From hero to hubris – Reconsidering the project management of Heathrow’s Terminal 5

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Abstract

Heralded as the first stage in the regeneration of Heathrow Airport leading up to the 2012 Olympics, the construction of Terminal 5 had bucked the trend. In a world where most mega infrastructure projects fail, the T5 project was not only on schedule, it was on budget. At its official opening by the Queen it was being trumpeted as the 21st century gateway to Britain. But multiple problems emerged on the opening day culminating in the cancellation of numerous flights and thousands of lost bags requiring manual sorting before being returned to their owners. What should have been an occasion for celebration turned into a national disaster. Using accounts drawn from the media, from a House of Commons Transport Committee report and material from research into the construction phase of the project, this paper examines the episode via two theoretical lenses – normal accident theory and high reliability theory.

Keywords: Normal accident theory; High reliability theory; Mega-projects

1. Introduction

It was all going so well. The construction of the Terminal 5 at London’s Heathrow Airport was good news – ‘History in the Making’ as an article in the Royal Academy of Engineering’s house journal put it (Kimberley and Jordan, 2005). Here was a mega-project that was on schedule and on budget since construction had begun, bucking all the trends of previous mega-projects. T5 was seen as the first step in the regeneration of London’s main airport in preparation for the 2012 Olympics.

Two weeks before it was due to go operational the Queen was at T5 for its official opening before an invited audience of the great and the good and representatives (managers and operatives) of the companies who had worked on the project. “It gives me great pleasure to open Terminal 5 – this 21st Century gateway to Britain and, to us, the wider world,” said the Queen. T5 was a dream facility that would end the nightmare that Heathrow can sometimes be and transform the travel experience according to Ruth Kelly, the Transport secretary. Owner BAA and customer BA (who were to be T5’s occupants) were also gushing with confidence. Terminal Five marks the start of a new beginning for Heathrow said Nigel Rudd, BAA’s Chairman. “Terminal Five is a fantastic facility and our customers will really enjoy the space, comfort and convenience it offers. With the opening of T5, BA and BAA have an opportunity to make air travel, both into and out of the UK, once again a calmer and much more enjoyable experience,” said BA chief executive, Willie Walsh.

So, after 19 years in the planning and construction, Heathrow’s Terminal 5 building was nearing the final whistle. Everyone was expecting a resounding victory. Instead, in the last minute of normal time, they score a spectacular own goal. On the day of its operational opening, March 27th, 2008, just two weeks after the Queen had been
officially opening the Terminal and those quotes above had been given, disaster struck. A combination of problems led to complete chaos with passengers unable to check-in hold baggage and 68 flights had to be cancelled. The headlines in the papers next day were uncompromising. In a reference to T5’s campaign about ‘Making History’, the Times piece was headlined ‘Making History? It is memorable but for all the wrong reasons’. The chaos continued into the weekend with more flight cancellations and baggage being lost.

This paper asks: How could this disaster have happened? We piece together accounts of the problems that ensued during the first few days of opening and contrast this with the promises that had been made beforehand. We examine the opening disaster through two theoretical lenses which have been used to explain other disasters and accidents – normal accident theory and high reliability theory. On balance, rather than this coming as a big surprise, we suggest that the events of the opening day should be seen as a ‘normal accident’ (Perrow, 1984), one which we might have expected, given the complexity of the system. Further we suggest that management in both BAA and BA became over-complacent to the extent that once they thought they had surmounted the considerable issues related to building such a vast and technologically sophisticated terminal they suffered from technological hubris (Hughes, 2004) and forgot about the people issues related to the successful functioning of any large technical system (Hughes, 1987).

This paper draws on three main sources: documentation such as reports and articles appearing in the general and construction press in the immediate aftermath of the disastrous opening; the House of Commons Transport Committee report – ‘The opening of Heathrow Terminal 5’ (House of Commons Transport Committee, 2008); and information collected by the authors during a study about the learning gained from involvement in the T5 project. In the next section we show how BAA and BA built up expectations for T5 in the years and months preceding the opening. We go on to analyse the events of the opening day and show how an accumulation of relatively small problems combined to create the catastrophic outcome. We then contrast the focus of the efforts to transform the approach to managing the design and construction phases of T5 with the management of the operational phase.

2. The promise of T5

In the years and months preceding the opening of T5, BAA and BA had been pushing out press releases which promised a massive transformation in the performance of Heathrow Airport. For example, on March 27th 2007, exactly 1 year before the scheduled opening date, a BAA press release was put out announcing that over 90% of the construction-related work had been completed and that the project remained on-time and on-budget. The plan was for BAA to hand over the terminal to BA in September 2007 for six months of proving trials, involving more than 16,000 members of the public who would be recruited to act as passengers to thoroughly test every aspect of the building including car parking, check-in, baggage systems, IT systems and security.

The press release (Distributed by PR Newswire on behalf of BAA plc, 2007) quoted Tony Douglas, CEO of BAA Heathrow (who had previously been T5 Managing Director) as follows:

“London is a world city, a global financial centre and needs a world-class airport. T5 is already a testament to the skill and hard work of the thousands of people, including architects, planners, construction workers, airport and airline staff, who have together made the building happen. With just 366 days to go there is still much to do, but we are confident we are on track to deliver a world-class experience that Heathrow’s passengers deserve.”

But, according to Douglas, T5 was only the start of creating the new Heathrow. He went on to say how

“...when T5 opens and 30 million passengers move out of existing terminals, for the first time we will have space to breathe in the central terminal area and have a once in a lifetime opportunity to redevelop the rest of the airport and bring it up to a comparable standard to T5. By 2012, we aim to have either re-built or redeveloped our existing facilities and returned Heathrow to its rightful status as the world’s leading international airport. We will be proud to welcome the world’s Olympians through our gates.”

Douglas’s optimism was matched by Willie Walsh, CE of British Airways:

“This is a historic breakthrough which will transform the airport experience for our customers. T5 will mean less queuing, faster baggage systems and better punctuality. For comfort and convenience, it will exceed the best you can find at any other airport. The next twelve months will be extremely busy as we continue with our preparations for the move. Our plans are on track and we will be ready for 27 March, 2008 when the first flights begin.”

These expectations continued to be built up during the year, and, at the official opening, two weeks before the operational opening, confidence was still high as we have seen from the quotes in the introduction. In one other memorable quote which he would no doubt come to rue, BAA’s strategy director, Mike Forster, said: ‘We have a world-class baggage system that is going to work perfectly on day one.’

But, even amid all the fanfares there were some qualification from senior people in BAA and BA. Andrew Wolstenhome, BAA’s Capital Projects Director – who was previously Project Manager of T5 was quoted in a construction industry journal thus:

“...
“There is a small amount of work still left to do and the final tuning can only be achieved when the building comes under full load. For that we need a hot summer and a cold winter at full capacity. But this is all quite normal for a project of this size and we are confident we have done all we need to do.” (Wright, 2008)

While David Noyes, BA’s Customer Services Director thought that “There will be some bedding down time but we do not think it will affect the customer experience in any way at all.” (Wright, 2008).

How wrong they were was demonstrated just two weeks later on the catastrophic opening day.

3. What went wrong?

Accounts in the press and BBC news website in the immediate aftermath of the opening day pointed to a series of problems rather than a single source of difficulties. The problems began when staff and passengers arriving at the new terminal at around four in the morning of 27th March had trouble locating car parks and car parking spaces. Apparently there was a shortage of specially designated spaces in some car parks. This was exacerbated because some staff overflow car parks were not open early in the morning. As a result some staff were stuck in their cars driving around seeking places to park when they should have been going through security checks before moving to the check-in desks.

The delays in finding appropriate parking spaces were compounded when staff reached the Terminal building itself. There were problems with signage. According to one BA check-in attendant who spoke to the BBC: “It took an hour for people to get to the right place. The place is so enormous, we don’t know where we’re going; we have been given no maps, no numbers to ring”.1 Some staff had difficulty finding the locations for security checkpoints which they needed to pass through to get ‘airside’. These delays were compounded by problems at the security checkpoints. Long queues started to build up at these security checkpoints.

Once staff had managed to find and get through security checkpoints they encountered other problems. Some workers in the baggage handling sorting area, for example, reported being unable to log on to the computer system. Others who had been provided with new hand-held equipment running the Resource Management System (RMS) which was supposed to allocate baggage handling staff to their duties – unloading or loading specific flights – found they could not operate the systems properly. This meant workers who had successfully managed to gain access to their work areas were unaware of the tasks they had been allocated. This affected both outgoing and incoming baggage.

BA staff that had managed to find parking spaces and to navigate their way around the new building to their check-in desks were unaware of the problems in baggage handling and continued to load more suitcases to the baggage system. With not enough baggage handling staff to take luggage off the underground conveyors, the system soon became completely clogged. This led to long delays in planes taking off waiting for the baggage.

Incoming planes were also subjected to delays in getting baggage handlers allocated to them so passengers faced long delays in picking up baggage before they could continue with their journeys after arriving at T5. By 16.30 the baggage system failed completely and all check-in at T5 was suspended. Long queues had formed at fast bag drop desks and BA suspended check-in of all luggage into the hold, as they tried to deal with the backlog of clogged bags.

These cumulative problems had led to the cancellation of 20 flights by lunchtime and by the end of the first day a total of 34 flights had been cancelled and thousands of passengers were left stranded. Further cancellations and delays occurred over the next few days.

The House of Commons Transport Committee report on the opening of T5 confirmed much of the media reporting on what happened but added more detail to some specific issues. Their list of problems included:

- search facilities for both staff and passengers (including transfer search) were not ready,
- staff facilities including parking were not ready,
- a number of passenger and staff lifts were either not fully commissioned or were unserviceable for use on the day,
- jetties to transfer passengers on and off the planes failed to perform as specified and caused frequent stoppages which meant maintenance crews having to reset the operating system on each jetty before they could be reused, leading to departure and arrival delays,
- regular, fixed electrical ground power units failed necessitating the unplanned towing of mobile power units around the apron,
- stand guidance systems were incorrectly calibrated requiring attendance by airfield signalling marshals,
- staff accommodation areas and staff access routes were not fully completed or fitted out,
- the automated temperature controls failed.2

4. How serious were the problems and how quickly were they resolved

In their oral evidence to the House of Commons Transport Committee in May 2008 and July 2008, and in written evidence, both BAA and BA were at pains to point out that many of the problems that occurred on the opening day

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1 BBC News website.  
2 See Q8 in House of Commons Transport Committee (2008).
were of short duration and had been sorted out fairly quickly. Their evidence to the transport committee on each of the aspects described the specific issues and their resolution as follows:

**Car parking:** there were some minor disruptions to staff car parking on opening day. According to a joint BA/BAA statement produced on the day, car parking problems affected no more than 60 members of staff, causing delays of less than 10 min.³

**Staff search and control points:** Delays of up to 20 min were experienced by staff passing through the ramp area control posts and the five staff search points situated in the terminal. The Apron North staff search post did not open to plan on March 27th due to a failure in the X-ray machine which was not rectified until 13.30 h. The plan for managing staff search points was devised in close cooperation between BAA and BA based on projected throughput requirements for each location, anticipated staff routes to workplaces and search flow rates demonstrated during pre-opening trials. On the opening day 40–50% more staff turned up than had been anticipated going through the South Apron search points. Furthermore, the trials did not factor in repeat entries by individuals, non-BA observers and retail staff who were instructed to report to work early. These groups contained many people using temporary passes, requiring manual physical searches through security which slowed the flow.⁴

According to BA’s CE, Willie Walsh, the staff central search area had been significantly improved, but was still not completely operating at the level BA would want – specifically he said that while there were enough BAA security staff now (in May), from time to time different security channels are either open or closed and that creates a problem… if BA staff go to one staff search area and it is closed, they are redirected to another one, which could be some considerable distance away. This delays them reaching their work locations on time.⁴

**Lifts and escalators not being operational:** On the first 28 out of the total of 192 lifts were not operational in passenger terminal areas on March 27th.³ By May 7th, 17 were still not working but it was expected that all but 4 would be operational by the end of May.⁵ Despite continuous testing prior to March 27th, 2 escalators out of 103 broke down on the opening day but were back in operation by 9.30 that day.³

**Jetties/airbridges:** BA said that all airbridges were available on opening day but that a number had been driven out of limits by BA staff due to lack of familiarity.³ BA pointed out the equipment was new. There were issues such as calibrating the equipment which had led to loss of power so it required engineers to correct and restart the equipment. Once people become familiar with the equipment the calibration problems disappeared, and BA agreed that the problems with the jetties had largely been resolved by May 7th.

**Baggage handling system problems:** during the opening day, the rate at which hold bags were being put into the BHS was far greater than the rate they were being loaded onto the aircraft by BA Baggage and logistics operations which eventually created a gridlock in the system. The system itself operated within design specifications. The test programme assumed that BA Logistics would move the full Unit Loading devices to the aircraft and load them. But on the opening day this did not happen. There were problems for staff trying to log into the baggage system which affected 48 ‘accounts’ which had been incorrectly set up on the system the day before. The problem was limited to eight members of BA staff and was remedied by 8.56 am on March 27th. The other problems related to log in failures were due to barcode passwords being generated incorrectly by BA. More than 26% of BA users were entering the wrong passwords on opening day causing the system to lock out the user after three unsuccessful attempts. BAA implemented a fast track password resetting process to solve this problem the same day.³ In his evidence, Mr. Terry Morgan, the then acting Managing Director of Heathrow, noted that the baggage handling system is very complicated and relied on people putting in bags, the system working and people taking out bags. The front bit and the bit in the middle were tested incredibly thoroughly in the lead-up to the opening. What was not tested as well as it should have been was the last bit, that is, getting the bags from the baggage hall to the aircraft.⁶

Willie Walsh pointed out that there were also some specific software issues related to the baggage handling system that created challenges on the first few days. The main one, which was a software filter that had been installed as part of the testing system, was identified on the Sunday – that is 30 March – and removed that day; so from 31st March that issue was addressed. A number of software problems that created problems were resolved within four days of operation.⁴ From the BAA point of view, Colin Matthews claimed that the software filter and reconciliation problems on the baggage handling system of themselves would not have caused major problems. The filter problem affected only a small number of bags between one specific terminal and another.⁶

According to Walsh, the baggage system was actually working very well by May 7th when he gave his evidence. The design criteria used was that there would be system-generated errors of no more than one bag per thousand passengers. During the trialling and testing of the system this was reduced to around five bags per thousand passengers. Since then that error rate had gone down to about 1.2, 1.3 per thousand passengers but BA and BAA were continuing to work to get it down to that design level.⁷

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³ See Ev 47 in House of Commons Transport Committee (2008).
⁴ See Q134 in House of Commons Transport Committee (2008).
⁵ See Q9 in House of Commons Transport Committee (2008).
⁶ See Q295 in House of Commons Transport Committee (2008).
⁷ See Q 143 in House of Commons Transport Committee (2008).
5. Theoretical perspectives on disasters

Two important theoretical perspectives on disasters – normal accident theory (Perrow, 1984) and high reliability theory (see for example, La Porte and Consolini, 1991; Roberts, 1993; Sagan, 1993) – help to throw light on what happened at the opening of T5. Both have emerged from studies of major accidents or disasters such as the Three Mile Island nuclear meltdown in 1979.

According to Perrow (1984), accidents are inevitable in complex tightly coupled systems. The complexity means that unexpected interactions occur between independent failures in a system. The tight coupling means that these interactions escalate rapidly and cause a system breakdown. It is the combination of the complexity and the tight coupling that makes such breakdowns inevitable and so Perrow refers to such occurrences as ‘normal accidents’ or ‘systems accidents’. Systems accidents involve the unexpected or unanticipated interaction of multiple failures in a complex system. The complexity may be technological, organisational or both.

High reliability theory, on the other hand, suggests that the effects of tight coupling and complexity can be overcome by the use of a variety of organisational design and management strategies which counter the effects. Such strategies include making safety the priority organisational objective; the decentralisation of decision-making to allow for prompt and flexible responses to unforeseen events; creating a culture of reliability which enhances safety by encouraging uniform and appropriate responses by field-level operatives; continuous operations, training and simulation to help create and maintain high reliability operations; and trial and error learning from accidents/near accidents both within the organisation and externally Sagan (1993).

Normal accident theory points out that safety is often just one of a number of competing objectives in a complex tightly coupled system; introducing redundancy into a system tends to increase interactive complexity, encourages the taking of risks (precisely because there are back-up systems, etc.) and paradoxically can cause accidents as a result; managing the complexity in system suggest a decentralised approach while tight coupling requires a more centralised approach – this leads to organisational contradiction; organisations cannot train people for unimagined situations and learning from the past is difficult because of denial of responsibility, faulty reporting and reconstruction of history.

6. Discussion

While the T5 opening has been called a disaster, this is mainly in terms of public relations. No-one was put at risk of death or serious injury because the system broke down on the opening day. As such, it is hardly comparable to Three Mile Island or Chernobyl. However, the approaches above are useful in trying to understand how the debacle of the opening day could have happened.

Earlier we showed that the chaos on opening day was the result of the interaction of several separate problems each of which, on their own, probably would not have had such a catastrophic effect. Operating a new airport terminal involves a very complex technological and organisational system. It is also a very tightly coupled system. According to normal accident theory the opening disaster was an inevitable consequence of these features of the system. But (Perrow, 1984) notes that while the causes of such accidents are relatively easy to see in hindsight, they are difficult to see in foresight.

In anticipation of having to deliver T5, BAA actually did try to develop some foresight by learning lessons from previous major projects. This is in line with what one might expect from high reliability theory. During the planning phase just prior to the project construction phase in 2002, BAA carried out a two-year in-depth study of every major UK construction project of over £1bn conducted over the previous 10 years and every international airport that opened over the previous 15 years. This benchmarking study found that no such major UK construction project had successfully delivered on time, within budget, and to the quality standards originally determined in the contract, and that few projects had good safety records. It also found that no recently built airport had opened on time. Based on its study of 12 major airport programmes, BAA concluded that without a radically different approach the T5 project would cost over £1bn more than was affordable, would be two years late and result in six fatalities.

BAA specifically identified two areas that contributed to the poor performance of mega-projects: the lack of collaboration among project partners and the client’s reluctance to assume responsibility for project risk. The study found that transferring the risk onto the contractor offered no real protection for the client, because the client is always ultimately accountable for cost, time, quality and safety. BAA recognised that the only way it could achieve the desired outcome on a major project was to change the ‘rules of the game’ (Interview with the T5 Project Director, 2005) by establishing a new type of partnership with its first tier suppliers.

BAA developed a novel approach for delivering T5 based on two principles:

- The client always bears the risk.
- Integrated project teams.

These two principles were codified in the ‘T5 Agreement’. The agreement represented a radical break from the existing practices in the construction industry. The use of integrated teams in the construction phase – a tightly coupled system – echoes the high reliability approach to decentralised decision-making. The project was broken down into 147 smaller sub-projects each consisting of a co-located integrated team which included people from different partner organisations such as BAA, main suppliers, design consultants and principal sub-contractors. The
integrated teams were co-responsible for the output and when they faced problems they were responsible for developing solutions to them at the local sub-project level.

BAA’s benchmarking research specifically identified poor systems delivery and integration during the final stage of project execution as the main reason why international airports failed to open on time. A further separate study undertaken by Nick Gaines, BAA’s Head of T5 Systems Integration, identified the integration of unproven high-technology components – particularly IT systems – during the final stages of systems delivery as a major cause of airport project failure. BAA sought to avoid this problem by using only mature technology during the systems integration stage. Any unproven technology was installed and tested in a different environment (e.g. a smaller airport) prior to its incorporation in the T5 programme. This approach was intended to avoid any big surprises. The baggage handling system, for example, which caused problems on the first day had been used in other European airports.

The principles in the T5 agreement were successfully applied in the construction phase of the T5 project and a major reason why the construction project was delivered on time and within budget. The approach shows many similarities to the high reliability systems approach. However, it appears that these principles were not always carried through in the same way into the test and operational phase of the T5 project. Of course, ‘project’ and ‘operational’ activities are quite different and require different skills, organisations and capabilities. It is precisely because of this that the transition from the project phase to the operational phase requires careful preparation (Davies et al., 2009). It appears that not enough attention was paid to this in the build-up to the opening. When asked by the Transport Committee to list the top five reasons for what happened on the opening day Colin Matthews, BAA’s CEO, said the most important was the need for the airport operator and the airline operator to be fully integrated. He said that while this appeared to be the case during the construction of T5, around or just prior to the opening of T5 it seemed that this togetherness deteriorated.

Perrow suggests that hindsight is often the only way to spot the causes of a normal accident (and even then it may be difficult). It appears there was no shortage of hindsight for the Chief Executives of BAA and BA when they gave their evidence to the House of Commons Transport Committee. In particular, both thought that they had placed too much faith in the testing regimes they had agreed for the new terminal.

“With the benefit of hindsight, we can clearly say that we were not successful in replicating in a test situation every aspect of the real-life situation, because the real-life situation created the problems which are well documented.” (Colin Matthews, CEO of BAA)

“With the benefit of hindsight, it is clear that we had made some mistakes. In particular, we had compromised on the testing regime as a result of delays in completing the building programme for T5 and the fact that we compromised on the testing of the building did impact the operation at T5 on the first few days after its opening.” (BA Chairman Willie Walsh)

The trial and testing regime adopted by BA and BAA once the building had passed into the operational phase in September 2007 contrasted strongly with the testing regime used in the construction phase when off-site testing of components and sub-assemblies was insisted on prior to acceptance. Pre-assembly techniques and off-site fabrication enabled T5 suppliers to manufacture, assemble and test components and practice their installation before being taken to the T5 site. Once tests were completed, the subsystem (e.g. sections of the T5 roof, chimneys and air traffic control tower) was disassembled and taken in the largest possible sections to the Heathrow site for final assembly. Around 70% of mechanical and electrical engineering components were manufactured off-site.

The failure of BAA and BA to function as an integrated team in the months leading up to the opening seems to have been addressed by BAA and BA in preparation for the remaining switchover from Terminal 4 to Terminal 5. A new regime of meetings was put in place between the two companies including:

- a daily T5 operations meeting attended by senior managers and their immediate teams to review the previous day’s operations and any issues arising from them,
- a weekly BAA/BA joint meeting to review the performance of the baggage handling operations in T5,
- a weekly BAA/BA meeting to assess progress in ensuring the remaining flights would be switched from Terminal 4 to Terminal 5 according to the timetable they had drawn up together.⁸

Had a similar schedule of meetings been in operation in the days leading up to and during the T5 opening perhaps it may have been easier to deal with the many small problems as they arose and the disastrous chain of events which unfolded might not have taken place.

7. Conclusions

Our analysis of the events of the opening of T5 has revealed many of the features associated with normal accident theory and with high reliability theory. While they are normally presented as conflicting schools of thought, and mutually exclusive, the two approaches sometimes reach similar conclusions (Ripma, 1997). The myriad separate problems that occurred on opening day interacted together to create system breakdown in much the way normal accident theory would have predicted. However, we also show how many elements of high reliability theory had been

⁸ See Ev 46 in House of Commons Transport Committee (2008).
applied during the construction phase of T5 but were not followed through to the operational phase. This was one of the most puzzling features of the case. We suspect that this failure can be understood by reference to what Thomas Hughes refers to as technological hubris (Hughes, 2004). Throughout the construction phase of the program a huge emphasis had been placed on delivering T5 on schedule. The T5 project headquarters office had clocks counting down from the time T5 was to become operational – originally 4 a.m. 30th March 2008 but which was subsequently brought forward to 4 a.m. 27th March. This deadline was treated as sacrosanct. Thus it became politically impossible to delay the opening even though concerns were raised about the state of operational readiness (as revealed by evidence to the House of Commons Transport Committee). Furthermore, it seems that many senior managers in BAA and BA were convinced that nothing could go wrong given the success of the construction programme. In another example of how hindsight is often the only way to understand the causes of accidents in tightly coupled systems we see how

“...with the benefit of hindsight we might have adopted a more humble position, given that track record, (of other airport opening disasters) and it was unfortunate that we created an expectation of perfection in what was an extremely complicated programme.” (Colin Matthews, BAA CEO in House of Commons Transport Committee, 2008)

Of course T5 is not the first complex project to suffer problems on launch day. Several high-profile IT projects come to mind. The London Ambulance Service computer-aided despatch system spent over five years in development but when it went live the system quickly became overloaded – slowing down and eventually locking-up altogether. At this stage the automatic back-up system should have kicked in but this too failed to operate. As a result of these operational difficulties, they reverted to a manual system (Flowers, 1996). Similarly, the Swanwick Air Traffic Control Centre had huge problems related to getting the system operational (House of Commons Environment, 1998). By the time the ‘state-of-the-art’ system was launched in January 1992 it was already six years overdue. The system was dogged by problems in the next year. The computer-aided despatch system spent over five years in development but when it went live the system quickly became overloaded – slowing down and eventually locking-up altogether. At this stage the automatic back-up system should have kicked in but this too failed to operate. As a result of these operational difficulties, they reverted to a manual system (Flowers, 1996). Similarly, the Swanwick Air Traffic Control Centre had huge problems related to getting the system operational (House of Commons Environment, 1998). By the time the ‘state-of-the-art’ system was launched in January 1992 it was already six years overdue. The system was dogged by problems in the next year. The overall systems which these IT systems were components in can both be considered tightly coupled systems. When problems arose in the IT systems they quickly escalated to cause major problems in the overall system. In both cases the faith of the procuring managers in these technical systems was evidently misplaced and in hindsight could be seen to have led to poor decision-making in the choice of systems developers and in the choice of going for tailored complex solutions instead of simpler off-the-shelf tried and tested software. They could be said to have been suffering from the same kind of technological hubris that we suggest BAA and BA managers succumbed to in the operational phase of T5. However, they differ from the T5 case in that the implementation phase of the T5 project was successfully completed on budget and to schedule whereas the IT projects were either over-budget and significantly late (Swanwick) or of such poor quality that they had to be abandoned (London Ambulance). Although we have only considered a single case in this paper, it is possible that research into other major project failures might also reveal similar levels of technological hubris which contributed significantly to their problems.

Despite the problems of the first few days at Terminal 5, it now appears to be operating well. But ‘Terminal 5 Working as Planned’ does not grab many headlines. The damage done to the reputations of BA and BAA will take a lot longer to repair than the minor faults that emerged back in March 2008.

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