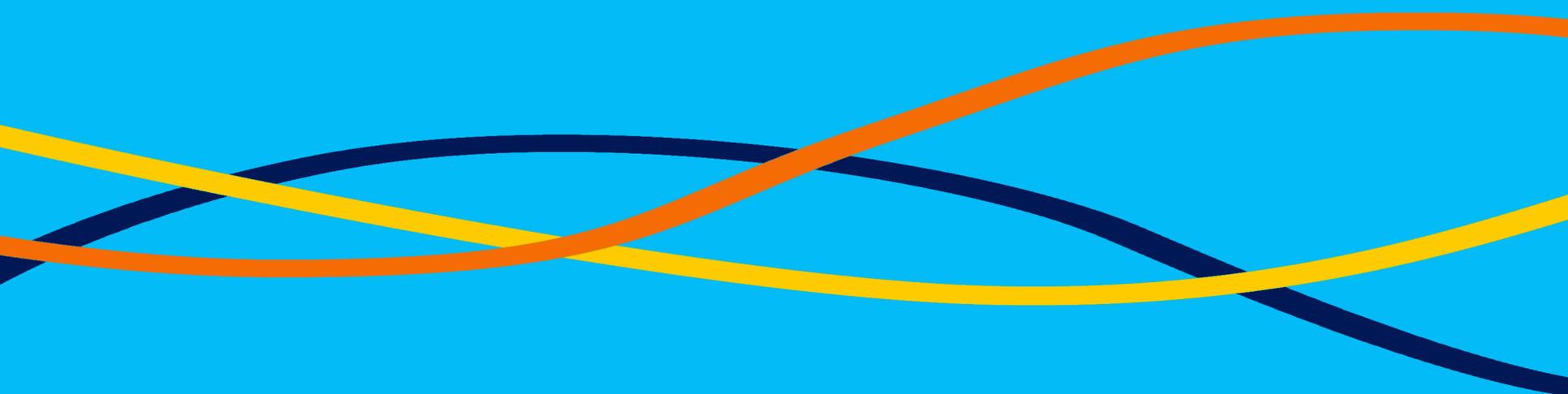
Flexibility &
Adaptability

Organisational
effectiveness

Method

- Literature review and preliminary interviews
- Questionnaires (N = 93)
 - Statements about 32 organisational attributes
 - Importance in network-enabled environment
 - Achievement in own organisation
 - Rating 1 - 5
- Case studies
 - Detailed semi-structured interviews
 - Senior managers responsible for e-business/network technology initiatives

Findings



Most important areas for network enablement

- Transformation champion (4.29)
- Involvement and commitment (4.27)
- Learning and renewal (4.17)
- Respect and trust (4.11)
- Alliance performance expectations (4.11)
- Knowledge sharing(4.02)
- Leadership accountability (3.98)
- Alliance respect and trust (3.98)

Success of commercial organisations

- Compared the importance and achievement ratings for all 32 questionnaire variables
 - paired sample t-test analysis
- Achievement ratings were significantly ($p < 0.01$) lower than importance ratings on 31/32 questionnaire variables
- Upper quartile range of means of paired differences
 - identified 8 areas with the 'largest gap' between importance and achievement ratings

Areas being least successfully addressed

- Transformation champion
- Involvement and commitment
- Learning and renewal
- Respect and trust
- Alliance performance expectations
- Knowledge sharing
- Standardisation and interoperability
- Agility and decision edge

Further analysis

- Factor analysis identified seven factors critical to successful organisational performance in network centric environments
- Development of a 'digitization index'
 - target effective performance in a network centric environment
- A method of mapping an organisation's performance against target — to identify strengths and weaknesses in the seven areas critical to successful network centric operations
- Case studies identified example behaviours for each area

Critical success factors in network-enabled environments

- Leadership of transformation 4.06
- Enterprise wide change management 3.82
- Organisational learning 3.78
- Network centric information management 3.65
- Coherence/Consistency of direction/Alignment/Shared vision/Alignment/Shared vision/Alignment/Shared vision 3.60
- Process oriented agility 3.32
- Knowledge exchange meetings 3.00

Whilst maintaining reliability

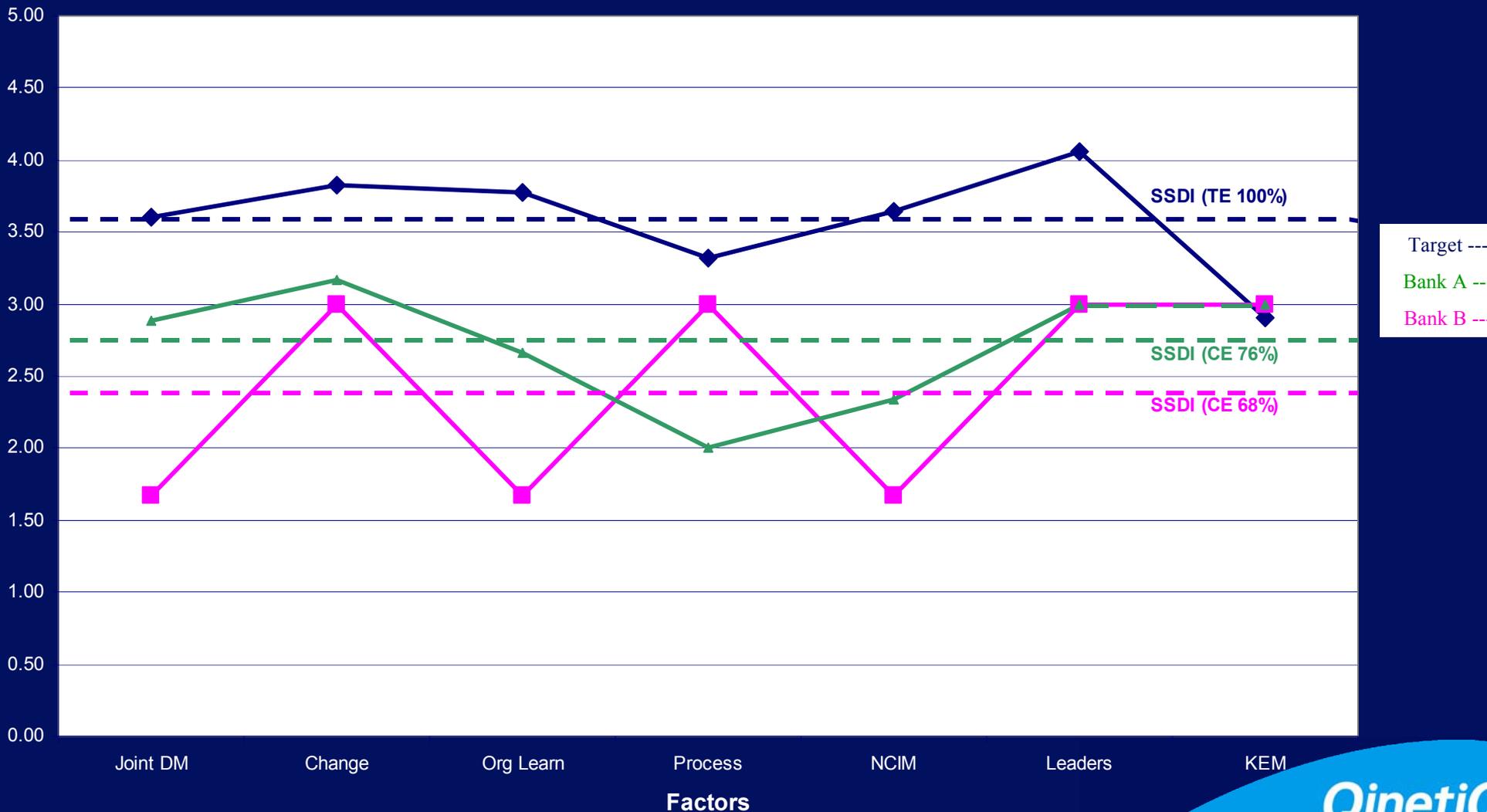
Flexibility & Adaptability

Organisational effectiveness

Aggregated sample's current and target effectiveness profile



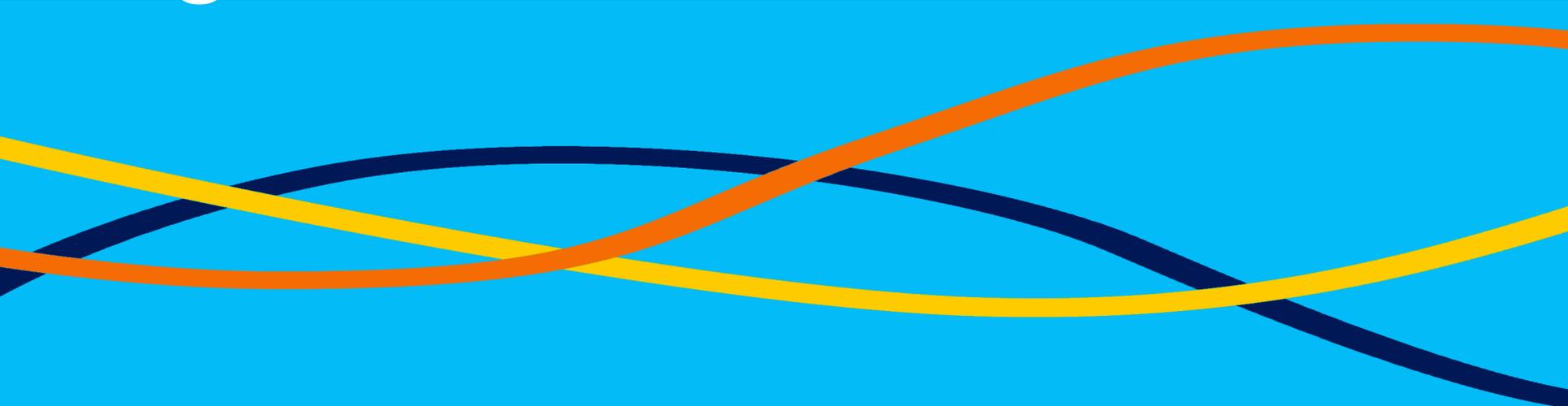
Organisational effectiveness profiles



Organisational progress towards network-enabled capability

- 5 'levels' of network-enabled capability
 - From: Level I – less capable
 - To: Level V – more capable
- Behavioural markers help organisations to:
 - decide what level of network-enabled capability they need to achieve
 - assess their own progress towards a network-enabled capability

Critical success factors of network-enabled organisations

The background of the slide is a solid blue color. In the lower half, there are three thick, wavy lines that overlap each other. One line is orange, one is yellow, and one is dark blue. They flow from left to right across the slide.

Alliance/joint decision management and intelligence

- Alliances — future growth and survival, novel solutions and new opportunities
- Limited impact of network technologies on decision making
 - Increased *speed* of decision making
 - Limiting factor — human information processing
- Ensure that role and responsibilities are clear in alliances
- Develop respect and trust to establish an information sharing culture

Enterprise-wide change management

- Driving/implementing organisational change by ensuring rapid implementation of good change management practices
- Significant organisational change necessary to achieve the potential benefits of network technologies
- All organisations stated:

“It is essential in networked environments to take into account the people, their relationships and the organisational arrangements”

(Phillips and Louvieris, 2002)

Organisational learning

- Knowledge facilitates effective organisational response to environmental challenges
- A key activity **throughout** any successful organisation
- Focus on the **people and process** aspects of knowledge development, sharing and exploitation
- Case studies show technology-centred initiatives fail

Process oriented agility

- Process is more important than structure in network-enabled environments
- Successful organisations identify critical processes within the organisation and gather knowledge about them to drive improvements
- Organisational agility = the extent to which the organisation possesses a variety of actual and potential procedures/processes and the speed by which it can implement them in response to task/environmental demands

Network centric information management

- Addresses the **technology and infrastructure** attributes that support organisational learning, knowledge sharing and exploitation in the network-enabled organisation
- Interoperability reduces uncertainty, risk and costs - an important technical factor in making large distributed information projects successful
- Non-technical aspects of interoperability (processes, doctrine and culture) are also key

Leadership of transformation

- Driving/implementing organisational change by focusing on high visibility leadership to staff
 - Leadership advocacy and transformation champion
 - Relinquishing control and empowering staff at the 'edge' of the organisation
- Case studies indicate this is an important factor in the ability to achieve organisational change

Knowledge exchange meetings

- Role in organisations that derive value from electronically mediated meetings
 - BUT face to face meetings still important for relationship development
- Ability to communicate is key to development/dissemination of knowledge throughout organisation

Conclusions

Key commercial findings

- Network information and communication technologies have caused major changes to commercial organisations
- Most important areas for network enablement appear to be human and organisational
- Many of these are also the most poorly addressed by commercial organisations

Critical success factors - key points

- Most important areas for network enablement are human factors areas
- Process is more important than structure in network-enabled environment
- Organisational learning & exploitation of knowledge are key to success
- Change is a key capability
- Technologies have little impact on how actual decisions made

Recommendations

- Using Critical Success Factors identify current progress towards a network-enabled capability and future aims
- For success in network-enabled environments develop/improve capability in each of the CSFs as necessary
- Address processes as a key issue
- Develop ability to share and exploit knowledge, establishing a culture of organisational learning
- Develop capability to implement and manage change successfully
- Match investment in technology with investment in people

“The power of a new technology cannot be fully exploited to create competitive advantage without the simultaneous co-evolution of organisation and process”

(Alberts, Gartska and Stein, 1999, Network Centric Warfare:
Developing and Leveraging Information Superiority)

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