# Heathrow Terminal 5

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# Agenda

- Contracting & Collaboration
  - are the two compatible?
- Creating The Environment For Success
- Heathrow Terminal 5 – a case study

# Creating The Environment For Success

- T5 Agreement – The Contract
- Approach to Risk Management
- How to Influence Behaviours
- Communications
- Performance Management
- The Organisation

# Terminal 5 Site - 2001

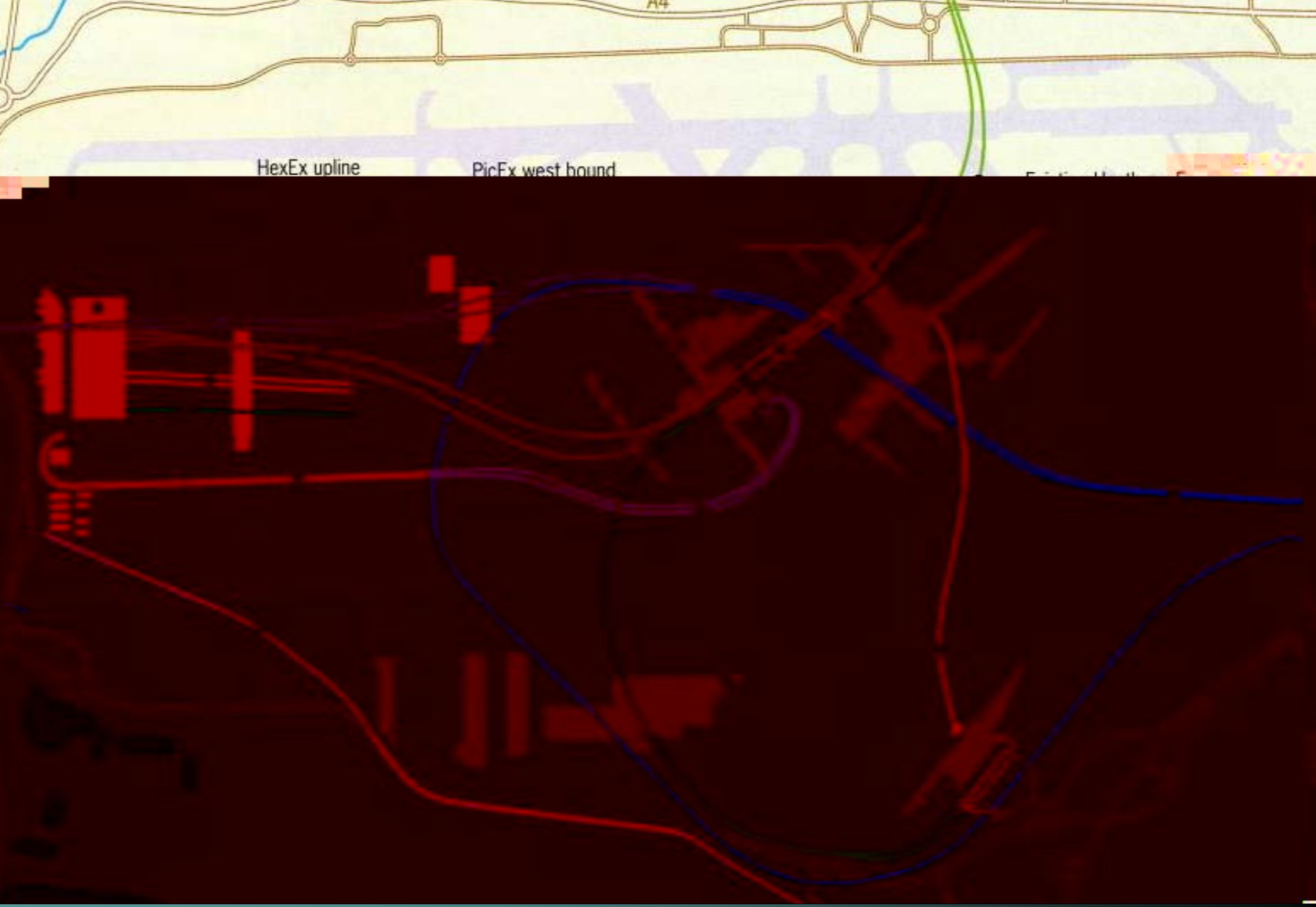
# Terminal 5 : Scale & Statistics

- £4.3bn Programme
- 251 Hectare Site
- 4000 space car park
- 140 shops
- 600 bed hotel
- Terminal capacity for 30 million passengers
- At peak a workforce of 8000
- Total 60,000 people involved over life of project
- 37 million man hours to build
- Opening 4:00am 27th March 2008 !

# Terminal 5 : More obscure statistics

- 6.5 million m3 earth moving
- 80,000 t of steel
- 18km of baggage conveyor belts
- 175 lifts
- 131 escalators
- 800 Flight information displays
- 20,000 trees
- 100,000 shrubs

# Terminal 5 Master Plan




# What’s going on under the surface?

# Terminal 5 Site – 2005

**LU blamed for two-year Jubilee Line Extension delay**

15 September 2000

**Running Late**

New Civil Engineer – 06/01/2000

Railtrack will miss a 2005 deadline to increase slow train paths on the West Coast Main Line

**Dome lurches from crisis to crisis as bankers brought in**

Architects Journal – 21/09/2000

**British Library fails to meet the challenges of the internet age**

Architects Journal – 30/05/2000

**Inquiry pledged into £400m bill for Scots parliament** Guardian April 2003

**Never mind a West Coast upgrade- the route is off track**

IT IS difficult to tell which project, the new Scottish parliament building or the upgrading of the West Coast Main Line, is the more tragic in terms of delay, cost-overruns and bungled management.
Scotsman July 03

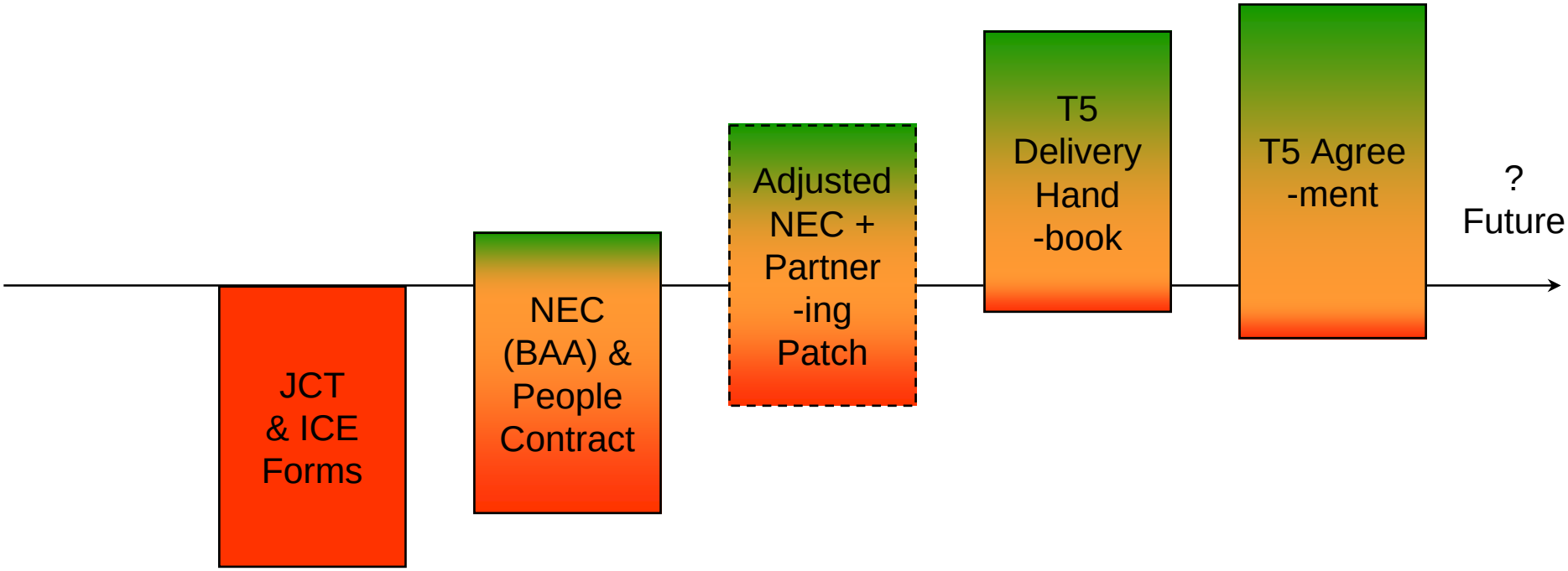
**Inquiry to say £300m bill for MOD project is unacceptable FT September 03**

**Railtrack calls in Americans on coast line**

RAILTRACK plc yesterday brought in the US project management group Bechtel to take charge of the West Coast Main Line upgrade where budgeted costs have rocketed from £2.1 billion to more than £7 billion.

The world's most successful airport development

# Thinking … Different



# T5 Contracting Approach

- Usual contracting
  - Transfer of risk
  - Price in advance
  - Profit at risk
  - Penalties
  - Defined scope
  - Employer's team
  - Best practice
  - Compliance/remedies driven
  - Silos

- T5 contracting
  - Cannot transfer risk
  - Remain Flexible
  - Integrated teams
  - BAA holds the risk
  - Active risk management
  - Reimburse properly incurred
  - Profit levels pre agreed
  - Emerging pre-planned scope
  - Single integrated team values
  - Exceptional performance
  - Goals/Targets
  - Success driven
  - Liability

DIFFERENT UNDERLYING ASSUMPTIONS

# What the T5 Agreement means to key audiences

## BAA PLC

Enabling exceptional performance

e.g. BAA holds
all the risk
all of the
time / on time, on budget
and to quality

## Suppliers

It gives them an opportunity to create competitive advantage for their business – Using T5 as a showcase

Enabling a step change in performance

## Teams on T5

Working in highly effective integrated teams that are committed to achieving T5 Milestones

It's about trusting each other and relying on each other to work together

It's about supplier teams, and BAA staff working on one team

## All T5 team members must demonstrate:

- Commitment
- Trust
- Team work

**Aligned in our focus on exceptional performance**

# Learning From Terminal 5

- UK Construction Industry Commercial Model does not drive performance improvement i.e. turnover and margin are king!
- Construction Suppliers Commercial Model is "Job Cost" i.e.silo approach even within organisations
- Impact of this – no medium or long term "investment" model
- Ability to align corporate objectives compromised by this
- 1st half vs. 2nd half, supply chain characteristics change, impact on performance?
- Recognise how we manage performance in this transition – it will be a different game, how do we shape and influence?
- Capability of most suppliers reduces as complexity and risk increase

- Management Challenge
- Culture
- Performance Management
- Too many direct relationships?
- Sub Contract Strategy
- Transparency
- Controls and Procedures

# SUPPLIER MOTIVATION WITH BAA

# Meeting the challenge and setting T5 apart

- The T5 agreement
- Employee engagement - History in the Making
- Incident and Injury Free programme
- Managing logistics
- Responsible neighbour

# Employee Engagement

Making T5:

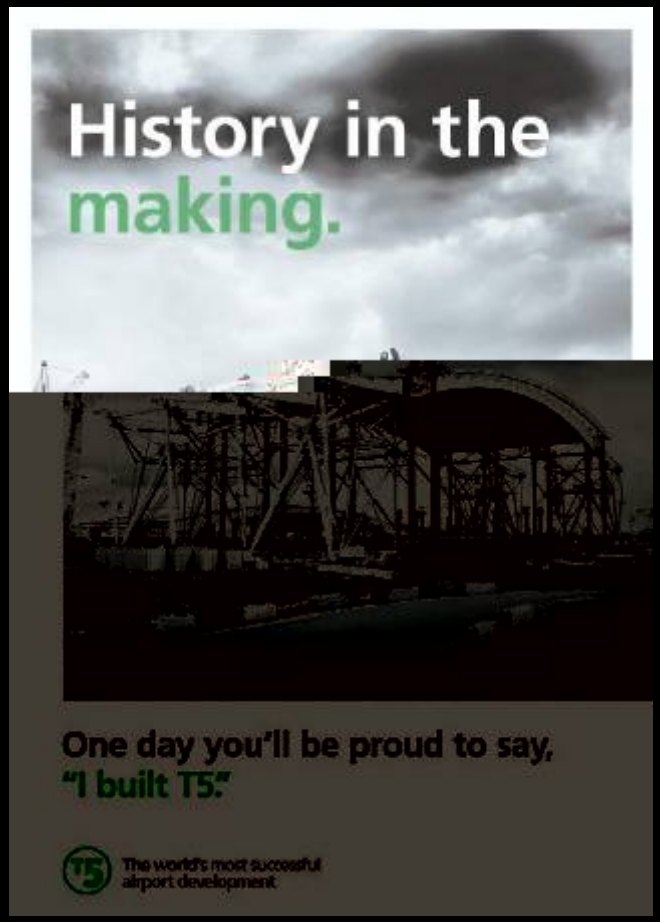
Safe

Quality

Within budget

Bang on target

# History in the making campaign



# Delivering an experience

# Logistics

## The challenge

- A building site the size of Hyde Park
- Around 100 deliveries per hour
- 8000 people

## The solution

- Pre-assembly
- Demand fulfilment
- Logistics centres

# Responsible Neighbour

- Environmental improvements – The Colne Valley, the Twin Rivers
- Local Focus Forum
- T5 Community Liaison
- T5 tour programme
- Notification of Works
- Community projects – Stanwell Moor Low Flow Scheme, Longford Flood Alleviation Scheme
- Archaeology programme

# Colne Valley Improvements

The Colne Valley will be of similar character to Waterside

1.5m wide footpath

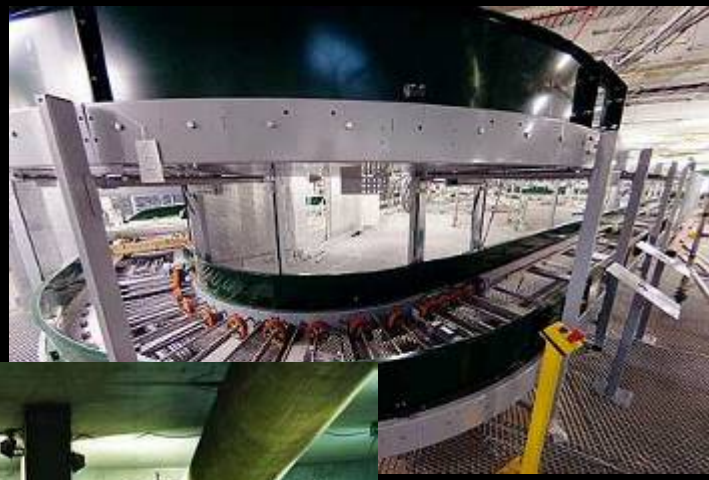
Access gates

G28 grassland translocation

Local provenance plants

# T5 – Status (July ’07)

- Spent £4.27 billion and 96% complete
- 240 days to Opening
- Safe working environment

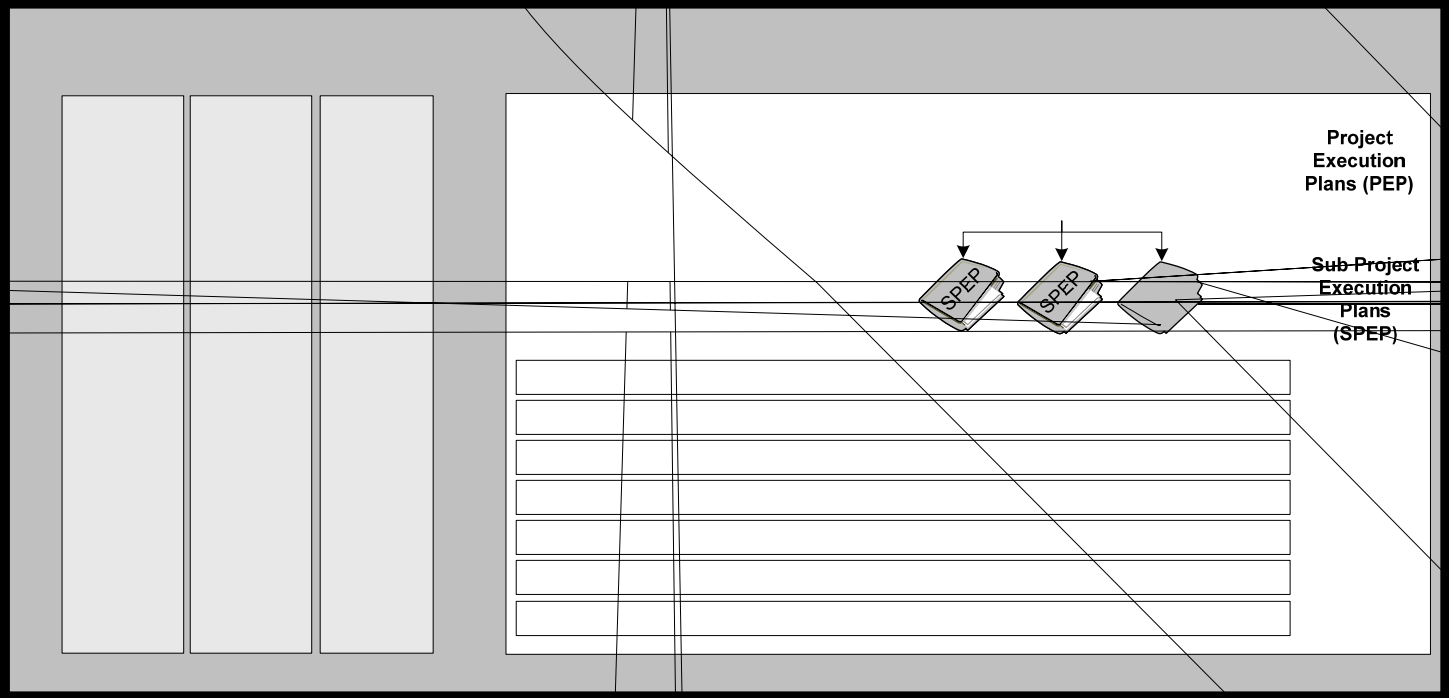


# Programme Management

- Governance and Management Structure
- Project Controls

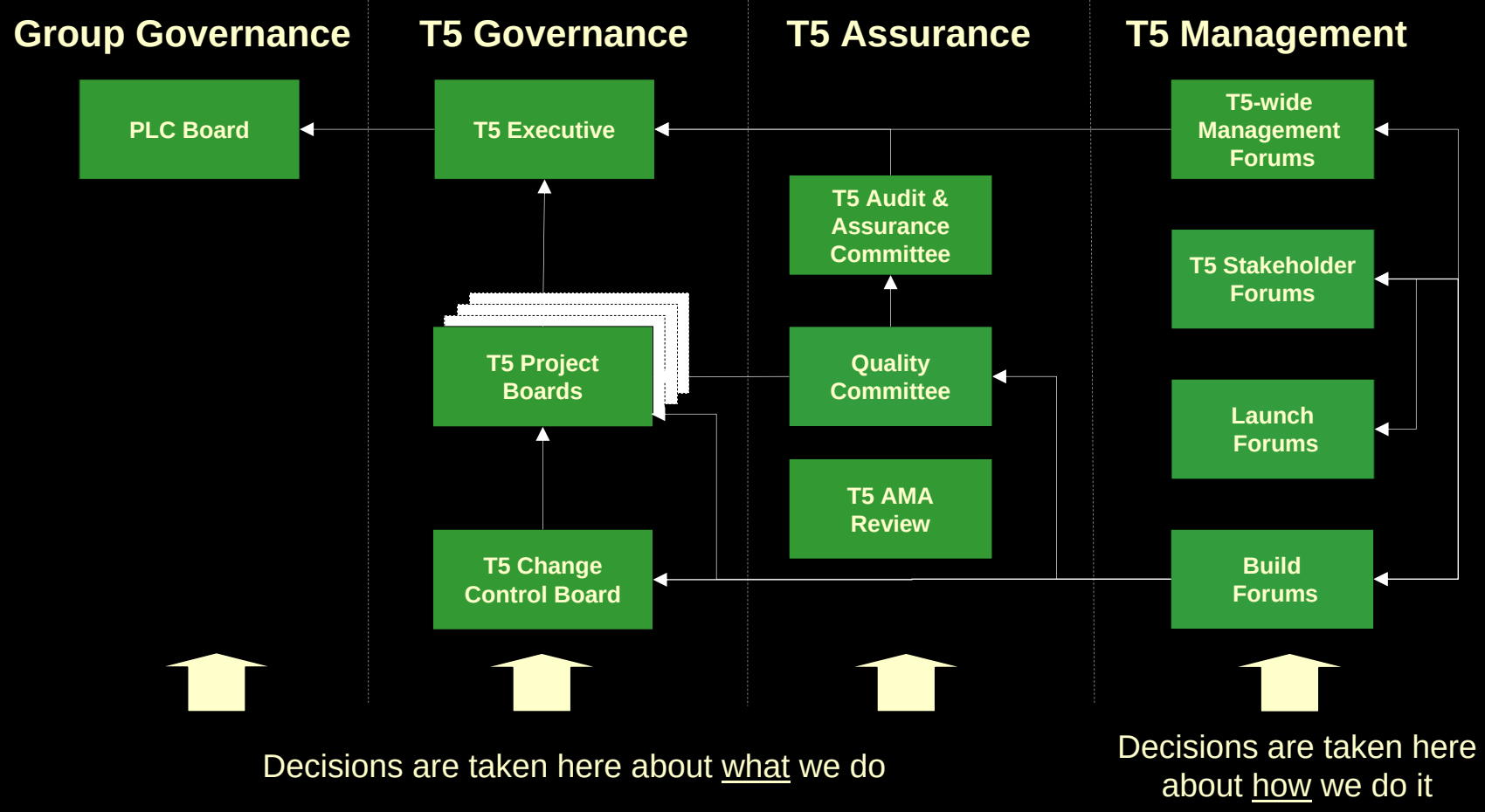
# Programme Governance

- Execution planning is at the core of how we manage T5:



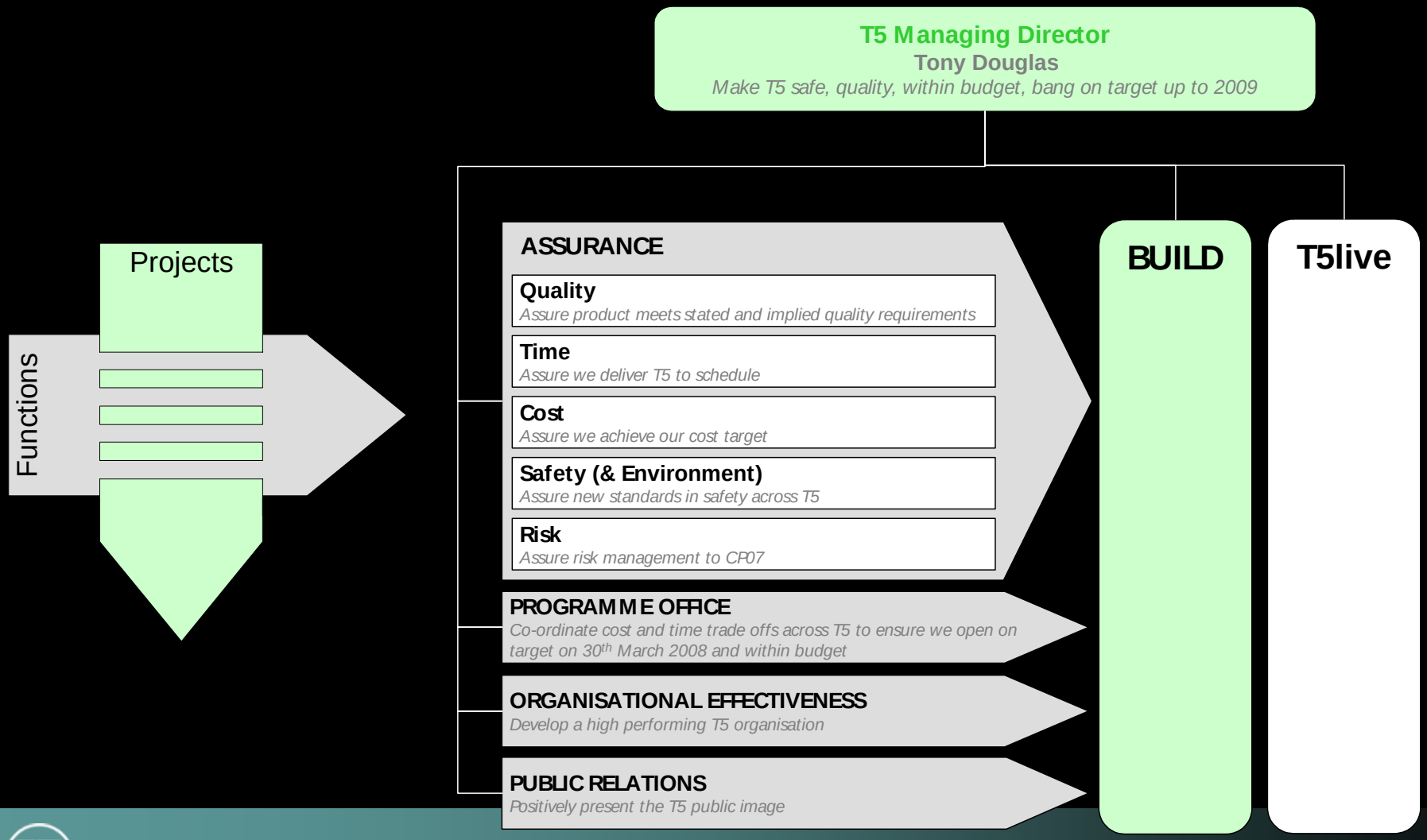
# Programme Governance

- Governance, Assurance and Decision Making



# Management Structure

## Matrix Management



# Programme Governance

## Core Processes

- CPO1 Project Requirements
- CPO2 Stage Approvals
- CPO3 Change Management
- CPO4 Execution Planning
- CPO5 Commercial Management
- CPO6 H&S Responsibilities and Appointments
- CPO7 Opportunity & Risk Management
- CPO8 Cost Management
- CPO9 Schedule Management
- CPO10 Performance Measurement

# 80 x ’08 Milestones

## History in the making.

80 x 08 SMART Milestones

| Activity ID | Due Date | Providing Team | Receiving Team | SMART Milestone Description |
|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

2004 2005 2006 2007 2008

Quality. Within budget. Bang on target.

Making T5 Safe

# What is Earned Value?

A Performance Measurement tool that enables us to determine the health of a project in terms of scope, time and cost against a defined scope of work

# Why Bother ?

Well, for good decision making, we need to know...

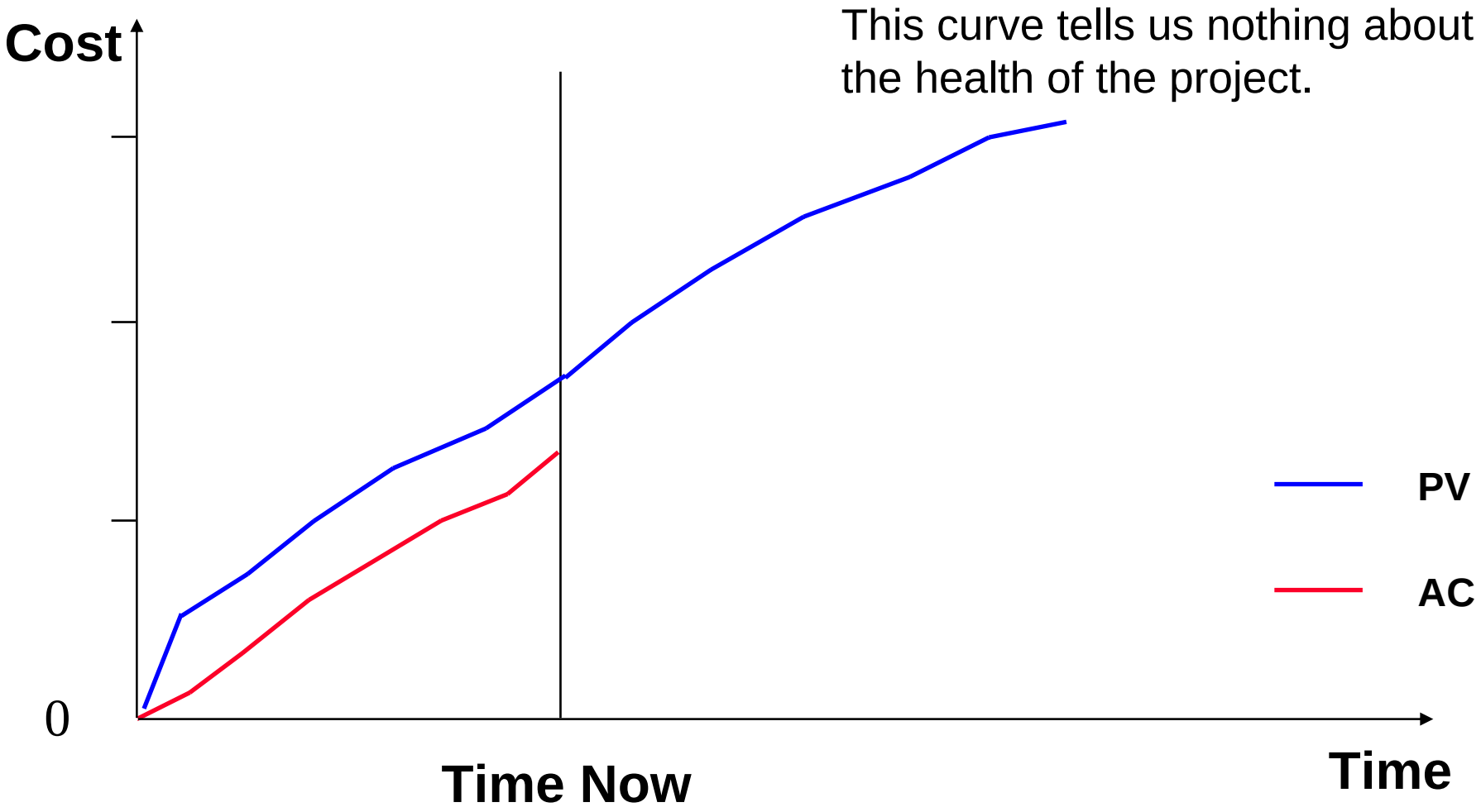
- What is the plan for Project execution?
- How is the Project progressing?
- What has the project achieved with the budget spent to date?
- What is the true final cost likely to be?
- When will the Project be complete?
- Can we trust the data in the reports?
- Are resources being employed effectively?

# Purpose Of Earned Value Measurement

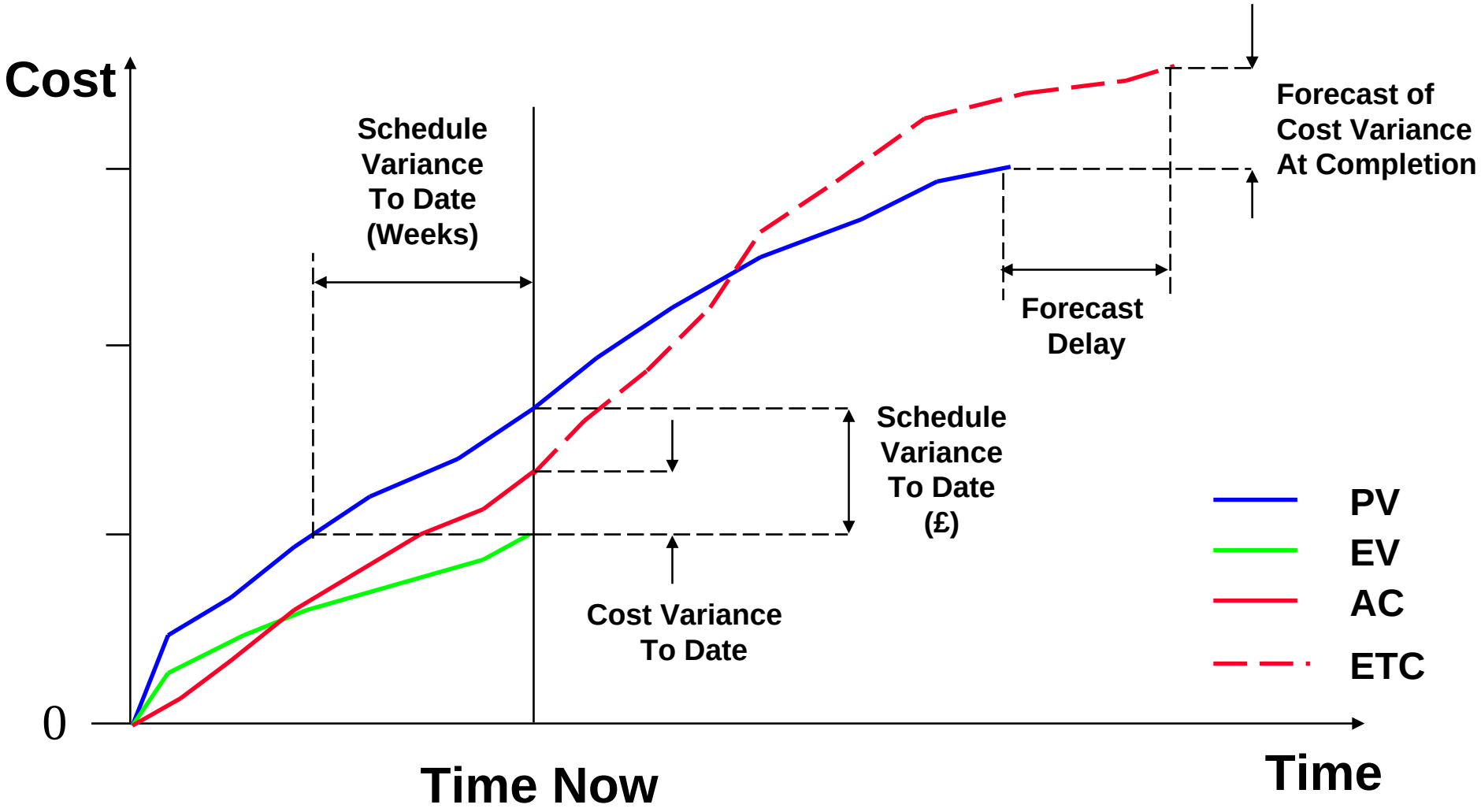
To determine:

- What has really been achieved of the plan
- What it has really cost to achieve the planned work
- If the work achieved is costing more or less than was planned
- If the Project is ahead or behind the planned schedule

# TRADITIONAL APPROACH



# EARNED VALUE CURVE



# Some basics

- Time and Cost should always be integrated
- Single database with integrated schedule
- Effective project controls on a project the size of T5 is not easy
- What we have now works well
- This type of solution is mandatory (and is the norm in Aerospace / Oil&Gas)

# What to measure

- Important things to measure are:
  - Actual Spend
  - Earned value
  - Schedule (Critical Path)
  - Budget
  - Change
  - Anticipated Final Cost
  - Risks and Opportunities

CPI

SPI

# T5 Overview - Lessons Learned

- Management challenge
- Performance Management
- Culture

- Sub Contracts
- Transparency
- Controls and Procedures