



Measuring the benefits of
Smart Acquisition

By

Professor David Kirkpatrick
Defence Engineering Group, UCL





Introduction

- **Smart Acquisition (SA) Initiatives (originally titled Smart Procurement) were published as part of the SDR in July 1998.**
- **This paper considers how the benefits of Smart Acquisition might be assessed, with emphasis on relevant issues of cost analysis.**
- **The paper includes discussion of -**
 - Generic issues of public policy evaluation
 - The SDR and the SA Initiatives
 - Various methods of assessment
 - Implementation of SA Initiatives
 - Achievement of SA objectives





Assessment of public policy

- **HMG Dept. of State transform budgetary inputs into outputs consisting of public benefits.**
- **Some policies yield benefits which appear quickly, and are easily measurable.**
 - Road improvements, vaccination
- **Some benefits emerge slowly, but are measurable.**
 - Levels of pollution and crime
- **Some are slow, multidimensional and complex.**
 - Education, national security
- **The effects of Smart Acquisition are complex and will emerge over many years.**





Defence Equipment Acquisition

- Market is 'imperfect' with few buyers and sellers.
- Projects are large and complex; hence expensive.
- To avoid inferiority, projects must have some risk.
- Funding comes from the public Treasury.
- Benefits are uncertain, and far in the future
- Many stakeholders are involved

ALL THESE FEATURES ENDURE

- Reforms can correct obsolete and dysfunctional organisational structures, relationships, policies and procedures.





Strategic Defence Review





A acquisition problem s perceived in SDR

- **Overlong time-span from concept to service**
- **Overruns in cost and timescale**
- **Failure to balance performance, time and cost**
- **Undue transfer of commercial and technical risk**
- **Standardised approach to varied projects**
- **Lack of delegation and incentives**





Problem s not perceived?

- **Global restructuring of defence industry**
- **Future reliance on COTS**
- **Scale and allocation of MoD's research funding**
- **Implementation and assessment of Initiatives**





Objectives of Smart Acquisition

- Shorter timescales from concept to ISD
- Lower equipment through-life costs
- Better equipment delivered to the Armed Forces
- Hence **FASTER, CHEAPER, BETTER**





Initiatives to achieve the SA objectives

■ Initiatives which are Smart but hardly new

- Through-life approach, and systems engineering principles
- Rigorous early planning and assessment
- More-accurate prediction of cost and timescale

■ Initiatives which are new, and may be Smart

- Capability-based approach to acquisition
- Reorganisation of procurement and logistics
- Fewer approvals and segmented procedures
- Integrated project teams and Partnering
- Delegated authority and incentives
- Incremental Acquisition
- Culture change
- A PPP for DERA





Existing policies endorsed

- **Competition for defence equipment contracts**
- **Firm-price and fixed-price contracts**
- **Collaboration with allies in acquisition**
- **Technology transfer promoted by the DDA**
- **Resource Accounting and Budgeting (RAB)**
- **Integrated Logistic Support (ILS)**
- **Private Finance Initiatives (PFI)**

These existing policies are not considered as part of the Smart Acquisition Initiatives.





Methods of assessing Smart Acquisition

- **Extent of implementation of the SA Initiatives**
 - No implementation means no effect, and even full implementation may not achieve desired objectives
- **News items from individual projects**
 - Selective and incomplete, unsafe to generalise
- **Stakeholder survey and analysis**
 - Views inaccurate or biased?
 - Analysis is inevitably subjective
- **Quantitative assessments against objectives**
 - Data from ten 'Legacy', ten 'Smart' and ten 'Infant' projects in NAO's MPR 2002
 - Difficult to compare actual and hypothetical outcomes
 - Clear evidence may emerge only slowly





Implementation of Initiatives





Through-life approach and Systems engineering

■ Through-life approach

- Specified in 1974 MoD guidelines, endorsed by NAO + HCDC
- Required by HMT for public projects since 1991
- Since SA, MoD has more accountants and a COO process, but TLC are not yet public. Service customer has little input.
- MoD cultures prefer exactness, so TLC may be neglected?

■ Systems engineering

- Advocated by DoD 1971, used by NASA in 1980s, highlighted by Foresight in 1997, and by DSAC in 2003.
- An Integration Authority has been established, but implementation of SE requires well-trained staff on each IPT
- But there is no SE module in the DPMT syllabus





Early planning and fixed prices


■ Rigorous early planning

- Recommendations (in 1961, 1968 and 1988) for investment of 15% of development cost in feasibility and project definition studies were not heeded.
- SA wants 15% of procurement cost invested before Main Gate. Why not a % of TLC?
- 'Legacy' projects spent less than 1%, but 'Smart' projects intend to spend 3.5%. A significant improvement.

■ Accurate forecasts of performance, cost and time

- Desirable since Biblical times, but Inherently difficult for large, complex and innovative projects
- 'Smart' projects have so far accumulated less variation
- Proper comparison needs more detailed analysis





Capability-based approach, reorganisation, and project mgt.

■ **Capability based approach**

- ECC established (and reorganised)
- This approach might yield a more cost-effective solution
- Extensive assessments always extend project timescale
- Cuts in research (not part of SA?) must inhibit concept studies

■ **Reorganisation of procurement and logistics**

- Separate budgets and Plans inhibit a through-life approach
- Interfaces and geography discourage staff transfers
- Cluster IPT cannot transfer en bloc

■ **Fewer approvals and segmented procedures**

- Introduced





IPT and Partnering

■ Integrated Project Teams (IPT)

- IPT were set up rapidly and successfully, but allocation of staff was sometimes arbitrary rather than driven by project needs; shortfall in some key skills.
- IPT members have various cultures, divergent goals and different priorities.
- Difficult to transfer staff, or arrange long tours of duty
- IPT principles only partially implemented.

■ Partnering

- Promoted by the Defence Industrial Policy, Oct 2002
- Either short-term which inhibits mutual trust and discourages investment, or long-term which erodes competition.
- Partners have some conflicting interests.
- Some improved communications, but mistrust remains.





Delegation and Incentives

■ Delegated authority

- IPT Leaders have greater control over projects but limited control over personnel.
- Individualistic policies promote stove-piping, and hence may proliferate logistics and inhibit networking of equipment.
- Errors can embarrass Ministers and senior officials – hence the ongoing application of a ‘long-handled screwdriver’.

■ Incentives

- These work best when the output is prompt and evident.
- In MoD they could distort priorities and suppress dissent.
- Rewards to IPT members could reflect different cultures.
- Big incentives distort, small ones fail to motivate.





Incremental Acquisition and Culture

■ Incremental Acquisition

- The progressive and preplanned enhancement of project capability as technologies mature, with potential benefits and penalties.
- Only limited implementation to date.

■ Culture

- Several cultures interact within MoD
- Which cultures need to change? How will they be changed?
- MoD cultures changed at higher level, but not at workplace?





DERA PPP

- **PPP for DERA has been implemented, but slowly and acrimoniously.**
 - Proposed in July 1998, promising revenue of £200M
 - Reliance plan proposed 5/99, but widely condemned
 - Core competence plan proposed 4/00, implemented 7/01 by splitting Dstl from QinetiQ
 - 1/3 of QinetiQ sold to Carlyle Group
- **Many concerns remain e.g.**
 - Dstl analysis depends on QinetiQ inputs
 - Effect on QinetiQ's relations with UK industry and US labs.
 - QinetiQ is building Chinese walls
- **Cost of implementing split exceeds revenue to date.**
- **Effects of this policy will emerge very slowly.**



Implementation of SA Initiatives

- **A personal and subjective view of Implementation.**
- **Implemented**
 - Fewer approvals and segmented procedures
 - Reorganisation of procurement and support
 - DERA PPP
- **Some implementation, but how much?**

<ul style="list-style-type: none"> ● Through-life approach ● Rigorous early planning ● Integrated Project Teams ● Partnering with industry 	<ul style="list-style-type: none"> ● Capability-based approach ● Culture change ● Delegated authority
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- **Little (if any) implementation**

<ul style="list-style-type: none"> ● Systems engineering ● Accurate forecasting 	<ul style="list-style-type: none"> ● Incremental acquisition ● Incentives.
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Achievement of Objectives





Implementation and Objectives

- **Some Initiatives are evidently good, some are dubious. The extent of implementation is uncertain, but could be clarified.**
- **The real issue is ‘Faster, Cheaper, Better’**
- **Faster**
 - Less time from Concept to In-Service Date (ISD)
- **Cheaper**
 - Lower cost of equipment through its life cycle
- **Better**
 - More effective on the battlefield, and more Service friendly





Better equipment

- **Obtained by better selection of KUR and better achievement of KUR?**
- **Better is a multi-dimensional mix of lethality, survivability, mobility, availability, etc.**
 - Compared to predecessor, or best contemporary?
 - Compared to hypothetical project not using SA ✓
- **Measured in terms of**
 - Popularity with operators and commanders?
 - Export success?
 - Results of competitive firepower and other trials?
 - Combat experience?
 - Less adverse Press coverage?
- **'Better' will always be subjective.**





Cheaper equipment

- **Cost is one-dimensional**
- **Cheaper can be**
 - Relative to an earlier project?
 - Relative to a similar project using earlier procedures ✓
 - Relative to previous forecast (easily spun so BEWARE)?
- **Can effects of SA be distinguished? Need they be?**
- **SDR chose to define Cheaper as £2B saved from the equipment budget 1999-2008**
 - Equipment programme planned in 1998 is not the same as the actual programme viewed from 2009.
 - Rigorous comparison would compare a given programme using Smart and pre-Smart methods.





Faster equipment

- **Project milestones are not well-defined.**
 - Concept and In-service dates may be obscure + inconsistent.
 - Approval dates at least are recorded unambiguously.
- **MG to ISD depends on the nature of the project.**
 - Aircraft and GW require 9-14 years, average 11 years.
 - Other projects require 4-10 years, average 6 years.
 - OTS projects need less time.
- **IG to MG duration depends on policies and procedures.**
 - 9 'Legacy' projects (MG pre-SA) took 40 months
 - 10 'Smart' projects (MG post-SA) took 38 months
 - 9 'Infant' projects (not yet MG) expect to take 46 months
- **No evidence yet of faster procurement.**





Achievement of SA objectives?

- **‘Better’ will be difficult to assess; but even a subjective assessment will help prevent the equipment programme being driven by the wrong targets.**
- **‘Cheaper’ can be measured in various ways; evidence of improvement not yet apparent but might be revealed by more-detailed analysis.**
- **‘Faster’ will be difficult to achieve, as management proliferates; evidence to date suggests no change.**





Hope for the future

- **It is written ‘What matters, gets measured’.**
 - Consumer preferences
 - House price inflation
 - Effectiveness of drug treatments
- **If the cost-effectiveness of Smart Acquisition really is important to some organisation, that organisation will take the trouble to measure it.**

