

# **Dynamic Efficiencies and Workable/Effective Competition – Comments on a Paper by William G. Shepherd**

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The issue for this session as it is set out in the program is “Dynamic Efficiencies and Workable/Effective Competition”. I want to begin by recalling why that is an obvious and relevant topic for a regulatory conference at this particular time. Then I will briefly explore a few issues that I think arise from Geoff Shepherd’s paper.

## **What is effective competition?**

I think the use of the oblique stroke between “workable” and “effective” in the topic on the program is meant to suggest that the terms are interchangeable, and I have no problem with that, but I find the term “effective competition” clearer and generally will use it from now on.

The term “effective competition” is often used in a slightly apologetic or defensive way, as in “Look, perhaps in an ideal world there could be more competition in this industry, but we do have effective competition.” By that I think the speaker means that the level of competition is as good as one could reasonably expect or hope for and provides satisfactory or acceptable market outcomes in terms of product/price/quality packages.

Bankers would say this about retail banking. Supermarket chains would say it about grocery retailing. Real estate agents would say it about the market for residential properties. Electricity generators say it about power generation. Personally I would largely agree with them. Most people would say it about lots of primary product markets.

How many people would say it about some telecommunications services, or about gas and electricity retailing, is problematical.

To summarise the significance of the notion of effective competition, the implication is that one would not seek to regulate markets that are effectively competitive, and that the outcomes provided by effectively competitive markets are worth trying to emulate in markets that fall short of effective competition. Thus, the thought is that effectively competitive markets provide a benchmark for regulators, who should seek to achieve the characteristics and outcomes of effectively competitive markets in markets that are regulated (because they are not and could not be effectively competitive). On the other hand, regulators would be over-zealous and their actions counter-productive if they went further. Moreover, effectively competitive markets should not be regulated in the first place, so effective competition is the benchmark against which to decide what is brought

within the regulatory net, e.g. in decisions about whether to declare telecommunications services, or whether a pipeline should be covered by the Gas Code.

In short, effective markets, being the best one can hope for and that can actually be observed in the real world, set the standard to which regulators should aspire but beyond which (in the direction of perfection) it would be unrealistic and wrong (and possibly unfair) to seek to go.

### **Why this is a good topic – the *Epic* case and the building blocks approach**

Now why is this topical in regulatory circles in Australia? It stems from the *Epic* case<sup>1</sup> in the Supreme Court of Western Australia.

The *Epic* case concerned the setting of gas access tariffs by the Western Australia regulator. The Supreme Court had to interpret the Gas Code and, to shorten and simplify, pronounced that where the Code uses the terms “competition” and “competitive”, it should be interpreted as meaning “workable competition” and “workably competitive”, as opposed to the theoretical concept of perfect competition.

In saying various fairly helpful and non-controversial things about the nature of competition, the Court commented that there is no consensus about how to promote a workably competitive market where one does not already exist; that a workably competitive market “. . . is not a fixed and immutable condition with any absolute or precise qualities, but a process which involves rivalrous behaviour . . .”; that it “. . . may well tolerate a degree of market power, even over a prolonged period”; and that in it “. . . forces will increase efficiency beyond that which could be achieved in a non-competitive market, although not achieving theoretically ideal efficiency.” The Court was speaking in the context of the regulator’s need to deal with potentially conflicting objectives, of which competition was one.

In an attachment to its submission to the Productivity Commission review of the gas access regime, the ACCC provided a paper by Darryl Biggar discussing the implications of the *Epic* decision. Darryl has subsequently written other pieces, including an article in the April 2004 issue of *Network*, the publication of the Utility Regulators Forum.

The main theme of his original paper was that telling regulators to try to achieve the outcomes provided by effectively competitive markets was of limited use; and that the target should generally be economic efficiency. The Court had recognised that real markets take a while to adjust to equilibrium.

In the paper he provided as part of a submission by Allgas Energy Ltd to the Productivity Commission inquiry, David Round was critical of Darryl’s paper. Darryl responded and, on my reading, the debate became more focussed on whether current regulatory practice in Australia was pursuing static efficiency at the expense of dynamic efficiency. This was a useful exchange, but you will need to read the papers yourselves to resolve it.

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<sup>1</sup> *Re Dr Ken Michael AM; Ex Parte Epic Energy (WA) Nominees Pty Ltd & Anor* [2002] WASCA 231.

I think the argument implicitly runs as follows: regulators typically try to set an efficient price for a bottleneck service, i.e. a price that leads to efficient market outcomes in terms of upstream and downstream competition, efficient investment, build or buy decisions that maximise community welfare, etc. Efficiency is assessed by reference to competitive markets. And of course in the perfect competition model, price equals marginal cost.

Now we can't actually have perfectly competitive markets and must be satisfied with (and I would say be more than happy with) effectively competitive markets. But are regulators unreasonably seeking to impose the efficient prices found only in perfectly competitive markets on the services provided by essential facilities? Are they inappropriately trying to set price equal to marginal cost? Are they stuck in a static world? What about dynamic efficiency. Do the prices set by the regulator stifle innovation?

For reasons that I confess have not been entirely clear to me, David Round seemed to conclude from Darryl's first piece that the ACCC was failing to adopt the WA Supreme Court's view, that continued use by it or any other Australian regulator of the building blocks approach would leave it open to formal challenge, and that the ACCC "may have elected to continue to regulate under its traditional perfect competition model . . ."

This was all a bit of a mystery to me as, although I was not involved in the ACCC's submission to the Productivity Commission review of the Gas Access Code, I was the Commissioner most directly responsible for its approach to utility regulation, and I know for a fact that we never thought of ourselves as applying a traditional perfect competition model. Staff whom I ear-bashed over the years about the unreality of perfect competition and its inapplicability as a benchmark must have been equally puzzled.

However, I do feel strongly that notions taken from the perfect competition model have sometimes wormed their way, and been accepted uncritically, into thinking about both regulation and competition policy, including how mergers have been analysed. In this, perhaps I am on the same ground as David. For example, it is damaging to think in terms of prices adjusting instantaneously to falling marginal costs without remembering the reasons why investors put their money up in the first place.

A few words about the building blocks approach are necessary.

Regulators have to set prices. In the case of, for example, gas transmission, they have no choice about this, nor of what pipelines they have to set prices for. The Gas Code sets out the framework in which the prices are to be set. To simplify greatly, prices are based on costs, and the building blocks approach is commonly used to estimate efficient costs. It consists merely of the proposition that an operator's costs consist of its operating expenses, its cost of capital, and its depreciation costs. The last two of these three are sometimes called the return *on* capital and the return *of* capital.

The regulator's task is generally to set prices at levels approximating what they would be in a competitive market. This raises all sorts of problems, the most difficult of which, I believe, is that a competitive market for the service being provided – such as gas transmission or telecommunications access – cannot exist, even in a theoretical sense – because of the natural monopoly character of the essential facility. That is, the regulator

is only setting the price because there is no competitive market; and there is no competitive market, not for some transitory or externally imposed reason, but because the fundamental nature of the market is inimical to competition.

In saying this, I of course recognize that whether there is in fact a natural monopoly needs to be assessed, not assumed; that government and other constraints rather than intrinsic factors such as minimum efficient scale given the level of demand sometimes inhibit competition; and that there are infinite shades of grey. Regulators have to be aware of shades of grey, but their regulatory tools tend to be black and white.

I see nothing about the building blocks approach that is necessarily inconsistent with notions of effective competition or necessarily tied to a perfect competition model. The question is – and always has been – how are an efficient firm's costs best estimated?

Geoff Shepherd has chosen to address exactly the right questions: how to do access regulation, how to assess whether a market is effectively competitive, and what to do if it's not.

The main point from my perspective is that there is no question that we should seek to redress problems of market dominance, anti-competitive structures and conduct, etc., but that equally we should be realistic about what regulation should aim for. We may then ask whether regulatory tools have been developed in the light of theoretical models of perfect markets rather than "merely" effectively competitive markets, and are as a consequence inappropriate in some way. And much of that question then resolves itself into one about whether overemphasis is being given to static rather than dynamic considerations of efficiency.

### **The pernicious doctrine of perfect competition**

OK. I concede that "pernicious" is a bit strong. But the problem is this. Perfect competition is a description, an idealisation, a model to aid understanding. We all know that. It requires strong assumptions, some but not all of which are never to be found in the real world. But the word "perfect" immediately suggests something that is good and that we should aspire to; and that the alternative must be imperfect, not as good, something that we should seek to improve upon, something whose imperfections should be removed.

But some of the characteristics of real-world markets that violate the assumptions of perfect competition are not imperfections, shortcomings, things that can to be changed, or even necessarily things that ought to be changed if they could be.

For example, a perfect market requires that all buyers and sellers have perfect knowledge about market conditions, with information being costless and implying that everyone knows what everyone else knows. I don't even want to live in a world like that.

We talk about market imperfections, that prevent perfect competition, and unconsciously conjure up comparisons with an imperfection in an otherwise perfectly made glass vase, or a wrong note in a piano recital, or a flaw in piece of woven fabric. These are imperfections that could be removed, or perhaps with greater care would not have been made. But the fact that a market does not behave according to a textbook is partly

because it is governed among other things by human nature, which we may not want to alter so that the market can operate more closely to the textbook description.

Or technology may be the issue. It would not make sense to ban production techniques with falling costs so as to prevent the possibility of natural monopoly. There is usually little that can be done about the sunkness of costs. These are characteristics of some markets that should not be looked upon as failings but simply as intrinsic features.

We will make mistakes if we forget this and try to impose on a market characteristics that are not found in nature, or if we decide to regulate a market that, while failing to meet assumptions required for perfect competition, is no different from many markets that are effectively competitive.

On the other hand, there are some market impediments that can be dealt with. Free entry and exit may not be possible in the presence of large sunk costs, but government-erected barriers to entry – almost always put in place for bad reasons or unintentionally – can and should be removed.

Even more important, thinking in terms of the simple perfect market model with costless information, common technologies, etc. is not helpful for dealing with issues about incentives for innovation, trade-offs between static and dynamic efficiency, and the very things that regulators have to grapple with, as was pointed out in the *Epic* case.

The difficult question is how far we should go in seeking to replicate the outcomes of competitive markets in circumstances where effective competition is precluded, e.g. markets for bottleneck services.

### **Access regulation**

Let me turn now to what Geoff has to say about access regulation. His summary prescription is to set prices based on long-run marginal costs but with liberal profit limits, backed by aggressive regulation that requires rapid innovation. My focus is on how one actually does that.

Geoff has quite reasonably made some assumptions: viz. that it is clear what the precise bottleneck or essential facility is for which one is setting access prices; and that costs are crystal clear. Not surprisingly in any economic discussion, the assumptions provide rich grounds for further debate.

I shall come back to the definition of the bottleneck later. For now, let us think some more about costs.

### **Regulating innovation**

I believe it is generally agreed that the benchmark is the forward-looking long-run costs of a (technically) efficient firm. Why add something to those costs in setting prices? Geoff is fairly explicit that a margin is needed to provide an incentive for the access provider to innovate. But what is the theory and evidence behind this?

I see no reason why profits – or additional profits – should encourage innovation by an access provider, i.e. an essential service operator. The existence of profits does not, of itself, change the incentive to undertake innovation. As Geoff says, the firm may just give the extra profits to its shareholders, although I would have thought that the evidence

is that monopolists generally dissipate profits. But that's a principal-agent problem, and best left for another day.

The claim seems to be that allowing a liberal profit margin at least provides the wherewithal for expenditure on innovation, and it's up to the regulator to make it happen. This troubles me in several respects.

First, Geoff discusses what constitutes a liberal profit margin in terms of high rates of return by comparison with those of other firms and with its own cost of capital. But what is its cost of capital? As all students of finance know, the cost of capital is determined not by the firm's costs of raising capital but by the riskiness of its investments, and that includes, crucially, its investments in innovation. If the firm is innovating, the need for capital to finance that activity should be captured in estimates of its cost of capital. At least, there should be a relationship between innovation and cost of capital. There should be no need for an arbitrary add-on to prices.

Secondly, I wonder about any regulator's ability to compel innovation. Geoff says regulators need to know what the innovation possibilities are and be able to judge whether the rate of innovation is unacceptably slow. With all my admiration for the ACCC, I doubt if its staff and Commissioners would be eking out meagre livings as government employees if they had these capacities. It's just not easy for anyone to know what innovation possibilities there are. Information about such things is, after all, highly sensitive commercially and tightly held. It tends to be anecdotal. Evaluating it requires an ability to separate out the real flakes from those who only appear flaky.

Moreover, rates of innovation depend on more than technological possibilities. They require complex risk/return calculations involving forecasts of demand, etc. where it would be difficult for the regulator to even ask all the right questions.

What regulator, for example, could have known at what point mobile phone operators ought to have introduced text messaging? Judging by the revenue that was evidently forgone before SMS came in, clearly the operators themselves did not have a good grasp of the potential market. Who could say with confidence when Telstra should have begun rolling out ADSL? It faced great uncertainties, including with respect to the regulatory framework.

Thirdly, there seems to be a perhaps Schumpeterian assumption that innovation is the field of the access provider. What about the upstream and downstream competitors? Are not high access prices (i.e. access prices above efficient costs) restricting their capacity to innovate? Certainly those access prices must be restricting the size of the upstream and downstream, i.e. competitive, markets.

### **Efficiency and rents**

This brings to the fore the real question here: how much allocative inefficiency are we willing to put up with in the hope that above-cost pricing will encourage innovation? It would be one thing if we knew what the trade-off was. Then we could make a judgement. But there is no reason to believe that higher access prices would generate greater innovation.

On the other hand, higher access prices, if expected to continue indefinitely, should create greater incentives to bypass the bottleneck. That bypass would be in the form of both

inefficient (in an allocative sense) investments, e.g. in alternative access networks or duplicated pipelines, and of investments in alternative technologies that would ultimately allow efficient bypass. In either case, there would be more competition sooner than would otherwise be the case, but whether that would be efficient is problematic.

I have been attracted to a suggestion by Ingo Vogelsang that regulators should set access prices at low initial levels and then raise them according to an announced schedule, thus encouraging bypass. But I find it hard to see how to make that work in practice, when the cost of access is probably falling and the key requirement is for the regulator to give all the parties certainty. The risk is that the certainty would be at the expense of prices diverging more than intended from costs whose path is determined by unforeseen circumstances.

Note that innovation that facilitates bypass of a bottleneck – and perhaps that’s the most important sort of innovation – is hardly likely to be carried out by the bottleneck owner. More broadly, innovation that allows new forms of competition, even if not strictly bypass – I am thinking here of embedded electricity generation competing with transmission augmentation – may be quite removed from the bottleneck owner’s business.

Perhaps my objection to the proposition that access prices should contain liberal profit margins to encourage innovation boils down to a concern about regulators condoning permanent rents. But the role of rents is critically important in regulation.

The pursuit of rents is precisely what drives competitive outcomes and dynamic efficiency. For rents to be pursued, the possibility of capturing them must be real. In highly competitive markets rents will be fleeting and transitory, and will not adversely affect the efficiency of the market outcome. In effectively competitive markets, they may be less fleeting but far from permanent. The problem (and a primary rationale for regulation) is that market imperfections sometimes create sustained rents that have adverse consequences. Copyright is one example of when statutory intervention is supposed to do some good through the creation of sustained rents.

The problem in access regulation is that the returns to sunk investments are, by definition, all rent, and the regulator has to decide how much should be allowed to generate good outcomes (efficient provision of the essential service – generally, collective demand in excess of operating costs just recovers long-run capital cost) without generating the bad (downstream prices that simply transfer surplus to the asset owner). One way of putting this is to say that a regulator should try to squeeze out the rents but not interfere with the quasi-rents.

A regulator who confiscated all rents as soon as they arose would put an end to innovation. Fortunately, even a misguided regulator who had that objective would be highly unlikely to succeed. As I was told by an old hand when I first became a regulator, “No regulator ever did any serious damage to an incumbent.”

Retention of rents to some degree is necessary for the achievement of efficient rates of innovation, bypass and new entry. But I do not see it as being implemented by deliberately setting prices above long-run costs. Nor do I see it as the aim of incentive regulation, which is all about allowing the operator to retain profits for a limited time.

Incentive regulation is intended mainly to provide incentives for cost minimisation, including through process innovation. I see no reason why incentive regulation would of itself encourage product innovation or facilitate bypass and ultimately greater competition.

Perhaps what is implicit in my approach to this discussion is a doubt about Geoff's statement that "innovation is the most important goal". I would prefer to see efficiency, interpreted broadly, as the key objective. Because I think competition is the most powerful driver for both efficiency and innovation, I lean towards regulation that promotes competition in the expectation that that will lead to innovation, rather than trying to promote innovation directly.

The big question is whether rents are capable of encouraging entry and whether there is any chance of new technologies providing new forms of entry. The answers vary from industry to industry, and I do think that regulators need to know their industries well enough to make appropriate judgements.

Where an access network is the bottleneck in telecommunications, clearly alternative access technologies are feasible. Regulators are going to have to be careful that they forbear from regulating fixed local loops once mobile and possibly other technologies effectively discipline the fixed operators. I don't know when that will be, and it is complicated when ownership of both technologies resides in the same firms, but I would not be surprised if regulators are late in letting go.

On the other hand, it's hard to see any alternative technologies to, or feasible bypass of, distribution networks for gas and especially water. Gas competes with other forms of energy, but I'm not sure that water competes with anything, although I admit to being puzzled by the amount of bottled water sold in countries where the tap water is perfectly potable.

Where the bottleneck is transmission, again we see differences between electricity, where embedded generation has a role, and gas, where only faith in energy substitution could make sense of the Productivity Commission's aversion to regulation. Of course energy substitution sufficient to negate the need for regulation just means that the gas pipeline does not have market power, which does not seem to be the Productivity Commission's conclusion, so there appears to be a contradiction there.

It is not enough to say: "Lay off the regulation and let rents lead to new entry." Rents are not going to give us another ubiquitous telecommunications access network or competition in electricity, water and gas distribution in the foreseeable future. More generally, rents derived from control of an essential infrastructure input or an inherited network monopoly are vastly different from rents that existing and potential competitors can aspire to take a piece of by being more efficient or coming up with a new idea.

### **Has the ACCC got it wrong?**

I would like to return to the question whether the ACCC is somehow at odds with the *Epic* decision in continuing to use a building blocks approach. As I see it, the real concern must be that the ACCC is systematically under-estimating costs and setting prices too close to these under-estimates, or precluding the possibility of some windfall profits as a driver of efficiency. What else could be the concern be? Even if it is

expressed in terms of incentives for innovation and a claimed over-emphasis on static efficiency at the expense of dynamic efficiency, the problem must initially manifest itself in the prices that the regulator sets.

What signs should we look for?

First, is the ACCC underestimating the regulatory asset base? Is it assessing reasonable operating costs too harshly? I have seen no plausible evidence of any systematic errors in these departments.

Is it underestimating the WACC? Is it misusing the capital asset pricing model? Is the CAPM appropriate in a less than perfectly competitive environment? Is it used in a manner consistent with its use by firms trying to understand their own cost of capital? In these areas I am not so sure because I consider the issues have not been sorted out fully, even in principle, but again, I have seen no convincing evidence of error.

In an effectively competitive market where sunk costs are important and adjustment to equilibrium is not rapid, the regulator can face a trade-off between forcing prices to levels that look efficient in terms of productive and allocative efficiency and disincenting investment. I think this is the main test. That is, while I have no doubt about the importance of innovation, the more fundamental, and I suggest more tractable issue, is whether regulation causes reduced investment. Of course, one has to consider investment not only in the essential facility but also in the upstream and downstream markets, i.e. not only in the incumbent but also in the competitors and potential new entrants.

### **Competitive processes**

I now want to change tack and talk about competitive processes. In seeking to replicate the features of competitive markets, we generally talk about competitive market outcomes such as the relationship between prices and costs, the existence of investment in innovation, and so on. But what really characterises competitive markets is the processes of rivalry that generate the desirable outcomes – prices, etc. – that we are familiar with from theoretical models.

This is an area in which it is difficult to be at all rigorous, but I think a key point is that the degree of rivalry between producers depends on the behaviour of consumers.

What I have in mind is that vigorous competition comes only when consumers are well informed about choices on offer in terms of prices, nature of the product or service, quality, etc., and when they can freely exercise their choices. With highly differentiated products this becomes very complex.

### **The role of information**

The more complex and the greater the number of choices facing the consumer, the less knowledgeable the consumer will be (because it will be more costly to be informed), the more reliance will be placed on simple proxies, and the greater will be consumer inertia and reliance on habit.<sup>2</sup>

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<sup>2</sup> This discussion draws on Roger D. Dalton, Consumer Information and Workable Competition in Telecommunications Markets, *Journal of Economic Issues*, September 1993.

If consumers do not know clearly how services differ from each other in functionality, in all the aspects of quality such as reliability and warranties, and in the terms and conditions of purchase, they will be forced to use proxies such as trademarks, brand names, company reputation, company size and age, time the service has been on the market, etc. It is not that these factors are insignificant, just that they do not in general go directly to the product/price/quality bundle. Firms will compete more on brand name than on the intrinsic merits of the product.

Gaining knowledge of choices open to the consumer requires search time and effort. Business and residential consumers will differ considerably in their search behaviour according to the resources available to them and the cost-benefit tradeoffs facing them.

I would like to see regulators putting more effort into improving the information available to consumers in terms of both quality and quantity and of access. Reports provided by the ACCC on, for example, telecommunications prices and services are not, I suggest, of much use to consumers. They mainly serve as a source for the government to congratulate itself over progress, and perhaps for the regulator to do so, too.

Comparative price/service/quality information such as provided by Choice magazine would be much more useful. But regulators are naturally wary of getting embroiled in the highly charged issue of a government body seeming to recommend one provider's service over others. They would be seen as picking a winner, or at least providing free publicity. Nevertheless, I believe that Ofcom did provide comparative service information and some regulators in Australia have shown a willingness to proceed cautiously down this path.

Now you might say that all this is fine, but in practice what matters is having a sufficient number of firms competing. But what does "competing" mean? Unless consumers are prepared to seek out and use information in making decisions about alternative services, competition will be weak, i.e. the fact that there are multiple players in the market will not discipline prices.

What should the regulator's response be? To discipline the prices himself? No, it is far preferable to empower consumers. And if they still don't care maybe it doesn't matter to them enough, i.e. maybe not enough is at stake. In that case, there's probably not enough at stake to justify the regulator getting involved either.

The issue of mobile phone termination charges comes to mind. Has enough been done to empower the consumer? If so, why do we need to keep gnawing away at the problem? Or is the market failure genuinely so intractable and important that regulatory action is a must?

### **Switching costs**

The other key requirement for competitive rivalry is the ability for consumers to exercise choices. Firms try hard to reinforce consumer inertia by raising the costs of switching to another firm's offering. Technology can sometimes impede switching – for example, the need to learn a different operating system or mobile phone user interface – but can also facilitate it. Who could doubt that competition between mobile phone networks would subside as penetration plateaus were it not for number portability?

Indeed, in another field of regulation, viz. banking, I wonder why more consideration is not given to the same issue. Surely the reason many are doubtful about the effectiveness of competition in retail banking, despite the evident efforts of the banks to promote their wares, is the cost of switching banks. With more and more use of standing direct credits to receive payments such as salaries, and of direct debits to pay regular bills, moving one's account to a different bank is a daunting prospect.

How much easier it would be if the account number stayed the same, as it could with bank account portability. Why should there be any need to tell those paying money into your account, and those to whom you regularly pay money from your account, that you have switched banks? Why shouldn't the account number be yours for life if you want it to be?

It's also slightly ironic that, phone number portability now being taken for granted, switching ISPs is deterred by the need to change email address. At the least, I believe regulators should be on the lookout for strategies by firms with market power to raise switching costs.

I am not proposing that regulators go overboard on a new quest to improve information to consumers. It has to be acknowledged that as well as the cost of acquiring information and the cost of switching, users face uncertainty about the expected increase in utility from an alternative service. Will the new provider be better to deal with over the long term? What about when something goes wrong with the service? What will prices and your own pattern of usage be in the future?

Moreover, many consumer choices are made on the basis of neither habit nor search, but on impulse. This varies immensely from person to person, e.g. because some people gain pleasure from searching and processing information. I'm in that category. The technical description for such a person is "nerd". But some people would rather be doing something else. That is a matter of taste.

Note also that information may only be made useful or even discovered through the processing of it. Understanding various aspects of service and quality, i.e. how products are differentiated, requires actually immersing yourself in the information. It cannot be presented to the consumer ready to digest. (Hence the difficulty in trying to mandate standards for disclosing bank charges, superannuation fund rates of return, etc.)

In addition, it is not generally feasible or sensible to use two service providers, e.g. two electricity retailers, simultaneously. This makes direct comparison more difficult and adds to search costs and uncertainty.

### **Implications for the effectiveness of competition**

One implication is that the level of competition may be effective for some consumers but not others. In particular, it may be effective for business users but not residential users even if the actual services provided to businesses are identical to those provided to residential consumers, because businesses may face a different cost/benefit analysis. Similarly, competition may be less effective for low income/low usage consumers.

It follows from all this that I am sceptical that just looking at the number of competitors is sufficient as a means of assessing the effectiveness of competition in a market. I think one needs to look inside the market to see how firms and consumers are acting. And

I think barriers to entry tell us more about what the future holds for competition. Counting the number of firms can give no more than a snapshot frozen in time.

Regulators need to make judgements about the future. What will happen if we don't do something? Will competition improve with time, or will market power become more entrenched? Why? And observing firm behaviour only takes us so far.

Our understanding of, and even more our ability to predict, why firms act as they do has a long way to go. For example, it is said that dominant firms both stifle innovation and are too lazy to innovate. But those are contradictory statements. Actively hindering innovation – raising rivals' costs and stymieing their attempts to introduce new technologies – requires energy and cleverness. It may be reprehensible, but it is not the same as laziness.

I would like to know more about what conditions promote active anti-competitive conduct by a dominant firm and what leads to self destruction. Can an 800-pound sloth turn into an 800-pound gorilla, or vice versa? It would be a real paradox if an incumbent was slow and unresponsive and simply failed to innovate, but was also right up with the times and actively preventing innovations coming onto the market.

What can the regulator influence? Where can regulatory tools be applied most effectively?

## **Conclusions**

To sum up, effective competition is good enough. We know that is correct, because we can't do any better, so there's no point agonizing over whether we could engineer some higher level of competition. If one believes the market generally does an all right job, then when we see vigorous competition, we should accept that as the benchmark.

Perfect competition is a construct. It is not something to aim for, because some of the assumptions that would allow it are contrary to desirable or unchangeable aspects of human nature that should not be sacrificed on the altar of a model. However, reducing barriers to entry and improving information availability to increase competition is certainly worthwhile.

As well as being relevant to regulatory decisions, effective competition has implications for how we think about antitrust issues more generally. Geoff Shepherd has dealt with that in his paper. The way I would put the basic issue is that, just as the outcomes provided by effectively competitive markets provide the benchmark that regulators try to emulate in markets that are intrinsically uncompetitive, one should not seek to regulate markets that are already effectively competitive. That raises questions of market definition. Suffice it to say that regulators who forbear from regulation are as scarce as hen's teeth.

So if effective competition is the answer, what was the question? That is less clear.

In the context of this conference I think it comes back to what regulators should do. How should they go about their jobs?

The basic question for a regulator is always: will my intervention do more harm than good? Comparing the costs of Type I and Type II errors as David Round discusses is a useful exercise, although I suspect there is a temptation to assume the answer.

I think the holy grail is good old-fashioned economic efficiency, with competition as the best driver of it. Of course, society has other objectives as well as efficiency. The task for a utility regulator is usually to be aware of the other objectives and try to ensure that their achievement comes with as little adverse impact on efficiency as possible. I agree that innovation is hugely important – and characteristic of truly competitive markets – but I am suspicious of regulators’ ability to pursue it directly.

For me, the main issue is whether regulation unduly hinders investment, of which investment in innovation is a key part. In assessing that, we need to think about investment by all the players, not just the incumbent, who is sure to claim that its investment is being constrained.

This leads me to think that the regulator should just do the most careful job he can. I do not see an alternative to the building blocks approach as a starting point in setting access prices, and I do not see a need for an alternative. Of course, incentive regulation should take over once the starting point has been determined, but the building blocks should not be entirely put away. Even the mature regulator may need to play with them.

It is easy to talk about regulators needing to use their judgement, not be constrained by rigid logical approaches, and so on, but the risk is that we would then lose accountability and predictability without knowing that the outcome was any better anyway. A regulator who loses credibility has no future. That is likely to lead to government taking over, with either inappropriate deregulation or inappropriately heavy over-regulation.