Public and Private Provision of Services to Landholders

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Dr Vic Wright

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Author:
Dr Vic Wright
School of Business, Economics and Public Policy,
University of New England,
Armidale, NSW

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Foreword

The question as to when government should use the private sector to deliver public services arises in a wide variety of contexts. Much has been written about this in relation to the provision of public services to farmers, particularly from an economics perspective. Much has also been written about the fact that a variety of problems have emerged with using the private sector to deliver public services to farmers (Howden 2008). The origin of many of these problems appears to lie in outsourcing services to the private sector that, from a strategic and organisational management perspective, should not be.

In this paper, four perspectives are employed to identify the factors that must be taken into account in considering when to use the private sector to deliver public services to farmers. These perspectives are economics, strategic management, organisational management and marketing. Consideration of all four of these perspectives provides for a more comprehensive, integrated basis for assessing when to use the private sector to provide public services to farmers.

This paper was commissioned to create a resource for the Practice Change Portfolio in DPI. However, we have made the paper available to others to stimulate discussion about the issue of using the private sector to deliver public services to farmers.

Geoff Kaine

Senior Policy Researcher
Practice Change Research
Farm Services Victoria Division
Department of Primary Industries
Private Bag 1
Ferguson Road
TATURA, Victoria

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Introduction

The question as to whether or under what circumstances government should use private sector producers to deliver services arises in a wide variety of contexts and has been considered in a variety of professional literatures. Contexts relate to commonwealth, state and territory and local levels of government and range across prison services, security for armed services bases, education and services for landholders. The issues involved have been scoped and analysed by economists, strategic management theorists, general management theorists, marketers and political scientists.

The question is not so broad as to deal with the factors that justify government intervention, by way of direct production or funding of production, in the economy. The situation under discussion is one where intervention of this kind is justified, by some kind of market failure or other threat to economic efficiency. That is, the intervention is a response to a competent judgement that the production of the goods or services of interest would be at an inappropriate level if it were left to the free market.

Our focus is whether it makes sense for government to engage directly in production or, in effect, to sub-contract or outsource production. The assumed legitimacy of intervention, and therefore the inadequacy of free-market production, is a defining characteristic of this situation and one that bears on all of the major related issues.

A logical first step in analysing the factors that may define the suitability of direct or outsourced service provision to landholders, therefore, is to specify the situations under which public service provision is justified and what this indicates about the goods or services in question. A related matter in this paper is the possibly ephemeral nature of these situations, and the consequent need for government to withdraw from provision of services.

Landholder service provision

The services which are the focus of this analysis are generally diverse[1] but can be described under the rubric Research, Development and Extension (RDE). They are outputs designed to achieve the outcome, ultimately, of a more efficient Victorian agricultural sector.

The driver of public intervention in markets, of which public service provision is an instance, is a concern for efficiency and a judgement that inefficiency is being caused by persistent, systemic factors. The incentive to intervene is not triggered by concerns for individual farm performance or farmer welfare. Nor should decisions about *continuing* with intervention be. The focus is on achieving best possible levels of resource use effectiveness; that is, of economic efficiency (see Appendix A).

Whether the sources of inefficiency are causing current waste or threatening future waste, in the case of landholder services they are embedded in the nature of the services themselves. Technically, these features of services can be described as non-rivalry and non-excludability (Randall 1983). Non-rival services are services, such as a production skill or the security created by national defence, whose use by one person does not impede concurrent use by another. Non-excludable services are services, such as rain or national defence, where it is practically impossible to restrict access/consumption.

Non-rivalry leads to lower production of output in a free market than is efficient. This is because once a non-rival output is created, such as national defence, the non-rival character of the output means that consumption by an additional customer costs the producer nothing; the cost of production is unrelated to the number of consumers. If output has any price put on it, efficiency will suffer because those customers who value the output, but not enough to buy it at that price, will go without. This is socially inefficient because the true cost of supplying the additional customer is zero and, while each customer derives some value from the output, it is not made available to all of them.

Examples for landholders would be price or weather forecasts. Assuming these have some value for most landholders, it makes sense for both to be created (assuming costs are not greater than the total value to landholders). The non-rival character of these forecasts (and of information,

[1] See the current list at www.dpi.vic.gov.au/DPI/nrenfa.nsf/childdocs/-4EDEC1466EB47EFACA256F2C0022A13F-6B58B8BCDB060B20CA25703800158A30?open

generally) means that there is no meaningful cost-based or market-demand-based price that will emerge in the market and, worse, *any* price would be socially inefficient for the reason explained above; specifically, providing the forecast to a farmer has no additional cost but the existence of a price will deter some from buying it, to society's disadvantage.

It must be noted that "second-best" solutions to this problem, where a price *is* struck and some customers do not purchase, while less than perfectly efficient, may be widely acceptable (see Randall 1983). That is, the problem may be more academic than real.

Non-excludability has a similar character, if somewhat more obviously. Because it is not possible to prevent an individual from consuming output, no price can be charged and no profit-seeking firm will bother making the output. The effect is more extreme than was non-rivalry. With non-rivalry we can imagine a private producer making output, such as forecasts, for a price.[2] There will be output; it is a problem because there will be less than is efficient for society. With non-excludability, there will be no output at all because consumers cannot be tapped for payment. "Free-riders" can enjoy benefits at no cost to themselves.

There are various combinations of these two characteristics of goods, each with different implications for what is required to achieve social efficiency (see Randall 1983). As noted, each causes the free market to stumble in achieving the right output levels or price. If the characteristics appear together, as in the case of national defence or basic research, we have the worst of all possible situations so far as the prospects of the free market achieving economically efficient outcomes are concerned. Generally, however, non-excludability (the ability to free-ride) is the more serious of the two characteristics because it implies a total absence of private sector production.

There is a common confusion that is related to such market failures. The fact that, as in the example above, many farmers derive some private benefit from the output (the forecast, for example) prompts some observers to believe that, if farmers receive the forecast, they should contribute to the cost of creating it. There are two problems with this reasoning. First, if the forecasts are non-excludable, it is impossible to identify who is and isn't receiving them, which makes it impossible to bill farmers for use. Second, even if they were excludable, economic analysis indicates that the total benefit to society of providing them to all who derive any benefit is only achieved by charging a price that matches the idiosyncratic value they attach to the forecast. This price discrimination is not usually possible, or legal. In addition, an alternative approach, of

[2] For example, the subscription component of the Weatherzone website: www.weatherzone.com.au/about/whatweoffer.jsp

calculating an average user share of the total cost of creating forecasts, would be impossible, since the number of users and frequency of use are not known in advance.

Both of the characteristics cause “market failure”. That is, both cause market price to fail to work to achieve economic efficiency. The effect is some degree of under-production relative to the ideal levels, given that these are determined by the value society puts on the output. The fact that some private benefit is associated with the outputs is unexceptional: if there were none, there would be no market failure. Attempts to extract direct payment for this private benefit, where excludability enables it, and thus deterring some consumption (which is costless to meet) can readily undermine the level of efficiency society achieves.

Analysis on efficiency grounds can indicate how resources should be allocated to satisfy needs and preferences. How the costs involved are met goes to different types of questions. The commonplace market solution, where the consumer pays basically for the resources used to produce the product, seems fair, as well as efficient. But what is “fair” in a situation of non-rival consumption is much less clear. Thus, government-funded news (via the Australian Broadcasting Corporation) and national defence are free. Legitimate debate can be had on this question but it is important to understand that, from society’s perspective, the fairness question is distinct from the efficiency question, provided that, in some way, resources are allocated according to society’s total needs. Critically, one must remember that charging for non-rival products lessens efficiency. This may not be wise since efficiency determines how much there is to be shared in society.

There are many examples of government seeking contributions to costs, far below cost recovery, where private benefit is judged to exist amongst service recipients. This is a financing decision by government and is, in effect, a decision that recipients should pay somewhat more than all other taxpayers due to the existence of private benefit. Provided that this contribution does not inhibit service consumption at desired levels, this policy is quite separate from the response to market failure.

The existence of private benefits has no logical connection to private sector provision. Market failure dictates that the free market, private sector response will be socially inept. If this weren’t the case, government would be redundant.

There is no systematic cure for this market failure. The characteristics of non-rivalry and excludability indicate that a problem exists but neither of them indicates its magnitude. There is no omniscient entity who knows the degree of efficiency loss caused by either characteristic. Nobody

knows the extent of under-production relative to the ideal. This means that, if government moves to increase production, inevitably subjective judgements have to be made about how much production is wanted. As well, government needs to monitor the persistence or not of the trigger market failure: technological change can modify the rival or, more commonly, the excludable characteristics of outputs. As either change the capacity of the market to easily and reliably maximise economic efficiency may be restored. One example is contemporary interest in “congestion pricing” for metropolitan traffic, where the feasibility of cheaply tracking vehicle movements has emerged from technological change.

Information as an output

Information, the core of RDE, is a somewhat exceptional output compared to others. Government funds research effort where it judges that too little research will otherwise occur, threatening the adaptability of society: its dynamic efficiency. This is the funding of activity that, at the time of funding, has non-specific, or unknown, output. When government funds teaching or urban transportation the outputs are well defined. With research funding, government is actually seeking outputs some of which are very likely to be taken up by private enterprise. That is, outputs with characteristics of being rival and excludable, such as new equipment, physical products or other patentable output, may be generated by the research.

The onus is then on government to abandon the pertinent research field so that private enterprise is neither subsidised nor impeded as invention is commercialised.

The output of research may, however, be non-rival or non-excludable. For example, a new production method, such as zero-till farming, is non-rival. It is also non-excludable. It would be surprising if a private company sought to market the technique, alone, as a source of revenue. It may be marketed as part of a suite of agronomic services to ensure the suite is contemporary. But this will restrict direct promulgation of the technique only to customers of the company. At the least this will slow adoption and thus contradict the central purpose of the initial research funding: the speeding of adaptation. (The impact of excludability can be seen clearly by comparing this situation to that prevailing with genetically modified seed stock, where excludability is strong.)

In this situation, and more obviously in situations where private firms have no interest in promulgating an innovation, there is a need for government to engage in post-discovery development and deployment of innovations to customers.

This logically-derived role for government raises a set of questions. First, how can proper estimates of the value of an innovation, to landholders and society, be made such that reasonable budgets can be derived for the deployment effort? Second, what is the context that needs to exist for deployment, which is a communication event or process, to be achieved efficiently? These are explored here subsequently.

Another feature of information as output is that, while in use it may be non-rival, the process of deploying it to landholders may be rival inasmuch as extension effort has to be delivered separately to each targeted landholder. That is, there is some opportunity cost faced by the deploying entity. This raises questions about deployment efficiency and optimal management thereof, which is a concern of this paper.

Framing efficiency

The popular notions of effectiveness and efficiency are not separable analytically; they must be analysed as the single construct “efficiency”. Maximum efficiency is achieved when minimal resources are used to achieve desired outcomes. The main contributors are allocative efficiency, or achieving desired distribution of appropriate produced outputs, and productive efficiency, or doing so at lowest possible input cost (see Appendix A). In the context of the public sector, allocative efficiency relates to achievement of outcomes, or “public sector performance” (PSP), and productive efficiency to outcomes relative to the resources employed, or “public sector efficiency” (PSE) (Afonso, Schuknecht and Tanzi 2005).

Evaluating efficiency requires that the nature and quantity of desired outputs, and their desired distribution in society, is known and that the least cost combination of inputs and technology is known. The appeal of markets (when they can be relied on) is that all of this information is implicit in relative prices. Assuming acceptable levels of competitive pressure (“contestability”), the profit motive drives the search for efficiency. Efficiency is automatic.

When we know we have market failure to contend with, we need to assemble this information in other ways. In fact, it has to be assumed. Both the nature of output desired and the process by which it will be produced are decided “outside the market”. Who might be involved, or not, in production is one aspect of this decision making.

It is untenable in a democracy that such “off-market” decisions should be made by any entity other than government. The possibility of poor decisions being made means that, at the least, society wants as disinterested and accountable a decision maker as possible.

In the broadest of terms the outcome required of landholder services provided by government is accelerated productivity growth and adaptation to change, relative to what would occur without government provision. The incentive for government to contemplate investing in these services is the diminished farmer interest in innovating, due to lack of control over financial performance, the persistent decline in the per unit value of farm output (albeit not at a persistent rate; see Mullen 2007) and market failure characteristics of farm-related research outputs. These characteristics combine to threaten declining farm economic efficiency (single factoral terms of trade; see Fleming 2007) unless farmers change practices and technologies over time to boost productivity (engineering or technical efficiency) at a rate sufficient to offset declining terms of trade (Mullen 2007).

Focusing RDE on appropriate objectives requires an understanding of the context in which landholders operate which is seen through the eyes of staff who identify with the performance of the agricultural sector, as distinct from seeing the role of the sector as it relates to their own performance. When social objectives, such as stewardship and sustainability, are to be served, this becomes even more clearly the case. (See the later discussions of motivation and organisational type.)

Characterising tasks

The three major components of landholder services (R, D and E) comprise a supply chain. They could also be described as components of a new product development process (McColl-Kennedy and Kiel 2000). They can be, and are, provided by both private and public (government) entities.

The specificity of “landholder services” means that “research” refers to applied, as distinct from pure, research, where the intention of researchers is to satisfy needs arising from the productive activities of landholders. It is not impossible that pure discoveries may be made in the course of such research but it is not the primary intention. The potential proximity of applied research to useful innovation means that applied research can be either a private or public good while pure research is rarely a private good (that is, rival and excludable).

As noted above, this feature of applied research means that government has to be active in assessing the appropriateness of its involvement in such research. Applied research which is initiated for lack of commercial interest, but which reveals marketable outputs, notionally ceases to be a suitable candidate for public support. Continued public support could no longer be justified on

the grounds of market failure (although other features such as inevitable natural monopoly may come into play as justifications) (Cutler Review Panel 2008).

Development as a task is the conversion of concepts and discovered knowledge into products. It may be inseparable from the applied research itself or anywhere along the continuum of activity that ends with extension. Even within extension there may be development occurring to customise products to better suit farmers' individual contexts. Development may also involve the use of earlier research, with no new research input, to deal with a new farm challenge.

Extension is the agricultural analogue of promotion of new products in marketing (see McColl-Kennedy and Kiel 2000). The objective is to maximise adoption of the new product or practice and to optimise the speed of adoption. The possibilities of market penetration, or percentage adopting, are defined by the real value of the innovation to possible adopters. The rate of uptake depends on the skill in extension activity and the factors defining farmer perceptions of the value of the innovation and the risks of adoption. It is not appropriate to strive to *maximise* the rate of adoption because costs will rise with extension effort. This means that, at some level of extension effort, the benefits of faster adoption are less than the cost of achieving them.

Salient characteristics of R, D and E are now discussed for the purpose of considering issues to be addressed by whoever is producing each or considering outsourcing production.

Research

Research as productive activity in an organisation is reliant on the maintenance of a critical mass of relevant disciplinary capability. In applied research settings one aspect of that capability is familiarity with the context to which research output is targeted. There is thus a need for continuity of staff. The relevance of discovery turns in part on the validity of perception by scientists of the context in which landholders manage.

Research involves intrinsically unstructured tasks and low levels of routine activity. The appropriate character of organisation design in which scientists work is organic rather than mechanistic (see General Management Perspectives below; Kast and Rosenzweig 1974; Khandwalla 1977). Performance appraisal of staff is consequently complex requiring the use of professional peers. Quantitative indices of output, per se, mean almost nothing in the absence of measures of other aspects such as creativity, persistence, insight, and so on. Teamwork is common, signalling reciprocal dependency where researchers "bounce ideas off each other" (Kast and Rosenzweig 1974; Khandwalla 1977).

The shepherding of research into domains of likely best payoff for landholders requires ongoing communication to researchers of landholder needs and of the impact of past innovations. The main ways in which this can be achieved are by direct input from landholder representative groups or from extension personnel. The former cannot be guaranteed to be representative while the latter are likely to have a richer understanding than a small group of landholders of the range of needs in play across farm industries. There is thus likely to be reciprocal dependence between researchers and extension personnel.

The demands for output from researchers will vary through time as challenges facing landholders vary.

Development

Development can be defined as the process of transforming an innovation into a “finished product”, in management jargon, ready for sale. Who contributes to development depends on the nature of the product. Specifically, it depends on the extent to which it is bundled versus customisable for the landholder.

Thus, a new fungicide may be developed from its core technical innovation base by personnel within the organisation, perhaps even by the scientists. New farm management software, on the other hand, cannot be finalised for the adopter except by working with them at their computer. This will add extension personnel to the development phase of the innovation.

Development requires an understanding of the specific details of the usage context of the innovation on the properties likely to adopt. It also requires ease of interaction between scientists and developers to ensure that the product design is optimal across potential adopters: that the new product is as useful as the core technical innovation allows. This implies the need for personnel who have acquired comprehensive understandings of landholders’ operating environments.

Development involves substantially unstructured tasks and high variety over time. Interdependence with extension personnel is likely to be reciprocal. Interdependence with researchers will vary with the nature of the innovation. A newly discovered chemical is likely simply to be supplied to developers, commonly from overseas laboratories. This is simple serial, or sequential, dependence of developers on researchers. Product involving more customisation of the innovation may enjoy more reciprocal dependence between developers and researchers (Kast and Rosenzweig 1974; Khandwalla 1977).

The creativity demanded of developers implies the need for a relatively organic organisational design (Kast and Rosenzweig 1974; Khandwalla 1977). It implies also that performance appraisal is, as for researchers, properly laced with qualitative aspects not readily quantified or codified.

Extension

Extension, like sales and promotion in marketing, connotes "pushing" products into markets that will adopt them. Like sales and promotion, however, the impact of extension relies much more heavily on the value that landholders attribute to a product than to the skill of extension personnel. This is particularly so because landholders are organisational buyers rather than final consumers, and therefore bring a different set of decision making behaviours to the purchase decision making situation (McColl-Kennedy and Kiel 2000).

The extension role is one of communicating the benefits that a product offers potential adopters. This requires sufficient understanding of the needs of potential adopters to be able to translate product attributes into benefits: that is, the value to the adopter of the things the product can do. Persuasion has little to do with the role.

Extension is activity designed to achieve exchange: the adoption of an innovation. The extension officer receives no "price" for the adoption but a behaviour change is the outcome and this involves costs being borne by the adopter. The relative infrequency of adoption of innovations, their common importance as inputs and the typically face-to-face extension activity involved causes the relationship between extension personnel and adopters to be more important than otherwise. One need only contrast this situation to a typical retail shopping encounter to detect the difference. This is particularly so when a new product has to be customised by and for landholders but it is also true of bundled products.

The typical significance of innovations to landholders, and the perceived risks associated with adopting inappropriately, mean that any brand standing behind a product will mean less, and the trust that can be placed in individuals promoting the innovation more. Continuity of personnel and relationships thus has value, most notably with members of innovator and early adopter categories who are more reliant on information from suppliers in their decision making than are later adopters (McColl-Kennedy and Kiel 2000).

A more subtle role of extension personnel, like salespeople in business, is that of "boundary spanning" for the organisation (Kast and Rosenzweig 1974). Being in contact with customers or

clients, extension staff are a conduit for feedback of pertinent information to their organisation. This information can range from client attitudes to the organisation to information about emerging problems and needs facing landholders.

Extension tasks are relatively structured. Performance appraisal is made complex by the importance of relationships with clients to outcomes and the role of product value to "sales". Specifically, it is invalid to attribute poor rates of product uptake to extension staff in situations where the product has been mis-targeted or is simply of little value to any landholder. Equally, very good rates of uptake may mask poor extension effort related to a brilliant product. The importance of relationships means that a focus on individual transactions (adoption of individual products) is inappropriate. Performance lies elsewhere, in the trust built up over time and which eases acceptance of valuable new products.

This complexity also means that individual extension staff can manipulate outcomes through time. Inappropriate performance appraisal can encourage this. For example, a focus on "sales" within a time period is an invitation for longer-term relationship development activity to be reduced in favour of "hard selling" which itself will expose adopters to greater risk of error, and the organisation to long-term damage to its brand, its reputation. The focus of extension personnel is inexorably drawn to measured output. If this is on the wrong aspects or, as is more common, on only a subset of aspects, moral hazard is created. It becomes irrational for staff to perform the role properly if this differs from the role as they perceive it to be measured and rewarded.

Public or private - outsourcing

A number of factors have arisen which have caused a good deal of attention to be focused on the question as to how a decision for government to intervene through production of outputs is best implemented. These factors include: increasing pressure on governments to be seen to be spending taxation revenue efficiently; a mounting awareness amongst economists that government intervention can fail (see Dollery and Worthington 1996); and trends in thinking about best models of public sector management (see Petris 2005; Amagoh 2009). In the agricultural context there are added forces arising from the declining importance of agriculture to economic growth and a shift in focus, somewhat and increasingly, away from productivity enhancement and towards environmental concerns (see Mullen *et al.* 2000).

It is assumed in this analysis that the sole objective is to maximise the economic efficiency of service provision, all aspects considered. That is, there is no objective to subsidise any economic agent.

Government Provision of Services

The rationale for public funding of agricultural RDE is to improve allocative and productive efficiency in a situation where there are sound reasons to expect them, otherwise, to be less. The rationale has nothing to do with the welfare of farmers. The focus is on enhancing the productivity of resource use in agriculture. Importantly, the near perfectly competitive structure typical of Australian agriculture implies that nominal benefits to individual farmers from productivity enhancement are not sustainable over time.

Market failure

"Market failure" has long been the justification for government intervention in Australian agriculture (Mullen *et al.* 2000). Beyond providing the rationale, however, market failure affords little guidance as to appropriate magnitudes of intervention, much less optimal adjustment to intervention over time. In a context of limited guidance, decisions about intervention are subjected to rent-seeking activity from a variety of stakeholders, including DPI. With no clear economic metric, decision making may be informed to a considerable extent by notions of the intrinsic worth, or lack of it, of intervention.

The predominance of comparative static analysis amongst microeconomists has implied, arguably, the absence of much concern with the adjustment of government intervention over time, notwithstanding the continuous competitive demands governments face for intervention and, therefore, for re-balancing of interventions through time.

The provision by government of goods or services as a response to market failure is often fraught with difficulties. This is inevitable when the source of the market failure is non-exclusiveness or non-rivalry in consumption. The intervention occurs to deal with the absence of reliable demand signals. As a result, allocative efficiency is indeterminate (Dollery and Worthington 1996). It is always possible that production will be in the wrong quantity and that nobody can tell. With allocative

efficiency unable to be determined, productive efficiency is likewise indeterminate (see Appendix A).

In the absence of clear economic advice about policy adjustment over time, decision making attention has moved to the interior question: how one might maximise technical efficiency. This could be argued to be an abiding concern underlying the extant evolution of models of public sector management. However, the reductionist path one follows to turn attention from allocative efficiency to technical efficiency is fundamentally flawed: the absence of the ability to identify allocative efficiency means that no meaningful efficiency construct can be identified. It is entirely possible that apparently high levels of technical efficiency are purely dysfunctional: the minimal-cost pursuit of the wrong objective. In what follows it will be argued that this is, in effect, precisely the main downside risk associated with contracted provision of services to landholders.

Since concerns with efficiency rest at the heart of market failure, and of choices about who should provide services in response thereto, some attention to efficiency seems warranted.

Efficiency and market failure

Efficiency cannot be determined unless the full set of desired outputs to which inputs can be applied are defined and ranked in attractiveness. Until this is done, it is dangerous to use the term "efficiency" with respect to any domain. A more neutral construct, such as input:output relationships, is more appropriate. This is because "efficiency" has distinctly positive connotations: more efficiency is uncontestably better than less. This beguiles people into regarding *any* discarding of input in production processes as "wasteful".

By maintaining the pejorative possibility of "wastefulness", using the notion "efficiency" invites people to believe that there is some baseline, engineering notion of efficiency which has relevance to decision making, independent of context. There isn't. The belief, however, can lead to absurd squandering of resources to stop "waste" that doesn't really exist. Water policy is one such domain (see Watson 2008), where evaporation and leakage from irrigation infrastructure are perceived, wrongly, by almost everybody as intrinsically wasteful. A more obvious, less provocative, example is the "efficiency expert's" suggestion that waste could be cut substantially if all members of an orchestra were to play simultaneously rather than serially.

Market failure exists when society judges it to exist. This is when the allocation of inputs to production, or of outputs to members of society, is determined to be inappropriate. Causes can be diverse but the consequences can be classified as being a problem with allocative, productive or dynamic efficiency. Respectively, the problems are wrong distributed output, wastefully-produced output or slow adjustment to changes in preferences and inputs.

Government intervention to produce output, such as landholder services, may be appropriate when any of allocative, productive or dynamic efficiency is inadequate. The purpose of public production varies in each situation. When allocative inefficiency is the trigger the purpose is to produce output that will not otherwise be produced by the private sector.

When production is undertaken to deal with wastefulness the purpose is to reduce it; there is no lack of incentive for private production. The problem may be one of weak contestability leading to low technical efficiency among producers as a result of natural monopoly.

Production to reduce dynamic inefficiency is intrinsically short-term in nature as it has the purpose of accelerating discovery of profitable opportunities (or future allocative or productive efficiencies) for private or public sector production.

In each situation the engagement of government in production raises two key issues: is such engagement a net improvement on the previous situation; and what is the composition of the net effect of production in terms of allocative and productive efficiency? The former issue refers to what is broadly referred to as “government failure” or “nonmarket failure” (Dollery and Worthington 1996) and essentially deals with whether public production has worsened efficiency. As noted above, this is not our present focus. The latter issue refers to the mix of effects of government entry into production on the distinct sources of efficiency. This issue, independent of the net impact of government production on efficiency, is of particular relevance to the issue of public or private provision.

Outsourcing

The broad incentive to outsource any aspect of organisational functioning is to achieve enhanced efficiency. This is arguably always technical efficiency, such as by the use of a specialist payroll processor. It may seem, at times, to be enhanced allocative efficiency that is sought, such as by the use of a market research agency to identify potential customers. But even this is about technical efficiency: the efficient collection of market information. The greater efficiency has to arise from cost

advantages owned by the target organisation relative to “in-house” production. The choice is to “make or buy”.

The genesis of the focus on outsourcing in recent decades is captured well here.

> In the 1990s, private sector corporations began to “reengineer” their business processes and organizational structures to increase their profitability by becoming more competitive and significantly improving critical areas of performance such as quality, cost, delivery time, and customer service. Three underlying premises of reengineering were that the essential areas of expertise or core competencies of an organization should be limited to a few activities that are central to its current focus and future success; that because managerial time and resources are limited they should be focused on the organization’s core competencies; and that services or functions required by the organization that are not core competencies can be outsourced to organizations that specialize in those services.
>
> Committee on Core Competencies for Federal Facilities Asset Management, 2005-2020 2008, p.14.

The decision to outsource some function involves consideration of a wide variety of factors. While it may seem to be a simple question, it lies at the core of the definition of the boundaries of an organisation. At any point in time all organisations reflect the history of decisions that have been made as to what is most sensibly produced in-house and what is most sensibly acquired from the market. Some organisations, such as farms, usually focus tightly on the production of physical goods, contracting out everything else, from input supply to output distribution, processing and marketing to final customers. Others, such as motor vehicle manufacturers, universities and retail banks, exercise tight control over a significant proportion of their marketing channel and/or supply channel.

Economic perspectives

Economists began focusing on the “in-house” question mainly last century. Political scientists were also involved; see the review by Williamson (2002.) Both were interested in the question as to where and why the command systems, the small sovereign states that single organisations are,

come into existence. The alternative is contracting with specialised individual producers in free markets. The way to contemplate this alternative is to think of an entrepreneur who has a new product idea and subcontracts every aspect of production and marketing to others. A current, close example is various electronics companies (eg Telefunken) that contract all production and distribution of their electronic products to firms in emerging economies. Only design and marketing are retained within the core firm.

The uniform answer as to why there are firms was “firms exist when production is more efficient under that arrangement” but the interesting issue is the dimensionality of that efficiency. Whence does it spring? The key aspects of this relate to the differences between command models and market models of integrated productive activity.

The command model is familiar to us all. It involves the subjugation of employee control to managerial authority. Employees produce what they are told to produce, and in the quantity, quality and timeframes specified. The cost of their output is under management control, as is any surplus (ie profit) associated with it. Relationships to be managed are specific to the employee rather than the output. Information flow is near-optimal due to internal communication processes and the immediacy of work-related advice. The commitment of the employee to the objectives of the organisation is defined to be part of the psychological contract under which they are employed. Employee performance is as observable as their role allows and feedback on it as timely as managers care to make it. Beyond formal job specifications there is an informal organisation within each firm which, among other things, may be ready and willing to act to ensure desired work outcomes are pursued even where job specifications fail to ensure this. That is, there are powerful pressures for conformity, arising from valued membership of groups, that can bring an additional element of commitment (Kast and Rosenzweig 1974).

In contrast, market solutions, where production is contracted at arm’s length, are characterised by greater uncertainty and “transaction” costs arising uniquely to each relationship (Williamson 2002). Transaction costs include those incurred to: discover a fair price to pay for the service; negotiate and create a contract; haggle over profit share; re-negotiate a contract when change requires it; and monitor contractor performance. Uncertainty impedes the reliance on long-term contracts (thus implying repeated transaction costs to re-negotiate) because the relevant environment may well change. Continuity in relevant supply cannot, ultimately, be assured; there may be no suppliers.

An economic construct that applies here is the “principal-agent” problem (Amagoh 2009). In any situation where a person organises for another to act on their behalf, such as producing something for them, the fact that it is not possible for the principal costlessly to monitor the performance of the agent creates a situation of moral hazard for the agent. The agent has a well-informed perception of their own performance; the principal does not. This information asymmetry creates the possibility for the agent to behave opportunistically and “short-change” the principal with inferior performance. Just how serious a risk this is depends on the intrinsic opacity of performance and the penalties the principal can exact for poor performance discovered subsequently.

The principal-agent problem exists in firms and between firms. Penalties for inadequate performance are greater within a firm, where the continuing employment of agents (ie, staff) may be at risk. As well, opportunities to inspect agent performance arise more naturally and often within firms than within outsourcing relationships.

In firms contracted to provide services the commitment of staff will be to the objectives of those firms. The commitment to the objectives of the organisation doing the outsourcing is indirect and derived from the role of their contract in the satisfaction of the supplying firm’s strategy and objectives.

Strategic management perspectives

The economic consideration of outsourcing points to issues that apply regardless of the strategic wisdom of outsourcing. That is, there is a layer of additional factors to be considered which bear on strategic management (see Petris 2005; Amagoh 2009), which is the management of dynamic efficiency by individual organisations.

Strategic management involves the future-oriented decisions as to what an organisation will produce, serving which customers/clients. It is future oriented because the minimum, financially sensible duration of the acquired skills, physical capital and organisation design means that the appropriateness of these components of the producing system has to be forecast for that period at least.

Strategy has also to identify the detail of appropriate output given the objectives of the organisation and its operating context. Private organisations normally need to decide how they are going to compete with immediate competitors. These decisions will carry implications for the relative emphasis to place on allocative efficiency (innovation, product differentiation, market specification)

and productive (ie, technical) efficiency (minimising costs and thus price). These strategic postures are substantially mutually incompatible (Porter 1985) and therefore require choice. For example, an organisation which seeks to compete on product price will not be able to introduce new products as frequently as one competing on product innovation.

Non-profit organisations do not have ongoing competitive concerns to deal with but do have to translate objectives into specific programs of activity. The translation of their mission or charter into specifics has to contemplate efficiency but does not have to contend with competitor behaviour. Where the organisation is “pot-holing”, covering gaps in services provided by others, the specific programs of activity will reflect that. The various branches of the Cancer Council are so placed, as is RDE within state departments of primary industry.

These strategic decisions have more or less enduring effects on organisations, as described above. Those effects, those organisational characteristics, which are pivotal to organisation performance, are defined as “core” aspects of the organisation. These are judged to be aspects without which the organisation cannot produce its desired output and, if appropriate, compete to maximum effect. At the other end of the continuum are aspects that are “peripheral” (Amagoh 2009).

An implication of this rubric is that reduced technical efficiency can be tolerated at the core but not at the periphery. This is because the technical efficiency of peripheral activity is essentially a short-term matter that is linked to repetitive tasks. Examples could be an organisation’s payroll function or car fleet management. Core activity, on the other hand, plays a more continuous role in organisation performance and will reflect the nature of effective strategy, which is to deliver good long-term performance with short-term fluctuations. Importantly, apparent technical inefficiency in core activity may simply reflect aspects of the work that are investments for future payoffs; effectively, the sacrificing of technical efficiency in the interests of long-run allocative efficiency (see Appendix A). Thus, a weak grasp of what is core and what is peripheral can lead to incorrect diagnoses of inefficiency.

A difficulty with this approach to identifying aspects of work that might safely be outsourced is that the membership of the core and peripheral categories may vary through time. For example, IT, initially closely associated with accounting, has been outsourced by many organisations but the emergence, and importance in customer relations, of the worldwide web has forced a re-evaluation (Soete and Weehuizen 2004).

Another difficulty can arise from inadequate analysis of the interconnectedness of roles within the organisation prior to outsourcing. That is, the tidy separation of core from peripheral roles may be assumed, naively, only for it to turn out that transactions costs associated with managing the linkages with an external provider skyrocket. More seriously, some connections simply cannot be managed with external providers. This interdependence issue is considered further below.

The overall effect of strategic perspectives on outsourcing is to narrow the possible areas of work that economic analysis indicates may sensibly be conducted by third parties. The central criterion is that the highest technical efficiency that can be achieved should be sought, subject to that not being, *to any extent*, traded off against the capacity to meet strategic objectives.

This lexicographic ordering of efficiencies (allocative dominating technical (ie, productive)) occurs in a particular context. Normally, when we are making choices about activity, we consider both the attractiveness of the results and the cost of alternatives: we trade off all costs and benefits, with appropriate weights, to optimise our choice. Strategy is the specification of objectives and choice of activity. Any consideration of costs of producing outcomes must be considered when strategy is being determined. However, once strategy is set and the activities, and associated costs, chosen, there can be no trade-offs favouring technical efficiency over allocative efficiency (which is often called “effectiveness”). If some factor suggests the existence of significant technical efficiency gains requiring a change in activity, strategy needs to be reconsidered. To modify strategy *incidentally* to chase technical efficiency gains, as and when the opportunity arises, is to mock the whole notion of strategy and to threaten its integrity as the program by which objectives are to be sought.

This reasoning begs a question: what activities can be performed more efficiently without impacting on strategy and which can’t; which activities link quintessentially to strategy and which don’t? The latter should be susceptible to vigorous pursuit of technical efficiency and the former shielded from naive “penny pinching”. The notions of core and peripheral activities are an attempt to address this central question.

General management perspectives

A complicating feature of organisations, however, is that they are complex, social systems. Everything is, in some way, connected to everything else. So, beyond considering what is core and what is peripheral, it is necessary also to consider which *links* between identified components are

core and peripheral. If this seems fanciful, it is because we don't usually reflect on the fact that the specific activities we design, and the links between them, are but one decomposition of the total work of the organisation (Kast and Rosenzweig 1974). There is no "natural" division of activities; simply the divisions we are used to.

In a subsistence context one person does everything. In organisations we tap the gains from work specialisation (and economies of scale) by dividing this work into skill-related sets of tasks which allow access to specialisation. The links which make these sets of task combine efficiently into the work of the organisation are as important as the tasks; they are as much part of the work as the tasks. They will be more challenging and numerous than in the subsistence context because they mostly involve communication and other processes that are either irrelevant or intrinsic to a single, completely unspecialised producer.

In the early decades of the twentieth century "co-ordination" was defined as a function of management. The conceptual model was one of specialist individual workers being highly productive performing highly-structured tasks and being co-ordinated by managers to make the separate tasks cohere into a finished, distributed product (Khandwalla 1977). This is a model that is not very distant from the world contemplated in economic discussion of transaction costs as the basis for firms being formed. The discreteness of tasks, including the superior co-ordination task, keeps the analysis clean when in-house or outsourced production is being considered.

However, this is no longer a commonly applicable model. Even at its birth it was criticised for stripping capabilities and endemic features from the individual worker: caricaturing him or her as an ape rather than an enquiring, interested human being whose performance would be diminished if their own control over their work activity was reduced substantially (Khandwalla 1977). Since then the focus in organisational analysis, with the same, ancient fixation on technical efficiency, has been on the nature of people as resources: the human variable (Kast and Rosenzweig 1974; Khandwalla 1977).

When considering outsourcing, beyond the broad factors provided by economics, and the more localised ones from strategy, there are the most proximal, from general management, to consider. This is rich territory but, as with strategy, it is only necessary to focus on elements which are likely to be touched by, or impact on, outsourcing. These areas are an interacting amalgam of organisational culture, organisational type, motivation and organisation design.

Organisation culture

At the broadest behavioural level, the culture of an organisation plays a subtle role in defining the behaviour of employees. It is the major expectations of contemporaries governing individual behaviour and the beliefs and values underlying them: how we do things around here, and why. Culture, to a substantial degree, determines "what employees see and how they respond to their world" (Robbins *et al.* 2008, p. 95). Culture is shared. Acceptance of, and compliance with, the prevailing culture is derived from the powerful motives people have to be members of human groups.

Aspects of culture come from the organisation itself, as well as from the broader society and the unique set of people in the organisation. One characteristic of organisations that is important in determining organisation culture is its "type". And among various bases on which organisations might be categorised is *cui bono*: who benefits? For whose benefit has the organisation been created?

Organisational type

All organisations have multiple beneficiaries. The origins of an organisation, and the roles of different stakeholders, lend a priority ranking to beneficiaries. One group will dominate when competing beneficiary interests exist (Khandwalla 1977). This is a key understanding for those who work in the organisation; it is the ongoing *raison d'être* of the organisation.

Blau and Scott (1962) suggested that there are four archetypal organisations that can be defined on this criterion. Business firms exist to benefit their owners. Mutual benefit organisations (clubs, cooperatives, unions) are created to benefit members. Service organisations (professional practices, private schools) are set up to benefit clients. Commonweal organisations (public universities, government departments) are created to benefit society as a whole.

A number of salient implications flow from these differences. One is the cultural impact: employees soon learn where the emphasis is expected to be placed when beneficiary interests compete. Thus a business will be concerned for employee welfare and customer goodwill, but only to the point where it makes sense in terms of delivering dividends to shareholders. For all business organisations long-run returns on capital are what matter. When they don't, it is usually because managers are subverting the interests of shareholders in favour of their own interests.

In the other types things are more variable. Mutual benefit organisations will respond to the particular expectations of members which will be captured in their charter. A trade union or professional association will differ considerably from a fishers' cooperative or single-gender club. All will rank member satisfaction highest "when push comes to shove".

Service organisations will sacrifice profit, and employee welfare, to meet professional obligations for clients. They commonly have professional codes of practice to govern this. The particular needs, though, will vary.

Commonweal organisations will, as well, have a charter which defines their client group(s) and the types of their needs to be satisfied. Their culture will be dominated by the notion of "public service".

Any rubric such as this one is coarse. Reality is more complex. There is always a balancing of interests of all beneficiaries: employees, customers, shareholders, suppliers and all the other players have to be satisfied to some minimal level. However, the *cui bono* analysis shines a fundamental light on the origin of strategy within each organisation. It provides an organisation-specific, qualitative insight on strategy.

Strategy making does not begin in a vacuum. The exogenous starting point for strategy is the purpose of the organisation. This is basic and beyond revision unless the organisation is to change its character fundamentally; for example, changing from a commonweal organisation to a business. Telstra, Qantas and the Commonwealth Bank are examples of such a switch. Each of these organisations took some time to "change their spots", and Telstra's confessions about poor customer service (Carswell 2009) indicate that it is still working on this challenge. The reason is that organisation purpose informs culture and culture is an enduring set of expectations of its members. Purpose is the statement of *cui bono*.

All business organisations have the purpose of achieving some desired return on capital employed. Regardless of the specific way they do it, the goods or services they make, constraints they may impose on their own behaviour (such as compliance with social responsibility or sustainability norms), their survival relies on adequately servicing the capital invested to create and sustain them. Mission statements relating to who their customers are and what they wish to do for them are variable over time: a part of strategy. Profit for distribution to owners is persistently central.

The other three categories of organisation have more action-specific purposes which are much more constraining of strategy. Mutual benefit organisations have purposes which identify their target

group (members) and the specific services to be supplied to them (credit union, trade union, professional association, etc). Service organisations, similarly, identify their target (clients) and specific services (medical, legal, (private) educational, etc) to be delivered; likewise, commonweal organisations. Their charter will define which elements within the public they are to serve and with what services.

The clear distinction between these three types of organisation and businesses is central to outsourcing. For businesses, no customer or client group is identified except as a part of the strategy whose purpose is to generate dividends for owners. For each of the other types of organisation the client is defined in the purpose; the effective delivery of defined outcomes to clients is the purpose. The role of technical efficiency differs, likewise, fundamentally across these organisation types.

Another implication of type for culture is the predominant, most basic focus pervading the organisation. Blau and Scott (1962) argue that this is efficiency in the case of business firms and the maintenance of member control in mutual benefit organisations. Service organisations are persistently concerned with the maintenance of appropriate professional standards of service delivery to clients and commonweal organisations are most concerned with public accountability.

For non-business organisations technical efficiency influences the extent to which clients can be served: the reach of budgets. It is not the pervasive concern it is for businesses. This matters because technical inefficiency is difficult to observe at low levels. The absence of a sense in each employee that technical efficiency, high personal productivity, is intrinsically desirable means that high levels will not be achieved. The most basic focuses outlined above imply that a message that technical efficiency is high priority will not flow through non-business organisations. A persistent challenge is therefore to promote such efficiency.

This is particularly challenging in commonweal organisations where it is common for customers to lack sufficient information to have informed understandings of their service needs. Thus, a “customer orientation” in public schools, hospitals, the police force and the armed forces relates to only peripheral activity because the public are, by and large, ignorant of the full set of the dimensions of service quality. A relevant issue in our analysis is the extent to which this is true of core activity in R, D and E in agriculture.

Periodic exhortations to employees to be mindful of efficiency often have ephemeral impact because they promote commitment to an objective that all know not to be central to the *raison*

d'être of the organisation. In addition, the exhortations are often superficial and unconvincing because they fail to specify how conflicts between service quality and cost should be resolved. The unpalatable consequence of this superficiality is to imply, to signal, to staff that they are being unnecessarily wasteful.

In business organisations it is an undisputed article of faith that technical efficiency is valuable. This arguably results from its direct link to the achievement of purpose. The wasting of resources reduces the achievement of purpose: return on capital employed is reduced. The attention to clients of non-business organisations is, translated into attention to customers, only a device in business organisations. Customers are as deserving of attention as they are profitable to the business. Importantly for our analysis, the attention customers will receive will be determined entirely by what the customer thinks they want, regardless of the validity of this for their needs and regardless of hidden negative consequences (market failures) of consumption.

A persistent challenge for managers in business is to soften the harsh edge that the powerful concern for efficiency, for profit, has on the relationship with customers. At the least, the attention to customers must not be revealed as the ploy in use to make profit. It is better if customers believe the business actually cares.

In both business and non-business organisations, interestingly, a management challenge is to force some balance, between concern for clients/customers and efficiency, to the inherent emphasis in the organisation which arises from its purpose and type. Thus, in businesses staff are exhorted to "love the customer" and in other organisations they are exhorted to be mindful of costs. The origins of the appeal of business approaches to managers of non-business organisations, rests here. But so do the risks of seeking to transplant predominant emphases from one type of organisation to another.

Motivation

Below the level of culture is the motivation of individual personnel within organisations. Motivation is often thought to be a trait of individuals, a characteristic of eagerness and commitment that varies across people. This is wrong-headed. The manifestations of motivation that we infer to reflect personal characteristics of staff are individual responses to the context managers create for them in organisations (Robbins *et al.* 2008). These contexts are judged, often implicitly, in terms of their ability to satisfy the personal goals of staff. In developed economies these goals are derived from "higher order" needs: the need for esteem and self-esteem and for self-actualisation.

Motivation is a characteristic of lifefulness. The intensity of it that we (think we) detect reflects only the (perceived) usefulness of the behaviour of interest for the achievement of the individual's aspirations. As this changes, "motivation" changes.

Optimising motivation requires constructing the most appealing organisational context for staff, consistent with technical efficiency, and the selection of staff who have appropriate skills and for whom the organisational context is appealing. The motivation of staff is a management task.

There are established differences between people who attain employment in the private (business) and public (commonweal) sectors. The latter are more risk averse and, at least initially, "have a strong willingness to serve others or the public interest" (Buurman, Dur and Van den Bossche 2009, p.1). Public sector jobs appeal to risk-averse individuals because they tend to be more secure with less income volatility. These reasonable expectations that staff have of public versus private employment are another aspect of the culture within organisations. The alignment of this motivational character of public servants with public sector objectives and purpose enhances technical efficiency: personnel identify with organisational purpose. The same is true of business personnel.

When activities are switched via outsourcing between public and private sectors, technical efficiency is automatically reduced: private staff delivering public services are too transaction oriented and customer-responsive, and public staff delivering private services are too client oriented and paternalistic.

Organisation design

Just as culture is the enduring behavioural character of an organisation, organisation design is the enduring structural character of an organisation. And as culture has various contributing inputs, organisation design is composed of a variety of decisions, made over time, about the roles and relationships most appropriate for the organisation. Like culture, design is profoundly influenced by the type an organisation is and by the strategy and technology it employs. Like culture, design is not readily modified, although a surprising number of managers seem not to realise this.

Organisation design involves a multiplicity of decisions as to how work will be done. Substantial management research (see Khandwalla 1977) has made plain the fact that design has an important facilitating or constraining role in organisation performance: there are "right" and "wrong" designs. The research has also made plain the fact that no single component of design is defining of its

overall character and, further, that it is the overall character that constrains or facilitates performance.

Organisation design is composed of its superstructure (departmentalisation) and infrastructure. Infrastructure encompasses hierarchy of authority, use of committees, delegation of authority, specialisation of functions, standardisation and formalisation of procedures, and the control and information system (Khnadwalla 1977 p.486ff.).

Each of these components combines with the others to define the overall character of the organisation design, described as resting somewhere on a continuum between “organic” and “mechanistic” (Kast and Rosenzweig 1974 p.510-1. Being on a continuum, these design alternatives are intrinsically competitive: the more organic an organisation, the less mechanistic it must be. Relatively mechanistic organisations are rigid and stable. They are “characterised by high specialisation, rigid departmentalisation, narrow spans of control, high formalisation , a limited information network (mostly downward communication) and little participation in decision making by lower-level employees” (Robbins *et al.* 2006 p. 331).

Organic organisations are highly adaptive and flexible. Jobs are not standardised and are changed as circumstances demand. Staff are highly trained and authorised to respond to diverse problems, often in teams. Supervision is loose and embedded in few formal regulations. Authority tends to flow to staff who have the superior competence to handle a given issue (Robbins *et al.* 2006 p. 331-2).

There are two important features of this important component of general management theory. First, there is no ideal design; what is appropriate depends on a small set of “contingency” factors. Second, these factors can imply the need for components of organisations to differ in design character from the overall character of the host organisation.

The major contingency factors are strategy, size, technology and environmental uncertainty. These are complex and interrelated but the core impacts are as follows. Organisations that rely heavily on technical efficiency for performance will tend to be mechanistic and those that rely on innovation are better to be organic. Informing the implications of strategy, also, is the persistent focus in organisations derived from their type (see above).

The larger an organisation is, the greater the likelihood that it will be mechanistic in design. Organisations that engage in single unit or small batch production, or in continuous process production, perform better if they are organic. Mass production technology favours mechanistic design.

The greater the degree of relevant environmental uncertainty, the greater is the value of the adaptability enabled by an organic design.

Size and technology are substantially givens, while strategy and environmental uncertainty (the relevance of which is grounded in strategy) are under somewhat greater control.

Different contingencies can yield conflicting implications. For example, the size of DPI Victoria inevitably implies the need for a mechanistic design for best performance (as does this commonweal organisation's concern for accountability) while the innovative focus of RDE, and uncertainty in the landholders' contexts, implies the need for an organic design. High-level performance of RDE, consistent with high-level performance of DPI overall, will require the shielding of RDE from the mechanistic character of the host organisation. RDE needs to achieve a degree of organicism substantially greater than will prevail across DPI for best performance.

Organisation design draws together the salient idiosyncratic features of any organisation to indicate the preferred design emphasis: towards organicism or towards mechanism. In doing so it goes some way towards providing a framework for consideration of the nature of organisations holistically, embracing both substantive components and linkages, as discussed earlier. And, in doing this, it indicates the degree of empathy likely to be available between an organisation and an outsourced service provider.

Marketing perspectives

The focus of Marketing as a discipline is the study of exchange. This particularly involves consideration of the relationships among organisations, and their clients or customers, products, competitors and the exchange itself (McColl-Kennedy and Kiel 2000). Advertising and promotion (including personal selling) are little more than the most publicly visible periphery to marketing effort.

A major distinction between marketing contexts that bears on issues here is that between relationships with customers/clients which are transactions-based and those that are more continuous (McColl-Kennedy and Kiel 2000). The latter are defined as "relationship-based" and, while individual transactions occur, the management of the relationship dictates which, and how many, individual transactions will occur.

This distinction is not product specific. Organisations can engineer relationships with some customers, but not others, for the same product. The notion of brand loyalty can be interpreted as a relationship marketing achievement, the loyalty causing customers to resist temptations arising on a

transaction-by-transaction basis to switch brands. The incentive for businesses to embark on Customer Relationship Management is grounded in this desire to soften the focus by customers on individual transactions. For many product categories (washing detergent, for example) this is often an optimistic approach.

Nor does the distinction map neatly onto public versus private organisations. Exchanges with the police are not relationship-based, in the public sector, while exchanges with banks are, in the private sector. However, there is a predominance of relationship-based exchange in the public, or commonweal, sector. This is also true of service organisations.

The marketing management applying to exchanges where each transaction stands largely alone in the customer's mind is very different to relationship-based marketing. The latter applies when customers or clients perceive that the role of transactions varies over time; that transactions are contributing differently over time to the satisfaction of their needs and wants. The supplier assumes a much larger share of the responsibility of scoping client needs and evaluating possible solutions. And the client understands and approves this role.

The defining characteristics of relationship marketing are its continuing nature and its richness of information flow between client and marketer. As implied above, this only makes sense when customers, rightly or wrongly, assume that they lack sufficient competence, or interest, to identify and/or evaluate goods and services offered for needs they have and that this matters.[3] That is, they have significant perceived risk of error of some kind associated with the category of product in question. That error may be failing to adopt in a timely fashion, adopting inappropriately, paying too much, appearing a fool to peers, and so on. If error would be of no consequence, the prospect for useful relationship marketing is low.

Framing the Outsourcing Choice

The preceding analysis indicates the complex multidimensionality of the issue at hand. This does not, in itself, imply that no landholder services should be provided by private organisations. Rather, it provides perspectives that enable the comprehensive analysis of the costs and benefits likely to be encountered if such outsourcing is undertaken.

[3] Hanson and Just 2001 make clear that this is likely common, and justified, and that this also imperils the feasibility of charging for extension services in ways that will not damage efficiency.

The fact that outsourcing is being contemplated in a public organisation adds some idiosyncratic dimensions to the decision as a result of the triggers, in the first place, for public sector involvement in the activity. Apart from these, most of the factors to be considered are general to all organisations.

The nature of key aspects of the outsourcing decision is problematic for quantifying costs and benefits. They are qualitative issues whose contribution to the net effects of outsourcing cannot be projected quantitatively. Cost benefit analysis of outsourcing choices can therefore only be one part of comprehensive analysis. Uncertainty surrounding dimensions means that the riskiness of outsourcing has somehow to be incorporated.

The incentive to contemplate outsourcing of activities currently provided by public entities is to achieve higher technical efficiency. The sources of that greater efficiency will be either or both of greater engineering efficiency (creating higher performance potential) or reduced x-inefficiency (moving actual performance closer to the potential). The former would come from providers being technologically more advanced than the public entity. This could exist in the form of physical capital (better equipment) or human capital (higher skills of personnel).

Reduced x-inefficiency would arise from better management. The incentive management has to cut x-inefficiency depends on the impact of inefficiency on profit, which depends, in turn, on the intensity of competition the organisation faces. This is because weaker competition allows firms to take the easier path of passing the costs of inefficiency on to customers.

A Double-Hurdle Model

The factors that we have considered that bear on outsourcing decisions fall into two categories. There are those that determine the likely degree of success of an outsourcing arrangement. These, which are here called “success factors”, relate to the nature of specific factors that contribute to the efficiency gains apparently available and the confidence that can be held that the gains will in fact be achieved. These factors can be identified for any and all activities currently conducted within an organisation.

There are other “strategic” factors that comprise a more fundamental, qualitative test of the appropriateness of outsourcing. These strategic factors work with the success factors asymmetrically. Jointly, they form a double-hurdle choice framework. The failure of a prospective outsourcing option on strategic grounds is irrecoverable: a bad strategic choice should never

wittingly be made. However, a prudent strategic choice may be crippled by inadequate success factors.

Strategic factors, alone, thus determine the plausible set of outsourcing options. Options that fail to clear this first hurdle are strategically irrational. Within the plausible set, success factors determine those that can be chosen with some confidence. The logic of efficiency analysis does not permit the reverse flow of influence. Outsourcing can only contribute to enhanced productive efficiency; it cannot improve allocative efficiency.

Strategy is the process that defines, together with the real world with which it interacts through time, the allocative efficiency that an organisation achieves: the appropriateness of the output it creates. Outsourcing possibilities, or requirements, may provoke reconsideration of strategy but organisations would approach that as a planning review rather than much more finely as an outsourcing decision. For example, if a private organisation were to create an agronomic research centre whose main role was to maintain a large body of expertise sufficient to allow it to do contract research for a wide variety of entities that would otherwise need to do it themselves, each of those entities may embark on a strategic review in response.

This would, like all such reviews, be broad in scope and consider the implications for all strategic objectives and constraints of using the service. This would not resemble an outsourcing decision at all. These are characterised by detailed consideration of success factors. (One would expect, on balance, most organisations to reject the option due to strategic vulnerabilities associated with abandoning internal agronomic expertise. These would include excessive supplier power, confidentiality concerns and loss of internal creative capacity.)

In what follows the various factors considered in this paper are grouped into categories of Strategic or Success factors. As with other aspects of management, the assessment of the value, or state, of some factors may require some introspection within any organisation; for example, aspects of strategy that are currently implicit may need to be made explicit.

Strategic Factors

Strategic factors are those characteristics of an outsourcing possibility for an activity that deny outsourcing any strategic rationality.

The activity is core

As noted above, strategy theorists define core activities as those that are pivotal to organisation performance. In public sector contexts these have been described as “inherently governmental activities” where the public interest is intimately involved and the activity must therefore be conducted by a government employee (Committee on Core Competencies for Federal Facilities Asset Management, 2005-2020 2008, p. 101). “The more an activity belongs to [a public] agency’s core policy making, regulatory, enforcement, and key service delivery functions, the more it should be provided in-house and not be contracted out” (Amagoh 2009, p.5).

As noted above, which activities are core and which not is debatable at the margin. And the margin is where outsourcing may emerge as an attractive idea. So, further detail is needed to help with the specification of core activities. This is especially so where activities may be divisible into discrete tasks or roles some of which may seem eminently outsourceable.

One of the factors discussed above is central to this issue. It is the nature of the interdependence between sets of activities; R, D and E in this case. Quite independent of features of the activities that may influence the success of outsourcing, the nature of interactions between staff performing the activities and other functionally proximal staff in the organisation impacts on the immediacy and richness of communication, and ease of managerial oversight, required for high performance. Significant interdependency dominates task complexity here. Even the most highly structured and easily appraised of activities may be too closely linked to core activity to be outsourced, depending on the interdependencies.

For example, routine accounting processing in organisations is so embedded in organisational functioning that it is very rare to see it outsourced, notwithstanding its susceptibility to automation. Superficially, it could be described as the costs of exporting and importing data overwhelming potential efficiency gains. More fundamentally, though, it is information flow demands overwhelming potential efficiency gains. The importance of the fundamental view is that the information flow may be much more subtle than invoices, expense claims and preferred report formats. The key is the operational flow and the interdependencies of actors it creates.

The earlier discussion of the nature of R, D and E activities indicated that reciprocal dependence should predominate if these three components of the new product development cycle are to work efficiently and if the relationship between DPI and landholders is to be optimised for the adoption of innovations.

The focal questions here are: are R, D and E being managed well now; and, how, exactly, would required interdependencies be managed should outsourcing of activities be undertaken? The first question is important to avoid the inappropriate use of outsourcing to solve a management problem. For example, outsourcing could reify poor interdependencies if there is a management problem (such as inappropriate organisation design) suppressing RDE performance, thus disabling the prospect of higher performance.

The second question is important inasmuch as it demands specific consideration of interdependency and its management under outsourcing. Soft analysis of outsourcing too easily leads to awkward realities being assumed away. At best, this has the effect of technical efficiency being enhanced at the expense of the achievement of outcomes (allocative efficiency), which is perverse. A related question that seems to apply to RDE is just how specific tasks are to be identified for outsourcing and how are these to be managed such that the integrity of the whole RDE set of tasks is not perturbed? How can RDE neatly be decomposed? This is particularly salient given the emphasis on environmental uncertainty, creativity and relationships that pervades RDE.

Contestability of supply

Despite popular perceptions, and the pleasure that business people derive from basking in them, private organisations are not intrinsically more efficient than public entities. As discussed, they are intrinsically more interested in profitability. Whether that translates into an emphasis on efficiency, either allocative or productive, depends on the competitive pressure they face. “Contestability” “refers to the ease with which potential service providers can compete for the contract” (Amagoh 2009, p.9). It is defined, substantially, by the number of similar producers that there are or may be.

When there are few alternative suppliers, each can offer services at high prices because, first, they cannot be easily replaced and, second, there may be high costs associated with them withdrawing their services. Outsourcing may collapse the number of competing providers.

On the other hand, it may be that the initiation of outsourcing will attract new providers, lifting contestability above prior levels. It has to be borne in mind, though, that comprehensive outsourcing means that the current producer is no longer a competitor.

Another factor that can have similar effects is asset specificity. A service provider who has to invest in high asset-specific service will raise the costs of entry of new competitors, thus maintaining low

contestability and the ability to raise prices or reduce service performance (Amagoh 2009). Such assets would include in-house capabilities in any part of RDE that are expensive to build.

In situations where outsourcing involves total reliance on external providers for performance of some task, whether core or peripheral, low contestability removes the prospect of efficiency gains. Unlike the success factors considered next, low contestability among profit-driven agents is necessarily fatal to the rationale for outsourcing.

Success Factors

Success factors are factors that are not determinants of the appropriateness of outsourcing options automatically but which do interact to determine the net benefit of outsourcing; they determine its impact on performance. Outsourcing is imprudent when there is any significant possibility of net benefits being negative.

Asymmetric information

The principal-agent problem varies in significance as a number of factors vary. Broadly, these are factors which bedevil performance appraisal and factors which increase the incentive for agents to act opportunistically. Contestability is one of the latter. Staff interdependence is one of the former.

The character of R, D and E in terms of ease of performance appraisal was discussed earlier. This was to do with task complexity, qualitative dimensions of output and input, outcome uncertainty (involving creativity in R and product value to landholders in E) and interdependencies (principally information flow). As performance appraisal becomes more demanding, information asymmetry matters more. This is because the scope for the agent to know more about true performance achievements than the principal increases.

The continuous nature of E engagement with landholders indicates that relationship marketing is behind exchanges. This helps explain the difficulty of performance appraisal of extension personnel. Individual adoption decisions, much less participation by landholders in field days, are unreliable indicators of extension effectiveness.

How much information asymmetry across RDE matters depends on the scope for outcome-based contracts (since behaviour-based contracts have variable outcomes) and trust-based relationships to be formed with outsourced service providers (Amagoh 2009). This will be influenced by the duration of that relationship and the response of the agent to incentives to behave opportunistically.

Asymmetric information enables opportunistic behaviour but inadequate contestability spurs it, given the profit focus of the agent.

Motivation conflicts

The difference in the type of organisation, between public (commonweal) and profit-seeker (business), exacerbates the potential costs of outsourcing. From senior management to frontline employee, the type of organisation impacts on the perception of personal roles and the role of the organisation in ways described above. In the context of commonweal and business organisations engaging in outsourcing, in either direction, there is a fundamental clash of focus. In the case of extension, to business, the purpose of relationships with landholders is to have profitable exchanges.

The implications of this for effort committed to creating and maintaining relationships will be governed by this reality. The difficulty, even impossibility, of monitoring validly the quality of service provided in this regard is problematic. The incentive to minimise effort here, consistent with achieving adequate external measures of performance, is very dangerous to performance. There is no identification by staff with the purpose of DPI on which to rely, and no guarantee of identifying indifferent performance. This would amount to a failure of accountability.

With each of R, D and E, any notion that tasks may be shared with outsourced providers raises some novel issues. One is the complexification of interdependencies, with more people involved and organisational boundaries, and focuses, getting in the way. Another is the complexification of relationships with landholders, for no apparent benefit for them. How are all involved to perceive their roles?

There are multiple specific issues that arise here, many of which reflect the apparently core nature of RDE to DPI and the consequent detailed problems that full or partial outsourcing would generate. The key issue, in general terms, about motivation is that the drivers of the performance of outsourced tasks by the provider must align with the interests of the focal organisation (eg, DPI) or they must be able to be managed to imitate that outcome. Where this is not a plausible expectation, a successful outsourcing relationship will be based on hope.

Motivation clearly interacts with asymmetric information in influencing likely outsourcing success. Notionally, appropriate motivation could offset risks associated with asymmetric information. Alternatively, it could exacerbate them.

Conclusion

Outsourcing is one manifestation of the increased pressure that organisations sense to focus their efforts. In the public sector that pressure is unleavened by soft competition as it can be in the private sector.

A feature of the private sector is the simplicity of the strategic management context. The objective is lucid, to achieve a return on capital employed, and the basic strategy simple, to do so by meeting customer preferences for output the business can produce. In the public sector, strategy is qualitatively joined to the organisation's charter, as defined by government. Technical efficiency, the target of outsourcing, is not so neatly connected to organisational performance as it is in the private sector.

Yet, even in the private sector outsourcing has been found to fail (see Soete and Weehuizen 2004). There are many possible causes of dysfunctional outsourcing arrangements. Most are unrelated to whether the organisations involved are from the private or public sector. They are to do with the safe exportability of activity to other providers, in terms of their closeness to strategic effort and the pressures on providers to produce them efficiently, and the controllability of provider performance, given the mutuality of interest that exists for true high performance.

The additional issues triggered by the prospect of private provision of public sector activity are to do with two factors, in the main. The first is that it is often the case that government is producing because markets have "failed". If this type of productive activity is involved, this means that, to then use free market providers, a great deal of dexterity is required to step around the factors that caused the market failure. And a question remains as to residual activity this may leave to be done. In short, government production in response to market failure is extremely likely to be core activity.

The second factor is that the conversion, through outsourcing, of a public sector *objective* (such as landholder productivity maximisation, for example) into a *strategy* for a profit-seeking organisation evokes a fundamentally different incentive context for the private organisation and its staff compared to that in the public sector. In the case of peripheral activity, this may be dealt with by adroit contracting. In the case of core activity, it is likely to be devastating to allocative efficiency: organisation performance compared to charter.

A simple double-hurdle decision guide is proposed for assistance in considering outsourcing possibilities. The rich set of background perspectives drawn from various disciplines, however, is the material most likely to inhibit naïve decisions.

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Appendix A: Constructs of efficiency in economics

(excerpted from Wright 2009)

Notwithstanding the complexity and mass of detail and interactions within national or state economies, the quality of performance of an economy is conceptually a simple matter: an economy is performing at its best when "economic efficiency" is maximised.

Economic efficiency refers to the adroitness with which a society consumes its resources to meet its needs and wants: the value for money of its use of resources (Palmer and Torgerson 1999). Maximum efficiency occurs when the right mix of goods and services is produced at least cost. The process through which this occurs involves two steps. One is the identification, either by market processes or by government determination, of the quantity of the particular goods and services that will be produced and distributed to members of society to meet their needs and wants.

The second step is the choice and management, by those in command of productive enterprises, of the technology to be used to convert resources into goods and services. Technology is the conversion instrument that determines the goods and services that can be made and the physical productivity of resources used to do so. These resources include human resources. This determines the collective demand for resources and, given resource availability, the price of resources.

Figure 1 (below) relates to this discussion of efficiency.

Physical measures of efficiency

Each chosen technology embodies a conversion ratio of resources into goods and service outputs. This is a physical ratio that may be expressed, for example, in terms of energy or some other dimension. This can be defined as "engineering efficiency". It is an expression of the output potential of an input or set of inputs.

"Technical efficiency" (Palmer and Torgerson 1999), or "X-efficiency" (Frantz 2007), is the extent to which engineering efficiency is actually achieved. Factors which can inhibit the achievement of

relevant engineering efficiency include management incompetence, low levels of staff motivation or skill, low penalties associated with technical inefficiency (due to weak competition, for instance) and a performance-satisficing, rather than performance-maximising, approach in the enterprise. The effect is to waste inputs; less output is made than could have been. The field of general management (see Robbins *et al.* 2008) is almost entirely focused on maximising technical efficiency.

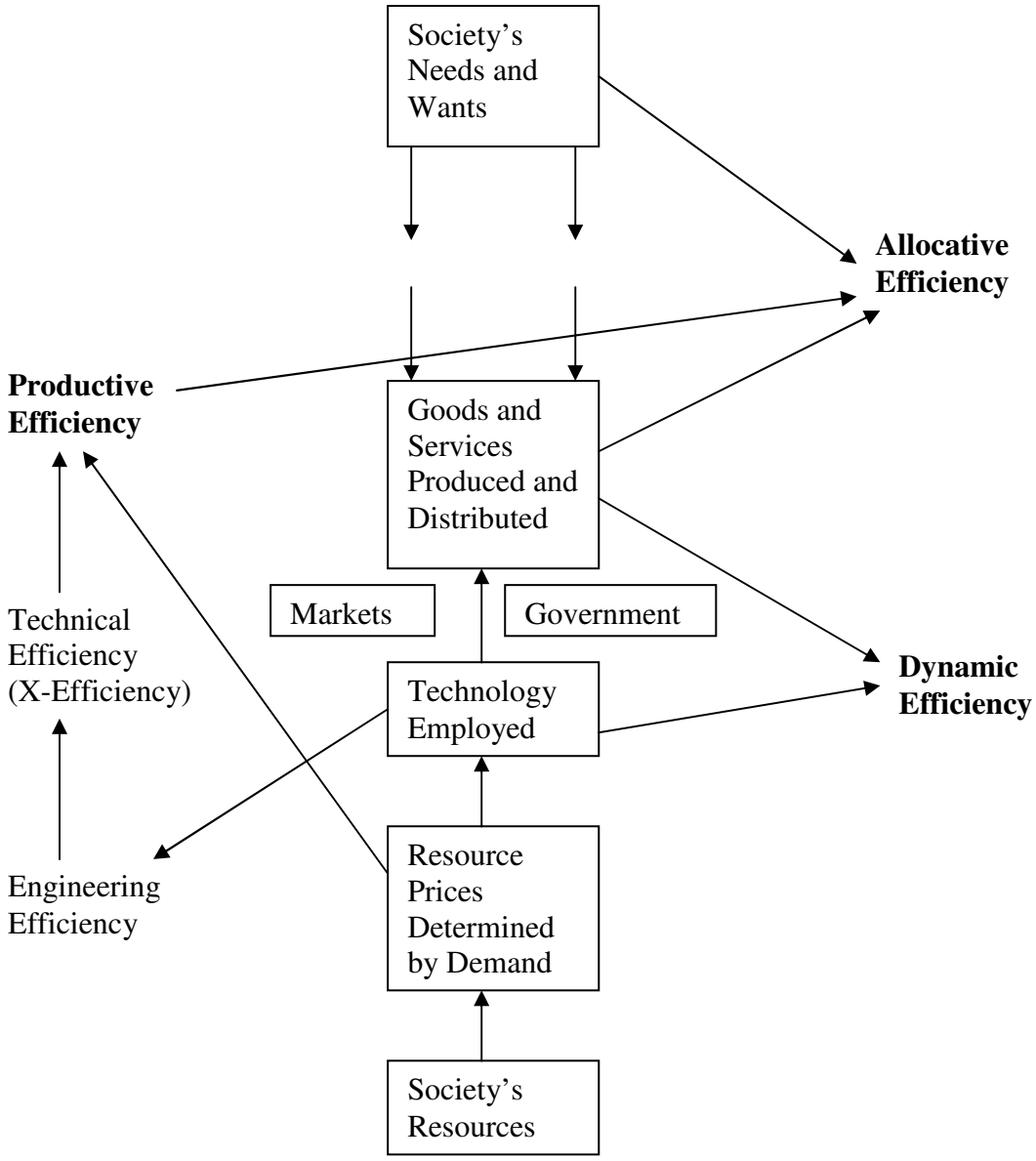
"Operating efficiency" and "operational efficiency" are also terms sometimes used for technical efficiency.

Productive efficiency

Both engineering efficiency and technical efficiency involve only physical relationships. The technology chosen to produce a good or service will be chosen on the basis both of engineering efficiency and the cost of inputs. The objective of a producing enterprise is not to use the most engineering-efficient technology; it is to use the cheapest. (Note that we are considering different technologies to produce exactly the same output. However, the same criterion applies to different technologies with *similar* outputs: for example, a technology with higher engineering efficiency that offers better performance in the final output will only be employed if the customer value of the better performance exceeds the cost of the "better" technology. The use of gold, rather than poorer conductors, in loudspeaker cables is an example: production is limited because few consumers will pay the substantial premium for the best engineering efficiency to be had.)

"Productive efficiency" refers to the extent to which output is produced at least cost (Palmer and Torgerson 1999, Fallon 2005). It depends on technology choice, which should be based on engineering efficiency and resource (input) prices, and technical efficiency in the operation, the general management, of the technology. Colloquially, productive efficiency is "doing things right". In the general management literature it is called "efficiency" (Robbins *et al.* 2008). Popularly, it is also referred to as "cost effectiveness".

Figure A1: Economic Efficiency Map



Allocative efficiency

"Allocative efficiency" is the extent to which the goods and services produced, and distributed, maximise the welfare of society (Palmer and Torgerson 1999, Fallon 2005). It peaks when there is no other mix of the economy's outputs, and no other pattern of distribution of them to members of society, which would enhance the satisfaction of society's needs and wants. Another (derived) way allocative efficiency therefore can be defined is the extent to which the allocation of society's resources (to outputs) maximises society's welfare. This, of course, is a valid reflection of desired outputs only to the extent that demand for resources arises via maximum productive efficiency. Colloquially, allocative efficiency is "doing the right things". In the general management literature it is called "effectiveness" (Robbins et al. 2008), although strategic management is the literature most closely linked to it.

Economic efficiency can only be maximised when allocative efficiency is maximised and productive efficiency is maximised *given maximum allocative efficiency*: when the right things are made as cheaply as possible. Allocative efficiency determines the appropriate specific choice of technology that underlies productive efficiency.

Beginning with the set of resources available to society, economic efficiency is maximised by a process of stepping through the output possibilities, enabled by technologies, which maximise resource productivity. Engineering efficiency indicates the highest levels of output available from resources. Productive efficiency indicates the least cost translation of engineering efficiency, thereby identifying levels of output available at least cost. (Technical efficiency is a consideration only in the context of actual production). These physically-based output possibilities indicate, notionally, the entire variety of quantities of goods and services that can be produced efficiently and from which a specific set can be chosen.

The technically efficient production of less-valued goods and services is wasteful, of course. Resources used are wasted to the extent that they could have been used to produce a mix of goods and services which provide greater satisfaction of needs and wants. Economic efficiency depends on resources being consumed, at least cost, to produce the right goods and services in the right quantities. Physical, technical aspects of efficiency play a role but it is a subservient one to the

choice of desired outputs. Any deficiency in productive efficiency will diminish economic efficiency, of course, and distort allocation of resources by using more than are necessary.

Inefficient activity

Technical waste occurs when more input is consumed than need be, with existing technology and inputs, to create a unit of output. Economic waste (allocative or productive inefficiency) occurs when the output mix is wrong or more is spent to achieve an output than need be. The latter can be so if a more expensive technology is chosen or there is technical waste in the use of the chosen technology, or both.

The distinction between technical waste and economic waste is central to economic performance at both the enterprise and economy levels. This is all the more important because technical waste is the more apparent of the two. It is clear that water leaking from irrigation infrastructure, or hospital emergency staff being idle, is 'wasteful' compared to what might occur. However, when evaluating technical waste, or "x-inefficiency" (Frantz 2007), it is very important to understand exactly what output is desired, the technology being used and relevant costs.

In a hospital, any wish for short waiting times for emergency treatment necessarily implies idle times for staff. Idle time is part of the technology for this desired output characteristic. The apparent technical inefficiency, the technical waste, is not real: it arises from a lack of understanding of the desired output, the technology, or both. Removing this 'waste' would lead to all fluctuations in demand for emergency treatment mapping directly into waiting times, and the duration of trauma.

Water loss from infrastructure occurs due to design features or physical deterioration. In either case, any move to reduce losses will involve the investment of funds. This is quite different to x-inefficiency. It is not a matter of sloth or clumsiness. Removing the 'waste' is not a matter of costlessly moving towards the engineering efficiency potential. Given the existing infrastructure, there is no technical waste; it is achieving its potential. A proposal to reduce the leaking is an investment proposal which needs to be evaluated as one would any other. Even when the leaking has arisen from system deterioration this does not give system repair any special status as the appropriate response. Economic efficiency will only be served if the variety of technologies available to deliver the desired outcome is considered, along with their costs. What is more, the

relevant desired outcome is likely to be broader than simply 'reducing leakage'. 'Optimising water utilisation in Victoria' may be more appropriate (see Watson 2008).

The process of reviewing current desired outcomes and current alternative technologies, triggered by indications that better technical efficiency may be available, is the core of the diffusion of innovations. Implicitly assuming the optimality of existing technology, by re-investing in it without a review of options, can impede the pursuit of greater productive efficiency.

Dynamic efficiency

This discussion of efficiency has been static, or timeless, in nature. At a practical level there is a further aspect of efficiency to consider. It relates directly to technological change. Because technological change is the source of per capita economic growth, there is notionally an optimal allocation of some of society's current resources to technological research and development. That is, there is a string of future benefits available to society from increasing the engineering efficiency of technology, the productivity of resources. There is thus good reason to allocate some current resources to the production (including discovery) of new technology and away from current production of goods and services.

This amounts to investment in future efficiency and can be overdone or underdone. The term that is used is "dynamic efficiency". It refers to the appropriateness of the degree of diversion of resources from production (for consumption) to research, development and extension (the deployment of innovation). A related concept with such a future orientation in general management is "adaptability" (Anderson 1984).