Commitment and adaptability in telecoms regulation

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Executive Summary

In its first consultation on the strategic review of telecommunications, Ofcom remarked that a number of fundamental changes were taking place in the industry and that more were in prospect. Ofcom suggested this brought into question some of the assumptions underlying the historical regulatory framework it had inherited. Ofcom also noted, elsewhere in the Phase 1 review, that investors needed reassurance that returns will not be "regulated away" after their investment is made.

Both of these points have merit, but there is an important link between them which has gone largely unacknowledged. Whenever regulation changes to reflect new circumstances such change may be difficult to distinguish from "regulating away" returns after the investment and innovation has occurred - thereby undermining the credibility of incentive-based regulation. The key theme of this paper is therefore how to accommodate both regulatory flexibility and the provision of regulatory commitment in order to encourage investment, innovation and infrastructure competition.

This paper argues that to send the right signals to investors, regulation must not only be predictable but it should contain commitments about future actions. This represents a significant shift. To date, regulators in the UK have largely maintained their right to override their own previous decisions but, in regulation as in business, a strategy without commitment is hardly a strategy at all. We suggest that, in order to achieve superior outcomes, regulators must selectively tie their hands and relinquish "unfettered discretion".

We believe commitment is at present under-supplied by regulators and thus that the scope of regulatory commitment should be selectively widened. Regulators should therefore carefully consider where to pre-commit and, where it is appropriate to commit, devise mechanisms to ensure that such commitments are explicit and credible to the market.

Such a move would be consistent with changes in regard to monetary policy, where governments have chosen to tie their hands by making a commitment not to accommodate inflation, in order to achieve price stability. In the UK, institutional arrangements that accompanied independence of the Bank of England were also vital in achieving credibility of the new arrangements. These provide pointers for an analogous regulatory strategy to encourage investment, innovation and infrastructure-based competition.

Uncertainty about future market circumstances is likely to complicate the problem of achieving credible commitment. One approach to reconciling commitment with flexibility is to develop contingent regulatory contracts ("triggers") which explicitly anticipate and provide for future contingencies. Markets make use of contingent commercial contracts, and regulators could do the same. We consider a number of illustrative contingent regulatory contracts, including transitional price controls, investment-based triggers and contingent profit sharing in this paper.

Even events which are unforeseen, and hence outside the scope of any contingent regulatory contract, can be addressed by having clarity of objectives and clear due process for addressing such events. Objectives and processes ought to be sufficiently explicit and transparent to enable outside parties to form a reliable view of future regulatory decisions.

While the approach we suggest might appear challenging, it would offer a number of clear advantages. First, it would elevate discussion about policy to a strategic level where the exploration of win-win solutions is more likely. Secondly, it would force consideration of the future in a rigorous

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manner. Thirdly, it could provide the basis for a new "regulatory contract" comprising a rationally-linked and inter-dependent series of actions over time which would enable the telecommunications market to work more effectively. Commitment is the very essence of strategy.

We therefore offer three specific propositions to stimulate discussion. First, that regulators should consider where to pre-commit and, where it is appropriate to commit, devise means to ensure that such commitments are credible. Secondly, that neither regulatory independence, nor the appointment of benevolent regulators, provides credible commitment on its own - other mechanisms will be required in addition. Thirdly, a specific contingent regulatory contract is proposed for the withdrawal of mandated access to infrastructure wherever replication is demonstrated by the investment behaviour of one or more entrants. This would use market information to focus regulation on non-replicable assets and allow a fuller role for general competition policy elsewhere.

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1. Introduction

This paper focuses on the role contingent regulatory contracts could play in reconciling the need for commitment in order to promote investment, innovation and infrastructure competition with the need for flexibility in a changing market. The paper also discusses the rules and procedures that could govern uncontracted for events and contract "re-negotiation".

The work was funded by BT, and was motivated by the opportunity presented by the Ofcom Strategic Review of Telecommunications to take a fundamental look at regulation. While the analysis focuses on the communications sector, the insights are general. In particular, the following questions and propositions are the focus of the paper:

> *"…ways must be found to reassure investors that returns will not be 'regulated away' after the investment is made."* Ofcom Phase 1 consultation, paragraph 4.7.
>
> *"A number of fundamental changes have taken place in recent years, and more are in prospect. They bring into question the continued validity of some of the assumptions underlying the historical regulatory framework."* Ofcom Phase 1 consultation, paragraph 3.18.
>
> *"We believe Ofcom should explore, over the course of this Review, innovative means of combining commitment with flexibility through the use of clearly defined "regulatory triggers", where specific regulatory change or deregulation is triggered by the achievement of certain market goals. Triggers could help reconcile stability with flexibility."* British Telecom, page 5.
>
> "...*a series of market development milestones that could be applied both to broadband and other markets, and could, for example, be based on growth in the development of competing infrastructures. Once these targets are met, ex ante regulation could be lifted and providers of networked communications services could compete to provide services according to their various strengths and weaknesses and governed by competition law."* Confederation of British Industry, page 8.

The paper has the following sections.

Section 2 discusses the place of trust and commitment in market institutions, and the implications for regulation.

Section 3 discusses the need for credible commitment, drawing on examples from monetary policy, regulation and intellectual property rights.

Section 4 discusses the implications of uncertainty for credible commitment and other aspects of regulation, and introduces Sections 5 and 6 which develop the concepts of contingent regulatory contracts and uncontracted events and incomplete contracts.

Section 5 introduces the idea of a contingent "regulatory contract" whereby the regulator would pre-commit to changes in regulation contingent on events.

Section 6 discusses institutional mechanisms including due process and reliance on general competition law for addressing uncontracted events.

Section 7 concludes with strategic issues for further exploration.

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2. Markets and competition

"For a market to function well, you must be able to trust most of the people most of the time; you must be secure from having your property expropriated; information about what is available where at what quality must flow smoothly; any side effects on third parties must be curtailed; and competition must be at work."
John McMillan. 2002. "Reinventing the bazaar – a natural history of markets." Page 228

Of these five characteristics of a well functioning market identified by McMillan, European telecommunications regulators have tended to focus on the latter three – in particular on promoting competition and, where that is not possible, on mimicking competition. This reflects an often cited principle of regulation described by Professor Alfred Kahn:[1]

"….the single most widely accepted rule for the governance of the regulated industries is to regulate them in such as way as to produce the same results as would be produced by effective competition, if that were feasible"

Efforts to promote and mimic competition have arguably led to the relative neglect of two other mechanisms crucial to the effective operation of markets and regulation – trust, and security from having property (including innovations) expropriated. Trust is one, but not the only, means of achieving credible commitment since in the absence of trust institutional mechanisms may provide the assurance necessary to make commitments credible.

The regulator, as an agent contracting on behalf of customers (and wider society to the extent that the sector and regulatory actions involve spill-over costs or benefits), must offer credible commitments against expropriation. Observations from markets and other areas of governance offer insights in terms of how this can be achieved, and the benefits of doing so.

Observation of so called "market failure" tends to lead to sector specific *ex ante* remedies without asking whether imperfect regulation can better outcomes in imperfect markets subject to general competition law and other general laws and regulations. As Nobel Laureate Ronald Coase put it: [2]

"If an economist finds something – a business practice of one sort or another – that he does not understand, he looks for a monopoly explanation."

The Better Regulation Taskforce made comparative evaluation one of their regulatory tips:[3]

"Tip 7: Regulatory failure can be worse than market failure. Both need to be carefully considered before any intervention."

Physicians refer to iatrogenic conditions, namely conditions caused by the physicians themselves. Physicians know that their understanding of human physiology is partial and carefully weigh up the option of no intervention. Their maxim "Primum non nocere" or "first do no harm", from a Latin translation of the Hippocratic oath, should be taken to heart by economic regulators since the

[1] Alfred Kahn. 1988. "The Economics of Regulation". MIT Press.
[2] Ronald H. Coase. 1972. "Industrial Organization: A Proposal for Research". Reprinted in Coase 1988. "The firm, the market, and the law." Chapter 3, page 67.
[3] Better regulation taskforce. December 2003. "Imaginative thinking for better regulation." Page 47. Tip 7. http://www.brtf.gov.uk/docs/pdf/imaginativeregulation.pdf

communications market, no less that the human body, is an imperfectly understood complex system with self regulating feedback.

In the communications sector, the possibility that regulation itself might limit new services and infrastructure competition is the counterpart of the physician's iatrogenic condition. Unfortunately, it takes time to recognise the symptoms (i.e. the absence of investment and innovation). Examining mechanisms that can build trust and credible commitment could contribute to better outcomes.

All markets need a framework of social stability and trust to operate. This framework makes mutual commitment more easy to bring about. This is especially true when there are lots of mutually dependent bilateral relationships rather than impersonal 'spot' markets. Regulation has its own responsibilities here, but public policy is in an uneasy position - it is expected to provide the framework for market activity, but at the same time it is conferred with legitimate power to override its own policies, and indirectly, the strategic commitments made by the companies in the market. Good government - and by extension good regulation – needs to be watchful about how it uses this power.

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3. The need for commitment

"The freedom and extent of human commerce depend entirely on a fidelity with regard to promises."
David Hume, 1739

Credible commitment is one of the key ingredients of a healthy market where parties need to invest in relationships, commit resources to innovation and invest in assets whose value depends on the actions of other parties (note that pre-commitment differs from predictability since opportunistic behaviour may be predicable).

For example, a manufacturer of car parts will be reluctant to invest in developing and manufacturing components tailored to a specific model unless there is a credible commitment from the manufacturer to purchase a sufficient quantity of the parts at an adequate price. The risk is that, once the part has been developed, the car manufacturer could renege on the understanding and offer a price that covered production costs excluding development costs. This is known as the “hold-up” problem in industrial economics, and the “time-inconsistency” problem in macroeconomics.

Unless the car manufacturer can commit to purchase a given quantity at a given price, inefficiency will result since the supplier might decide not to produce the component at all, or only to develop general purpose components that a range of manufacturers could purchase. Economic development – involving specialisation, risk sharing and capital accumulation – could not have progressed without commitment.

Dixit and Nalebuff, in their book “Thinking Strategically” set out a range of means of making a strategy credible. Among these are the following:[4]

(i) Establish and use a reputation.

(ii) Write contracts.

(iii) Burn bridges behind you - for example In 1066 William the Conqueror’s invaders burned their ships, thereby making a commitment to fight rather than retreat.

(iv) Move in small steps - for example, investing and innovating incrementally to reduce the incentives for expropriation since future investment and innovation is hostage to current conduct.

(v) Employ mandated agents (for example, delegating monetary policy to an independent central bank with a clear objective and transparent accountability).

To this list we would add common ownership, which can eliminate incentives to expropriate sunk investment and innovation. All these mechanisms aim to change expectations as to future behaviours and thus to change current actions, and all of them tie one’s hands to some degree.

An illustration of someone literally tying their hands is provided by the story of Odysseus:

[4] Dixit and Nalebuff. 1993. “Thinking Strategically”. Chapter 6.

"she said we were to keep clear of the Sirens, who sit and sing most beautifully in a field of flowers…Therefore, take me and bind me to the crosspiece half way up the mast…If I beg and pray you to set me free, then bind me more tightly still."
Homer, The Odyssey

Achieving commitment is central to the provision of services from infrastructure networks where we need specific investments (i.e. with little value in other uses) and innovations to deliver services such as telecommunications, energy and water efficiently. Where commitment is absent, public ownership tends to be the default outcome for "utility" industries, since private investors will not commit funds. In the communications sector, the lack of credible commitment might hamper the emergence of infrastructure competition since not only are the incumbents' sunk assets at risk, but so also are those of new entrants to the market.

A lack of credible commitment will involve costs of various kinds, perhaps the most visible been an elevated cost of capital. However the risk of expropriation is not necessarily reflected in the observed cost of capital and will more likely show up in terms of inefficiently low levels of investment and innovation, or short-termism and a lack of specialisation (since returns must be made quickly or assets re-deployed in the face of a risk of expropriation).

There is a range of theoretical and empirical evidence pointing to a commitment problem in relation infrastructure investment. In a comparative study of telecommunications regulation Levy and Spiller found that:[5]

> *"...performance can be satisfactory with a wide range of regulatory procedures, as long as arbitrary administrative action can be restrained. We find also that regulatory credibility can be developed in not very propitious environments, that without such commitment long-term investment will not take place, that achieving such commitment may require inflexible regulatory regimes, that in some cases public ownership of utilities is the default mode of organization, and furthermore, that it may be the only feasible alternative."*

A study of regulation and outcomes in deploying fixed voice networks across Europe from the 1870's onward also pointed to the benefits of credible commitment:[6]

> *"I find that countries with competition between telephone providers and whose governments did not threaten to expropriate firms' assets saw higher telephone penetration and lower prices, even in rural areas."*

[5] Brian Levy and Pablo Spiller. 1994. "The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation." Journal of Law, Economics and Organisation, Volume 10(2).

[6] Scott Wallsten. March 2003. "Returning to Victorian Competition, Ownership, and Regulation: An empirical study of European Telecommunications at the Turn of the 20th Century". http://www.wallsten.net/papers/wallsten_europe_telhist.pdf

The UK was, at the time, wealthy relative to other countries in Europe, but fared badly in terms of voice telephony rollout. In 1904 the National Telephone Company ("National") warned that it would not sign up new customers since it had to recoup all of its investments by 1911, when all its concessions were set to expire with no agreement as to what would happen afterwards. In contrast, Scandinavian countries fared better and were global leaders in voice telephony by the beginning of the 20th century. Telephony was provided by competing private and cooperative operators who were not subject to any royalties or a threat of expropriation.

Discretion was considered a virtue when regulatory institutions in Britain were established following privatisation (in most instances re-privatisation) over a decade ago:[7]

> *"...in setting X the UK regulator has more discretion and less need to reveal the basis of his decisions than does his US counterpart. The US tradition is to place all evidence and reasoning in the public record. In the UK, there is less pressure for due process. The UK regulator is deemed to be a person to whom public policy may be safely delegated..."*

Evidence points to the need to move beyond the view that devolving the public interest to independent regulators and leaving them free to pursue this duty with relatively unfettered discretion will produce good outcomes - what Dieter Helm has referred to as "good chaps regulation".[8]

Unfortunately appointing a benevolent regulator does not solve the commitment problem:

> *"The regulator's benevolence is a virtue when the regulator can commit but not necessarily when he or she cannot commit; then the expropriation of the firm's investment is socially optimal ex post but not ex ante."*[9]

There is now growing recognition among regulators of the need for credible commitment as a signal to investors:

> *"4.7…ways must be found to reassure investors that returns will not be 'regulated away' after the investment is made."* Ofcom Phase 1 Strategic Review Consultation, 2004.
>
> *"Regulatory credibility will, to a large extent, depend on how far the regulator can pre-commit."* Doug Andrew, Group Director, Economic Regulation, the Civil Aviation Authority.[10]

What is less widely acknowledged in the literature, although it is common knowledge among political commentators, is the particular difficulty of achieving credible commitment where governments are involved. Governments are powerful, and potentially short-lived, making the achievement of credible commitment a challenge, even where governments recognise the potential benefits of commitment. Administrative power makes both trust and contractual remedies more difficult to establish than in private transactions since power itself enables commitment to be undone.

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[7] Beesley M E and Littlechild S C. Autumn 1989. "The regulation of privatised monopolies in the United Kingdom." The RAND Journal of Economics. Volume 20.

[8] Dieter Helm. 2004. "The new regulatory agenda." Social Market Foundation. http://www.smf.co.uk/site/smf/Members/bllewelyn/folder-news/news-helm-pamphlet

[9] Laffont and Tirole. 1993. "A theory of incentives in procurement and regulation". The MIT Press. (Page 99).

[10] Doug Andrew. September 2002. "Effective governance and the principal-agent problem – lessons from aviation regulation." In CRI Proceeding 30 - Regulated Industries - the "Governance Contract". (page 50).

The implicit threat of withdrawal of co-operation in circumstances involving repeated interaction and incremental commitments of relationship specific capital can support credible commitment to co-operative outcomes. However, this basis for co-operation and commitment can prove insufficient with long-lived assets and a relatively high discount rates (or short "lived" agents).[11] Co-operative outcomes can also be supported by an irrational threat of retaliation i.e. retaliation that if carried out involves greater costs than benefits, but nevertheless (if the threat is credible) may support co-operative outcomes *ex ante*. An irrational threat of retaliation is unlikely to be credible when dealing with a powerful government or regulator.[12] Finally, the sort of close relationship that can promote trust and therefore support commitment in the private sector might be unworkable in a regulatory context where the regulatory agency must be seen to be independent of vested interests.

The alternative to voluntary commitment which are expected to endure is to contract – in other words for both parties to limit their discretion *ex post*. However, regulators do not do sign contracts and, in any event, governments can use their power to legislate to nullify contracts.

Full or partial state ownership might solve the commitment problem, but might involve inefficiency related to agency problems from public sector participation. Under investment has also tended to plague public enterprise for budgetary reasons.

Governments, and their regulatory agencies, therefore face a particular challenge in achieving credible commitment. Independence merely shifts the problem from one agent to another. In a review of experience in developing and developed countries with regulation by contract the World Bank included as one of its ten conclusions that "*Independence is not enough*."[13] Some other ingredients must be involved to achieve credible commitment. Three examples are used to illustrate credible commitment in different contexts, namely monetary policy, US regulatory institutions and patent protection.

Monetary policy

In 1997 the Government granted the Bank of England independence and delegated decisions over interest rates to the Bank. Credibility did not flow from independence *per se*. Rather, the relationship between the Bank and the Chancellor was clearly and transparently spelt out, and a clear and independently verifiable objective of price stability was agreed. The Office of National Statistics measures inflation, minutes of the Monetary Policy Committee are published, and an "open letter" to the Chancellor setting out the Bank's intentions for achieving price stability is required if the Bank considers that inflation will move outside the target range.

The decision to reform the approach to monetary policy grew out of experience of the poor outcomes of the previous discretionary policy and an understanding of the insights from the theoretical literature that demonstrated that even a well-intentioned and rational individual might not be able to commit to a

[11] Salant and Woroch. Spring 1992. "Trigger price regulation." RAND Journal of Economics. Vol 23(1). Gilbert and Newberry. Winter 1994. "The dynamic efficiency of regulatory constitutions." RAND Journal of Economics. Vol 25(4).

[12] Paul Seabright. 2004. "The company of strangers – a natural history of economic life."

[13] Tonci Bakovic, Bernard Tenenbaum and Fiona Woolf. October 2003. "Regulation by Contract – a new way to privatize electricity distribution?" The World Bank working paper series, number 14 http://www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000090341_20031105153200

socially optimal plan unless he or she can somehow tie their hands.[14] Work on "time-consistency" was cited in the decision to award Kydland and Prescott the Nobel prize in economics in 2004.

Ed Balls, former Economic Advisor to the Chancellor of the Exchequer, expressed the principles governing the decision as follows:[15]

- *"stability through constrained discretion*
- *credibility through sound long-term policies*
- *credibility through maximum transparency*
- *credibility trust through pre-commitment"*

An alternative or complementary approach to institutional mechanisms is to appoint individuals to an independent agency who have preferences that differ from the natural tendency of Government. For example, the US Federal Reserve arguably achieves credibility via the appointment of anti-inflation "hawks" such as Alan Greenspan. It could be argued that appointing a regulator who is pro-industry and/or pro-profit could increase credibility, thereby allowing returns to investment and innovation that would best serve customers' long term interests.[16]

US Safeguards

In the US, the body of law by which all federal and state institutions must abide is the US Constitution. Safeguards for private property are integral to the Constitution. The limitations on control of business by the federal government are found in the Fifth Amendment:

> *"No person shall…be deprived of life, liberty or property without due process of law, nor shall private property be taken for public use, without just compensation."*

The Fifth Amendment does not rule out the taking of private property, but just compensation and due process of law are required.

The judgement in the 1944 Hope Natural Gas case set a clear standard for regulatory commissions in decision-making consistent with the Constitution. The role of the courts, it declared, was to interpret whether federal and state statutes were unconstitutional - not to determine how regulators should regulate. This became known as the "end result" criterion. Hope established that a "fair return" should provide companies with the opportunity cost of capital as applied in other comparable uses so as to attract investment, by giving the company revenue which covers both a return on capital (profits) and return of capital (depreciation). Once the methodology for calculating a "fair return" was determined, a regulator should be prepared to explain why there was any departure in methodology or process, potentially subjecting the decision to judicial review.

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[14] Kydland, F and Prescott, E. 1977. "Rules rather than discretion: the inconsistency of optimal plans". Journal of Political Economy, Vol 85, No 3, p619-637.

[15] Edward Balls. November 1997. "Open macroeconomic in an open economy". Centre for Economic Performance Occasional Paper No 13. http://cep.lse.ac.uk/pubs/download/occasional/OP013.pdf

[16] David Currie Paul Levine and Neil Rickman. October 1999. "Delegation and the ratchet effect: should regulators be pro-industry?" CEPR Paper 2274. http://www.econ.surrey.ac.uk/rcpg/cepr-dp2274.pdf

In 1946 the Administrative Procedures Act (APA) was passed. The APA set out the administrative rules and procedures which would need to be followed in making regulatory (and other) determinations. Together, Hope, the Uniform System of Accounts and the APA provided regulators with considerable discretion in choosing the methodology through which a "fair" return would be calculated, but at the same time provided a set of rules for how regulators came to and explained their decisions in a way that is consistent with Constitutional safeguards for private property. This is the basis of credible commitment by regulators in the US.[17]

Patents and copyright

Patents and copyright provide protection for any rents associated with investment and innovation for a period of time. To promote investment and innovation, they embody a commitment to allow profits that might otherwise be viewed as excessive. These protections are credible not necessarily because of statutory backing, but because they have become a part of accepted conventions supported by a history of case law and subject to treaties between nations that are mutually reinforcing. In the United States, the Constitution provides for copyrights and patents stating in Article I, §8 that

> *"Congress shall have Power …to Promote the Progress of Science and useful Arts, by securing for Limited Times to Authors and Inventors, the exclusive Right to their Writings and Discoveries."*

There is a close analogy between the reasoning behind regulatory commitment and that of institutional arrangements to protect intellectual property rights. The analogue of patent protection would be a commitment not to subject something new to *ex ante* regulation for a period of time.

Summing up

Monetary policy, US regulation and intellectual property rights all provide insights in terms of the commitment problem. The examples demonstrate the importance of governments and regulators tying their hands, thereby enabling a degree of credible commitment to solve so called 'time inconsistency' problems where the unfettered optimal decision *ex post* would lead to poor outcomes.

Commitment is necessary to achieve good outcomes since otherwise anticipated behaviours *ex post* will produce poor outcomes *ex ante.* The scope of regulatory commitment should widen. Commitment is at present under-supplied by regulators, and this may prevent more efficient market behaviour.[18] Institutional mechanisms can contribute to credible commitment: namely clarity of objectives and the decision making model; transparency of process and decisions; independent monitoring and verification.

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[17] Yogita Mumssen and Brian Williamson. 1999. "Economic regulation of network industries." New Zealand Treasury Working Paper 00/5. Page 14. http://www.treasury.govt.nz/workingpapers/2000/twp00-5.pdf

[18] Brian Williamson. January 2002. "UK incentive regulation: international best practice?" In CRI Regulatory Review 2000/2001 – Millennium edition. http://www.indepen.co.uk/panda/docs/CRI.pdf

4. Implications of uncertainty

> *"There are things we know that we know. There are known unknowns - that is to say, there are things that we now know we don't know but there are also unknown unknowns.* Donald Rumsfeld, February 2002.

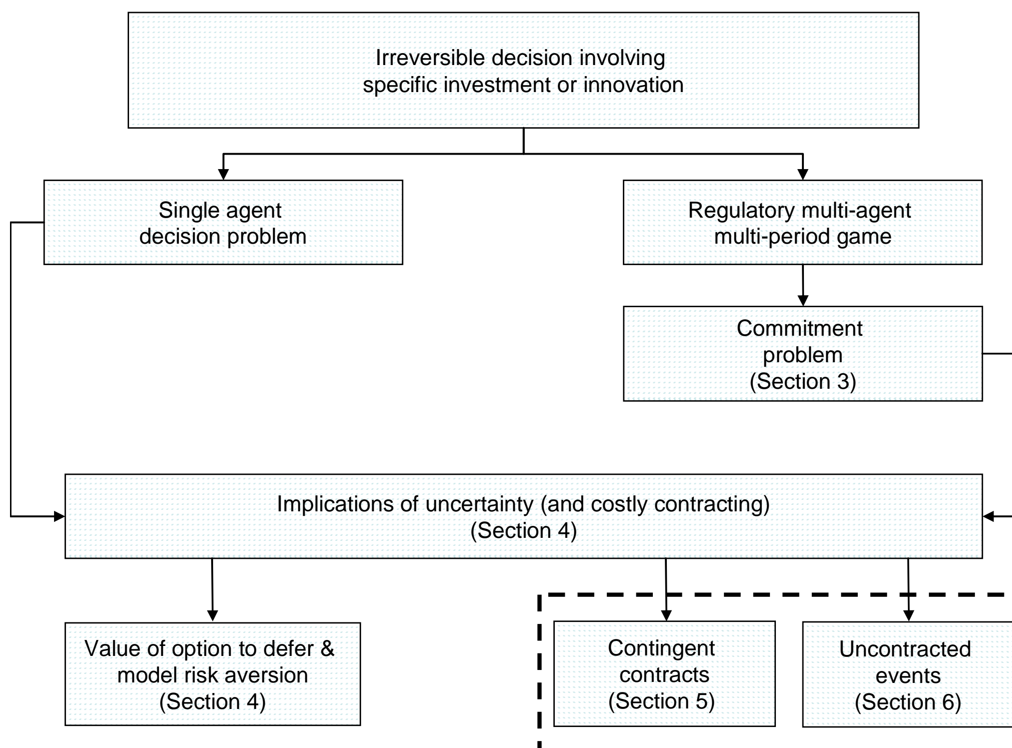
Somehow regulation must address these different kinds of uncertainty. This need for flexibility is driven by the fact that optimal policy today might not be optimal policy tomorrow given changes in information. This presents a challenge in terms of achieving the benefits that flow from credible pre-commitment. The problem is that uncertainty and new information might provide a legitimate reason to change a decision *ex post,* thereby undermining the scope for beneficial pre-commitment.

Moore's law (according to which the number of transistors per integrated circuit grows exponentially); and policy innovations, such as market based allocation of radio spectrum, will continue to drive fundamental market changes but, while underlying trends might be predictable, market development might not be. Uncertainty and change will be ongoing features of the communications market.

The new innovative technology of today quickly becomes the sunk "riskless" infrastructure of tomorrow, ripe for *ex ante* regulation. Investors know this. To break out of this and achieve a virtuous circle with a healthy communications sector requiring less *ex ante* regulation, forms of flexible commitment are required.

Figure 4.1 sets out the link between Section 3, which discussed commitment, and the issues that arise when uncertainty is introduced. While the commitment problem arises without uncertainty, uncertainty complicates a contractual solution to the commitment problem.

Figure 4.1: A taxonomy of irreversible decisions, commitment and uncertainty in decision making



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When uncertainty is introduced into the commitment problem "contingent contracts", where actions depend on external developments, represent a possible means of achieving credible commitment while allowing regulation to adapt to changing circumstances. However, in a world of incomplete knowledge and costly contracting, contractual solutions to the commitment problem will have their limits.

Due process and procedures can play a part in resolving the commitment problem where a contingent contract is not feasible. “Indefinite" agreements (agreements to agree that rule out particular options) might also be used given the incompleteness of contingent contracts.[19] The general framework of competition law also provides guidance as to acceptable market conduct where no explicit regulatory contract exists. Finally, trust and procedures also play an important role when unanticipated events arise and a new understanding must be reached.

Uncertainty has implications for regulation, in addition to the complications it introduces in achieving credible commitment. The paper touches on two of these before focussing on the core themes of contingent contracts (Section 5) and uncontracted for events (Section 6) as mechanisms for achieving credible commitment.

Uncertainty about the appropriate choice of model to evaluate policy alternatives can also lead to a form of precautionary principle – as illustrated by the following example. In deciding whether to regulate an emerging market such as consumer broadband, several alternative "models" governing the development of the market might be considered including a model where costs are known and benefits flow from ensuring prices are cost reflective, to models where rates of innovation, market growth and consumer benefits could be reduced if apparent economic rents or excess profits are eliminated. An appropriate rule of thumb in these circumstances might be to base the policy on the option that comes closest to minimising the losses under the worst case rather than the policy that maximises benefits assuming a single preferred model.[20]

Waiting can reveal information and decisions can be costly to reverse. This combination means that waiting can have a positive (option) value that should be taken into account in decisions about what to do now.[21] This could lead to caution in adopting *ex ante* remedies.

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[19] Oliver Hart and John Moore. May 2004. "Agreeing now to agree later: contracts that rule out but do not rule in." Harvard University Discussion Paper. http://post.economics.harvard.edu/faculty/hart/papers/hartmoore_504.pdf

[20] Durlauf and West. October 2003. “Policy evaluation in uncertain economic environments”. National Bureau of Economic Research Working Paper 10025. http://www.nber.org/papers/W10025

[21] George Barker. September 2002. Regulating commercial relationships and uncertainty: a regulatory framework for industries facing dynamic change. Centre for Law and Economics, Faculty of Law – ANU. http://law.anu.edu.au/cle/Papers/Law&Econ-Conference.pdf

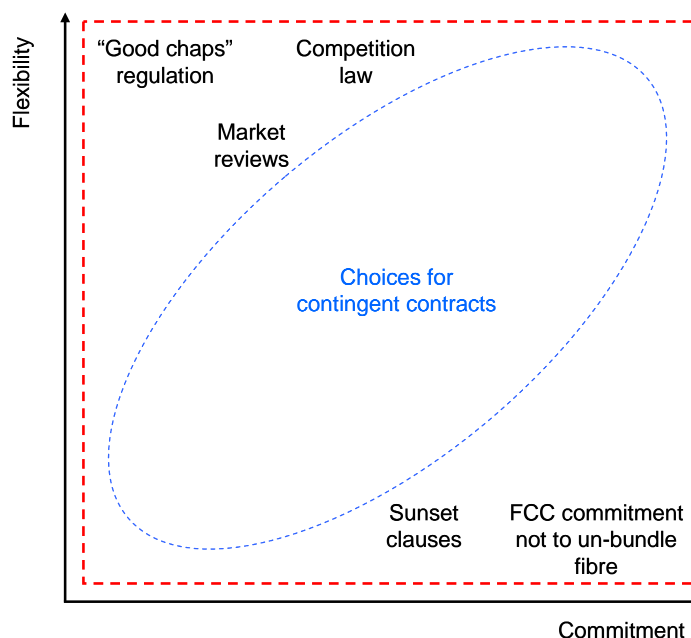
5. Regulatory contracts

"The bonds of words are too weak to bridle men's avarice."
Thomas Hobbes, The Leviathan, 1660

Alternative regulatory mechanisms differ in terms of the extent to which they involve commitment versus flexibility. Furthermore, perceived commitment may differ from stated commitment, to the extent that credibility is not fully established.

Figure 5.2 illustrates a range of options in terms of flexibility and commitment, and includes an illustrative oval region in which contingent contracts might be located.

Figure 5.2: Flexibility versus commitment for alternative regulatory "contracts"



There is no simple trade-off between commitment and flexibility and both regulatory contracts and institutional approaches for addressing uncontracted for events (considered in Section 6) are designed to reduce the trade-off that might otherwise arise. We first consider unconditional contracts, before considering contracts conditional on events.

Unconditional regulatory contracts

Open ended commitments to do something or not to do something are examples of unconditional contracts. On the face of it unconditional contracts offer certainty and commitment. However, in some circumstances, a lack of conditionality may undermine credibility if it is perceived likely that the stated commitment will no longer be sustainable under plausible developments in terms of external events. Examples of unconditional regulatory contracts are the FCC commitment not to require the unbundling of fibre, sunset clauses whereby an existing regulation is removed at a point in time, and "sunrise" clauses where *ex ante* regulation becomes a possibility after a period of time.

FCC commitment not to unbundled fibre

The FCC announced an unconditional commitment not to require the unbundling of fibre optic cables in August 2003:[22]

> *"Although we require the unbundling of legacy technology used over hybrid loops, we decline to attach unbundling requirements to the next-generation network capabilities of fiber-based local loops, i.e., those loops that make use of fiber optic cables and electronic or optical equipment capable of supporting truly broadband transmission capabilities....We expect that this decision to refrain from unbundling incumbent LEC next-generation networks...will stimulate facilities-based deployment in two ways. First, with the certainty that their fiber optic and packet-based networks will remain free of unbundling requirements, incumbent LECs will have the opportunity to expand their deployment of these networks, enter new lines of business, and reap the rewards of delivering broadband services to the mass market. Thus, we conclude that relieving incumbent LECs from unbundling requirements for these networks will promote investment in, and deployment of, next-generation networks. Second, with the knowledge that incumbent LEC next-generation networks will not be available on an unbundled basis, competitive LECs will need to continue to seek innovative network access options to serve end users and to fully compete against incumbent LECs in the mass market. The end result is that consumers will benefit from this race to build next generation networks and the increased competition in the delivery of broadband services."*

On 14 October 2004 the FCC broadened and clarified the scope of the commitment to include fibre-to-the-curb:[23]

> *"Today's action builds on those broadband principles, and relieves incumbents from unbundling requirements for fiber-to-the-curb (FTTC) loops, where fiber is extended within 500 feet of a customer's premises. The FCC found that FTTC networks can deliver many of the same benefits as FTTC loops. FTTC networks offer enhanced capability for providing advanced services, including the ability to offer voice, multi-channel video, and high-speed data services. The new rules free companies to choose between FTTH or FTTC networks based on marketplace characteristics, rather than disparate regulatory treatment."*

Commenting on the decision, the FCC Chair Michael Powell stated:

> *"By limiting the unbundling obligations of incumbents when they roll out deep fiber networks to residential consumers, we restore the marketplace incentives of carriers to invest in new networks."*

The initial commitment and subsequent harmonisation and broadening of scope send a signal to the market, and the extension to fibre-to-the-curb would support very high speed DSL (VDSL) which requires a greater commitment of up-front capital to build out the network than standard DSL, where,

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[22] FCC. 21 August 2003. Report and order and order on remand and further notice of proposed rulemaking. In the matter of: Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers; Implementation of the Local Competition Provisions of the Telecommunications Act of 1996; Deployment of Wireline Services Offering Advanced Telecommunications Capability. Paragraph 272. http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-36A1.pdf

[23] FCC. 14 October 2004. "FCC removes more roadblocks to broadband deployment in residential neighbourhoods." http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-253127A1.pdf

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even if it is irreversible, much of the investment is incremental in response to demand. For example, responding to the FCC decision, SBC Communications has said it will:[24]

> *"dramatically accelerate its plan to build a new fiber-optics network into neighborhoods, providing 18 million households super high-speed data, video and voice services in two to three years — rather than five years as previously announced."*

Sunset clauses

The Better Regulation Taskforce put forward the option of sunset clauses in one of their regulatory tips:[25]

> *"Regulation can be overtaken by developments in markets and society. Where this is foreseeable, a sunset clause may be the best way of ensuring that Government and Parliament reconsider the regulation to ensure it is still effective and appropriate."*

Effectively this is a commitment to review, rather than to strike off, existing regulation after a period of time. Sunset clauses might also involve a commitment to remove a specific regulation after a period of time. Something like this has been proposed in the US in relation to Unbundled Network Elements (UNE's):[26]

> *"Our reading of the failure of UNEs to generate very much competition in wire line access after eight years of trying is that the UNE policy will never work as a permanent feature of the telecommunications system. Because UNE price regulation is so complex and contentious, a permanent commitment to UNEs will lead to enduring distortions in the provision of local service.*
>
> *Thus, we propose putting a time limit— perhaps three years—on the ability of competitors to obtain UNEs. But the clock for this limit would only start running from the date that an incumbent agrees to the FCC's system for defining and pricing UNEs, and stops fighting it in court. Once the limit is in place, it should concentrate the minds of local access resellers on building their own facilities, which would provide much greater competition to the RBOCs than simple resale."*

This proposition includes a commitment to a sunset clause, but one that is contingent on an end to contesting current regulation in the courts. We note that the courts subsequently struck down current UNE requirements and that access is now subject to voluntary negotiation backed by possible arbitration, whilst the FCC reformulates its rules.

Another example of a sunset clause is provided by the merger case involving Vodafone and Mannesmann. The European Commission cleared the merger with conditions including undertakings submitted by Vodafone to provide other mobile operators with access to the combined Vodafone/Mannesmann network in order that they could provide pan-European services. The

[24] SBC Communications. 14 October 2004. "SBC To Rapidly Accelerate Fiber Network Deployment In Wake Of Positive FCC Broadband Rulings." http://www.sbc.com/gen/press-room?pid=5097&cdvn=news&newsarticleid=21427

[25] Better regulation taskforce. December 2003. "Imaginative thinking for better regulation." Page 47. Tip 6. http://www.brtf.gov.uk/docs/pdf/imaginativeregulation.pdf

[26] Robert Litan and Roger Noll. January 2004. "The uncertain future of the telecommunications industry". Brookings Institution Policy Brief 129. http://www.brook.edu/dybdocroot/comm/policybriefs/pb129.pdf

Commission agreed, due to the fast development of the mobile telecommunications sector and the anticipated construction of alternative infrastructure by competitors, to limit these undertakings to a period of three years.[27]

Sunrise clauses

An alternative for new facilities would be "sunrise clauses" involving a commitment not to consider *ex ante* regulation for a period of time. This idea is analogous to a patent which provides temporary monopoly of an idea as the reward for its origination. "Sunrise clauses" placing a minimum time before a new market is reviewed would reflect the balance of risk in regulating such services and the fact that there is no objective method for pricing the risk of failure or underutilisation associated with the launch of new services. An example, though there was no explicit commitment involved, was regulatory forbearance in relation to the mobile sector which arguably facilitated its rapid development via price innovation (and discrimination) and "excess" *ex post* returns – at least for some.

More formal commitments to forbear for a period could be entered into in relation to new services such as fibre or VDSL. This approach appears consistent with recommendations in relation to the European Framework Directive:

> *"new and emerging markets, in which market power may be found to exist because of "first-mover" advantages, should not in principle be subject to ex-ante regulation."* Commission Recommendation 15 of 11/02/2003

Contingent regulatory contracts

A regulatory contract contingent on events might be motivated by three considerations:

i. Contingency may reallocate risk. However, the reallocation of risk via contingency may be more limited than it first appears. Since price caps are periodically reset, changes in costs are ultimately reflected in prices whether or not the contract is contingent. In addition, to the extent that non-diversifiable risk is left with the firm, customers pay a 'risk insurance premium' through higher prices reflecting the higher cost of capital. We do not consider the reallocation of risk as a motivation for a contingent contract further in this paper.

ii. Contingency might be designed to incentivise specific behaviour by a market participant. For example, allowing greater freedom from regulation as a reward for reaching some pre-specified performance threshold. However, if greater freedom itself is beneficial then holding it "hostage" in order to incentivise a desired behaviour could involve a net social cost.

iii. Contingency may make commitment more credible, and alter expectations of market participants and potential entrants, thereby increasing the willingness of the incumbent to invest in network transformation, and the willingness of potential investors also to commit capital and enter the market.

Our focus is on (iii) - increasing the credibility of commitment and sending signals to the market through contingency.

27 European Commission. 2000. Case No COMP/M.1795 – Vodafone Airtouch/Mannesmann. http://europa.eu.int/comm/competition/mergers/cases/decisions/m1795_en.pdf

Transitional price controls (Ofgem's removal of electricity price control)

The experience of Offer, and then Ofgem, in withdrawing price controls as, and arguably ahead of, the development of retail competition showed an understanding that price controls themselves are likely to inhibit the emergence of competition, and that a bold move may therefore be necessary if price controls are ever to be lifted. Non-binding price controls may nevertheless operate as a backstop should competition not prove effective in protecting all customers groups from abuse during the transition to competition.

In 1997 Offer noted that price restraints *"should not seek to do the job of competition, or discourage its development."* In the 2000 review of development of competition in domestic gas and electricity supply, Ofgem signalled its intention to remove the price controls from electricity suppliers from April 2002, subject to the development of competition.

Subsequently, in its 2001 review, Ofgem proposed that from 1 April 2002 regulation of gas and electricity supply would be through the use of powers of investigation and enforcement under competition law. Ofgem based this decision on a number of factors including customer awareness of competing suppliers; service satisfaction; switching behaviour; and a fall in the proportion of customers retained by the incumbent supplier from 90 per cent two years earlier to 70 per cent. The final decision to end price controls was made in 2002. Throughout the process Ofgem viewed price controls as a backstop, and consistently signalled a desire to remove price controls once competitive conditions permitted.[28]

Infrastructure investment based trigger

The European Commission set out the following objective in relation to access to communications infrastructure on terms mandated by regulators:

> *"the imposition by national regulatory authorities of mandated access that increases competition in the short-term should not reduce incentives for competitors to invest in alternative facilities that will secure more competition in the long-term."* Recital 19, Access Directive, 2002/19/EC

There is a dilemma inherent in this part of the Access Directive since mandated access tends to reduce incentives for competitors to invest in alternative facilities. There are three reasons for this. First, the use of Long Run Incremental Cost (LRIC) models which assume network architectures and asset prices and asset price dynamics that depart from those of real world networks that have developed over time may deny cost recovery.[29] Second, new technologies and services have an associated subjective risk of failure which cannot be reflected in objective measures of the cost of capital used to calculate access prices (this risk is revealed in markets via apparently excess *ex post* returns when a technology or service proves successful). Third, access prices do not make provision for the value of flexibility – the so called "option value" - associated with demand uncertainty.[30]

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[28] Stephen C Littlechild. 2002. "Regulators, competition and transitional price controls: a critique of price restraints in electricity supply and mobile telephones." London: Institute of Economics Affairs (IEA). http://www.iea.org.uk/files/upld-article38pdf?.pdf

[29] Federal Communications Commission. September 2003. "In the matter of review of the commission's rules regarding the pricing of unbundled network elements and the resale of service by incumbent local exchange carriers"; and Mandy and Sharkey. September 2003. "Dynamic Pricing and Investment from Static Proxy Models". FCC OSP Working Paper 40.

[30] Robert Pindyck. February 2004. "Mandatory unbundling and irreversible investment in telecom networks." NBER Working Paper 10287.

As a consequence of these three problems, the leasing of facilities may prove more attractive than building facilities; thereby discouraging investment by incumbents, and facilities-based investment by potential competitors. The complexity of addressing these three problems also makes it unlikely that the regulator will be able to identify replicable and non-replicable assets in advance as a basis for deciding where mandated access should be applied with any precision. Indeed, efforts to identify economic bottlenecks involving non-replicable assets reflect the fact that it is not possible to confidently set access terms and prices.

An alternative approach would be to commit in advance to a clear regulatory trigger for the withdrawal of mandated access wherever and whenever replication is demonstrated by the investment behaviour of entrants. This approach draws on market information, and sends a signal to both facilities and service based competitors regarding how regulation will respond to market conduct, thereby establishing consistency between regulatory and business strategy.

Potential investors would assess the business case for investment on the assumption that *ex ante* regulation would be withdrawn and that *ex post* competition law only would apply; while service-based competitors would access their business plans on the basis of expected voluntary access terms by the incumbent or facilities based competitor, or entry into facilities-based competition themselves.

The concept of de-regulatory triggers also has practical relevance given recent signals of infrastructure investment intentions to enable the use of unbundled local loops by companies including Cable and Wireless and NTL.[31] In this case, the relevant market would be at the exchange level, and *ex ante* regulation of access products other than the local loop could be removed where replication building on unbundled local loops is demonstrated.

Price surveillance and threat of regulation (Australian airports)

An alternative to waiting for sufficient competition to emerge is to reverse the burden of proof initially by removing *ex ante* regulation and then monitoring market conduct with the explicit and credible threat of reintroduction of *ex ante* controls if abuse of dominance is observed. The regulation of airports in Australia provides an example of this approach to contingent regulation.

Following a review of airport regulation during 2001, the Australian Federal Government accepted the Productivity Commission's recommendation that Sydney, Melbourne, Brisbane, Perth, Adelaide, Canberra and Darwin airports no longer be subject to *ex ante* price controls, but instead be subject to price monitoring under the Prices Surveillance Act 1983. These arrangements took effect from 1 July 2002, and an independent review will be carried out after five years to ascertain the need for future price regulation. The Government has stated that it would consider re-introducing price controls if it formed the view that an airport operator had unjustifiably increased prices. Its criteria for evaluating prices is that at airports without significant capacity constraints, efficient prices broadly should generate expected revenue that are not significantly above the long-run costs of efficiently providing aeronautical services.

This approach demonstrates a reversal of the burden of proof, thereby allowing greater commercial freedom subject to the threat of regulation. The challenge is to avoid an outcome where the threat of regulation, needed to deter abuse, turns out to be as onerous as *ex ante* regulation; or is so unclear and unpredictable that regulatory uncertainty is actually increased.

[31] Financial Times. 21 September 2004. "NTL to spend up to £65m on 'local loop unbundling'."

In New Zealand, which has historically relied on so called "light-handed" regulation, the approach has been under pressure in recent years. Two insights may be emerging from "experiments" with light handed regulation in Australia and New Zealand. First, an effective approach must be sufficiently robust to address "political" pressures and any evidence of monopoly abuse. Second, "light handed" approaches with prior experience of *ex ante* regulation might be more credible than in the absence of a history of *ex ante* regulation.

Increasing legitimacy and therefore credibility through via contingent profit sharing

In the UK, profit sharing was considered in the Government's review of regulation in 1998, but rejected on grounds of diminished incentives for cost efficiency.[32] In the US Alternative Regulatory Plans (ARP's), in which participation is voluntary (with existing rate of return regulation as the default), often include profit sharing arrangements. Profit sharing is seen as increasing the legitimacy, credibility and therefore attractiveness of such plans.

The plan between the state of Maine's regulatory commission and Central Maine Power stressed the importance of a stable contractual relationship and included profit sharing arrangements:

> *The price Cap has a profit-sharing component that adjusts the subsequent year's earnings if the earnings are outside a +/- 350-basis-point bandwidth around the authorised cost of equity (currently 7.05% to 14.05%). CMP's current authorised cost of equity is 10.55%. The profit-sharing component will be in effect for each price change taking place on or after July 1, 1996.*[33]

Another example of profit sharing agreements is provided by the regulatory contracts negotiated by National Grid Transco following their purchase of electricity distribution business in the US. As part of the regulatory approval process for the acquisition of Niagara Mohawk Power Corporation, the New York State Public Service Commission agreed a 10-year rate plan.[34] Under the plan, after reflecting its share of savings related to the acquisition, Niagara Mohawk may earn a return on equity of up to 11.75%, or 12.0% if certain customer education targets are met. Returns above this level are the subject of a sharing mechanism with customers.

Profits and losses outside a certain range may be "shared" to increase the overall legitimacy of a rate plan. A mechanism that at first site appears to weaken incentives may therefore strengthen them by allowing a longer term commitment to be entered into.

Summing up

Feasible regulatory contracts include a range of possibilities in terms of pre-commitment and contingency. The regulatory contract can have different default positions with either *ex ante* regulation or *ex post* competition law as the starting point. Neither alternative precludes a switch to the other conditional on some trigger, but the choice of starting point is likely to have important implications for the onus of proof (ranging from significant market power to abuse of a dominant position).

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[32] DTI. July 1998. "A Fair Deal for Consumers - Modernising the Framework for Utility Regulation - The Response to Consultation." http://www.dti.gov.uk/urt/fairdeal/

[33] State of Maine Public Utilities Commission. 10 January, 1995. Docket No. 92-345 (II).

[34] National Grid Transco. Annual Report and Accounts 2003/04. Page 30.

Among possible contingent regulatory contracts those that would lead to the withdrawal of *ex ante* regulation are of particular interest in the communications market. The European Access Directive embodies potentially conflicting goals of facilities-based competition and of achieving service-based competition via access mandated by regulation. One way around this inconsistency would be to pre-commit to removing the relevant mandated access products wherever and whenever investment in competing infrastructure occurs – thereby using the market to demonstrate where replication is feasible, conditional on the absence of mandated access.

A contractual approach cannot anticipate and economically provide for all contingences. The following section considers a framework based on clear objectives and due process as a basis for a loose "regulatory contract" in those areas where an explicit contract is infeasible, and discusses general competition law as a form of default regulatory contract.

6. Uncontracted for events

"...The essence of life is infinitely and mysteriously multiform, and therefore it cannot be contained or planned for, in its fullness and variability, by any central intelligence." Vaclav Havel, 1992. "Summer Meditations on politics, morality and civility in a time of transition".

Contracts are incomplete since they exclude known contingencies if the costs of writing, monitoring and verifying the necessary clauses is too high; and they necessarily exclude "unknown unknowns". Nevertheless there are things that can be done to provide predictability and credible commitment in the face of incomplete contracts.

Governments put in place the general framework of law within which regulators and markets operate. First, we first consider transparency and due process as mechanisms for guiding regulatory conduct in the face of uncontracted for events and contract 'renegotiation'. Second, we consider general competition law as a framework that constrains market conduct where *ex ante* regulation is absent.

Transparency, due process and appeals

The clarity of purpose and transparency of the regulatory framework can improve the scope for regulators to pre-commit. Due process also plays a part. For example, in the US the Administrative Procedures Act sets out specific requirements in terms of due process for state and federal agencies (a number of other countries have similar legislation).

Regulators themselves could also develop position statements on the interpretation of their objectives and the principles that will guide decisions. These could be open to consultation to encourage high level discussion, as opposed to the disagreement over detail that tends to characterise consultations on specific decisions. The Ofcom Strategic Review of telecommunications regulation could be viewed as a step in such a process.

Procedures could also be applied that are more dynamic, and demanding than the formal rounds of written consultation and response that characterise UK regulatory processes. For example, the Competition Commission concluded that joint and open meetings had a role in enquiries following a consultation on procedures in 1999.[35]

The Civil Aviation Authority has also used open hearings with published transcripts. These hearings allowed parties to elaborate on written submissions, present their views directly to the decision makers and enabled the CAA panel to question parties to ensure that their points were properly understood (and supported). The CAA concluded in a review of the process that such hearings were a worthwhile and effective process to complement written requests and submissions.[36]

Since subjective methods increase the scope for *ex post* opportunism, the development of norms and procedures around objective methods and data can build credible commitment. Methods that are

[35] Competition Commission. February 2000. Consultation on reporting side procedures and practices. http://www.competition-commission.org.uk/rep_pub/consultations/past/results.htm

[36] CAA. May 2004. "Airport Regulation - looking to the future – learning from the past." http://www.caa.co.uk/erg/ergdocs/erg_ercp_airportregulation.pdf

transparent and rely upon objective data might be preferable to even sound judgement when the potential for opportunism under the latter approach is factored in.

Regulators might also commit not to do certain things, leaving open scope for negotiation (or discretion) within limits. Such contracts are known as indefinite agreements, or agreements to agree. The overarching idea behind such contracts is that they guarantee what will not happen, but not what will happen.

A contract might include provisions under which it will be abandoned, opening up a new round of 'negotiation'. For example the Alternative Regulatory Plan (ARP) between the State of Maine's regulatory commission and Central Maine Power includes provision for termination:

> *"First, if the Company's actual return on equity falls outside of the sharing mechanism deadband for two consecutive years, then CMP may petition the Commission for review of rates, revenue requirements and the overall ARP. Second, if the Company fails to achieve 90% of the Demand-Side Management targets adopted in the Energy Resource plan for two consecutive years, then any party may petition for a Commission revision or termination of the ARP."*

Another route to commitment where it is not possible to specify the contingencies in advance is to delegate, under clear terms, the resolution of disputes. This mechanism parallels that between the government and the regulator at another level of remove. For example, Ofcom launched a Telecoms Adjudicator scheme in July 2004 designed to facilitate and to accelerate the development of fit-for-purposes LLU processes, and to deal with disputes in this area.[37]

The right to appeal decisions of adjudicators to a higher authority is a general feature of formal legal systems and combines a swift disputes resolution mechanism with the threat of appeal which aligns adjudicators decisions with those of the higher authority.[38] Rights of appeal over both the decisions of regulators and adjudicators, particularly if they contribute precedents, may help in achieving credible commitment.

Another example of adjudication is the inclusion of disputes resolution through "final offer" arbitration to support negotiated access under a specific timetable under the 1996 telecommunications law in Guatemala.[39] Final offer arbitration, also known as pendulum arbitration, limits parties' posturing incentives since the arbitrator must choose only between the two final offers, and the chosen offer then becomes binding on both parties. We note that if decisions of this kind were subject to appeal to a higher authority that authority would also need to be constrained to choose between the two offers to maintain incentives for truthful revelation of offers during negotiation.

Finally, the regulatory contract itself may from time to time need to be 're-negotiated'. Where a contract proves inconsistent with *ex ante* efficiency this may be appropriate ('renegotiation' due to *ex post* inefficiency alone simply reintroduces the time inconsistency problem that contracting is designed to address). Renegotiation when a contract is judged with hindsight to have been poor *ex ante* need not undermine the credibility of future contracts, provided the basis for 'renegotiation' is

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[37] Ofcom. 28 June 2004. "Telecoms adjudication scheme for local loop unbundling". http://www.ofcom.org.uk/ind_groups/ind_groups/telecommunications/telecoms_adj_sch/telecoms_adj_sch.pdf

[38] Steven Shavell. September 2004. "The appeals process and adjudicator incentives." NBER Working Paper 10754.

[39] P.T.Spiller and C.G. Cardilli. 1997. "The Frontier of Telecommunications Deregulation: Small Countries Leading the Pack." *Journal of Economic Perspectives*, Vol.11 no.4, 127-38.

clear and reasonable. An example that may fit into this category is roll-out obligations imposed on 3-G operators at the time they acquired their licences. Where these prove binding *ex post* they may simply be encouraging inefficient investment and reneging on them now would not necessary undermine the credibility of sensible future commitments.

General competition law

The default "contract" in markets is compliance with general competition law provisions. This contract is partially defined by an existing body of law and economics which evolves over time in response to developments in the theory of markets, empirical evidence and case law.

A possible virtue of reliance on general competition law rather than *ex ante* regulation in communications markets, where infrastructure is feasible, is that competition law is more accommodating of price flexibility and entrepreneurial profit than *ex ante* regulation – factors that are particularly relevant during market transformation.[40] Economic flexibility has also been identified as a key factor in terms of reaping the substantial potential benefits from the diffusion of Information and Communications Technology (ICT).

The institutional arrangements surrounding competition law provide for a contestable market for thinking and analysis; whereas under *ex ante* regulation the development of policy is to a considerable extent an in-house "monopoly" activity. Competition policy may be more conducive to the development of new networks and services than regulatory authorities accustomed to the problem of regulating legacy networks.

The European Framework Convention and guidance governing communications markets appears to facilitate the comparative evaluation of *ex ante* remedies alongside general competition law:[41]

> *"Only markets where national and Community competition law is not considered sufficient by itself to redress market failures and to ensure effective and sustainable competition over a foreseeable time horizon should be identified for potential ex ante regulation."*

In practice, it is presumed that *ex ante* remedies are appropriate wherever Significant Market Power (SMP) is found, without a second stage test as to whether there are net benefits from imposing *ex ante* remedies as opposed to reliance on competition law. For example, the European Regulators Group note that:[42]

> *"there is a presumption that ex ante regulation is appropriate on the 18 markets in the Recommendation if a position of SMP is found."*

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[40] Phillipa Marks and Brian Williamson. June 2004. "Profitability tests in competition law and ex ante regulation". *Utilities Policy*, Volume 12.

[41] Commission recommendation on Relevant Product and Service Markets within the electronic communications sector in accordance with Directive 2002/21/EC of 11/02/2003. Page 9.

[42] European Regulators Group (ERG). 23 April 2004. ERG common position on the approach to appropriate remedies in the new regulatory framework. Page 9. http://erg.eu.int/doc/whatsnew/erg_0330rev1_remedies_common_position.pdf

A similar concern has been identified in the US and, while the European Framework might be viewed as more rational by design, due process and the courts in the US might lead to better outcomes for converged markets over time:[43]

> *"Antitrust and regulation have starkly contrasting traditions on mandated access. As the internet, computer software, and telecommunications ("New Economy") industries converge, affected firms will increasingly seek clear and consistent legal rules. Moreover, courts reviewing the FCC's decisions in this area are increasingly pressuring the Commission to devise a regulatory regime more compatible with economic theory and antitrust policy."*

A clear focus for *ex ante* regulation on equivalent access to non-replicable assets would leave scope for competition law to regulate conduct in other areas of the communications market. This leaves the question of the transition path from extensive to focussed application of *ex ante* remedies. Contingent contracts, discussed in Section 5, may be one approach to managing expectations during the transition.

Summing up

Clarity over objectives and transparent due process are two key mechanisms that can provide a degree of credible commitment while allowing regulators to respond to un-anticipated or un-contracted for events.

Alongside due process, the framework provided by general competition law could apply with *ex ante* regulation tightly focussed on ensuring equivalent access for competitors to non-replicable assets. Commitment to a mechanism for regulatory withdrawal may be necessary to allow competition policy to function and shape expectations in the communications market.

[43] Joseph Farrell & Philip J. Weiser. Fall 2003. "Modularity, vertical integration, and open access policies: towards a convergence of antitrust and regulation in the internet age." *Harvard Journal of Law & Technology*, Volume 17 (1). Page 86. http://jolt.law.harvard.edu/articles/pdf/v17/17HarvJLTech085.pdf

7. Strategic implications

> *"Strategy without tactics is the slowest route to victory. Tactics without strategy is the noise before defeat."*
> Sun Tzu, 490 BC

A strategy is a rationally-linked and interdependent series of actions over time. Without commitment, a business strategy would hardly be a strategy at all since a company could costlessly reverse any decisions it had previously made.

Regulators have authority to override other decisions, including their own previous decisions. They therefore do not have to be strategic institutions. But this is potentially dangerous, as it can give the illusion that commitment is not required. Regulatory decisions do affect the future, usually by interacting with business strategies. So 'retaining unfettered discretion' will never be costless.

Ideally, regulatory and business strategies should be explicit and lie consistently alongside each other. Certainly, a regulatory strategy - or its absence - will influence business strategies, and thus has a crucial effect on the development of the market. If Ofcom's Strategic Review is to deal with true strategy, this link and its implications should be addressed. In this, the regulatory equivalent of 'contingent contracts' can play a strong role.

The following specific propositions are designed to stimulate discussion of such issues:

i. Regulators, acting on behalf of customers and society, should decide where to pre-commit, and where it is appropriate to commit, devise institutional mechanisms that ensure that such commitments are credible.

ii. Neither regulatory independence, nor the appointment of benevolent regulators provides credible commitment on its own. Other mechanisms must be explored that allow regulators to selectively tie their hands, thereby sending credible signals to market participants to allow efficient investment, innovation and to encourage infrastructure competition.

iii. Regulation may need to adapt to changing circumstances and there can be a conflict between the need for such flexibility and credible pre-commitment. Contingent regulatory contracts and clear due process to address un-contracted for events and contract "re-negotiation" can minimise the conflict. The following specific propositions illustrate these two alternatives.

    a. A contingent regulatory contract that included triggers for the withdrawal of mandated access, wherever and whenever replication is demonstrated by the investment behaviour of entrants, would send a credible signal that infrastructure investment should be assessed presuming that only *ex post* competition law applies, thereby promoting infrastructure investment wherever it is economic, and enabling market information to inform the question of what is replicable.

    b. To the extent that contracting is incomplete *ex post* competition law provides a form of incompletely specified contract which can guide market conduct. In order for this contract to function a commitment is required not to impose *ex ante* regulation to aspects of the communications market.