

Pricing Public Services

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Abstract

Efficient public sector prices depend on numerous conditions including the public good or externality characteristics of the services, the structure of markets, the deadweight costs of paying for fixed costs, transaction costs, and information problems. Consequently economic theory prescribes a complex set of efficient prices ranging from zero through short run marginal cost up to full cost pricing and including some intermediate prices. However, economists have not been very successful at translating these complex pricing principles into a workable pricing policy to be implemented mainly by non-economists. This paper describes efficient pricing principles and an attempt to translate them into practice for government information services in New South Wales. It describes both the practical second-best simplifications adopted in order to implement an efficient pricing policy and the arguments that government agencies raised against the pricing policy. Similar pricing issues would arise for most government services.

1 Introduction

Governments have long charged for some public services, notably for utilities, transport services, telecommunications and postal services, provided by public trading enterprises. Today governments at all levels are charging increasingly for general government services, such as refuse collection, parks and recreation, immigration services, information, corporate services, approvals for pharmaceuticals and medical equipment, and so on. The Commonwealth and state governments collectively raise over \$10 billion in user charges for general government services, in addition to revenue raised by its public trading enterprises.

Given the importance of pricing to efficient resource allocation, economists have analysed in detail the prices that governments should set for their services to maximise social welfare in a variety of market conditions (see Bos, 1985; Weare and Friedman, 1998). However, as Weare and Friedman (*ibid.*) observe: 'The great bulk of older established research on pricing principles is incompatible with the actual practice of public sector pricing'. For instance, the British White Papers on the nationalised industries (UK Treasury, 1967, 1978), which recommended marginal cost pricing, had minimal effect on the prices that these industries charged. Indeed, there is little evidence that governments have taken much notice of more recent state of the art work on public sector pricing principles. Producing

workable efficient pricing for public services, that will be implemented mainly by non–economists, evidently represents a significant challenge.

In this paper I discuss some issues that economists typically have to confront and resolve in translating pricing principles into practice. The paper draws on my experience in developing a policy for pricing publicly provided information services in New South Wales.¹

The paper contains four main sections. The first section outlines the main features of an efficient public sector pricing system. This does not break new ground, but is necessary to establish the basis for an efficient pricing strategy. Section two describes the main pricing principles for pricing the sale of government information that have been developed in New South Wales. Section three assesses how these principles conform to the principles developed in the theoretical literature and explains some observed departures. The fourth section discusses some practical objections that government agencies have raised to the pricing principles. The final section briefly summarises the main findings.

2 Principles of Efficient Pricing

Most public pricing literature starts from the premises that government is the sole supplier of a service and that prices should be designed to maximise the welfare of consumers and producers that are party to the transaction. It is also generally assumed *ab initio* that:

- There are no spillovers.
- Services are separable (excludable) and non–rival.
- There are no significant transaction costs.
- Revenues cover fixed costs or that taxation to pay for deficits has negligible deadweight cost.
- All other prices, including input prices, equal marginal costs.
- There are no significant information problems.
- Equity should be achieved by income transfers rather than by altering price relationships.

Under these conditions, maximising efficiency requires that services should be priced at the intersection of the demand curve and the short run marginal cost (SRMC) curve as shown in Figure 1. This is generally described in short as SRMC pricing. The demand schedule depicts the aggregate willingness to pay for a marginal increase in consumption. The SRMC curve represents the opportunity cost of producing a unit of additional service. The efficient price is P^* and the efficient amount of service supplied is Q^* . This price produces an allocation of resources to the service that maximises social welfare as measured by the sum of consumer and producer surpluses. Under any other allocation, it would be possible to increase someone's surplus without reducing another party's surplus.

The concept of SRMC pricing is re–expressed when capacity is fixed. In this case, after a certain output level is achieved, the supply curve becomes perfectly inelastic, as depicted in Figure 2. The

SRMC along the vertical part of the supply curve is again shown by the intersection of the demand curve with the supply curve. SRMC is here the value of the service foregone by another customer rather than the opportunity cost of some other goods that are foregone. In Figure 2, the efficient price for nighttime electricity is P_{night} and the efficient price for daytime electricity is P_{day} . The excess of P_{day} over the variable supply cost provides a contribution to fixed costs that may be more, equal to or less than the fixed costs. However, the efficient pricing principle remains SRMC pricing.

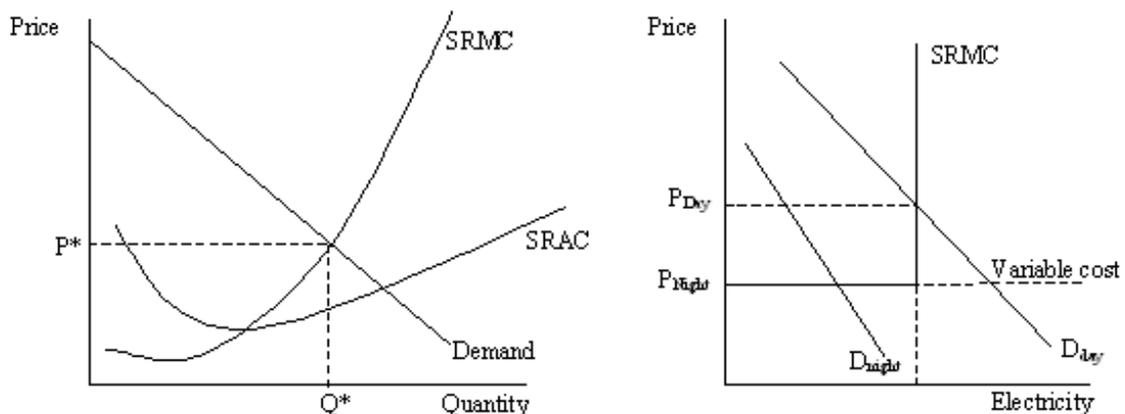


Figure 1 : The efficiency of SRMC pricing Figure 2: Efficient prices with a capacity constraint

Now we relax the seven dot point assumptions and examine the implications. Some implications are straightforward; others are more complicated. To allow for negative spillovers, for example, all we have to do is to redefine the SRMC schedule to include impacts such as pollution and congestion costs on third parties. The SRMC curve now represents the full social costs of production and the efficient price would again be P^* in Figure 1. Any departure from Q^* would be a potential Pareto improvement.

When goods are non-excludable or non-rival, the cost of a marginal unit of consumption is zero. Many public services, including parks, street lighting and the provision of some information services via public media have non-excludable or non-rival attributes. Although the production of a marginal unit of any such service has a cost, consumption by the marginal user has no cost. The service is a public good and the efficient charge is zero.

In addition to production costs, the act of charging for a service manually or electronically may cost a few dollars, which may even exceed the cost of providing the service. Suppose that the provision of some information costs \$5 and that charging for it would cost another \$5. Depending on the elasticity of demand, the deadweight loss from providing the information free of charge may be lower than the deadweight loss of charging \$10 for it.

Of course, SRMC pricing may not produce sufficient revenue to cover fixed costs especially when there are economies of scale (decreasing average cost) or spare capacity. Nor can it be assumed that taxation has zero deadweight cost. On the contrary, although estimates of the deadweight cost vary,

most research indicates that each marginal dollar of tax raised has a significant deadweight cost, probably not less than 20 cents (Abelson, 2001). This leads naturally to the question: can any price structure raise revenue with less deadweight cost? The two main contending approaches are Ramsay mark-up pricing and nonlinear pricing. Both approaches are designed to minimise changes in demand (in resource allocation) in response to price changes.

Using Ramsay mark-up pricing, prices are marked up most for services that are in inelastic demand. Ignoring cross-price effects, deadweight costs are minimised when mark-ups follow the formula:

$$\frac{(P_i - MC_i)}{P_i} = \frac{k}{\eta_i} \quad (1)$$

where P is price, MC is marginal cost, η is the compensated price elasticity of demand, k is a constant, and i is the i th good. This formula states that the mark-up for each service should be proportional to the inverse of the demand elasticity. This ensures that the decline in consumption of each service is equiproportional. The constant k is set to ensure that the marked-up prices produce the revenue required. The pricing formula is a little more complicated when cross price elasticities are introduced (see Bos, 1986; Weare and Friedman, 1998).

Importantly, the Ramsay mark-up principle can also be applied to a single service where a supplier can discriminate between consumer groups. The deadweight cost is minimised by marking up the price of a service to those with most inelastic demand. In the pure case, perfect price discrimination between consumers along the demand curve results in zero deadweight cost. Moreover, as Shapiro and Varian (1999) show, price discrimination is the preferred pricing model for many private suppliers of information services.

Nonlinear tariffs involve charging each customer different prices based on their level of consumption. The economic aim is to ensure that the price for a marginal unit of consumption equals the marginal cost of supply. There are many different forms of nonlinear tariff, but the best known is the two part-tariff. This typically comprises a fixed cost element for access to a service to pay for the provision of capacity and a user fee to pay for delivery of the service. Providing that the access charge does not deter access and that the service is a standard unit with a clear marginal cost, this is a perfectly efficient pricing mechanism.

So far we have assumed that government is a sole supplier of a service and that all other services are supplied competitively at marginal cost. As it happens, this produces a recommendation to charge SRMC prices, just as if there were perfect competition in this market. However, in reality many government services are or can be supplied by private agents who operate in an imperfectly competitive market selling services at above marginal cost. The well known second-best theorem states that when a marginal equivalence is not attained in one sector, it may be inefficient to set price equal to marginal cost in other competitive or complementary sectors (Lipsey and Lancaster, 1956).

As shown in Cullis and Jones (1998), when there is one such competitive or complementary sector, the efficient price of a good x (P_x) is:

$$P_x = MC_x - \Delta Q^y / \Delta Q^x (P_y - MC_y) \quad (2)$$

where Q indicates quantity and y represents a substitute or complementary service. If $\Delta Q^y / \Delta Q^x$ is negative (positive), the services are substitutes (complements). Equation (2) states that the price of x should be set above marginal cost if another service is a substitute. The amount that it should be set above marginal cost depends on the excess price of y above marginal cost as well as on the substitutability of the two services. If many goods are substitutes to good x , the price of good x should be set above its marginal cost according to a weighted average of the excess price of all other goods, with the weights depending on the extent to which the other goods substitute for x .

Needless to say, Equation (2), and more particularly its generalisation to include all possible substitutes and complements, presents significant information problems. A standard short-cut approach, and one embodied in Australian national competition policy, is to say that where government services are supplied in competition with private firms, revenues should cover long-run average costs, including a normal return on capital. This ensures that competition is fair and that inefficient high cost producers do not displace lower cost suppliers.

Other practical issues arise in the implementation of efficient pricing principles. A core issue is the definition of a marginal increment in output. The choice of the size of the increment and the relevant time period can have significant impacts on the estimation of SRMC. At the finest margin, incremental cost is typically very small. In the public sector, what is a fixed cost and what is a variable cost can be a matter of judgement as to what is a policy given. Also, some capital costs are not fixed but rather vary with the depreciation of an asset with use. Sometimes, the collection and analysis of cost information in relation to output is costly. Accordingly, even if the principles of efficient pricing are known, their application may not be straightforward.

Finally, efficiency is rarely the only determining criterion of price. Equity considerations, notably ability to pay, may require a modification of efficient pricing principles. Economists tend to prefer direct income transfers to price subsidies as a means to satisfy equity goals. Absent fiscal illusion, for any given income transfer the labour supply effects of income transfer and price subsidies are similar, but the relative price distortions have additional deadweight costs. However, the assumed absence of fiscal illusion is questionable and the political pressures to adjust prices for political reasons are often strong.

In conclusion, efficient prices depend on the circumstances. When government is sole supplier of a service (or when government supplies in a highly competitive market), efficiency generally requires that prices be set equal to SRMC. However, there are three main exceptions. One, for public goods or

for services with high transaction costs relative to SRMC, no charge may be efficient. Two, when there is a revenue constraint, mark-up or nonlinear prices may be more efficient (have lower deadweight loss) than deficit funding via taxation. Three, when supply is imperfectly competitive, long run average or long run marginal cost (LRMC) pricing may be more efficient than SRMC pricing. In any case, there may be information constraints on implementation of any pricing policy. Finally, equity considerations may warrant some departure from efficient prices.

3 Proposed Pricing Principles for Provision of Government

Information

The information pricing policy developed by the departmental working party for NSW Government agencies is intended to provide efficient and general principles for distribution of government information. The principles are designed to ensure that:

- Government information is made widely available to the public so that the greatest possible value is obtained from use of the information;
- Government information is produced and distributed as efficiently as possible and at least cost to the taxpayer.

Information is defined broadly as data and knowledge. It includes value-added services related to the development of information. Government information is information that is the property of the NSW Government or Parliament.²

The provision of information consists of four main activities: data collection, preparation in a form suitable for users, reproduction and distribution. The costs of information collection and preparation are typically high and fixed. On the other hand, the variable costs of reproducing and distributing information are usually low. The pricing policy aims to ensure that consumers obtain the benefits of the low costs of reproducing and distributing information, while ensuring that government agencies can cover the costs of collection and preparation when so required.

The pricing policy recognises that circumstances vary. In some cases, public policy requires the widest possible distribution of government information and charging for information is not appropriate. Examples include public health or safety information. In many other cases, information provides benefits mainly to the recipients of the information and charging is efficient. Second, although most government information can be readily reproduced and distributed at low unit cost, some materials, for example hard copy photographic material, may in effect be in fixed supply or expensive to reproduce. This may affect the price charged for it. Third, government policy encourages competition. When private firms can supply information, government charges for information should be consistent with the principles of competitive neutrality so as to ensure the most efficient method of production.

The basic pricing principles are summarised in Table 1. The policy recognises five main environments in which information is produced and recommends a pricing principle appropriate for each environment.

Table 1 Basic Pricing Principles for Government Information

Information environment	Principles
P1 Distribution is required for public policy purposes	No charge
P2 Government information is readily reproduced	
(a) Government is sole supplier	Short run marginal cost
(b) Supply is potentially competitive	Long run marginal cost
Supply is actually competitive	Market pricing
P3 Government information is in fixed supply	
In all cases	Market-clearing prices

Source: Draft Policy Paper, *Access and Pricing NSW Government Information*, prepared by interdepartmental working party and accepted by NSW cabinet for public distribution.

In more detail, the pricing principles are:

P1: When general distribution of government information is desirable for a public policy purpose or when it is not feasible or cost-effective to recover the cost of distribution, government information should be distributed free of charge. Information provided for public policy purpose is defined as information relating to the necessary processes of government that regulates the lives of people or that is important to the general health and welfare of people. Examples include public health and safety information, promotional educational material, information on traffic regulations, and information for the internal administrative purposes of government.

P2: When copies of government information can be readily reproduced and distributed at low unit cost, the price depends on the nature of the market.

(a) When a government agency is the sole supplier of information, the price should equal the SRMC of reproducing and distributing information.³

(b) When there is potential competition in the supply of information, the charge for it should be based on the estimated long run marginal cost (LRMC) of supply. Potential competition is defined as existing when more than one agency could supply the information and recover the relevant supply costs.

(c) When there is actual competition in the supply of information, the charge for the information should be based on market prices.

P3: When government information is in limited supply, then whatever the competitive position, the charge for information should be the market-clearing price.

In applying these principles, when prices are based on costs, they should be based on efficient costs, that is the least cost method of supply.

In addition, in order to ensure maximum use of government information and fair dealing for all users of the information,

P4: The pricing principles should apply generally to all users within and without government.

Agencies should not provide preferential prices to some users other than for strict commercial reasons, such as volume discounting based on costs.

If a general budget agency considers that for equity reasons some prices should be reduced for some groups in the community, the Minister should submit a case for budget funding. A public trading enterprise would apply for a community service obligation payment.

P5: All government agencies are expected to publish an overall information pricing strategy that incorporates these pricing principles. The written document should describe the pricing measures adopted for each category of information and the basis for the adopted prices. The strategy should be publicly available, transparent and accountable.

Further, where wide use of information is desirable, government agencies may consider waiving copyright, subject to acknowledgment of the source.

The draft policy paper recognises that revenue from charges may not cover the full costs of data production and distribution, especially with SRMC (P2a) pricing. Budget agencies are expected to absorb small shortfalls, if any, in revenue. When government requires an agency to achieve full cost recovery, prices may have to be adjusted in order to increase revenues. If so, they should be raised so as to have the least impact on the amount and type of information that would be provided under the basic pricing principles. The draft policy recommends the use of two-part tariffs (separate access and user charges) where feasible. If access charges are not feasible, consideration can be given to marking up prices on the basis of what the market can bear, taking into account the price sensitivity of the demand for information and equity issues.

4 Some Issues of Principle

To what extent do these proposed pricing principles for government information conform to the principles of efficient pricing described in section 2? And, where there is divergence between the two sets of principles, can this be justified?

The proposed pricing principles for government information are broadly consistent with the general pricing principles enunciated in section 2. Different pricing principles are recommended for different market conditions. When government is a sole supplier, SRMC pricing (principle P2a) ensures efficient use of government information. Charges for information should cover the variable costs of

reproduction and distribution because these resources have an opportunity cost. Lower charges would encourage inefficient use of resources. On the other hand, prices in excess of reproduction and distribution costs would exclude users who are willing to pay the costs of supply. SRMC pricing for data also encourages private firms to compete in the production of value-added information services. It helps to prevent information monopolies arising as a result of privileged access to government data. It discourages potential users from developing inferior in-house databases. Using resources to produce similar or inferior substitutes for information already available in the public sector is evidently wasteful.

However, when government information can be readily reproduced and there is a potential competitive source of supply, the charge for the information should be based on LRMC prices (principle P2b). This principle applies mainly to value-added information provided by government agencies that could be provided by private firms. In order that government costs are comparable to private costs, estimated LRMC prices should include allowances for indirect taxes and fees similar to those borne by private firms. This principle encourages competition and efficiency in the production of value-added services for all government information. LRMC prices give signals to the market that encourages competition and provides information about the kind of value-added services that users are willing to pay for. On the other hand, without actual competition, charging what the market could bear (market pricing) could lead to excessively high prices. Prices based on LRMC limit the rents that might be extracted by exercise of monopoly power.

When Government information can be readily reproduced and there is actual competition in the supply of information, the draft policy recommended that charges be based on market prices. Market prices signal the value that users place on value-added services. The prices guide production decisions, in some cases leading to increased production to meet demand, and in other cases to less production. This policy is consistent with National Competition Policy, which requires that the public sector does not underprice its services. Market prices encourage competition in service provision, especially in conjunction with pricing principle P2(a). If an agency provides its basic data to the public at SRMC, a public agency cannot price value-added information services at levels that would allow monopoly rents to be extracted from privileged access to the underlying government controlled information. Market pricing helps to pay for fixed costs, which limits the call on public funds that would result if SRMC pricing were extended far beyond the provision of basic information in primary form. However, when prices are based on market prices, government should not exploit any market power that it may have to obtain excessive rate of return on resources employed.

The pricing principle (P3) that information in limited supply should be charged at the market-clearing price, whatever the competitive position, ensures efficient use of information in scarce supply. If prices exceed the market-clearing price, some information products are stored and not used. On the other hand, if the products are sold at below the market-clearing price, they may be sold to users who

place a relatively low value on the product. Also, the products may be resold at a higher price, thus depriving the government of revenue that should accrue to the taxpayer.

Nevertheless there are differences in terminology and substance between the pricing principles outlined in section 2 and the proposed principles for government information described in section 3. First, although the pricing policy allows the free supply of services in some circumstances, it makes no reference to non-excludable or non-rival 'public goods', which provide the main efficiency arguments for free services.⁴ The working party preparing the policy was concerned, justifiably I believe, that references to public goods would be misunderstood. Government agencies could misconstrue the technical definitions and claim to provide services for the 'public good' using ill-defined and extensive concepts. The working party therefore attempted to define in a fairly restricted way the concept of information required for public purposes that should be provided free of charge. It remains to be seen whether this is an operational definition.

Second, the recommended pricing policy does not adopt standard economists' definitions of potential (contestable) and competitive markets. For example, contestable markets may be defined formally as a 'market for the supply of a good or service where there is freedom of entry and where exit is inexpensive' (NZ Treasury, undated). This does not seem a practical definition for many government purposes. For practical reasons, principle P2(c) draws on the notion of actual competition rather than of perfect competition, but actual competition is not defined.

In terms of the pricing principles, when competition for supply of information exists, principle P2(c) recommends the use of market pricing. This is different from Equation (2), which is not a practical option for most government agencies. Market prices are in turn preferred to LRMC pricing because the former is more observable. However, when prices are based on market prices, government agencies may exploit their market position to obtain an excessive rate of return on resources employed unless there is substantial competition. The pricing policy contains warnings that this is not acceptable.

The proposed pricing principle (P4) requiring government agencies to provide goods of a given kind at the same price to all users is also a departure from efficient pricing principles. As we have noted, price discrimination based on the elasticity of demand of users is a common practice of private firms and a practice that reduces deadweight losses. However the working party was concerned that, if agencies were allowed to discriminate between users, prices would be based on political gain and administrative convenience rather than the elasticity of demand for the service. There is much casual evidence that government agencies are inclined to reduce charges for other public agencies. The working party considered that allowing price discrimination, other than in very limited cases, would increase rather than reduce economic inefficiency.

In summary, there is a close relationship between the pricing principles of economists and the information pricing principles recommended by the working party. However, in the interests of practicality, some definitions relating to public goods and types of markets were softened. This may introduce a certain looseness into the pricing policies adopted. Also, when markets are competitive, agencies would be allowed to charge market prices instead of a carefully calculated welfare optimising price. And, as noted, price discrimination is discouraged.

However, all government agencies are expected to publish an overall information pricing strategy that describes the pricing measures adopted and the basis for them. This provides an opportunity for a monitoring body to check whether government agencies are using inappropriate definitions of public policy purpose and markets structures.

5 The Political Economy of the Proposed Pricing Principles

Needless to say, the information pricing principles will be implemented only if the agencies responsible for implementing the principles understand and accept them. In the early 1990s, NSW government agencies successfully resisted a similar attempt to change pricing practices and to introduce efficient user charges. In this section I describe the main concerns that agencies have raised to the introduction of draft pricing principles, some of which were also raised in the debate in the early 1990s, and provide some responses.

A common concern of agencies is that it is difficult to define information and more specifically to define government information. Some agencies also argue that they are willing to charge for information, but do not agree with charging for services. Neither concern is well founded. The concern about the definition of information is not of any substantive moment if government has a consistent, whole-of-government, user charge policy as the NSW government does, in which information price policy is essentially a subset of the more general pricing policy. Moreover, the provision of information is a service and embodies numerous service activities. Trying to distinguish the information from its service components, or from some value-added activity, seems futile and unnecessary. Charges by government agencies should not vary according to whether a service is declared an information service or some other kind of service.

Second, some agencies find it difficult to decide what information should be distributed free of charge for public policy purposes, especially where there are positive externalities. For example an agency responsible for mines may consider that information and regulations about mining safety should be distributed free of charge. An agricultural agency may consider that information about sustainable environmental practices should be distributed free of charge. It is difficult to draw firm lines in these areas. Under the draft pricing policy, an agency for mining would charge mining companies for safety information that will principally benefit the companies and their employees. A department of agriculture would likewise charge for environmental information that will principally benefit the

farmers who receive the information. The requirement to publish the basis for the prices adopted ensures that agency decisions will be based on a consistent interpretation and not be entirely arbitrary.

Third, the concept of a marginal cost is somewhat elastic. The concept of marginal cost presupposes that the fixed costs are known. But, in the public sector, what is a fixed cost is often a political judgement as much as a technical one. If government is committed to distributing information, only the copying and the distribution is a marginal cost. If the government is not committed to distribution, the overheads and capital locked up in the distribution process must be allocated to each unit of distribution. In any case, distribution may involve some wear and tear on machines. The elasticity of the concept of marginal output allows agencies some flexibility in determining SRMC and LRMC prices.

Fourth, and perhaps most crucially, general government agencies that are likely to lose revenue, because they are monopolies that will not be allowed to charge average cost prices, tend to strongly oppose the policy changes. In the consultation process for the draft pricing policy, several agencies argued strongly that the loss of revenue would be significant and that this would result in reduced services, an inability to pay for fixed costs and reduced investment, and a lower dividend to government. They also argued that the lower prices would be inconsistent with commercial principles, that they could allow private firms to on-sell the same products at a higher price, and that low prices would be inequitable because the prices would not reflect the full value of a service. These agencies exhibited considerable misgivings about the proposed price changes. As general government agencies, the revenue loss would reduce their autonomy. The draft policy allows that Treasury will review the revenue implications for budget agencies and that government business enterprises can raise prices to obtain required revenues following certain recommended methods to minimise deadweight losses. However the budget agencies are not guaranteed a revenue neutral outcome if Treasury believes that the agencies can absorb the revenue reduction in part at least through improved productivity.

On the other hand, some government agencies such as the Department of Education contend that they supply, and should supply, a significant amount of information at below even SRMC for equity reasons. The conventional response of economists, and the policy stance of the working party, is that subsidies should not be introduced covertly into prices but that they should be formalised through explicit and transparent community service obligation payments agreed with a central agency. The issue here is not one of revenue, because the line agency is foregoing revenue with its low prices in any case, but one of policy control. The pricing policy may implicitly transfer some policy control from the line agency to a central one.

Sixth, government agencies are often reluctant to charge other government agencies for services that they provide. Some agencies contend that they are all part of government, that sharing data improves efficiency, and that nothing is achieved (government's net financial position is unchanged) by intra-

government charges. Another contention is that government has paid for the information already and does not have to pay for it twice. The working party did not accept these arguments. Prices are not simply financing instruments; they are also instruments of resource allocation efficiency. Competitive neutrality requires that the public sector should pay similar prices for inputs as do private firms. Most exceptions would be inefficient and almost certainly arbitrary. Of course, if the transaction costs of pricing are high relative to the costs of transferring the data, pricing is not a sensible policy (for the public or private sector).

A separate situation arises when government agencies collaborate to finance or to generate data sets and therefore co-own information. For example, the roads and traffic authority and the police may collaborate to generate traffic data. But even here the principles of accountability and competitive neutrality require that information services should be explicitly priced. If quid pro quo arrangements between agencies are appropriate, they should be based on these agreed prices.

Seven, agencies often complain that the costing and documentation process is onerous and that they do not have the resources to implement the pricing policy. These points have some weight, though perhaps less than they are given by some agencies. In any event, the resources allocated to improving resource allocation should be proportional to the likely benefits. The response of the working party was that prices for information should be based on broad categories of information services and not determined separately for each individual piece of information provided.

Finally, many agencies asked 'how is the pricing policy to be monitored and enforced'? An effective implementation program is a crucial part of the pricing policy, but it is an exercise in political compromise. The stronger the proposed enforcement process on agencies, the greater the opposition to the proposed pricing policy is likely to be and the greater the prospect of its defeat at an early stage. On the other hand, the weaker the proposed enforcement process, the weaker will be compliance with the policy and the weaker will be the effect of the policy. To achieve compliance in NSW, the working party proposes that each agency will publish an overall information pricing strategy and will report on this strategy in its annual report. It has also proposed that the NSW Auditor-General be asked to conduct random audits to test the compliance of government agencies with the policy. The Independent Pricing and Regulatory Tribunal would take the policy into account in its reviews of NSW government businesses.

6 Conclusions

Efficient public sector prices depend on numerous assumptions about the economy including the existence of public goods and externalities, the structure of markets, the deadweight costs of paying for fixed costs, transaction costs, and information problems. It follows that technical economic analysis prescribes a complex set of prices for efficient public sector behaviour in different circumstances that run from zero charges through SRMC prices to LRMC prices to market prices along with some intermediate pricing recommendations as well.

Translating this complex pricing prescription into a workable policy that approximates efficient pricing to be implemented by non-economists represents a significant challenge. On the whole, economists have not been very successful at achieving this workable efficient policy.

In this paper I have described how a group of economists attempted to translate efficient pricing principles into practice for government information services. This involved different pricing principles for five economic environments (see Table 1). Moreover, these price principles may have to be modified as described to meet financial targets. Similar issues would of course arise for other services.

Although the working party attempted to achieve a fully efficient pricing policy to ensure the efficient distribution and production of government information, some concessions were made to achieve workability. Definitions relating to public goods and types of markets were softened. When markets are competitive, but not perfectly so, agencies would be allowed to charge market prices instead of a carefully calculated welfare optimising price. Also, price discrimination is discouraged other than in limited circumstances.

Even so, significant political and administrative hurdles remain. In the last section, eight such hurdles were identified. In particular, some agencies are reluctant to reduce prices and forego revenues. Other agencies are reluctant to increase prices partly for equity reasons and partly because this could reduce their turnover and activity. Underlying all the hurdles, line agencies are reluctant to forego policy autonomy and to be accountable to a central economic policy. Economists face an ongoing challenge to communicate to public officers and agencies that the benefits of an efficient pricing policy warrant pricing and administrative changes, including observance of a central economic discipline.

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- ¹The writer was a member of a government working party that prepared a Draft Policy Paper entitled 'Access and Pricing NSW Government Information' in 2000 which the NSW Cabinet endorsed as a basis for consultation with government departments. The pricing principles cited here are those in the draft policy.
- ²The information pricing policy is consistent with *Government Guidelines for Pricing of User Charges* (NSW Treasury, June 2001). This means that government charges should not vary according to whether or not a particular service is deemed to be an information service or some other kind of government service.
- ³Public servants often prefer 'avoidable' costs to 'marginal' costs. The concepts are equivalent. The marginal cost is the cost incurred in providing an incremental output; avoidable cost is the cost avoided.
- ⁴The New Zealand Treasury (undated) does employ the concept of public goods to justify free services in some circumstances.