

Presentation to
Fifth Annual Acquisition Research Symposium
Naval Postgraduate School
Monterey CA

‘Key Challenges for the Management of (UK) Defence Acquisition’

Trevor Taylor

Peter Tatham

David Moore

16 May 2008

Introduction

- A UK perspective on the generic defence acquisition challenges relevant to all states
 - UK continuous acquisition reform since 1998
 - Smart Procurement Initiative (1998)
 - Capability-based requirements
 - Smart Acquisition (2000)
 - Whole life equipment perspective
 - Enabling Acquisition Change (June 2006)
 - Whole system/whole life/ capability perspective

Introduction

- UK success in identifying problems associated with successful acquisition
 - Aspiration to manage them all
 - Initial Price/Cost/ Performance
 - under control
 - » but with some poisonous legacy projects
 - » inadequate funds for the programme
 - Contemporary UK conceptual framework
 - Through Life Capability Management (TLCM)

TLCM

Defence Lines of Development										
Training										
Equipment										
Personnel										
Infrastructure										
Concepts & Doctrine										
Organisation										
Information										
Logistics										

TLCM

Defence Lines of Development	£	£	£	£	£	£	£	£	£	£
	1	2	3	4	5	6	7	8	9	10
Training										
Equipment										
Personnel										
Infrastructure										
Concepts & Doctrine										
Organisation										
Information										
Logistics										

- UK aspiration
 - Forecast
 - Plan
 - Trade-off

Summary: five challenges

- UK experience reflects five ongoing **and over-lapping** generic acquisition challenges
 - What to outsource?
 - (DM)
 - How best to support equipment?
 - (PT)
 - How to build a whole-life/capability management perspective
 - (PT)
 - How to be an expert customer?
 - (TT)
 - The empowerment-coherence balance
 - (TT)
 - and balance in knowledge creation and utilisation
 - (DM)

Challenge: What to outsource?

Conceptually – Focus upon ‘core’ activities

but

Size of UK armed forces

UK Industry ?

Political influence

PFI / PPP

Nature of ‘Core Activities’ in defence environment

Nature of services outsourced & the extent of support activities

e. g.

Benign & Hostile

CONDO & CLS

Specifying & Contracting

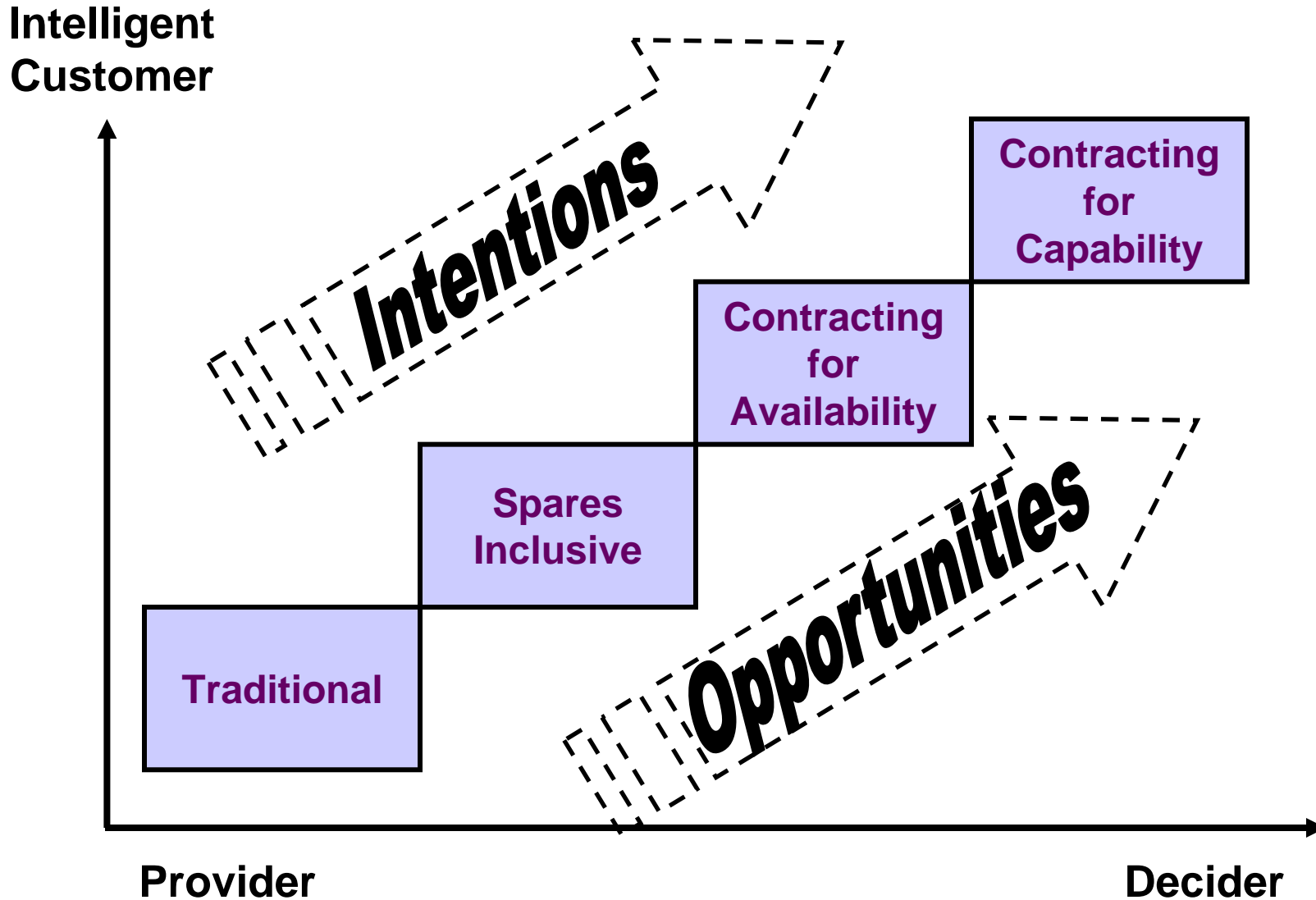
Importance of optimising Supplier Selection

in

Public Sector environment

Building effective relationships

– Partnering & Competition



DEFENCE ACADEMY
OF THE UNITED KINGDOM

Cranfield
UNIVERSITY

Defence College of Management and Technology



TTPTDM/NPS/160508

DEFENCE ACADEMY
OF THE UNITED KINGDOM

Cranfield
UNIVERSITY

Defence College of Management and Technology



TTPTDM/NPS/160508

“Design, reliability and maintainability will effect the total cost over the life of a product. Factors such as these may justify a higher initial cost.

Actions to promote the industrial viability and hence the trading competitiveness of suppliers can justify an additional initial cost or greater technological risk if over the long term the purchaser expects to gain improved value for money . . . “

DEFENCE ACADEMY
OF THE UNITED KINGDOM

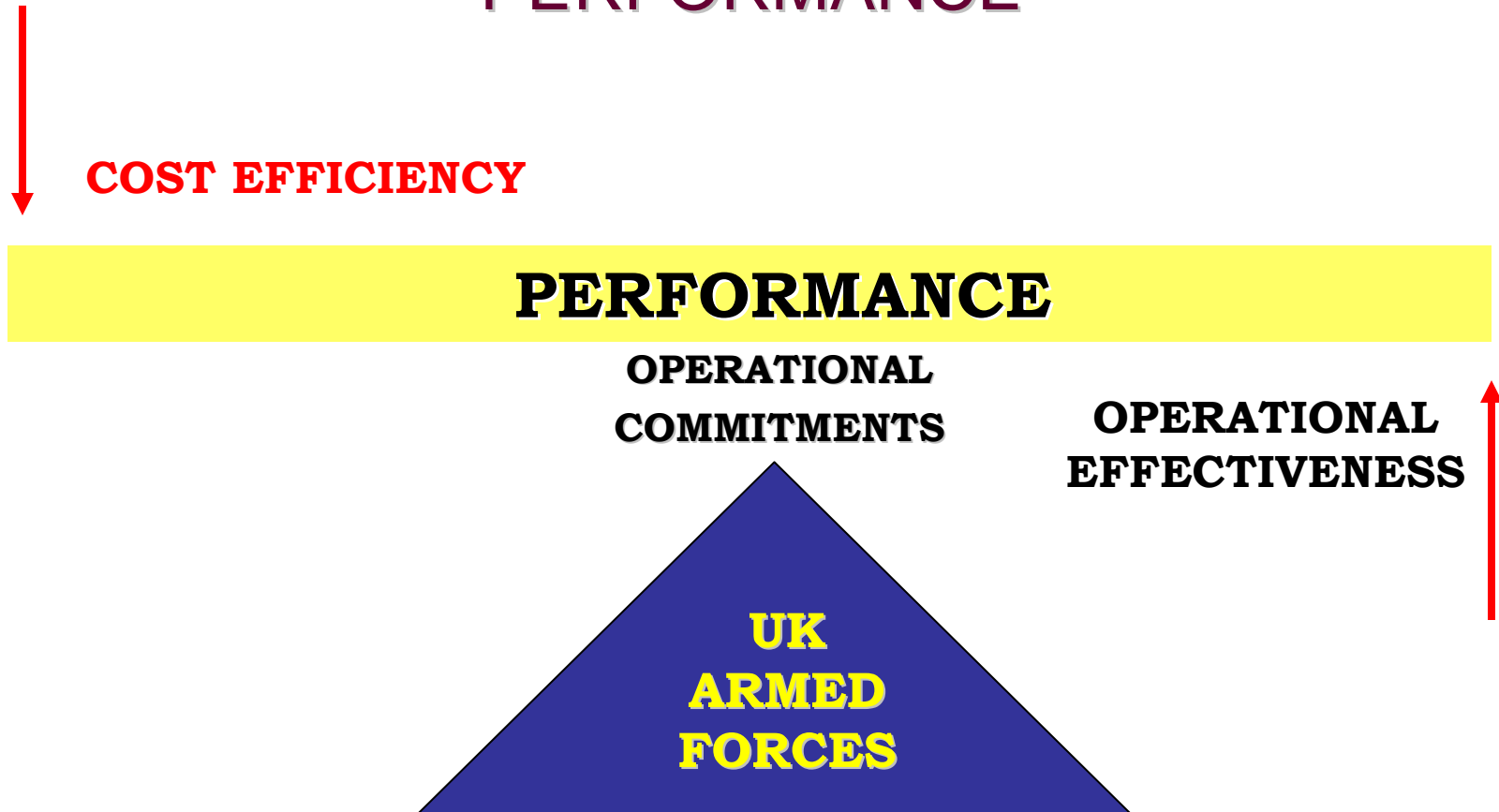
Cranfield
UNIVERSITY

Defence College of Management and Technology

Sir Geoffrey Pattie, UK Procurement
Minister.....1983

TTPTDM/NPS/160508

CHALLENGE: PRESSURES FOR PERFORMANCE



Developing an Outsourcing Strategy

Awareness

Knowledge

Internal Assessment

Supplier Selection

Working Together

Value Creation

**Staying
Together**

**Exit
Strategy**

Challenge: how best to support equipment

A Little Bit of History...

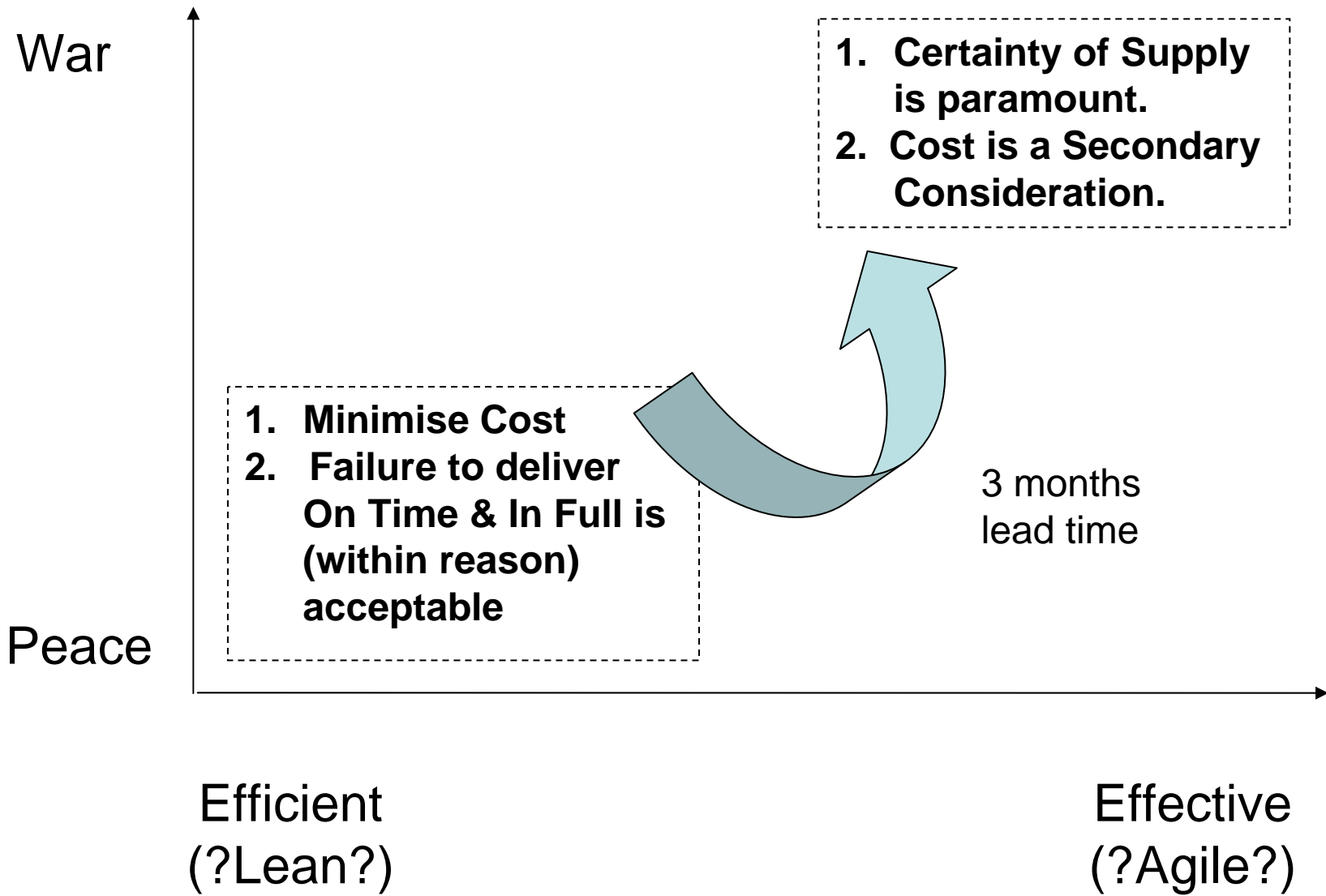
The Ministry of Defence's current performance in procuring equipment to cost and time **is unacceptable**, and there is **no evidence that the Department are controlling projects any better now than in the past**, despite previous initiatives that have been presented to the Committee.

UK Parliament Public Accounts Committee, **1997**

A Little Bit of History...

The [Ministry of Defence] very seldom exacts penalties from its suppliers and this appears to reduce the penalty clauses of contracts to little more than an empty form of words.

UK Parliament Public Accounts Committee, 1898



Challenge: How should support for equipment be arranged in a time of frequent and surprising operations

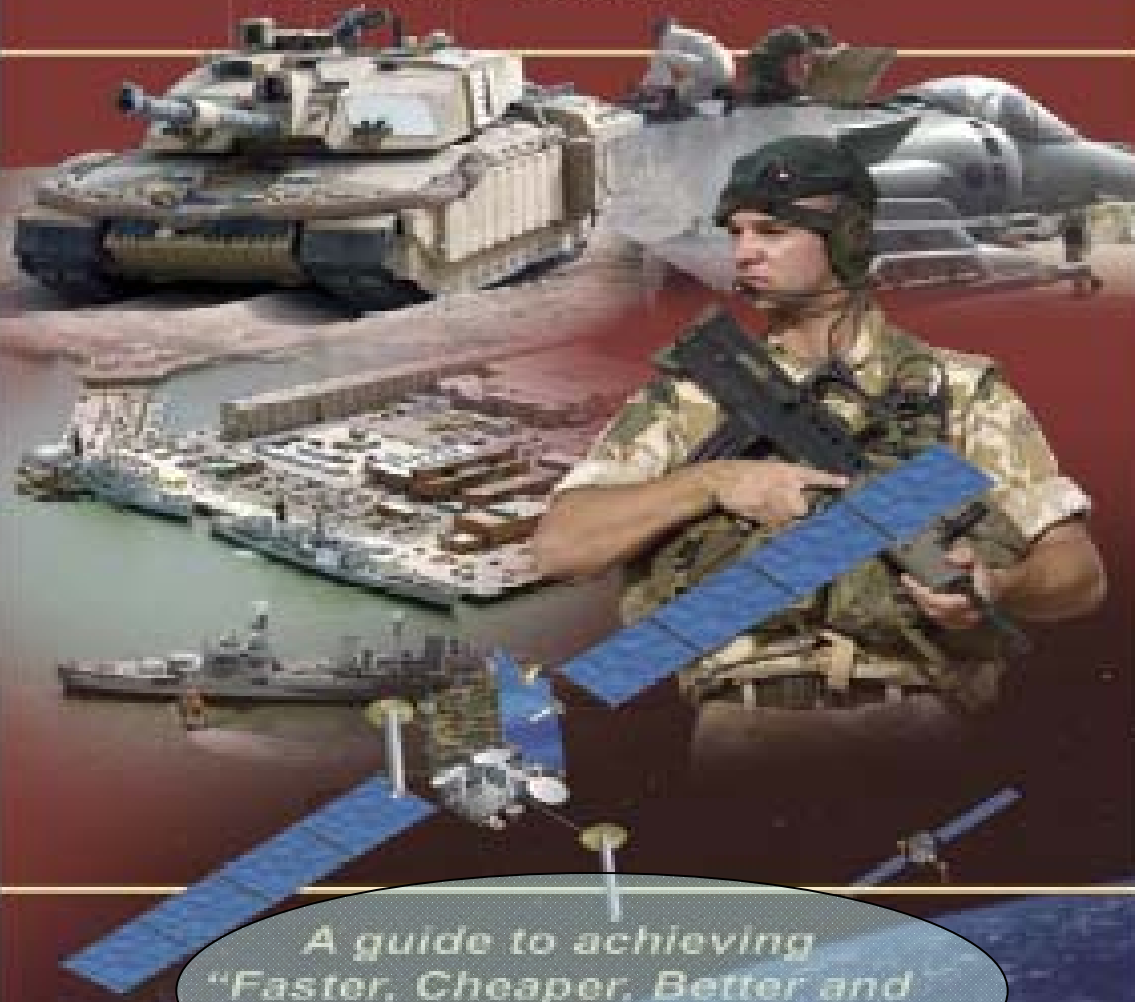
- “...the front end of logistics, with its focus on efficiency through predictability, is almost wholly incompatible with the front edge of modern warfare which requires adaptability and unpredictability.”

Vice Admiral Art Cebrowski USN (Retd) –
Director of the Office of Force Transformation



The Acquisition Handbook

Edition 6 - October 2005



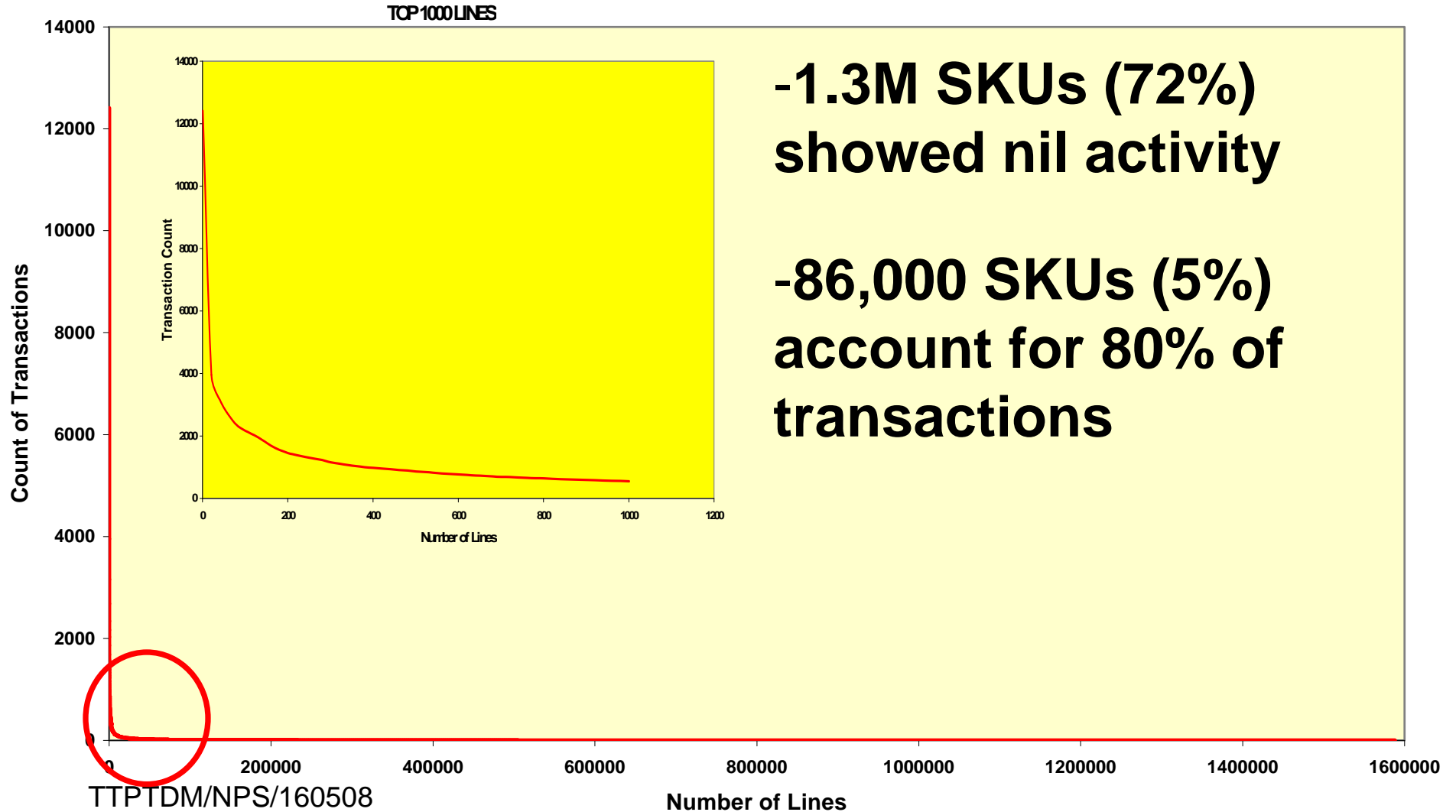
A guide to achieving
"Faster, Cheaper, Better and
More Effectively Integrated"

Inventory Size

- UK MOD
 - 1,700,000 SKUs

- Typical Supermarket Chain
 - 20,000-50,000 SKUs

PAN DLO ACTIVITY SUMMARY FY0203



Supply Characteristics	Long Lead Time	Plan & Execute (Lean)	Delayed Configuration (Postponement)
	Short Lead Time	Continuous Replenishment	React & Execute (Agile)
		Predictable	Unpredictable
	Demand Characteristics		

Christopher, M (2004) Proceedings of the 4th Supply Chain Cause and Effect Seminar, Sep 2004, Malaga, Spain

TTPTDM/NPS/160508

		Number & Percentage of Issues		
Supply Characteristics	Lead Time	Long (>12 Months)	5,476 (3%)	51,346 (31%)
		Medium (6-12 Months)	6,676 (4%)	48,996 (30%)
		Short (<6 Months)	7,646 (5%)	44,893 (27%)
			Predictable (SD/Mean ≤ 3)	Unpredictable (SD/Mean > 3)
TTPTDM/NPS/160508			Demand Characteristics	

- “In the absence of rock solid information regarding the availability of materiel, the warfighter will always buy readiness insurance in the form of excess local stocks
 - Kaminski, P. G. (1996) Lean Logistics: Better, Faster, Cheaper. *Defense Issues*, Vol 11, No 99.

The Logistic Commander of the future?



Asset Tracking – The Military Perspective

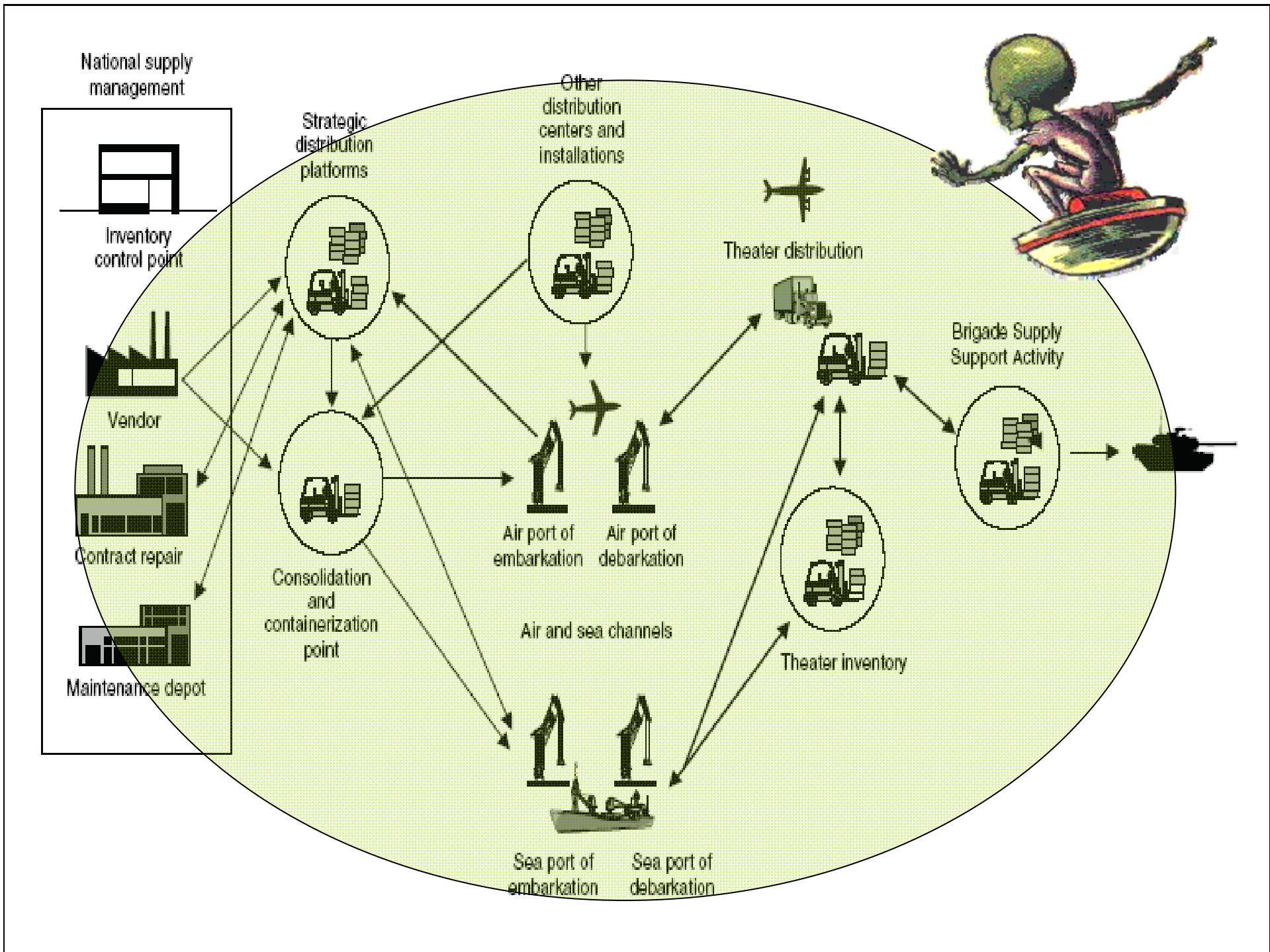
**The Physical
Location, Material
State, and Velocity**

+

**The Current Materiel
State of the
Demanding Units**

+

**The Future
Requirement of the
Demanding Units**





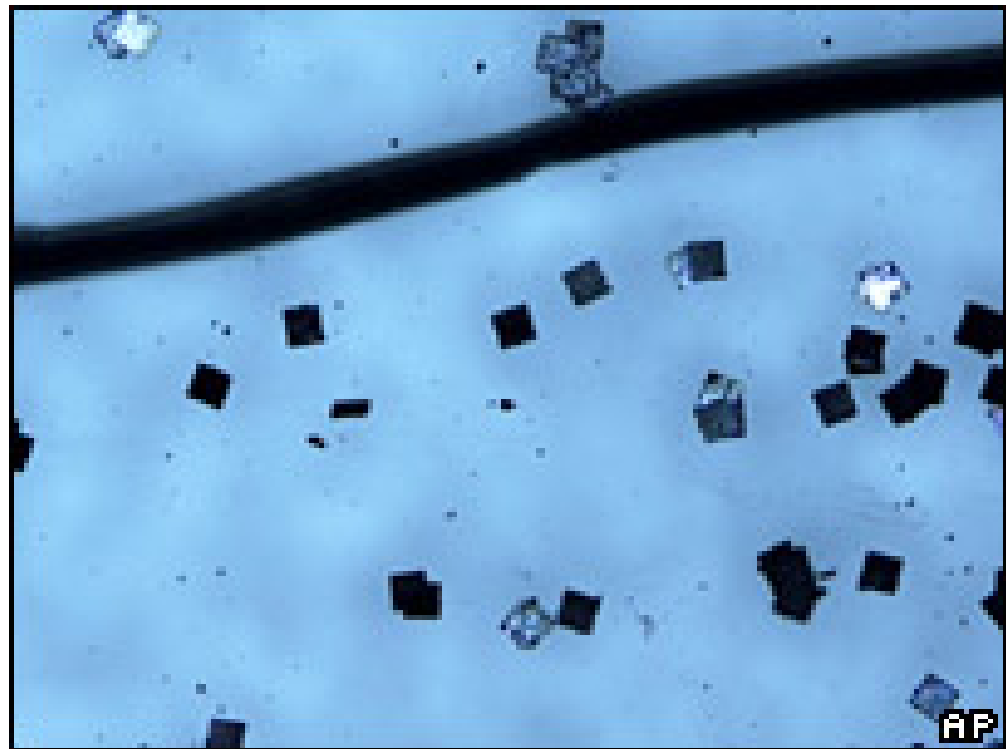






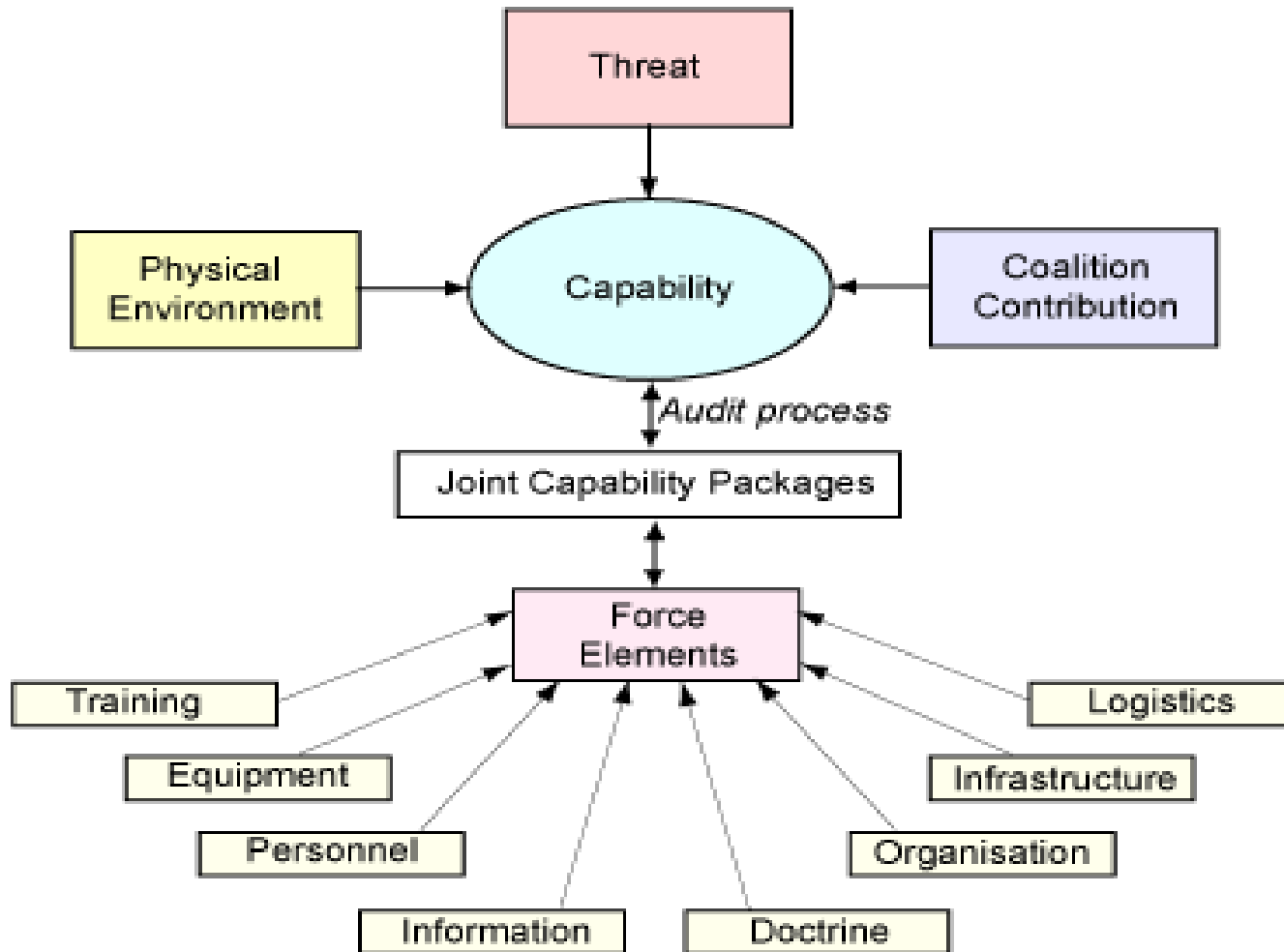
World's tiniest RFID tag unveiled

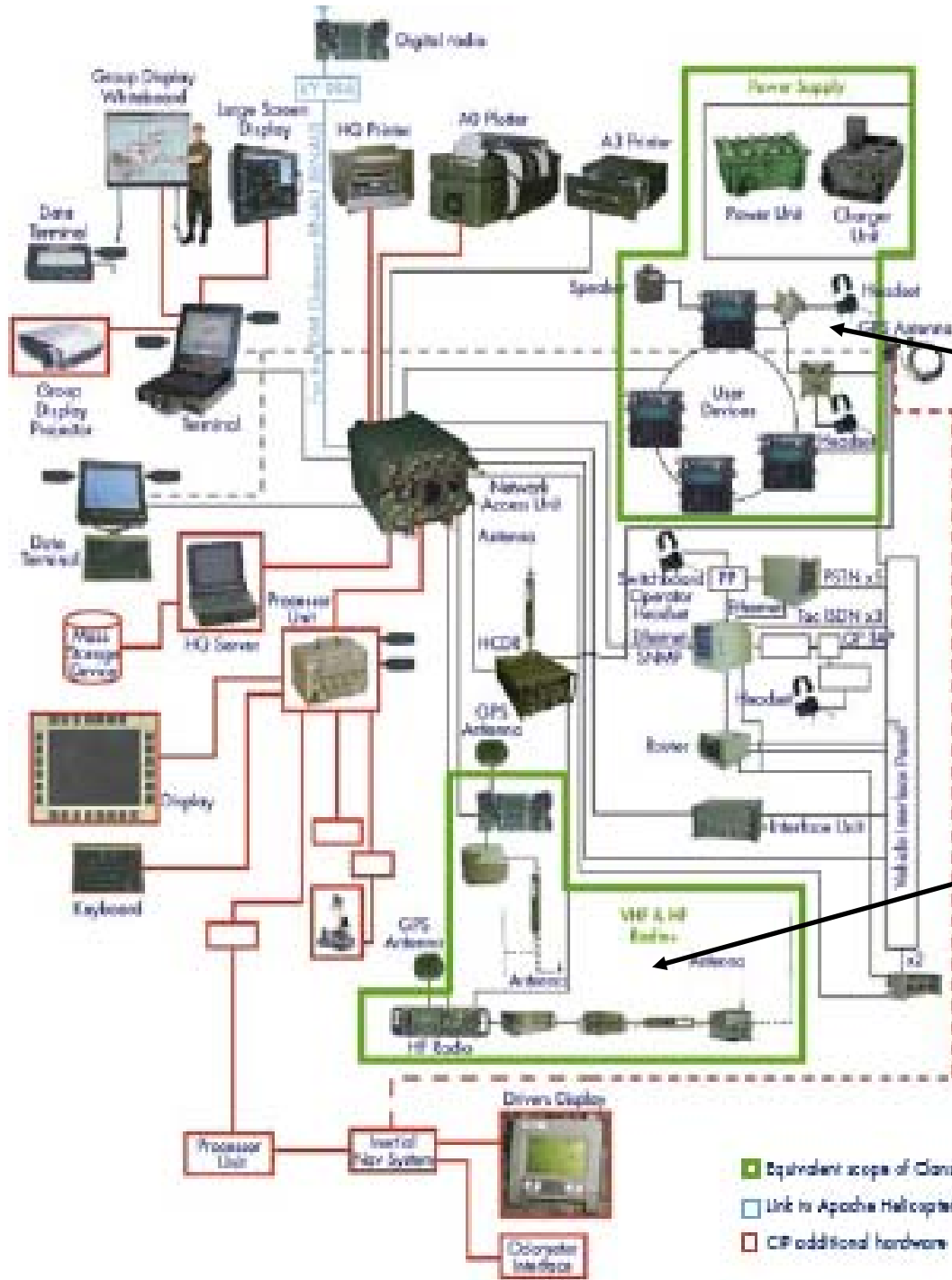
Here the tiny tags can be seen next to a human hair. The minute devices measure just 0.05mm by 0.05mm (0.002x0.002in) and to the naked eye look like spots of powder.



- Data Overload: RFID will generate more data – the trick is what you do with it!!
- Estimated that a fully functioning RFID system at Wal-Mart will generate 7 terabytes (7×10^{12}) of data **daily**.

Challenge – the whole system/capability perspective





Areas of the “Bowman” system that are equivalent to the “Clansman” radios it is replacing

Bowman – Training Shortfalls

- Original assumption was that the level of funding needed to provide training for operators and managers of Clansman would suffice.
- In 2002, a Training Needs Analysis estimated that the realistic additional capital cost was some **\$55M** and additional Whole Life Cost was some **\$375M** over 25 years.

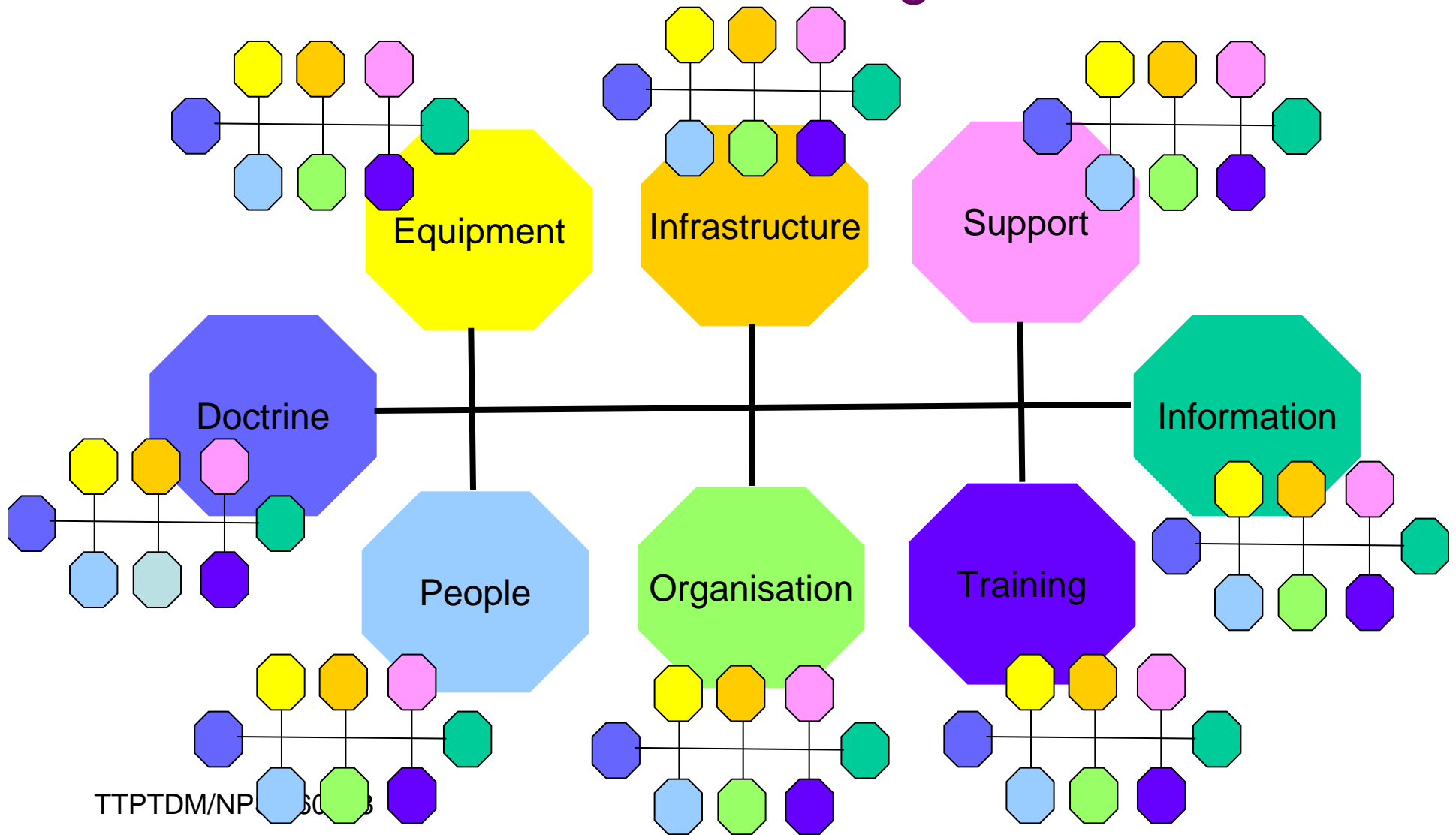
Building a capability-management machine

- How:
 - Capability Planning and Management Groups
 - Equipment Capability Customer
 - MoD Centre (Policy & Finance)
 - Science and Technology
 - Defence Equipment & Support
 - Single Service Users
 - Operations
 - Personnel
 - Training

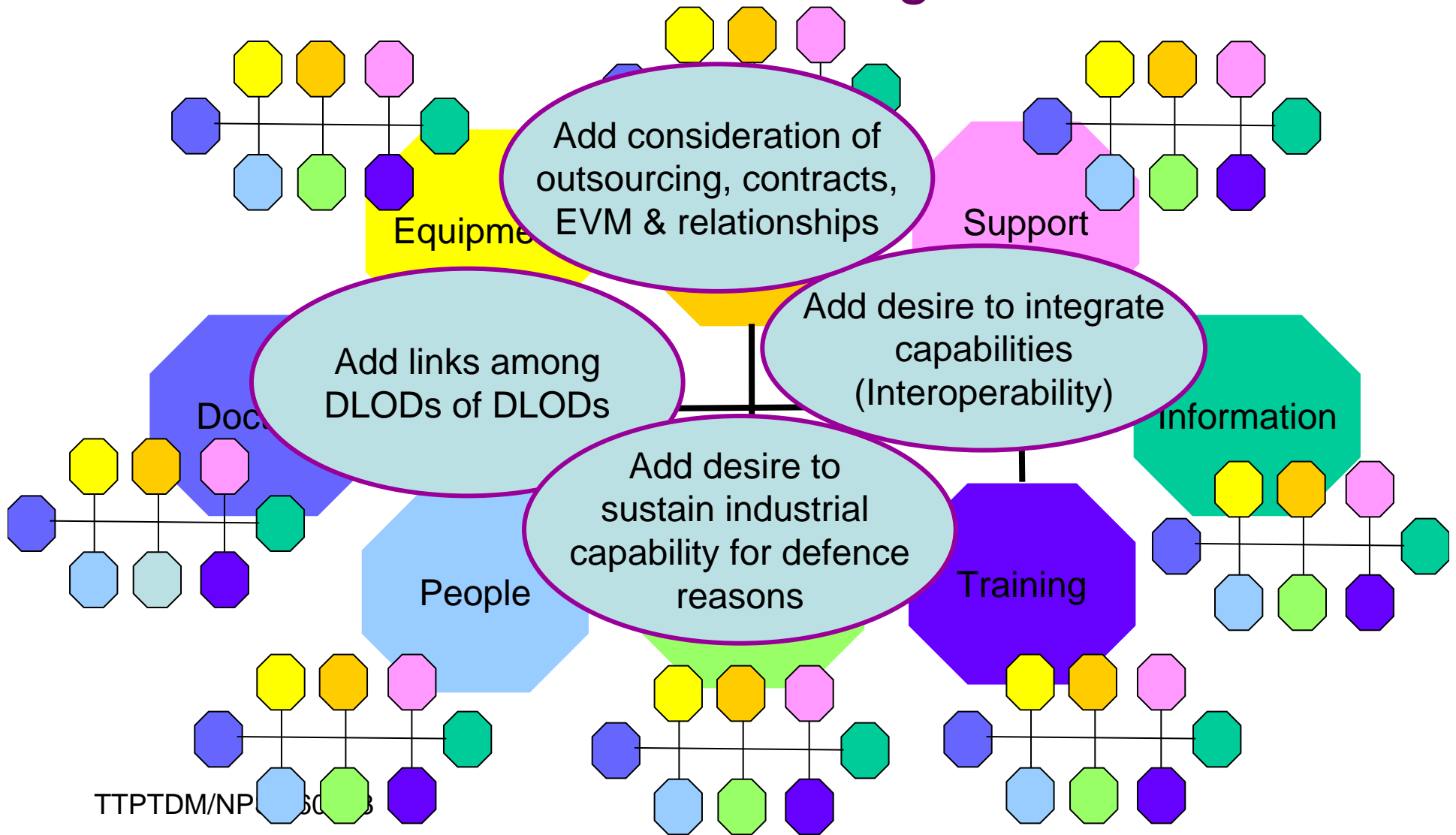
Building a capability-management machine

- How:
 - Capability Planning and Management Groups
 - Processes
 - OK for early setting of requirement
 - OK for early (poor quality) forecasts of DLOD costs
 - Then?
 - Are DLODs in place in a timely manner: not a massive challenge
 - How are DLODs best traded off?
 - Problematic, not least in terms of industry relations
 - TLMCM as a whole qualifies as a ‘complex’ challenge

DLOD relations, evolving over time



DLOD relations, evolving over time



Challenge: being an expert customer

- Three elements?
- A Knowledge Management issue
 - What do you need to know about technology
 - To specify ambitious but feasible requirements
 - To assess proposals from the private sector

Challenge: being an expert customer

- Three elements
- A Knowledge Management issue
 - What do you need to know about technology
 - To specify ambitious but feasible requirements
 - To assess proposals from the private sector
- Tracking and accessing global technological advance?
 - Defence as circa 10% of global total
- Vulnerability to ‘conspiracies of optimism’
- Maintaining appropriate internal spending to build knowledge?
 - Research as short-term committed money
- What to do in-house?

Challenge: being an expert customer

- Three elements
- A Knowledge Management issue
 - What do you need to know about technology
 - To specify ambitious but feasible requirements
 - To assess proposals from the private sector
- Recruitment and development of engineering talent within government, including the military?
- What to do in-house?
 - Role of the LSI/'customer friend'
 - Signs of MoD re-thinking on internal capabilities, especially regarding incremental acquisition

Challenge: being an expert customer

- Three elements
- A Knowledge Management issue
- A cultural issue: readiness to adjust the military to exploit best novel technologies, if necessary with disruptive systems
- Military inclination
 - to replace like with similar but better
 - to maintain established ways of doing business
- UK response: to put capability at centre of acquisition thought
 - But single service pressures remain

Challenge: being an expert customer

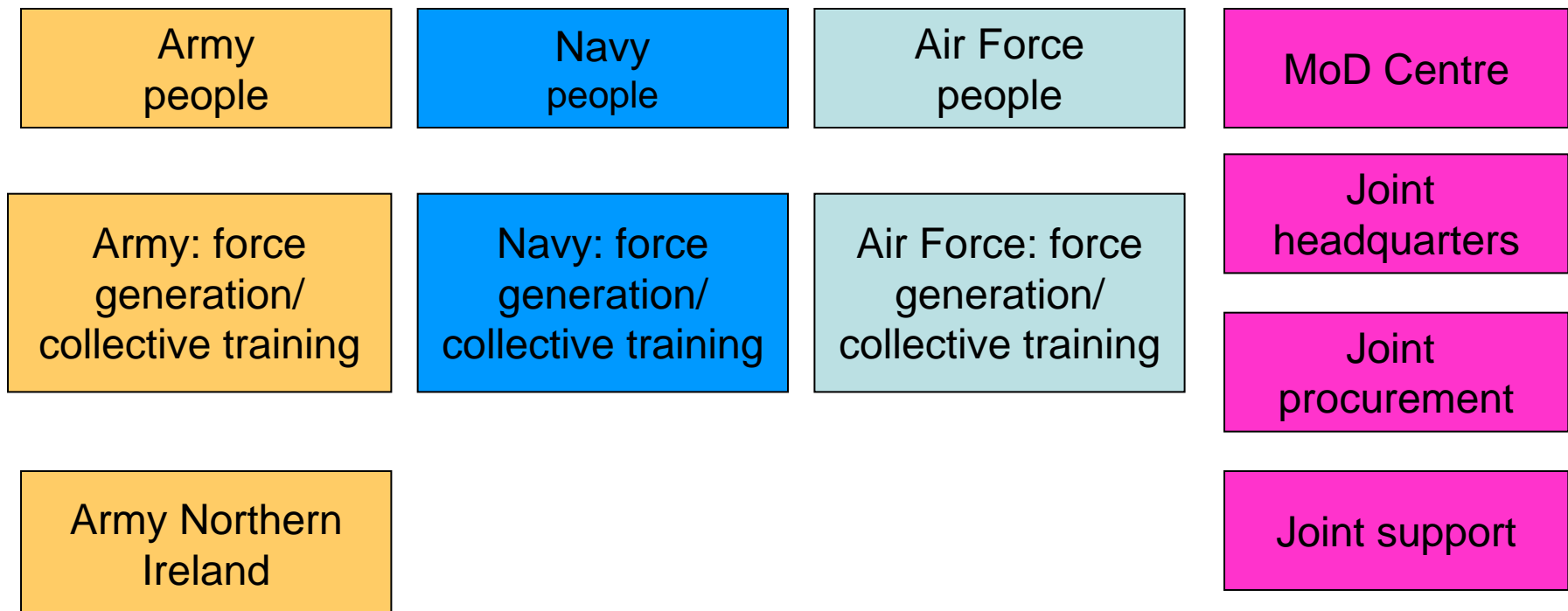
- Three elements
- A Knowledge Management issue
- A cultural issue
- A timeliness issue
 - Avoiding the purchase of systems that are irrelevant when come into service
- Aspirations to
 - shorten acquisition cycles
 - Use more incremental acquisition/spiral development
 - Closer relationships with flexible industry?
- But the peace-building versus inter-state deterrence/war-fighting dilemma remains
 - A core defence as well as acquisition issue

Challenge: Empowerment versus Centralisation/coherence

- Business management literature
 - Motivation, commitment & performance from having discretion/being empowered
- UK MoD system since mid-1980s
 - Responsibility budgets
 - Provide money & expect outputs
 - But how to divide up defence?

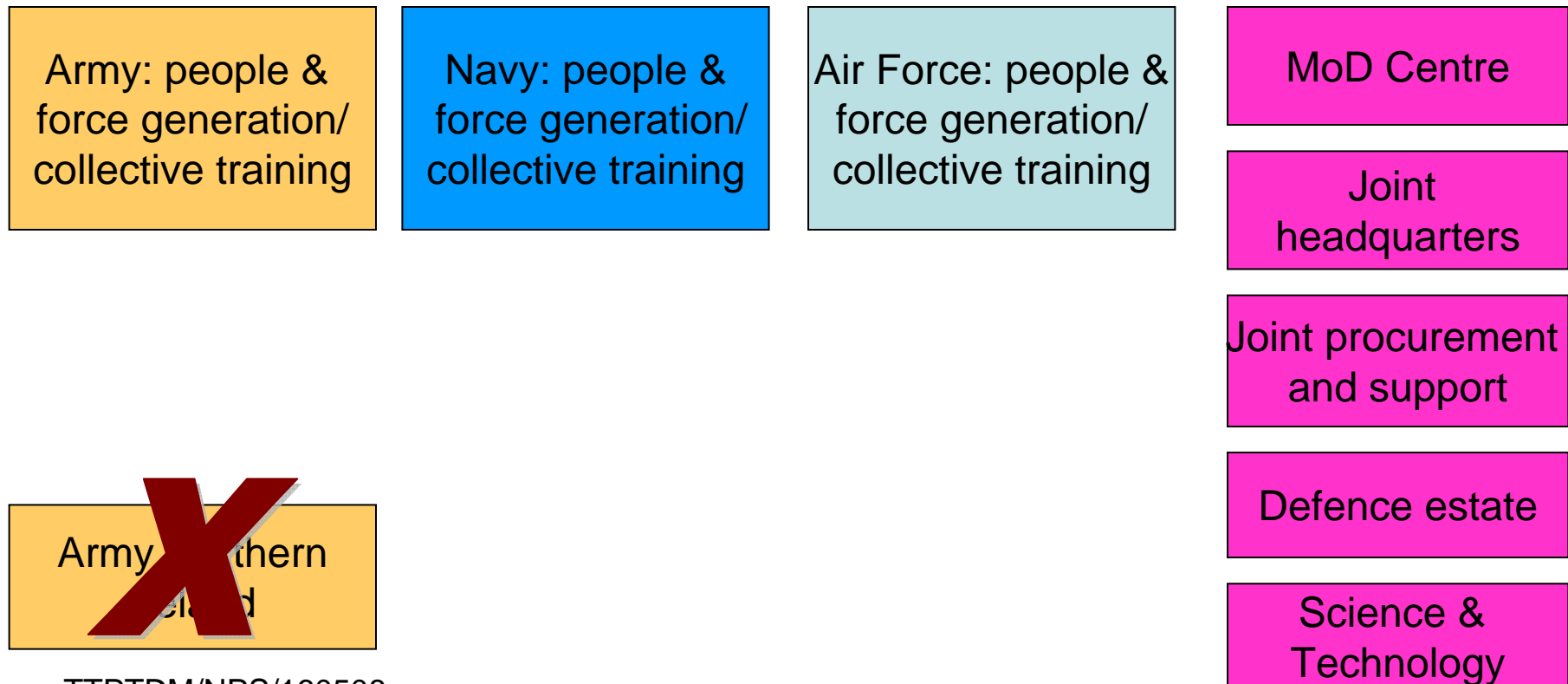
Challenge: Empowerment versus Centralisation/coherence

The 2003 Top Level Budget system



Challenge: Empowerment versus Centralisation/coherence

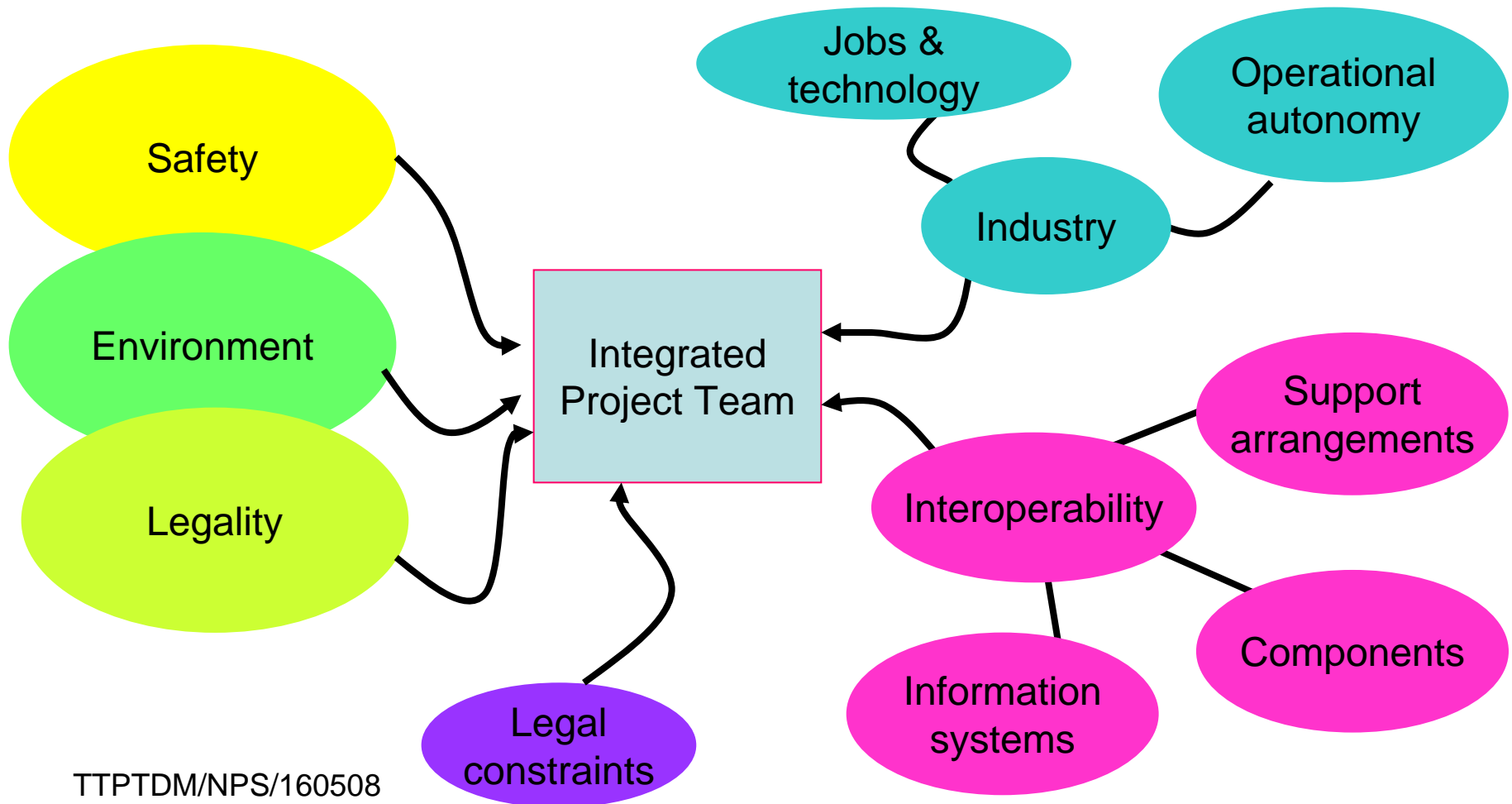
The 2008 Top Level Budget system



Challenge: Empowerment versus Centralisation/coherence

- Business management literature
 - Motivation, commitment & performance from having discretion/being empowered
- UK MoD system since mid-1980s
 - Responsibility budgets
 - Provide money & expect outputs
 - But how to divide up defence?
 - **Smart Procurement Initiative 1998**
 - **Integrated Project Teams with empowered Leaders for new equipment projects and their in-service support**

Challenge: Empowerment versus Centralisation/coherence



Challenge: Empowerment versus Centralisation/coherence

- Clear challenges
 - Sewing the seams between the empowered groups?
 - At equipment level, building a network and paying the premiums for interoperability?
 - Through life: compatible support arrangements and information systems for separate but related pieces of kit?
 - Army, Navy, Air Force and jointery
 - Interoperability with which allies?

MoD responses

- Rein in IPTL discretion
- Change Top Level Budget Holders (fewer and more)
- The relevance of the pendulum
- And MoD uncertainty

Ministry of Defence Departmental Framework: adjacent paragraphs

- The extent, variety and complexity of the individual tasks which are required to produce modern military capability makes detailed central control or management both exceptionally difficult and very inefficient. Responsibility for individual components of capability and for supporting and administrative tasks is therefore delegated, along with the resources required,... to individuals who are held accountable for delivery' (p5)
- The need for central direction both for military operations and for the peace-time creation and maintenance of military capability requires a hierarchical or vertical command and management structure.

Professionalism

- Derivatives of ‘Profession’
 - Noun / Adjective / Adverb
- Elements of a ‘Professional’
 - Training
 - Education
 - Experience

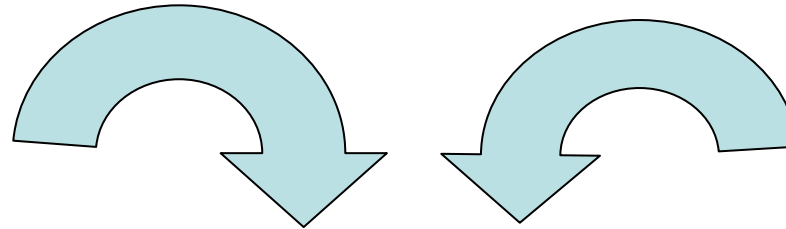
Training

HOW TO.....

Education

WHY.....?

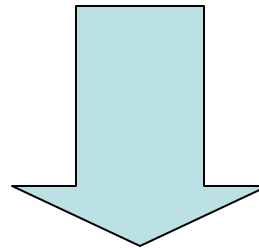
Propositional
Knowledge



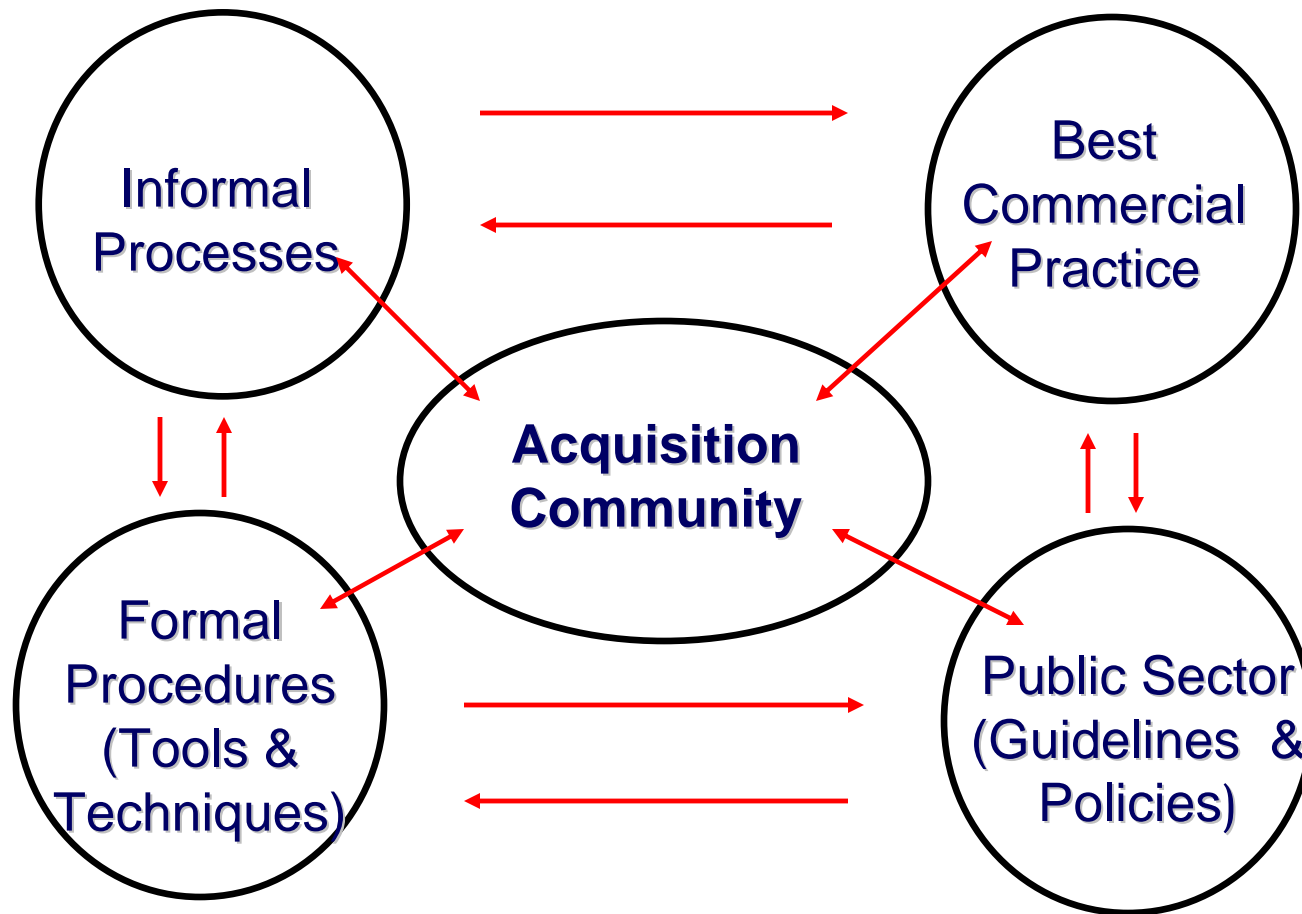
Process
Knowledge

Considered with
Personal Knowledge

Filtered

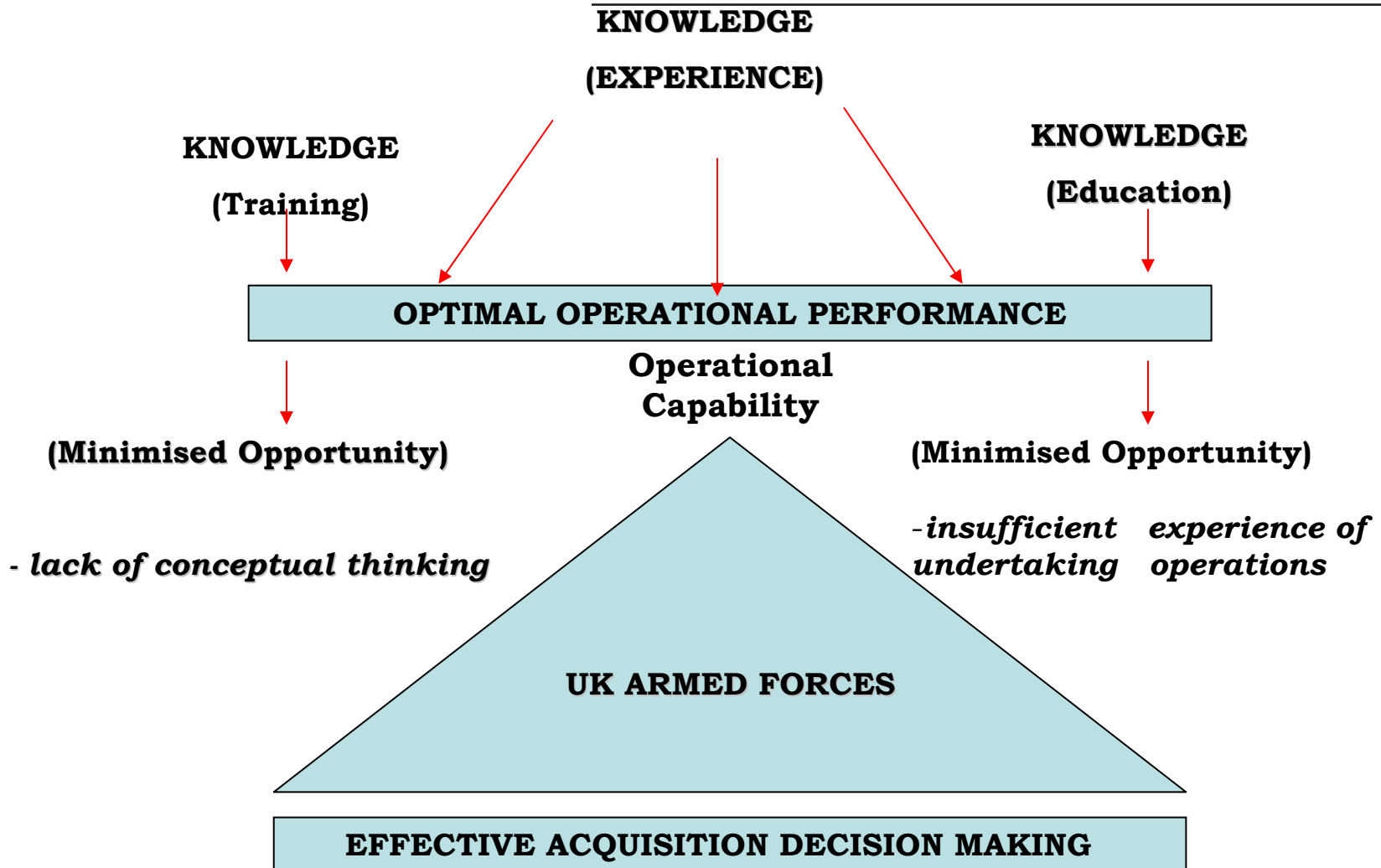


Cognitive Growth
Informing Practice



Questions

- Q. Is acquisition knowledge being created? A. Yes
- Is it being retained, refined and utilised? A. ???
- Retaining and utilising corporate and individual knowledge is not just a matter of filing and keeping data



The Knowledge Equilibrium - Essential for decision making in Acquisition

TTPTDM/NPS/160508

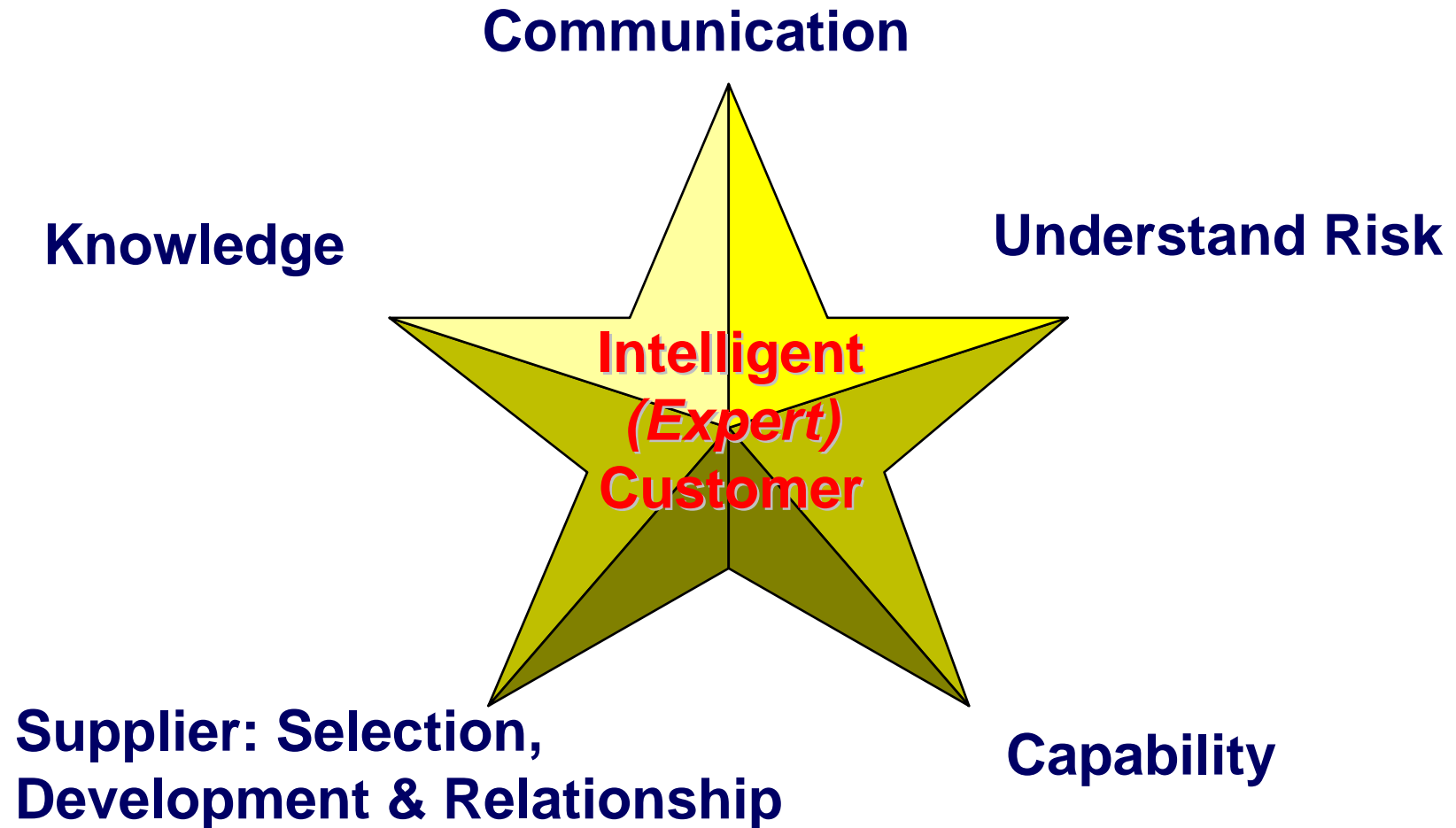
Management

**MEETING THE
CHALLENGES :
PROFESSIONALISM IN THE
ACQUISTION COMMUNITY**

**DEFENCE ACADEMY
OF THE UNITED KINGDOM**

**Cranfield
UNIVERSITY**

Defence College of Management and Technology



Conclusion

- A UK perspective on the generic defence acquisition challenges relevant to all states
- Resonance in US and elsewhere?