On Time, On Budget How Odd!
Heathrow Terminal 5 Project
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Agenda

• Why is Terminal 5 different?
• What is it?
• Difficult areas for present practices
• Risk and Opportunity
• Conclusions
Project Failures

- American Companies and Government agencies spent $81 billion on cancelled IT projects
- 31% of projects deemed complete failures
- 53% were late, over budget and did not meet expectations
- Only 9% delivered on time or within budget
- Only 16% considered successful
- Average time overrun 222% of original estimate
- 52.7% of projects will cost over 189% of their original estimates
- Projects completed by the largest American companies have only approximately 42% of the originally-proposed features and functions
- UK Government procured construction projects suffer on average 11% time overrun.

Why is T5 Different?

Heathrow’s Terminal 5 is on time and on budget. How odd
The Public Inquiry into the proposal to build a fifth terminal at Heathrow Airport started in May 1995 and finally finished after having sat for 525 days, in March 1999, making it the longest public inquiry in British planning history and at a cost of £80m in legal fees. The report was submitted to the UK Government 20th December 2000. Planning costs at risk were £320m.

The decision to go ahead was given on 20th November 2001 by Stephen Byers transport secretary and the terminal is expected to be completed by 04:00 on 30 March 2008.

Terminal 5 Project – What?

- A main passenger terminal and two satellites to handle 30 million passengers a year.
- The £4.2 billion complex would also include; service tunnels and roads, car parks, facilities for the next generation of 'super-jumbo' aircraft and a hotel.
- A complete transport interchange with its own high-speed rail and Underground links, bus and coach station and a spur road to the M25.
- Designed by Sir Richard Rogers, the terminal will feature a light, airy interior with spectacular views of the airfield. It will be spacious, elegant and user-friendly as well as functional.
- Offering the highest customer service standards for essential airport procedures and a range of facilities to enhance comfort and enjoyment, including shops and catering.
- Will provide an efficient and enjoyable airport experience for customers.
- All British Airways flights will be concentrated in Terminal 5.
- To deliver the Terminal 5 project within our Cost Plan and Programme.
- This will be done with sensitivity to the impact on the local community and with exemplary safety and environmental standards.
- The project will deliver the quality of facility and service described by the Project Brief with a satisfactory return on investment for BAA.
- BAA will implement the principles of the “Memorandum of Understanding” agreed with British Airways and work openly and constructively in the execution of a successful project.
- There will be fair reward for the achievements of our partners in delivering the project - and no surprises for our shareholders.
- By the time we’ve finished we will have created a new standard for project delivery in the UK

“The World’s Most Refreshing Interchange”

Mayor of London
Understanding what is meant by project success is crucial.
BAA Risk Principles

- BAA HOLDS ALL OF THE RISK ALL OF THE TIME
- USE OF INTEGRATED TEAMS TO HELP BAA MANAGE RISK
- RISK IS LINKED TO REWARD
- T5 HANDBOOK SETS OUT BASIC PRINCIPLES

Problem Areas

- Tame Problems
- Systems Complexity
  - Messes (Ackoff 1970)
- Behavioural Complexity
  - Wicked Problems (Rittel & Weber 1973)
- Wicked Messes (Roth & Senge 1996)
“TAME” Problems can be solved by linear or “waterfall” process.

**Problem Solving**

- Gather Data
- Analyse Data
- Formulate Solution
- Implement Solution

**Time since beginning**

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**Systems Complexity**

- Clusters of interrelated or interdependent problems
- Messes (Ackoff 1970)
“MESSES” meet the following criteria:

**Organisational Complexity** - clusters of interrelated or interdependent problems, or systems of problems.

*Messes* are puzzles; rather than solving them we *resolve* their complexities.

Cannot be solved in relative isolation from one another.

**Behavioural Complexity**

- Conflicting social ethics and beliefs
- ‘Wickedness’ (Rittel & Webber 1973)
“WICKED PROBLEMS” are characterised by:

An evolving set of interlocking issues and constraints - no definitive statement of the problem (no understanding of the problem until the solution has been developed).

Many stakeholders - the problem solving process is fundamentally social (getting the right answer is not as important as having stakeholders accept the solution).

The constraints (resources, politics) change with time - stakeholders come and go, change their minds or change the rules.

Since there is no definitive Problem there is no definitive Solution.

Words of Wisdom

“WICKED” Problems cannot be solved by linear or “waterfall” process

Problem

Solution

Time since beginning
Wicked Problem Solving

Resolving “WICKED MESSIES” is “SATISFICING” (H. Simon 1956)

Because of the number of stakeholders, changing constraints and dynamics of the problem, there is no ideal solution—it is “as good as it gets” or “good enough”

The Problem solving process ends when resource (time, money energy etc.) runs out!

Therefore we need a different approach when handling risk with respect to problems which are not Tame

Wicked Problem Solving

- Stakeholder Involvement
- Facilitated Workshops
- Timeboxing
- Objectives settings - MoSCoW Rules
- ‘Transparent’ communication across project
### Risk Assessment

**Quantitative**
- An attempt to apply meaningful and objective probabilities and subsequently consider and then quantify the potential of such risks in terms of time, cost and quality (Laxtons guide to risk analysis and management)

**Qualitative**
- Involves the registration of the identified risks, by ‘experts’ in a formal manner using subjective probabilities.
- Selection of stakeholders is critical to its success.
- Need to take into consideration Group Dynamics.
- Also used to identify Opportunities
Enterprise Risk Management – COSO

- Strategic – high-level goals, aligned with and supporting its mission
- Operations – effective and efficient use of its resources
- Reporting – reliability of reporting
- Compliance – compliance with applicable laws and regulations.

Committee of Sponsoring Organizations of the Treadway Commission
Development of Terminal 5 as a Wicked Mess

Summary Conclusions

- During strategic & initial stages of project we should expect a predominance of ‘wicked’ problems and less focus on technical and tame problems.
- The facilitator’s influence on outcomes in workshops is often underestimated.
- Present risk and project management practices underplay behavioural and systemic aspects.
- People are key to risk management and project success.
- Therefore do not under invest in your high worth assets.
Assessing Maturity of an Organisation

“The most important difference between Terminal 5 and other large building projects has been the approach to project management, and especially to risk”.

Tony Douglas T5 Managing Director
The Economist
18th August 2005
“Successful problem solving requires finding the right solution to the right problem. We fail more often because we solve the wrong problem than because we get the wrong solution to the right problem”.

Russell Ackoff, 1974

“When all you have is a hammer, everything looks like a nail”.

Japanese Proverb