

**The following presentation was given at:**

# Joint Workshop - SCAF and OR Society Workshop

Theme: “Value for Money and Complex  
Decisions”

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Ministry of Defence

# Optimism Bias

ISMOR - 26 July 2019

# Who We Are

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# Outline

- Motivation for work
- Current approach
- Issues with current approach
- Some initial findings
- Data Deep Dive
- Next Steps

...the proven tendency for appraisers to be too optimistic about key project parameters, including capital costs, operating costs, project duration and benefits delivery. Over-optimistic estimates can lock in undeliverable targets and it is therefore critical to make adjustments for this... adjustments should be based on an **organisation's own evidence base for historic levels of optimism bias.**

HMT Green Book 2018

“...there is always an element of **optimism bias** and really good, robust financial management requires us to get those levels of optimism bias, over-programming and forecasting down to as accurate a level as possible, and to **make sure that we have got the evidence**, science and financial rigour behind it to justify it.”

Cat Little – HCDC 2017

# Motivation

Clear requirement: Green Book

Senior leadership: Cat Little (DG Finance)

Current approach: Imperfect

# Current OB Treatment

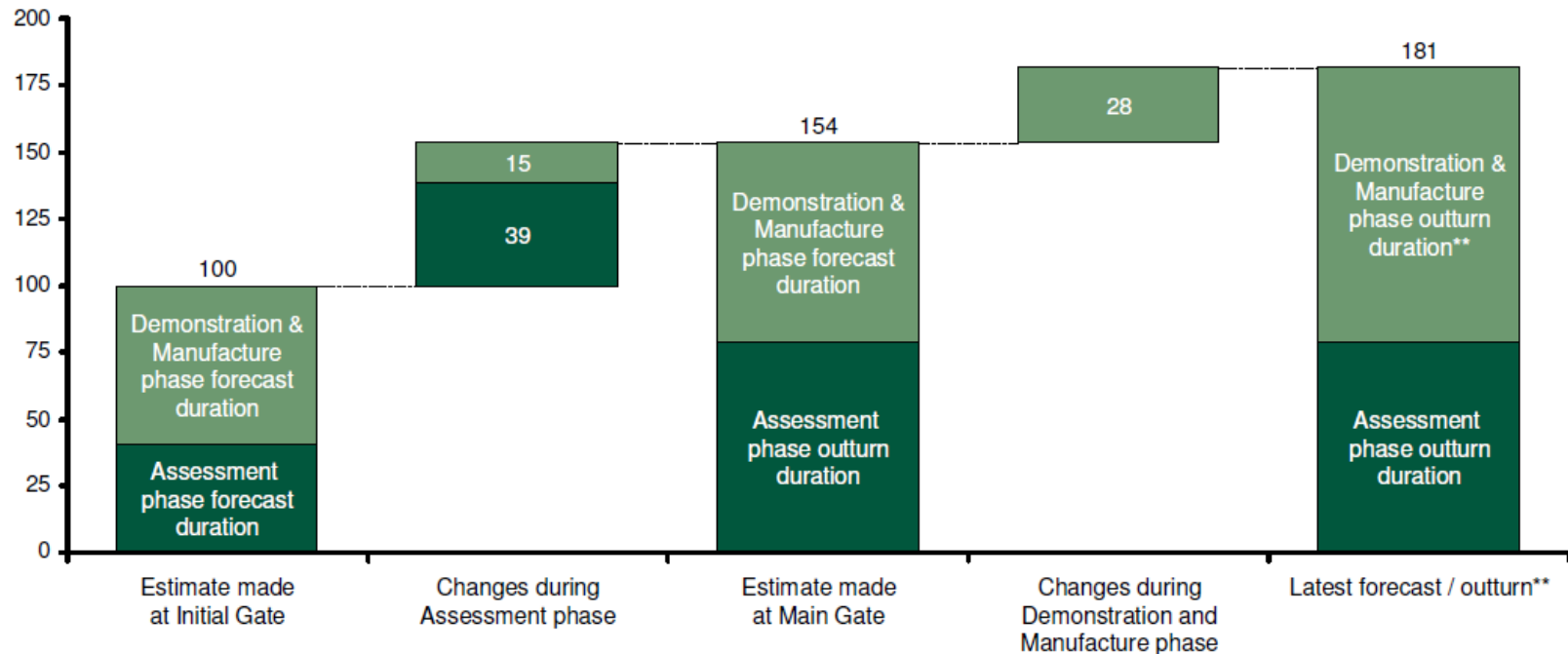
- Based on Review of Large Public Procurement by Mott MacDonald (study commissioned by HMT in 2002)
  - 50 Projects, cross-government
  - Identified under-estimation and management of project risks as the driving force behind OB
- Indices are applied to cost and schedule estimates based on broad categorisation of project:
  - Standard Buildings
  - Non-Standard buildings
  - Standard civil engineering projects
  - Non-standard civil engineering projects
  - Equipment and Development
  - Outsourcing



# Does this work?

## Average growth in project duration (time to “in service”) for ‘mature’ projects\*\*

Index of project duration (Forecast at Initial Gate<sub>50</sub> = 100)



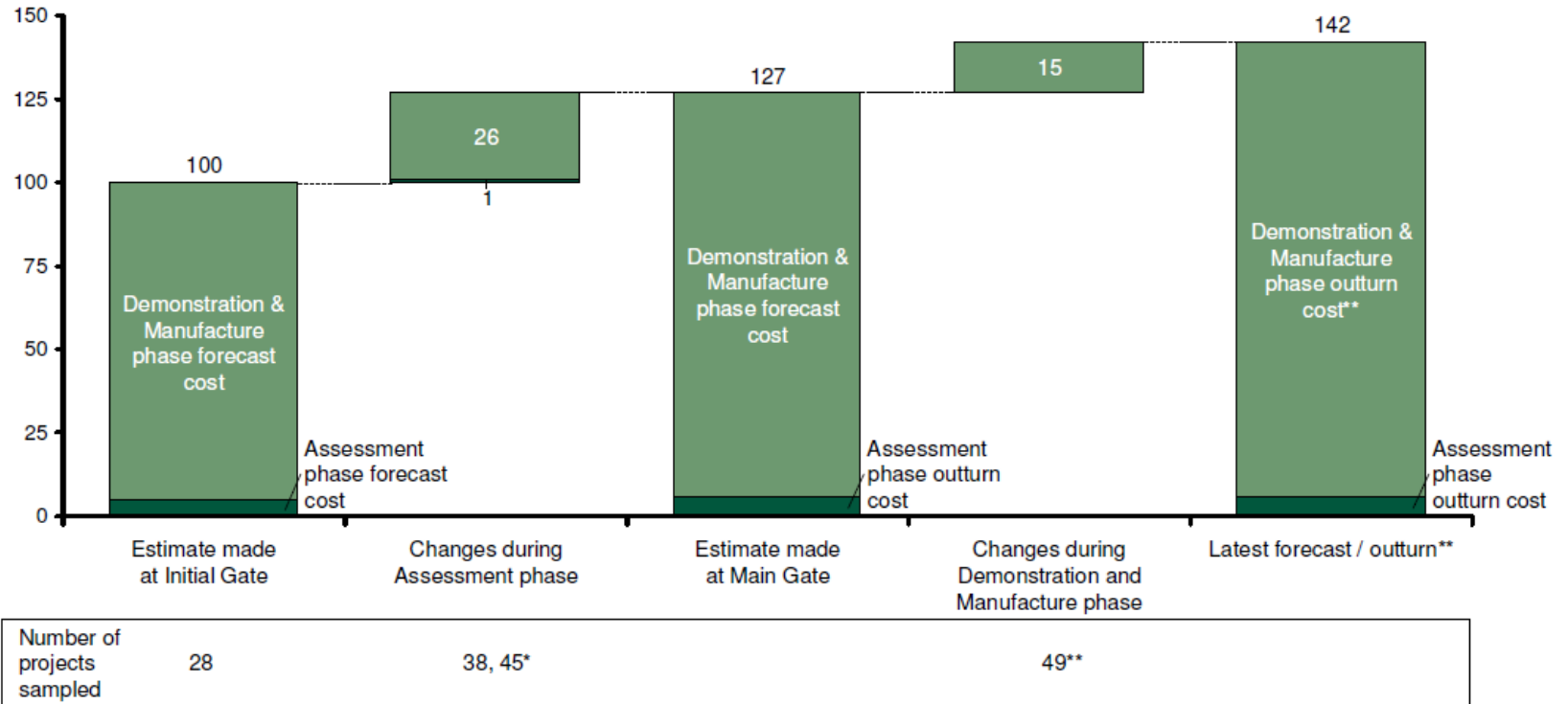
Number of projects sampled	87	42, 45*	91**
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Note: \* Sample of 42 for Initial to Main Gate forecast and 45 projects for Main Gate to In Service Date; \*\* Projects over 75% complete and in-service  
 Source: CMIS (Feb 2009); NAO Major project reports; IAB; Review team analysis  
 Grey (2009)

# Does this work?

## Average growth in project cost for 'mature' projects\*\*

Index of adjusted unit cost^ (Forecast at Initial Gate<sub>50</sub> = 100)



Note: \* Sample of 38 in the Assessment Phase and 45 in the Demonstration & Manufacture Phase; \*\* Projects more than 75% complete at latest forecast  
 Source: CMIS (Feb 2009); NAO Major project reports; IAB; Review team analysis

Grey (2009)

# Issues with current approach

- Sample projects are not necessarily representative of all MOD procurements
  - 2 MOD Equipment projects
- MOD projects are often:
  - Technical
  - Non-standard
  - Involve long technological development periods
- Alongside this, 'Entryism'/Conspiracy of Optimism:
  - MOD is often the single customer, resulting in a 'must win' approach from industry
  - Incentives for customer to underestimate cost/duration in order to get projects approved

# Initial findings demonstrate that teams consistently underestimate the risks associated with project

Average	50-90% Variation	50% Variation
<b>AP Cost Growth</b>	24	18
<b>AP Schedule Slippage</b>	31.5	86
<b>MG to ISD Cost Growth</b>	9.5	17.5
<b>MG to ISD Schedule Slippage</b>	20.5	33

These figures are not final and will change; however, they are indicative of final results. These figures have previously been released at the 2015 SCAF Annual Conference.

# Data Deep Dive

# Questions

