

**Reflexive Governance in the Public Interest (REFGOV) –
Democratic Governance and Collective Action (DEMOGOV)**

27-28 May 2010 – Brussels

**Systemic Deliberation, Social Dialogue and Contractual Learning:
The Case of Terminal 5**

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Abstract

Material drawn from an in-depth case study, the construction of Terminal 5 (T5) in London's Heathrow Airport, is deployed to examine the development and impact of learning both within and between the subsystems of corporate governance, utilities regulation, multi-firm contracting and industrial relations in large construction projects. We develop a theoretical model, drawing on systems theory, which clarifies the role played by social dialogue and deliberation in generating collective learning in the context of contractual relations. The T5 case study demonstrates how innovation in contractual design can improve performance outcomes in large, complex projects, but it also highlights the dangers of excessive reliance on formal contractual mechanisms as a solution to coordination problems, and the corresponding importance of social dialogue as a basis for learning.

I. Introduction

Based on the adoption of an 'internalist' approach to learning and governance that stresses the importance of communicative processes, dialogue and deliberation, a call has been made for a progressive extension of the institutional devices that must be established to make possible the learning necessary to the success of the operations of choice that will determine collective action. Empirical work can provide a context in which to explore the feasibility of such approaches that emphasise the importance of engaging multiple stakeholders and promoting deliberation, self-evaluation and self-correction. Material drawn from an in-depth case study, the construction of Terminal 5 (T5) in Heathrow Airport, is deployed to examine the development and impact of learning both within and between the subsystems of corporate governance, utilities regulation, multi-firm contracting and industrial relations in large construction projects. T5 took around 20 years to plan and build and started operations in March 2008, six years after construction started. Its opening was marked by confusion and controversy. As a construction project, however, T5 was highly successful. It was based on a novel approach to risk-sharing between client and suppliers and it

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² University of Warwick. An updated version of the paper is published as: Reflexive Approaches to Corporate Governance: The Case of Heathrow Terminal 5, in O. De Schutter and J. Lenoble (eds) (2010) *Reflexive Governance: Redefining the Public Interest in a Pluralistic World*, Oxford: Hart Publishing, pp. 97-114.

incorporated innovative mechanisms for dialogue and monitoring between the actors involved, i.e. the client, suppliers and trade unions. There is evidence that these arrangements contributed positively to a number of successful project outcomes, above all the completion of the construction work on time and on budget, an above-industry health and safety record, and virtually no time lost to disputes.

The case demonstrates how attempts to build a ‘systemic’ approach to the project revolved around the interactions between a wide range of actors and processes in and beyond the contractual arrangements. But the present empirical material is based on a specific case, where the environment, as formulated by the subsystems, was conducive to the kind of developments described above. On the basis of our theoretical approach and the T5 empirical results, we show that the absence of mechanisms of ‘structural coupling’ between the different subsystems limited the capacity for collective learning in this case. The effect was to make it difficult for the success of T5 to be replicated in other contexts. The first half of the paper explores theoretical advances concerning learning processes in contractual governance practices and compares them to neo-institutional approaches to collective action. The second half illustrates this approach through a study of the construction of Heathrow T5.

2. Theoretical framework

2.1 ‘Systemic deliberation’ and social learning in contractual governance

In the work that has come to be labelled neo-institutional economic theory, there are certainly important differences among theorists in the nature of their assumptions and in the focus of their analytic intention. However, the main thrust of the theory concerning governance embraces orthodox conceptions of rationality or slightly broadened assumptions, but seeks to apply economic arguments to account for the existence of organisations and institutions. In this context, institutions are considered as resting primarily on regulatory processes, that is ‘processes that involve the capacity to establish rules, inspect others’ conformity to them, and as necessary, manipulate sanctions – rewards or punishment – in an attempt to influence future behaviour’ (Scott, 2001: 52). Three more or less common themes underlie and link the contributions made by key neo-institutional economists, mainly Simon (1945), Coase (1937), Hayek (1948), Schumpeter (1926), Nelson and Winter (1982): first, a broad conception of the economic agent is embraced, replacing the assumption of maximising within a set of known alternatives; the focus is on the study of economic processes rather than on the purely logical study of equilibrium states and it is recognized that economic systems evolve over time reflecting, in part, learning by agents; and the coordination of economic activity is not simply a matter of market-mediated transactions, but involves many other types of institutional structures that are, themselves, important topics of study (see Langlois, 1986; Knudsen, 1993). Importantly, it is suggested that efficiency can be enhanced through the external ordering of behaviour. Institutions put in place incentive structures which are considered, in themselves, to be sufficient for ensuring coordination. The criterion of ‘success’ of this mode of governance refers to the extent to which ‘co-ordinated self-regulation’ can by itself lead to ‘optimal’ institutional design in contractual arrangements.

As a result of the neo-institutionalist analysis an increasing number of economists now accept the premise that ‘organisation form matters’ (Williamson, 1985: 274): the structural features of organizations, the specifics of their governance structures, affect economic processes and outcomes (Scott, 2001: 207). However, most neo-institutional economists still seek not to replace orthodox (standard) economic theory with the study of multiple and diverse institutional conditions but rather to develop an economic theory of institutions. Langlois (1986: 2) has, for example, pointed out that the new economic work ‘reflects less the ideas of the early institutionalists than it does those of their opponents’. This is evidently clear in the adoption of an ‘externalist’ conception of learning and an ‘externalist’ conception of governance (for a critical review, see Lenoble and Maesschalck, 2006). Whilst trying to go beyond the inadequacies detected in the theory of natural selection that underpins neo-classical economic theory, coordination in neo-institutionalism is not considered spontaneous, but rather requires external ‘hierarchical framing’ (Brousseau, 1999) or some external integration, i.e. ‘integrated coordination’ (Marengo and Dosi, 2005).

It is concerning this ‘externalist’ approach to learning that alternative approaches to governance are distinguished from neo-institutionalism. The main approaches presented here are the ones that could be termed as ‘systemic/reflexive’ or ‘pragmatist/experimentalist’.³ The first, ‘systemic/reflexive’ has largely developed based on the advances in system theory made by Luhmann (1995) and Teubner (1993). As a result of the operative closure of autopoietic systems, system theorists have suggested that ‘the system can only deal with its own internal construct of the environment’(Teubner, 1993: 74).; hence the influence from one system on another can only be understood by the latter through a translation in the proper language of that system. The specific role of social systems then is to ‘contribute to the emergence of forms of *meaning* through which the complexity of the world can be understood’ (Carvalho and Deakin (2007: 8, emphasis in original). In the context of governance structures, this approach emphasizes the need to facilitate communication, deliberation and participation among key stakeholders with interests in the organization in question. The assumption is that institutional design will be incomplete, *ex ante*, and that effective coordination, in addition to or perhaps in substitution for institutional structures, are conscious development of processes and mechanisms for collective learning among the actors. In this context, law has also a role as responsible for providing a resource of information about solutions to bargaining problems and assisting the parties to achieve contractual cooperation (Carvalho and Deakin, 2007: 4). The criterion of ‘success’ of this mode of governance refers to the extent to which, in spite of conflicting notions of the meaning within each sub-field, common understanding or some form of consensus can be achieved through dialogue.

³ Beyond these approaches, Lenoble and Maesschalck (2007: 7) have developed and espoused the so-called ‘genetic’ governance approach. According to the authors, ‘the term ‘genetic’ is intended to take account of two factors: on one hand, the set of conditions for production (that is, engendering) of actors’ capacity to carry out the ‘reflexive’ return required for the success of the learning operation; and on the other hand, the setting up of institutional conditions likely to guarantee effective implementation of the actors’ commitments.

The pragmatist/experimentalist approach suggests a role for more specific mechanisms for effective coordination and learning among the actors such as benchmarking, monitoring and audit (Dorf and Sabel, 2002) or cognitive reframing (Argyris and Schön, 1996) as bases for learning. According to Sabel (2005), the real test of a cooperative mechanism is its capacity to lead to effective changes in behaviours by developing mechanisms that, in incorporating discussion of the new possibilities produced by cooperation, strengthen the process of cooperation under way and thus reduce uncertainty to its continuation. What is sought, in this approach, is twofold social learning: the social learning that results directly from participating in the cooperative search for solutions within a process of local experimentation, and the learning that results from evaluating and comparing different local solutions at the level of the framing mechanisms. Through a shared will to ‘internalise’ the conditions for success of the learning operation, these approaches aim at building consensus as to the nature of governance problems and how to address them. The criterion of ‘success’ of this mode of governance refers to the extent of development of the capacities of stakeholders to actively engage and participate in social dialogue and experimentation, and thereby to contribute to the process of learning.

In both approaches, learning is viewed as a continuous and active process of adaptation and construction in which knowledge is developed through a permanent feedback loop between the system and its environment.⁴ From an organisation theory perspective, the potential of the organisation to learn through feedback on the consequences of its action has been emphasised by Argyris and Schön (1996) through the concepts of single and double-loop learning. Single-loop learning implies a general tightening and improvement in current procedures and changes in existing organisational rules largely at program level. In double-loop learning, which puts into practice a kind of meta-learning strategy, the features of learning expand and include rethinking of existing rules according to why things are being done; it involves understanding reasons for current rules and then questioning these reasons. Hence it implies that a completely new set of dynamics becomes possible in the whole process of learning: organisations start to change the framework of reference (Pesch, 2008: 138).⁵ Finally, there is also the potential for triple-loop learning (Swieringa and Wierdsma, 1992) which leads to questioning the rationale for the organization as a whole, particularly the mixture of internal desires and identity, and the relationships with the external environment.

Based on this elaboration, the single-loop process is arguably compatible with an ‘optimization’ strategy in line with a neo-institutionalist approach to governance, i.e. the objective is to search for an optimum in an already pre-structured space of solutions (Pesch, 2008: 139). Any activities pursued add to the knowledge base or firm-specific competences or routines of the organisation without altering, however, the nature of their activities. Instead, the double- and triple-loop processes are

⁴ According to Argyris (1976: 365), learning is defined ‘as the detection and correction of errors, and error as any feature of knowledge or of knowing that makes action ineffective. Error is a mismatch: a condition of learning, and matching a second condition of learning. The detection and correction of error produces learning and the lack of either or both inhibits learning.’

⁵ Sometimes double-learning is equated with Bateson’s ‘deutero-learning’. However, Argyris and Schön (1974) have made a distinction between double-loop learning and deutero-learning. They understand deutero-learning to mean second-order learning, reflecting on the first-order actions. Deutero-learning can take place by going meta on single or double-loop learning (for this point, see Argyris, 2003: 1179).

compatible with a process of learning akin to the one advocated by the systemic/reflexive approaches. The ultimate objective is to steer, through adequate structures, an evolution away from over-rigid or mechanical notions of governance towards more reflexive conceptions involving social learning processes. In this context, the solutions found have the potential to bring forth fundamentally new knowledge and insights or understanding through reflection and dialogue. Further, the method being applied in the process of double-loop learning is the technique of reflection: a process of radically questioning the premises and studying their implications on the organisation and on the dynamics of learning through an invitation for dialogue between the parties. Instead, in single-loop learning as in neo-institutional accounts of governance mechanisms, the parties are expected to be articulate about their purposes and goals and simultaneously control the others and the environment in order to ensure achievement of their goals (Argyris, 1974: 369).

2.2 ‘Systemic’ interaction between the systems of corporate governance, utilities regulation multi-firm contracting and intra-firm relations in the UK

As analysed above, the promotion of ‘internalist’ learning-based approaches to governance structures can bring about a form of structural coupling or productive ‘misinterpretation’ both at intra- and inter-systemic levels. In large construction projects, the systems of corporate governance, utilities regulation multi-firm contracting and intra-firm contracting, more particularly the relationship between management and labour, constitute the main subsystems relevant to the operation of contractual governance structures; as such, changes taking place both within and across systems can influence the project’s performance.⁶ It is important to stress here that, although it is theoretically possible for each social system to reconstruct every other system according to its own procedures and to attribute its own meaning to that system, the relationship between social subsystems, as developed by system theorists, is not necessarily one of equality. Those systems which are widely accepted as defining meanings for the whole of society, e.g. economics, politics, science and law in post-industrial Western societies, are in a much more powerful position than others (King, 1993: 231).⁷

2.2.1 Corporate governance

Core institutions of UK corporate governance, in particular those relating to takeover regulation, corporate governance codes and the law governing directors’ fiduciary duties, may be seen as strongly orientated towards shareholder value, mergers and formal joint ventures with suppliers and weak employee voice mechanisms. More particularly, the City Code on Takeovers and Mergers (Takeover Panel, 2006) maintains a regulatory regime which operates in favour of institutional shareholder interests (Deakin and Slinger, 1997; Deakin *et al.*, 2003). In contrast to the situation in so-called ‘coordinated market economies’, priority in large scale firms in Anglo-Saxon economies is placed on maintaining the level of dividends and, where possible,

⁶ In this context, ‘governance structures refer to all these arrangements by which field-level power and authority are exercised involving, variously, formal and informal systems, public and private auspices, regulative and normative mechanisms’ (Scott *et al.*, 2000: 172-173).

⁷ Teubner (1989: 749) has spoken of ‘the enslavement’ of the knowledge of one meaning system by another that may arise in situations when certain systems have acquired a more powerful position than others.

distributing surplus cash to shareholders via share repurchases. Along with wide dispersion of share ownership in the case of listed companies, the Takeover Code underpins a market for corporate control as a means to overcome the limited power of shareholders to coordinate their action and intervene directly with management in which managerial under-performance leads to shareholder exit and consequent changes in ownership and control.

The concern among incumbent management of being substituted guides them to pursue shareholders' goals (Pendleton and Gospel, 2005: 62) and subsequently makes it difficult for British firms to build 'partnership arrangements' with their suppliers and workforces (for the latter, see Edwards, 2004: 526). With regard to suppliers, UK firms may prefer mergers and joint ventures instead of relational contracting as a means to achieve coordination (Lane, 1997). Concerning employees, large enterprises, when in distress, tend frequently to cut labour costs to maintain profitability so as to secure continuing access to capital markets, retain credit ratings and defend against takeovers (Gospel and Pendleton, 2003: 559). As a result, waves of restructuring in British and American firms since the early 1980s have undermined the 'implicit contracts' which once provided for job security and long-term career progression (Schleifer and Summers, 1988: 41-2).

2.2.2 Utilities regulation

The basic design of utility regulation in the UK has been that of regulation as a form of bilateral contract between regulator and dominant regulated firm, the latter being in practice the enterprise being privatised after having benefited from a legal monopoly. As it will be seen below, this is the case with regard to airport regulation and the position of BAA. Under this model, regulatory decision making has traditionally played minimal attention to the interests of suppliers and the workforce (Prosser, 1999: 208). Whilst there is no direct reference to the interests of such actors, the potential that UK public listing firms may behave against the trends identified above concerning corporate governance, i.e. emphasis on shareholder value, mergers and formal joint ventures with suppliers and weak employee voice mechanisms, still exist. Firms that operate in sectors where services and products for end users are regulated have sometimes stable and active relationships with suppliers and are committed to employment security, career opportunities and human capital development. In this context, scope effectively remains for managers to respond to shareholder pressures in creative ways that reflect the need to engage with a wider range of constituencies, including other firms and employees.

Deakin *et al.* (2006) examined the evolution of labour-management partnerships in the utilities and manufacturing during the 1990s and early 2000s, finding evidence that enduring and proactive partnerships could develop, in conditions where management was able convince shareholders of the long-term gains from this approach, and where regulatory factors operated to extend the time-horizon for financial returns. In particular, they found that regulation of product and service quality, of the kind observed in most utility sectors and in certain others, favoured the emergence of stable partnerships. This is because in these markets, profitability was linked to the ability of companies to maintain a high and consistent quality of products and services for end users. As a result, companies were better able to convince shareholders to take the view that they would reap significant returns over the long term from a stakeholder approach. But, when such conditions were absent,

partnership arrangements were found to be highly vulnerable to shareholder pressure, no matter how much goodwill was invested by labour and management (Deakin *et al.*, 2006: 171). Hence, a form of interference can be established between the form of regulation and corporate governance that can lead to the emergence of a network of relations involving the dominant firm, its competitors, and others such as employees and suppliers.

2.2.3 Inter-firm relationships: multi-firm contracting

In standard economic theory, both the structure and the quality of inter-organisational relationships have been explained primarily as a result of rational decisions made by economic actors who are affected by neither the intrinsically inter-subjective nature of relationships nor the dynamics that occur when relationships develop over time. The development of neo-institutional economics, mainly transaction-cost economics (e.g. Williamson, 1985) and game theory (e.g. Axelrod, 1990) in the 1970s, provided scope for moving beyond the explanations provided until that time and for widening the analytical scope. However, as Bachmann (2003: 8) observes, ‘on closer inspection, these approaches have continued to neglect either the social learning processes within longer-term relationships (transaction-costs economics) or the dimension of the social embeddedness of interorganisational relations (game theory)’. Such considerations have an impact on the institutional framework required for managing the risks inherent in such relationships. In this context, it is deemed that traditional contract forms are prescriptive in the duties and roles that parties undertake which is acceptable when the tasks are known and understood but of little value when dealing with evolving ends and means (Lane and Bachmann, 1996).

Large construction projects usually take place in a multi-firm site and require high levels of coordination of interdependent activities that are performed by separate employing organisations covering engineers, surveyors, contractors and employees, all engaging in a complex process of contracting and sub-contracting. As such, the legal and organisational relationships developed are extremely complex. This particular configuration of construction work, with long-standing divisions between disciplines and organisations and accepted ways of working, may obstruct attempts to promote forms of cooperation and communication links between firms themselves, and introduce new initiatives (Harty, 2005: 521). In fact, this complexity may cause and sustain the adversarial nature of the projects and have negative impact on intra-firm relationships as well, such as those between management and employees. Parties may seek to gain advantage (financially or otherwise) at the expense of other parties, such as other suppliers or the client, with the supposedly common cause of construction merely providing the medium for such struggles (Lewis *et al.*, 1992: 74). Provided that governance structures promoting the building of consensus as to the nature of the challenges are promoted by the client and the suppliers, they may provide the necessary incentives for the development of cooperative working relationships between project participants for projects of limited life and budget.

2.2.4 Intra-firm relations: management and employees

The mechanisms of corporate governance intersect with the institutions of labour law and industrial relations at two levels: one, the level of the firm, is concerned with the constitution and governance of the enterprise, and with the influence of employees within managerial processes. The other, the level of the market, is concerned with how far basic employment conditions are regulated across the labour market as a

whole, or alternatively, left up to individuals or collective agreement in particular sectors or firms (Alhering and Deakin, 2005: 8). Concerning the former, i.e. firm level, the predominant form of employee representation in the UK is collective bargaining between employers and trade unions. However, in contrast to the wider range of issues subject to consultation in countries with so-called coordinated market economies, collective bargaining in the UK is mainly confined to wages, hours and terms and conditions of employment and does not extend to the core areas of managerial 'prerogative' (Wedderburn, 1986, ch. 4). Concerning the latter, i.e. market level, a partial approach to regulation has been adopted: 'the tendency has been for statutory regulation to impose only minimal constraints on the employment contract outside those sectors which are governed by collective bargaining' (Alhering and Deakin, 2005: 8). But, as a result of the plunge in the proportion of employees covered by collective agreement, declining union membership rates and contraction in the scope of bargaining (Kersley *et al.*, 2006) the partial character of labour market regulation has been accentuated.

Some of these features are arguably reflected in the nature of industrial relation in the construction sector in the UK. The sector has not, in recent years, enjoyed a reputation for harmonious industrial relations. It has been associated with casualization of employment, use of agency labour and 'fake' self-employment, a comparatively high level of labour disputes, declining coverage of collective agreements (Kersley *et al.*, 2006: 110, 119), a dilution of training, a relatively poor health and safety record, and a low level of awareness of equality and diversity issues. By contrast to construction, electrical contracting is a sector in which multi-employer national bargaining has remained relatively strong. It is distinctive both in the scope of application of its agreements and in the standards that it sets and there has been continuity in support for the collective agreement and for the Joint Industry Board (JIB) (Gospel and Druker, 1998: 249). The JIB regulates and controls employment and productive capacity, the level of skill, and wages and benefits of persons employed in the industry.

In the context of large projects and as a result of multi-firm arrangements it is very common to come across situations in which workers employed by different organizations, or by agencies, work alongside each other at the same workplace, often employed on quite different terms and conditions, leading thus to a blurring of organizational boundaries (Grimshaw *et al.*, 2005).⁸ This fragmentation is partly the result of the traditional conception of the legal framework surrounding the employment relationship as involving a single employer and a single employee. Common law rights and duties as well as statutory employment regulation are largely predicated upon the notion of an 'employee', as legally defined, working for a single

⁸ The degree of internalisation has been an area of interest for neo-institutionalist, such as Williamson (1985). Based on an exploration of transaction costs, theorists that adhere to this theoretical stream argue that internalisation is favoured where the transaction costs of an open-ended employment contract – in which an employer exercises authority over workers within customary and legal limits – are assessed to be lower than the detailed specification of the tasks in a contract for self-employed workers or a subcontracting company (Simon, 1976). Institutionalists have explained the rise of the internalised employment relationship as evidence of the successful resistance by labour to the casualization of employment relations associated with non-internalised systems (Grimshaw and Rubery, 2005).

employer.⁹ As a result, in multi-employer workplaces, ‘worker voice typically becomes fragmented and divided, and in some cases muted altogether’ (Marchington and Rubery, 2005: 138). From 2004, legislation in the form of the Information and Consultation of Employees Regulations (ICER)¹⁰ came into force requiring all firms above a certain size to have information and consultation mechanisms in place, although this law does not mandate continental European-style works councils or enterprise committees, and, indeed, leaves it open for managers and unions to continue with the single-channel model collective bargaining where they see it as in their interests to do so. But the representative structures put in place under ICER, as in other information and consultation laws,¹¹ are designed for single-employer units, and so cannot be easily adapted to workplaces where subcontracting as well as the use of agency and self-employed labour are the norm.

3. T5 as an example of inter- and intra-systemic learning

The analysis in the previous section painted a complex picture of the relationship between the four subsystems relevant to contractual arrangements in large construction projects and the potentiality for social learning through ‘systemic’ deliberation at inter- and intra-systemic level. In order to illustrate how such deliberation may lead to the development of a dynamic learning model and influence, in turn, contractual performance we draw evidence on the construction of Heathrow Terminal 5. At first site, multi-firm construction projects such as T5 look like an unlikely candidate for arrangements capable to promote ‘systemic’ deliberation. This, at least, is the conventional picture. The experience of T5 suggests, however, that this is not an inevitable outcome. As it will be seen, the structures put in place at T5 challenge conventional understandings of what governance structures can achieve in four different subsystems: corporate governance, utilities regulation, inter-firm contracting and intra-firm relationships. In effect, productive coupling was developed between the subsystems that led to a successful outcome for the project. While the flexible framework put in place promoted a capacity for adaptation within and across the relevant subsystems, the absence of wider feedback mechanisms meant, as we shall see, that the outcome is, however, not replicable. In promoting a systemic perspective, the study ultimately provides an alternative to the view that governance structures is about structures put in place through a contract, an alternative that focuses on the interactions within and across systems through which established roles, distinct disciplines and traditional cultures overcome in certain cases conflicting interpretations and engage in a process of social learning and development of capabilities. In this context, the notion of systemic deliberation offers a way to identify instances of structural coupling by which systems interact with the

⁹ There have been few studies that conceive of industrial relations beyond organisational boundaries (for an exception see Marchington *et al.* 2005).

¹⁰ The Information and Consultation Regulations 2004, SI 2004/3426.

¹¹ Legislation imposes information and consultation requirements in respect of certain events, such as impending redundancies (Chapter II, Part IV of the Trade Union and Labour Relations (Consolidation) Act 1992 (TULR(C) A 1992), as amended) and transfers of undertakings (The Transfer of Undertakings (Protection of Employment) Regulations 2006, SI 2006/246) and in respect of multinational companies through the European Works Council model (Transnational Information and Consultation of Employees Regulations 1999, SI 1999/3323).

environment and enables us to recognise the complexity of the contexts for governance structures.¹²

Evidence on the establishment, operation and impact of the MPA and related agreements was available to us in the form of in-depth, semi-structured interviews with managers at BAA and some of the construction and engineering companies involved in T5, along with employer and employee representatives who took part in the processes set up under the MPA and SPA. In detail, the following individuals were interviewed: BAA industrial relations (IR) manager, ECA official, Unite regional officer, T5 IR manager, Crown House IR manager, AMEC IR manager, Balfour Kilpatrick IR manager and two T5 designated representatives.¹³ The research was carried out between the autumn of 2006 and the summer of 2008. We also made use of public statements of the principal employers' associations, trade unions and BAA, and published audit reports conducted by the independent consultant Baker Mallett for the MPA Forum.

3.1 Corporate governance, utilities regulation and the emergence of the T5 agreement

The T5 project started during a period in which the principal client, BAA plc, was still a listed company. BAA's governance arrangements, as a regulated utility, are complex, and evolved further in the course of the T5's construction. BAA was established by the passing of the Airport Authority Act 1986, to take responsibility for four state-owned airports.¹⁴ The Airport Act 1986 commercialized 16 local authority owned airports and transformed the British Airports Authority from a government-owned corporation into BAA plc.¹⁵ A key aspect of the Act was the introduction of the economic regulation of airport charges, principally to protect the airlines from monopoly charging behaviour by the airports. The three main London airports – Heathrow, Gatwick and Stansted – and Manchester airport have been subject to price caps on their aeronautical charges imposed by the Civil Aviation Authority (CAA). The price cap formula is set every five years and reviewed in the light of forecast revenue. In February 2006, BAA was approached by Grupo Ferrovial, a leading partner in a consortium, which declared an interest in acquiring BAA. In June 2006, Ferrovial officially took control of BAA after gaining 83% of its shares. In August, BAA was de-listed from the London Stock Exchange, where it had previously been part of the FTSE100 index, and the company name was subsequently changed from BAA plc to BAA Limited, signifying its conversion from a public to a private company. The takeover by Ferrovial has not affected BAA's status as a regulated utility. As we shall see below, BAA's transformation from a regulated utility and

¹² It is important to stress here that whilst a systemic approach to governance is primarily concerned with the nature of systems it does not do away with collective actors, such as employers' organizations and trade unions. The latter take up a particular institutional role, for instance the industrial relations system, through the attribution to them of a specific identity by the systems.

¹³ The ECA and Unite officials were interviewed twice, firstly at the start of the project (October 2006 and March 2007, respectively) and, secondly, at the end of the project (May 2008 and July 2008 respectively).

¹⁴ Prior to 1986, national or local government owned and operated the majority of UK airports and provided the finance for their development.

¹⁵ Presently, BAA owns and operates seven of the UK's airports at Heathrow, Gatwick, Stansted, Southampton in England, Glasgow, Edinburgh and Aberdeen in Scotland.

listed plc, which was then taken over in a bid mostly funded by debt influenced, at each stage, its approach to the T5 project.

Partly because the planning process for T5 was protracted, BAA had the opportunity to learn from other projects both at Heathrow and elsewhere (Brady *et al.*, 2008: 34). Further, BAA's CEO in the mid-to-late 1990s, Sir John Egan, was instrumental in reassessing the way that large-scale construction projects were delivered. In 1998, under his chairmanship, the Construction Task Force – set up by the Government – published its report, *Rethinking Construction*. At the heart of the report was the conviction that an integrated project process would deliver the best value to the client and user (Construction Taskforce, 1998). Under Egan's guidance, BAA's senior management began applying the principles laid out in the report to improve project processes. In this context, a new process for organizing projects in BAA's capital investment programme, promoting a set of framework agreements to achieve more accurate project costs, to implement best practice, and to work with suppliers in longer-term partnerships, was developed (Brady *et al.*, 2008: 35).

BAA's solution to the problems raised by the construction of T5 was to develop a bespoke, legally binding contract – entitled 'the T5 agreement' – between itself and its key suppliers. The agreement was described by BAA itself as 'groundbreaking' and 'unique in the construction industry' (BAA Heathrow website). The contract governed BAA's relations with 60 suppliers and formed the basis for agreements between these 'first tier' contractors and their own subcontractors. The essence of the agreement was an assumption of risk by BAA: 'at the heart of the terminal 5 agreement is the concept that BAA retains the risk while suppliers work as part of an integrated team to mitigate potential risk and achieve the best possible results' (Wolmar, 2006; see also Brady *et al.*, 2008). This can be read as an acknowledgment that in a project of the size and importance of T5, a certain degree of residual risk necessarily lies with the client and cannot be passed on to the contractors. BAA was also in a particularly vulnerable position as a regulated utility subject to price capping as well as the pressures which accompanied a stock exchange listing: it took the view that 'massive cost overruns or long delays to T5 would have wrecked the company's reputation and sent its share price plummeting' (Wolmar, 2006).¹⁶

In the T5 agreement, by assuming the residual risks of the project and ultimate responsibility for any cost overruns, BAA avoided the need to set up contingency funds which are normal for large-scale construction projects in the UK. Instead, project teams were allocated a small contingency fund which, if unspent, was then available for another team (Wolmar, 2006). BAA was also able to reserve for itself powers to monitor the performance of contractors and subcontractors, to set quality standards and, where necessary, to engage directly with suppliers; this was a much more proactive role than was normal in construction contracts of this kind. More generally, the T5 agreement was aimed at minimizing dispute resolution costs and avoiding the atmosphere of adversarial confrontation which was perceived to have affected other large construction projects in the UK: 'essentially, it is a no blame

¹⁶ In other projects, including the construction of the new Wembley football stadium and the extension of the Jubilee line on the London underground, legal costs had formed a substantial proportion of budget overruns. There had also been widespread bankruptcies among suppliers forced to absorb the costs of late completion.

culture aimed at getting the best approach through cooperation, rather than the conventional adversarial approach' (Wolmar, 2006). In this way, the integrated approach to partnering, as advocated by the Construction Task Force, was put into practice.

It is possible to interpret the T5 agreement as an application of a game theory approach to contracting. The basic insight of game theory, which deals with conflict of interest situations, is that the process of strategies for cooperation between contracting parties depends on how far each agent calculates that it is in his or her self-interest to continue observing the norm of co-operation, given the likely behaviour and response of the other. In the present context, BAA sought, through the T5 agreement, to avoid the traditional way of contracting, lump sum and fixed price, so as to build successfully something as complex as T5. The approach adopted could be thus one of accepting short-term losses for the sake of long-term gained from the contractual relations with the suppliers. Whilst this account of T5 cannot be considered as inaccurate it is, however, incomplete as it does not take account of the interference mechanisms existing between the systems of corporate governance and utilities regulation and BAA. It was the existence of such mechanisms that influenced BAA's approach to the construction of T5 and led to a productive coupling between the normative goals of the two systems as well as with those of the T5 contract.

More particularly, the contractual relationship created by the T5 agreement empowered BAA and the suppliers to create their own understanding of how the particular relationship should proceed. The T5 agreement can thus be conceived as a form of communication system (Collins, 1999: 15) as it constructed an image of human interaction between BAA and the suppliers that reduced the complexity of the T5 project to the elements and trajectories that had significance within the contractual framework. Importantly, in this context, the environment, i.e. regulatory and corporate governance pressures, served arguably as a significant support mechanism for the adoption of quality standards in the contract so as to enhance the level of the T5 project's performance. More particularly, two changes in the regulatory approach, as contained in the airports price cap review for the period 2003/8, took place that arguably framed BAA's approach to the T5 project. Firstly, the caps imposed allowed Heathrow to increase its charges in real terms by 6.5%, per annum, thus reflecting the considerable capital spend on T5 during the 2002/8 period (Starkie, 2008: 69). Secondly, the regulator (CAA) introduced for the first time in the Heathrow cap a 'trigger', which would reduce the maximum allowable charge when the airport had not achieved particular capital project milestones, such as T5, on time (Wolstenholme *et al*, 2008: 11). Further, BAA was simultaneously subject to intense scrutiny by its regulator but also its shareholders and city analysts in respect of the company's monopoly of London's major airports: Heathrow, Gatwick and Stansted.

The specific governance arrangements within the corporate governance and utilities regulation systems and between these systems and external parties with interests or stakes in the performance of the tasks in question, i.e. BAA, provided an 'interference' mechanism that assisted in the emergence of the T5 agreement as a contractual framework capable of promoting adaptation and social learning. Importantly, the impact of utilities and market regulation on the T5 agreement determined, in turn, to some extent the nature of the arrangements applicable at the level of multi-firm contracting and industrial relations on the T5 site and led to the

successful completion of the project. As we shall see in the next section, these outcomes were achieved via the inclusion in the T5 agreement of contractual governance structures governing intra-systemic interactions and the development of principles of collaboration, monitoring and dialogue procedures.

3.2 Performance of the contract and outcomes

3.2.1 Multi-firm contracting at T5

The construction of T5 is an example of a ‘megaproject’ (Flyvbjerg *et al.*, 2003) because of its scale, complexity and high cost. The project was broken down into 18 major projects and 147 subprojects. Construction commenced in September 2002; phase one of the project was completed in March 2008.¹⁷ At any one time the project employed up to 8,000 workers, and as many as 60,000 people were involved in the project over its lifetime. Its goal was to increase the airport’s capacity from 67 million to 95 million passengers a year. In this context, many any firms’ collaboration was required for the successful completion of the project. Over the last years, BAA had developed a series of long-term framework arrangements with key suppliers to undertake the large capital investment programme needed to meet the demand for airport growth. Building on the experience from such arrangements, BAA understood that an approach to understand and facilitate the interactions and to achieve a culture of commitment and partnership with the suppliers was essential in T5. The importance of cultural commitment was reflected in specific provisions in the T5 agreement. Whilst difficult to enforce such provisions, the T5 agreement explicitly required individuals and firms to be aware of and focus on partnering, trust and cooperation, and being seen to do what they said. As BAA officials involved in the ‘T5 agreement’ stressed: ‘BAA’s thinking about contracting had thus evolved over time from the traditional transactional approach to a more relational approach’ (Wolstenholme *et al.*, 2008: 11).

In practice, T5 was structurally allowed to operate as a standalone business with the appropriate governance. This allowed it to break loose from the established corporate culture and adopt a different operating model towards identifying and managing risks (Doherty, 2008: 250). The development of collaboration and partnership at inter-organisational level was further relied on effective diffusion of information, the use of frameworks, benchmarks and measurement throughout the project and integrated teams working. More particularly, integrated forums operated throughout the project’s duration where key suppliers came together with BAA and reviewed performance against targets, discussed future delivery challenges and how they would work together to deliver. Based on such deliberative patterns of social interaction, BAA and the suppliers managed to augment levels of trust and cooperation in the performance of the contractual arrangements by, for example, providing useful information or suggestions for innovations, and developed a capacity to adapt as the T5 project evolved.

These forums were supplemented by integrated team working, reportedly a fundamental ingredient to the success of T5 (Doherty, 2008: 263). In traditional construction arrangements, clients, consultants and suppliers typically form different teams and deliver their own work package using resources from that company only.

¹⁷ The second phase is due to open in 2011.

When companies did need to work together to deliver, for instance design and construction, individuals work in separate teams and come together at times for meetings to manage handovers. Instead, integrated team working at T5 was designed to enable suppliers to work effectively as part of an integrated team and focus on meeting the project's objectives not only in relation to the traditional time, budget, and quality measures but also in relation to safety and environmental targets. Consultants and suppliers committed to this principle in return for a guaranteed margin and access to an incentive scheme. Suppliers owned the time, cost, quality and safety targets and worked together as one team to deliver ahead of the targets and jointly resolve the challenges as they emerged. The performance of the key 500 supplier roles was reviewed by BAA twice a year, more regularly if there was a problem; during T5 two first-tier suppliers and about 12 subcontractors were removed from the project.

Working in integrated teams influenced effectively the channelling of the suppliers' behaviour towards a dynamic model of learning: assisted by BAA's approach to risk-taking integrated teams focused on creating the optimum programme to mitigate delays without resorting to traditional behaviours associated with claims and individual suppliers maximising their position. Whilst it has been recognised that not all in BAA or in the suppliers fully embraced the T5 approach to contracting (Doherty, 2008: 132) there was sufficient support for it to act as a framework that enabled the development of trust, commitment and trust as the central values of multi-firm relationships in T5.

3.2.2 Intra-firm relationships between management and labour at T5

In line with the approach adopted in the T5 agreement, the principles governing BAA's approach to employee relations on T5 site included:¹⁸ the negotiation of local agreements which were to be no less favourable than existing national and sectoral agreements; the use of direct labour in preference to other forms of employment, with only limited provision for agency work to meet peaks in demand; limits on overtime working; establishing clear structures for basic wage rates and for productivity-related bonuses and allowances; the 'cascading' of agreed terms and conditions and employment quality standards to second-tier subcontractors and suppliers, coupled with arrangements for the monitoring of their performance; setting and meeting exemplary levels of health and safety protection; and a proactive approach to diversity and equality issues (on the latter, see Clark and Gribling, 2008).

These principles were reflected in the two main sets of collective agreements governing the site: the Hourly Paid Employees Agreement which governed the civil engineering side of the project, and the Major Projects Agreement (MPA) and Supplementary Project Agreement (SPA) which together governed the provision of mechanical and electrical (M&E) services on T5.¹⁹ The MPA was designed to be an

¹⁸ BAA did not directly employ any of the workers involved in construction on the T5 site and was not a party to collective agreements relating to the construction project. However, the T5 industrial relations policy was incorporated in the T5 agreement and was thus contractually binding.

¹⁹ It is the second of these sets of agreements, the MPA and SPA that provides the focus for our analysis in this section. At the time of the T5 project's conception, the parties to the MPA were the principal employers' associations in the M&E sectors – the Electrical Contractors' Association (ECA), the Association of Plumbing and Heating Contractors (APHC), the Heating and Ventilation

'umbrella' collective agreement designed specifically to deal with large construction projects. The impetus for its adoption was the perception on the part of the employers' associations that clients wanted an integrated agreement that would unite terms and conditions governing electrical engineering (electrical installations) with mechanical engineering (heating and ventilation). Each of the existing collective agreements, i.e. the JIB agreement in electrical contracting, agreements for plumbing and for heating and ventilation and the National Agreement for the Engineering and Construction Industries (NAECI) that covers part of the engineering industry, provided aspects of the model for the MPA. An ECA representative explained the MPA in the following way: 'all collective agreements still apply, but what the MPA does is, it puts an umbrella, an overlay, across these agreements. It replaces one or two aspects of the agreement where it would be sensible to do so such as in the case of dispute resolution' (interview notes).

The MPA has so far only been applied to T5, and T5, in turn, had been one of the catalysts for its development. In October 2001 there was a meeting between ECA officials and BAA managers, at which discussions took place over how BAA saw the emerging structure of industrial relations at T5. BAA wanted to avoid having a multiplicity of collective agreements applying to the site. On the part of the Unite, there was strong support at national officer level for a single agreement. The negotiations lasted for the whole of 2002. The SPA was agreed between Unite and the principal contractors on the M&E side at T5, namely AMEC, Balfour Kilpatrick and Crown House Engineering in November 2003. The relatively stable industrial relations background, described elsewhere in the paper, played a critical role in the emergence of the labour-management partnership at T5 as it acted as a framework for the developments of a deliberative climate of respect for the interests of all parties. For BAA, the adoption of the MPA and SPA complemented the goals of the T5 Agreement, in terms of its explicitly cooperative ethos and its commitment to functional flexibility to suppliers and the workforce.

In contrast to the role played by BAA and the willingness of the employer and union sides to reach agreement on the conditions for ensuring the success of major construction projects, the legal framework governing employee representation, including ICER, played a minor role in the adoption of the MPA and SPA. The MPA and SPA combined the two elements of negotiation and information/consultation in ways which are not unusual in UK collective agreements.²⁰ An ECA representative took the view that the emergence of information and consultation structures under the auspices of the MPA and the SPA was a natural development of the kind of collective bargaining which takes place in the construction industry under the JIB. This agreement provides a single set of structures 'picking up' both aspects, that is, bargaining and information/consultation (interview notes). The Directive was not, however, irrelevant; management representatives were keen to stress the broader affinity between the project's approach and the direction of public policy concerning employee representation at that time.

Contractors' Association (HVCA), SELECT (the Electrical Contractors' Association of Scotland), and the trade union representing workers in the M&E industries, Unite (previously Amicus).

²⁰ The main contractors who were parties to the SPA made separate provision for information and consultation procedures under the ICER terms following its introduction, but these were not explicitly aligned with the arrangements made for T5.

Similarly to the T5 agreement, a key principle of the MPA is a commitment on both sides to implement team working. In return for the union's commitment to this form of functional flexibility, the agreement commits the employer side to a system of productivity-related bonuses which, in practice, have delivered levels of pay substantially above the standard rates for the relevant trades. The SPA spells out in more detail the rules and principles governing payments of wages and bonuses, working time, health and safety, training and related aspects of employment conditions. Aside from the provisions for integrated team working and bonus payments, the agreements also make a number of procedural innovations. In particular, they establish several organizational structures for shared decision making. The union is to be a full partner in all organizational decisions and the project is to be governed by a joint labour-management council. A consultative mechanism, the MPA Forum, is established under the auspices of the MPA. The Forum consists of representatives of parties to the agreement, with equal numbers on the union and employer sides, and has an independent Chairman. One of its core goals is to audit the project applying the MPA and to receive reports on the progress. The SPA provides for a similar body, the T5 Joint Council. This body consists of equal numbers of trade union and employer representatives and has a number of functions including receiving and acting on audit reports, and receiving integrated team working, training and development needs, and labour resourcing issues.

How successful were the multi-firm arrangements contained in the MPA and SPA in terms of overcoming the fragmentation of employee representation across different employment units, which is normally associated with such large-scale construction projects, and promoting a reflexive approach to governance? As a result of integrated team working, an 'extraordinary amount of cooperation at all levels between industrial relations managers' (T5 IR manager, interview notes) was developed. The concept of integrated teams was implemented through the establishment of a joint working party between employers and the union, through which Amicus/Unite was able to participate fully in its organization and implementation at site level. Close relations between labour and management were sustained by a number of other means. Consultative meetings between individual stewards and each contractor, between the stewards and representatives of all contractors at Joint Council level as well as informal consultation between the designated representatives,²¹ the shop stewards or the union regional officer and the IR managers responsible for the site took place on a regular and frequent basis. As a result of joint consultation exercises management and the union successfully resolved a number of issues, among others the selection criteria for the redundancies taking place at the end of the project. The T5 redundancy policy was based on a common set of documents, i.e. invitation to a risk interview, transfer letters and redundancy letters, and a common matrix among all first-tier suppliers. According to the T5 IR manager, 'the reason for this unusually close coordination was to ensure that suppliers followed

²¹ The role of designated representatives is similar to that of 'convenors' or senior shop stewards, but, differently from the normal role of such lay officials, their functions are defined with the aims of promoting the MPA in mind, and not simply in terms of protecting trade union members' interests. Their responsibilities, which must be carried out 'in cooperation with Management', include '[developing] on the project ... an environment of social partnership' and '[promoting] industrial relations harmony and the avoidance of recourse to unofficial actions', as well as more traditional goals such as '[ensuring] the maximum take-up and compliance with Trade Union membership' (MPA, clause 20). Under the terms of the SPA for T5, both of the designated representatives sat on the T5 Joint Council.

the same process, with the same criteria and within broadly the same timescales'. As a result of this coordination with the union and the suppliers, the redundancy process operated smoothly and there were reportedly no referrals to Employment Tribunals.

Importantly, both the MPA Forum and the JC acted as mechanisms for assessing the extent to which the institutional mechanisms set up by the actors involved in T5, in interaction with each other, made it possible to bring the desired adjustments and learning effects at intra-systemic level. At the end of each year, reports were prepared by the MPA Forum that included specific references to lessons learned from the operation of specific provisions of the MPA/SPA agreements such as timing of the agreements, commercial and productivity issues and training plans. Based on these reports, recommendations were then made concerning the review of certain provisions of the agreements and the resolution of practical issues in the T5 site. For instance, when the MPA was agreed, it was assumed that most issues would be 'company-based' and that the first two stages of the procedure would be used. In reality, most issues were raised at stage two and the failure of negotiations at that stage would result in the issue being taken off-site. Consequently, the outcomes of two stage-three panels were unacceptable to one or both parties. Both parties recognized that issues were going to non-T5 bodies prior to detailed discussions being held, and identified a need to create a new stage three to allow a further opportunity to resolve issues at project level before passing them to non-T5 parties. Agreement was also reached on a more structured approach to the new stage-four panels with the cooperation of the MPA Forum. In that way, employers' associations, suppliers and unions increased their capacity to commit themselves to following the rules set out by the MPA and SPA during the latter's implementation. Further, an independent auditor was appointed who provided a monthly report to the Joint Council, ensured compliance with the terms of the MPA and SPA and provided advice and guidance to incoming contractors who were unfamiliar with the T5 arrangements.

Both sides saw the involvement of BAA as a proactive client as critical to the agreements' operation and the avoidance of the development of an adversarial relationship between the suppliers themselves and between the suppliers, the workers and the union. On their side, BAA recognized that the Joint Council was an effective forum for communication and consultation and that it allowed both sides to raise and resolve issues and concerns. In terms of quantifiable results,²² the goal of an above-industry average health and safety record was firstly met.²³ Secondly, industrial relations stability was provided. No days were lost to industrial action on the M&E side of the project.²⁴ Thirdly, while employers and the trade union thought that there

²² Further evidence on perceptions of outcomes is available from independent audit reports (see, Baker Mallett, 2005, 2008).

²³ Two people lost their lives, against an expectation of six deaths for a project of this size. In terms of major injuries, 600 were expected. This was the equivalent to the reportable incidences, and in fact T5 was three times better than the industry average (Doherty, 2008: 112). In repeated employee surveys, over 75% of the workforce felt that T5 was the safest site they had worked on and over 60% thought it was a good place to work (Doherty, 2008: 106).

²⁴ In the interviews we carried out with employer and employee representatives, the absence of industrial action in the M&E side was partially attributed to the definition of bonus regimes prior to the commencement of M&E work in the MPA and SPA. While there was some tension over the up-rating of bonuses, the approach taken to implementing this aspect of the agreements was described as effective, giving certainty to both workers and contractors, to the substantial benefit of the project itself. A further relevant factor was that SPA specified that no bonuses would be payable to workers in

had been scope for further productivity improvements, no use was made of the provisions in the MPA and SPA for reduction or suspension of productivity-related bonuses paid to the workforce. There was less consensus on a number of other issues. The goal of a consistent application of the provisions of collective agreements governing terms and conditions of employment was met, but the issue of exceptions to the use of direct labour was a contentious one. The employer view was that agency labour was explicitly contemplated by the terms of the MPA, and that it was only used at T5 to meet unexpected peaks in demand; agency workers were guaranteed equivalent terms and conditions to directly employed labour, so it was not used as a means of cutting direct labour costs. The union view was that the use of agency labour was excessive, and that it undermined training programmes and their efforts to recruit union members.²⁵

4. Assessment and conclusion

On the basis of a systemic approach to contractual governance, we have questioned accounts of governance that assume the rational pursuit of more efficient and/or effective projects through contractual arrangements, and instead found substantial evidence of the dependence of contractual arrangements on the extent to which inter- and intra-systemic learning processes are promoted. Our central argument has been that understanding the operation of contractual governance structures requires recognition of the critical significance of the operation of ‘systemic deliberation’ mechanisms developed beyond the boundaries of contractual arrangements. This calls for the use of a framework that is attentive to how governance structures allow for a process of dialogue, deliberation and ultimately learning and for an examination of how intra- and inter-systemic learning are shaped by the relationship of each subsystem with its wider environment, including other subsystems. It is only when institutional devices, which allow for the development of ‘systemic deliberation’, are set up that it is possible to guarantee a process of double-loop learning and productive coupling between the different subsystems.

In order to illustrate these suggestions, we draw on findings from the construction of T5. If the T5 project had followed the industry norm for construction ‘megaprojects’, it would have been between 18 and 24 months late, over budget by a billion pounds, and would have involved the deaths of six people (NAO, 2005). How can the above-average outcome of the project be explained? In the first place, the T5 agreement was based on a novel approach to risk-sharing under which BAA accepted that the residual risk of failure would remain with it as the client whatever stipulations were made for penalty clauses in contracts with its suppliers. However, the T5 agreement also addressed wider organizational and cultural issues. The agreement has

respect of any week during which they take part in unofficial strike action. Worker attitudes to this potential penalty were ambivalent, with some seeing it as an undue constraint on their participation in union activities (designated representatives’ interview notes).

²⁵ Changes to tax law acted as a catalyst in a dispute over employment status. Under the Finance Act 2007, that income received by individuals who provide services to an end user via a ‘managed service company’ or ‘MSC’ became taxable as employment income. The union claimed that the replacement mechanisms that the agencies in T5 used so as to comply with the 2007 legislation did not comply with the MPA and SPA, as they amounted to self-employment. The dispute went to stage 4 of the dispute resolution procedure and the panel set up for considering the issue decided in favour of the union.

been described as epitomizing a ‘move away from the lowest initial cost tendering to long term value with suppliers who are able to invest in people, innovation, research and development and equipment’, a process which ‘has been demonstrated in the results BAA has achieved through increased productivity, improving value and programme predictability and below industry accident statistics (Lane, Lepardo and Woodman, 2005: 3; see also Harty, 2005). Having a single approach to contractual relations with the main suppliers and their own subcontractors, consistently applying the terms of collective agreements and bringing the unions into the decision making process through the MPA and SPA were all part of this strategy (Doherty, 2008: 205).

The T5 project is an example of a ‘non-standard project’ in the sense developed by Helper et al. (2000) in the context of firms to describe a typical example of the institutionalisation of cooperative solutions in a non-constraining situation, i.e. in a situation where other valid choices could have been made. The non-standard project has a relationship to more dynamic and open learning: whereas the standard project combats the ignorance endemic among its parties by simplifying tasks, the non-standard project promotes cooperative behaviours as the means to find new solutions vis-à-vis complex tasks. This strategy is not only fruitful in the short term, i.e. is during the time needed for a problem-solving process to yield the solution to the problem identified. It is also fruitful in the medium term, as it enables a process of learning not only of how to choose solutions but also of how to choose the chosen solutions. In the present context, the patterns of social interactions, as evolved in each subsystem relevant to the T5 construction project, produced a differentiation between the communications between the parties according to the dominant point of reference. However, as a result of mechanisms of ‘interference’ existing between the systems it was possible to bring about a productive coupling of the systems for the purpose of the T5 project’s completion and produce inter-systemic learning.

This was particularly evident in the influence that the wider context played in the emergence and operation of the T5 agreement. At the outset, BAA saw itself as in a situation where the project’s failure would be reputationally disastrous, bearing in mind its position as both a utility, subject to regulatory pressure for service improvements, and a listed company required to meet shareholder expectations. This was the background against which BAA decided to take an interventionist line in the design of the contractual infrastructure of the project. BAA’s explicit adoption of a relational approach, which cascaded down into the MPA and SPA, confirms the suggestion that a stock market listing is not incompatible with a company taking with a long-term orientation to shareholder returns, when combined with regulatory pressures of the kind which utility companies are generally subject to (Deakin *et al.*, 2006). The takeover by Ferrovial seems to have had little impact on the completion of the T5 project. Commenting on the impact upon BAA of the takeover, the CAA said that while questions marks existed over BAA’s handling of the heightened security requirements and over its recruitment of security staff, ‘BAA had, however, proved very good to excellent in some areas, in particular Terminal 5 construction’ (Competition Commission, 2007: 1). However, it should be borne in mind that the takeover occurred several years after this contractual framework had been put in

place; BAA's new owners were locked into the arrangements which had been agreed.²⁶

Further, evidence of intra-systemic learning was provided in both of the subsystems of multi-firm contracting and industrial relations. As established in the paper, the notion of 'systemic deliberation' focuses primarily on processes of decision-making and control, and on procedures and structures that provide overall direction across and within subsystems. In that way, the reflexive conditions for the successful operation of collective learning are not taken for granted, as in neo-institutional accounts of how governance structures work, but are instead reliant on the establishment and effective operation of institutional structures. In the case of the multi-firm contracting system, the establishment and operation of integrated forums and integrated team working was successful in promoting forms of economic cooperation between suppliers. In line with a systemic approach to governance, these forms of cooperation worked by creating a common framework of understanding through dialogue mechanisms that allowed suppliers to access on a continuous basis the shortcomings of their joint activities, and to adjust their strategies accordingly with the view to contributing to the successful completion of the project.

Concerning industrial relations, the successful conclusion of T5 project suggests that it is possible to espouse a systemic model of governance within a context where strong legal and institutional support for employee voice is lacking. The project succeeded in meeting a wide range of objectives which included enhancing productivity, cutting costs and ensuring a high quality of end project, while maintaining high employment standards. This was only possible because parties with multiple interests participated in the design of the project from its inception and were represented in the deliberative processes through which the project was managed. Employees were asked to agree to flexible working practices in return for enhanced bonuses and a commitment to the use of regular, direct employment and the consistent application of collective agreements. In this context, the MPA Forum and the Joint Council operated as loci for the incorporation of stakeholders in the decision-making processes of the project and for monitoring the actual operation of the MPA and SPA agreements with a view to adapt them to the evolving requirements of the project. In that way, both subsystems, i.e. inter-firm contracting and industrial relations, managed to move away from the dominant practice of creating learning systems that inhibit double-loop learning and valid feedback (Argyris and Schön, 1978), associated with an optimisation approach, and called effectively into question their norms, objectives and basic policies in a process of double-loop learning akin to that of 'systemic deliberation'.

However, in order for a 'systemic deliberative' approach to work and produce productive coupling between subsystems and promote a long-term approach to inter-systemic learning it is essential that feedback mechanisms exist and operate in a context of equally powerful subsystems. This means that interference mechanisms should not exist only one way, e.g. from corporate governance to industrial relations, but that two-way mechanisms should be established that are capable of translating the

²⁶ Amicus had expressed concern about the BAA takeover by Ferrovial in 2006. The national officer had then stated: 'BAA has invested heavily in the UK's civil aviation infrastructure. We are concerned that Ferrovial might not be able to continue to provide the necessary levels of investment the UK airports and the UK economy needs' (Teather, 2006).

external noise in both ends, e.g. from industrial relations to corporate governance to a meaningful concept of the respective subsystem. Whilst there is evidence suggesting that the external noise produced by the systems of corporate governance and utilities regulation was received and productively reconstructed in the subsystems of multi-firm contracting and industrial relations for the purpose of the construction of the T5 project the same cannot be said in the case of the opposite direction. This is mostly obvious when looking at the unclear wider future of attempts such as the MPA to ensure a more ‘internalist’ approach to learning through ‘systemic deliberation’.

Both the M&E suppliers and Unite promoted the MPA as a model for further large construction projects, in particular the work for the completion of the London Olympic Games and Paralympic Games in 2012. According to Amicus’s response to the Olympic Delivery Authority’s Draft Procurement Policy, ‘there is a consensus view that the Major Projects Agreement ... adopted for Terminal 5 has set new standards in organising major construction projects ... The MPA has firmly established its value to the client, contractors and workforce on the Terminal 5 project, with enhanced welfare, health and safety, employment reward and industrial relations stability for a project of such a large size’. Despite the expansion of the MPA members²⁷ and the success of the agreement at T5, officials at the Olympic Delivery Authority (ODA) confirmed in February 2008 that the MPA would not be used to cover M&E work across the 2012 sites. The high costs of implementing the MPA (Prior, 2008) and the ODA view on the allocation of risk reportedly played a role in the decision.

Moreover, in 2007-8 discussions took place between BAA and the MPA Forum concerning the application of MPA in future BAA projects, in particular the plan for a new Heathrow East Terminal to replace the ageing Terminals 1 and 2. At this point, the financial arrangements put in place by Ferrovial to support its takeover of BAA were coming under severe strain. BAA’s annual operating profits were barely covering the interest on the loans taken out by Ferrovial. Ferrovial was also being subjected to new regulatory pressures. In the most recent price control review, the CAA agreed to increase the charges paid by the airlines to use the London airports but it also reduced the return BAA was to be allowed to make between 2008 and 2013 (CAA, 2008). In March 2007, the Office of Fair Trading instructed the Competition Commission (CC) to investigate whether BAA’s market position was limiting competition in the UK aviation sector. The CC inquiry has provisionally found that there are competition problems at each of BAA’s seven UK airports with adverse consequences for passengers and airlines and, provided that the CC’s proposals are implemented, BAA will be forced to sell two of its three London airports and one of its Scottish airports (CC, 2008).²⁸ It remains to be seen whether the MPA will be used for the Heathrow East terminal or whether a different approach will be taken in view of the nature of that project, which will be unlike the T5 project in that it will involve the removal of two existing terminals and their replacement with a new terminal whilst continuing to operate the airport throughout the life of the project.

²⁷ In October 2007, representatives of the thermal insulation contracting industry signed up to the MPA. The addition of TICA to the current signatories of the MPA means that the MPA now represents the full range of building services engineering disciplines.

²⁸ The final decisions on the competition remedies will be published in the first quarter of 2009 following several months of public consultation.

The negative results in the case of the completion of construction projects for the London Olympic Games and Paralympic Games in 2012 and the uncertainty surrounding the use of the MPA in Heathrow East indicate that despite the success of T5 the UK utilities regulation system but also the corporate governance system are relatively immune to the external noise and perturbations coming from the other subsystems, mainly those of inter-firm contracting and industrial relations. The reason for this is the absence of mechanisms of interference operating with these subsystems that could secure a process by which corporate governance and utilities regulation could trigger the self-regulatory mechanisms of themselves and the other systems so that they run in parallel in a process of co-evolution; in other words, to achieve a form of structural coupling. In the case of the London Olympic Games and Paralympic Games the reference to high costs and risk allocation as reasons for the rejection of the MPA highlights the imperative of a calculus of short-term economic interest by which the public authorities measured and assessed the possibility of using the MPA as a framework agreement for the construction projects.

In the case of Heathrow East, the uncertainty over the use of the MPA is arguably related to a regulatory failure on the part of the CAC and the CC to provide a stable framework in a fair to all stakeholders in the airport utilities way. It is important here to examine how public policy and the regulatory structure have approached the issue of airport investment. The CAA is given a number of specific duties by the Airports Act. These are: to further the reasonable interests of users of airports; to promote the efficient, economic and profitable operation of such airports; to encourage investment in new facilities at airports in time to satisfy anticipated demands by users of such airports; to impose the minimum of restrictions; and to take account of the UK's international obligations.²⁹ The airport charges were, and still are, regulated under the 'single till' principle where all income (aeronautical and commercial) is considered prior to setting the aeronautical charges. As the amount the airport can charge the airlines is restricted, experts on regulation (Humphreys *et al.*, 2007: 314) have suggested that there is little incentive for airport operators to invest in aircraft landing and handling facilities.³⁰ Further, an important omission of the regulatory structure has been that there is no duty on regulated airports to provide capacity where and when it is needed, and which has government policy support. As the CAA has itself admitted 'incentives to invest are insufficiently differentiated according to the value of different investments (Fincham, 2008). More generally, the CAA has reportedly relied on what it considered the benefits of a 'light touch' approach (BA, 2008). In conjunction with the continuing absence of an adequate long-term strategy for national aviation on the part of public policy, the conflict between the commercial realities of maximising return on assets, and increasing pressure on available infrastructure constrains the development of airport capacity in line with the social, economic and environmental welfare of the UK.

Further, the contemporary trend of viewing airports as tradeable assets and of investment decisions based on strict economic criteria has replaced, according to Toms (2007) the previous system that operated on the basis of a stable, informal, give

²⁹ These are found in article 15 of the Chicago Convention, the bilateral air services agreement between the UK and the USA and any other bilateral air services agreements.

³⁰ Potentially, this could change if the Department for Transport via the CAA adjusts the price cap in a manner that creates incentives for airport operators to invest in new infrastructure. Something similar took place with respect to the construction of T5 (see above p. 11).

and take partnership between government, the CAA and airports to deliver capacity. The absence of this partnership framework played arguably a role in the failure of the CAA to intervene during the process of the Ferrovial takeover bid. Analysts at that time had noted that BAA's defence, which stressed its good place to take advantage of growth in air travel, to the Ferrovial bid looked 'a little underwhelming' (Done, 2006). On the other hand, CAA's stance to the Ferrovial bid was ambiguous. In its 2003 decision document the authority developed the policy of non-interference to the financing of BAA and set a price formula based on a cost of capital which could attract new equity, if necessary (CAA, 2003, paras 4.53 and 4.58).³¹

However, a change of approach was observed during the Ferrovial bid. In May 2006 CAA made a statement that it would not bail out any overleveraged buyer through the price formula, and that it might take away any tax benefit from high leverage (CAA, 2006b). This statement was preceded by an earlier similar statement made in February 2006 when Ferrovial's interest was announced, but before a bid had been formally tabled (CAA, 2006a).³² But CAA's intervention did not have any impact on the BAA's market share and the final buy out of the company by Ferrovial. According to Toms (2007: 12), potential explanations for the failure of CAA included: the absence of CAA's legal power to prevent a highly leveraged structure; the lack of indication of the quantum of investment which BAA envisaged operators should plan for; the failure of CAA to express its policy concerns in terms of measurable thresholds, targets or standards which had to be met and lastly; its stated intention to examine all the parties' financing proposals without however intending to pre-clear or reject any of these proposals.

CAA's stance on airport investment and on BAA's acquisition by Ferrovial run contrary to the government principle that 'economic regulation should provide the right incentives to deliver necessary investment and ensure that the owners of UK airports are able to finance investment' (Department for Transport, 2008). Would a potential break-up of BAA make any difference to the operation of airports and investment strategies in airport facilities? The responses to the current proposals by the CC have been mixed. Whilst certain organisations such as Ryanair have welcomed a potential break-up, concerns have been expressed that this will not be the panacea for all problems. EasyJet chief executive, Andy Harrison noted: 'Let's not kid ourselves into thinking that the break-up of BAA will automatically result in a better deal for the travelling public. Simply selling a monopoly airport from one greedy, highly indebted capitalist to another will benefit no one apart from the dealmakers in the City' (Milner, 2008). Further, trade unions representing airport workers have expressed concerns about the commission's proposals and have stated that any attempt to break up BAA will be resisted (Milner, 2008).

As obvious from the analysis of the T5 case study, the effectiveness of internalist learning processes in contractual governance cannot be separated from their

³¹ During the takeover bid period, the government had reportedly watched events around the ownership of BAA closely but the takeover was described as 'a commercial matter for the companies involved and their shareholders' (Teather, 2006).

³² Apart from the failed CAA attempt, the UK's Office of Fair Trading threw the bidding battle for BAA into confusion in May 2006 by announcing that it was examining the UK airport market and a possible referral to the Competition Commission. The sudden uncertainty and the possibility of an eventual break-up of the BAA London airport monopoly prompted a steep fall in the BAA share price.

broader environmental context. In the present context, the systemic framework of utilities regulation acted as a constraint to the further use of frameworks such as the MPA that supported the development of ‘systemic’ deliberation, a mechanism potentially more suited for large projects where there is a great deal of dynamic complexity and a new environment has to be created between various employing organisations. The reason for this was the indifference of the system of utilities regulation to the external noise produced by the systems of multi-firm contracting and industrial relations concerning the success of T5. It will be unfortunate if such messages continue to be ignored.

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