

# SEARCHING FOR THE MEANING OF EFFICIENCY IN CONTEMPORARY MANAGEMENT PRAXIS

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## ABSTRACT

*The notion of efficiency has existed in management literature for more than one hundred years. Its original application to management praxis was relatively unambiguous, even though English-language meanings of the word are diverse. A century ago, managers who were also professional engineers, clearly enunciated their meaning of efficiency and its implications for productivity. Since that time, the combined effects of the emergence of the management development discipline, a decline in the managerial influence of engineers, and the ascendancy of notions of economic efficiency have seen significant levels of confusion arise about the meaning and application of the notion of efficiency in management praxis.*

## INTRODUCTION

The notion of *efficiency* occupied a privileged position in management literature in the first half of the 20<sup>th</sup> Century. Its status as a management concept was fostered in both public and private sectors through the dissemination of a range of theoretical and practical contributions commencing with Frederick Taylor (1911) and Henri Fayol (1949), and almost concluding with Luther Gulick (1937) and Dwight Waldo (1948). It is evident from this literature that over the period 1870 – 2000 there have been periods where significant attention has been given to aspects of the notion of *efficiency* as a scientific process and management philosophy (Taylor, 1911; Fayol, 1949; Barnard, 1938; Gulick, 1937; Simon, 1945; Waldo, 1948; ILO, 1978).

At its zenith, the status of the notion of *efficiency* was illustrated by Gulick (1937, p. 191) who claimed that: “whether public or private, the basic ‘good’ is efficiency” and by Waldo (1948, p. 201), who suggested that:

*those who are more “sophisticated” about economy explain that ... “true” economy may mean spending more rather than less money. If they attempt to explain “true” economy they do it in terms of efficiency. Efficiency is therefore the fundamental concept. (Waldo’s emphasis).*

However, the emergence of the management development movement (House, 1967) has seen a decline in the focus on the notion of *efficiency* in the management literature with concurrent challenges to the boundaries of management praxis through an influential re-interpretation of *efficiency* by economic theorists and other professional disciplines.

The contemporary influence of the concept of *economic efficiency* can be traced to the theoretical development of *laissez-faire* as a form of economic management (Smith, 1776), which was eventually adopted by the UK government for a short period in the 1870s (Williamson, 1931). A century later, *laissez-faire* was again popularized by leading neo-classical economists (Hayek, 1988; Friedman, 1962) with the aim of improving the *economic efficiency* of Anglo-American countries after the perceived failure of Keynesian-inspired economic policies. In the relevant literature around this aspect of economic theory, there is both a quantitative and qualitative approach to the meaning of *economic efficiency*. The quantitative approach has seen extensive development of

sophisticated mathematical models of economic behavior while the qualitative, language-based definition of *efficiency* has remained comparatively unsophisticated and imprecise.

While the literatures of economic and management theory have developed separately over the last century, it is increasingly clear that the descriptive notion of *efficiency*, whether derived from economic or management theory, exercises a significant influence over the discourse of management praxis (see Table 1). In these circumstances, it might be anticipated that the broader management literature would have evolved contemporary models of *efficiency* as a guide to praxis, and with a view to optimizing management outcomes. However, there is little evidence to show that the notion of *efficiency* within the overall management literature has developed greater sophistication during the past 50 years despite the potential advantages inherent in a more precise understanding and usage of the term. More recent literature, especially the populist publications of the so-called “management gurus” (Micklethwait & Wooldridge, 1996) and the literature of management development of the 1990s, has focused on other outcomes and competencies and has failed to contribute to the enhancement of *efficiency* as a guide to praxis.

## EFFICIENCY AS A LANGUAGE-BASED CONCEPT

The word *efficiency* possesses many meanings. *Efficiency* might be established through comparison between organizations in the same industry (Martin and Schumann, 1997), through the application of some form of benchmarking (Funnell, 2001). It can also be attributed to a revision of working practices with a view to increasing the output of a given set of resources, that emerged from the efforts of Taylor (1911) and his peers (Gantt, 1919; Kanigel, 1999; Hough & White, 2001). Furthermore, the traditional economic measures of *efficiency* involving land, labor or capital as typical factors of production (Lipsey, 1966) are no longer in ascendancy. The emergence of the knowledge economy has challenged the importance of some of the traditional factors and given rise to new business models and management paradigms (Easterby-Smith, Snell & Gherardi, 1998; Thurow, 1999).

Despite this decline in theoretical support, *efficiency* remains a key objective for managers and those who report on management performance. A contemporary sample of the broad usage of *efficiency*, showing the frequency of usage of the word *efficiency* in a sample of public sector management reports appears in Table 1 below, and confirms its importance in management discourse. However, the lack of contemporary, theoretical analysis and elaboration of the notion of *efficiency* in management praxis has not always been the norm in the management literature.

Gulick (1937), Barnard (1938), Simon (1945), and Waldo (1948), established the status of *efficiency* in management praxis in both public and private sectors. Gulick (1937, p. 192), for example, provided emphatic statements in support of the importance of *efficiency* in the public sector:

*Both public administration and politics are branches of political science, so that we are in the end compelled to mitigate the pure concept of efficiency in the light of the value scale of politics and the social order. There are, for example, highly inefficient arrangements like citizen boards and small local governments which may be necessary in a democracy ... It does not seem to the writer, however, that these interferences with efficiency in any way eliminate efficiency as the fundamental value upon which the science of administration may be erected.*

Barnard (1938) also contributed to this debate although his attempt to distinguish between *efficiency* and effectiveness (1938, pp. 19-20) tended to cloud this distinction:

*When a specific desired end is attained we shall say that the action is “effective” ... When the unsought consequences are unimportant or trivial the action is “efficient”. Moreover it sometimes happens that the end sought is not attained, but the unsought consequences satisfy desires or motives not the “cause” of the action. We shall regard such action as efficient but not effective.*

The emergence of a management development literature that crosses the boundaries of academic and practitioner interest has become increasingly prevalent. The literature starts with Taylor (1911) and his “scientific”

research into identifying “the one best way” for many types of workplace activity, and the implications of this approach for training and development. For this paper, the literature also extended into the field of management development, with an extensive range of publications competing for a place in publishers’ bestseller lists. However, the emergence of this literature has been accompanied by a decline in the focus on *efficiency* and a shift towards the use of professional staff development consultants in the place of internal consultants (Lees, 1992) who promote a wide range of management interests other than the notion of *efficiency*.

A search of the management development literature, revealed no exemplary studies that included *efficiency* as the focal point in the way that was the case with *efficiency* “pioneers” such as Taylor (1911), Gantt (1919), Gulick, (1937); Barnard (1938), Simon (1945), and Waldo (1938). Overall, literature searches in the contemporary management development literature suggested that this body of knowledge has little interest in the notion of *efficiency* (White, 1999). This perception was confirmed by a physical count of the references to *efficiency* appearing in the publications of the *efficiency* pioneers referred to earlier, and compared with a sample of contemporary management development literature. Whereas authors such as Barnard (1938) and Simon (1945) referred to *efficiency* on numerous occasions, most contemporary management development literature makes no mention of the term, and usually, little mention of the concept of *productivity*.

As a consequence, it seems that within the space of half a century, the notion of *efficiency* has lost its place at the head of management literature (Gulick, 1937; Waldo, 1948), despite remaining in management discourse as a language-based notion (as demonstrated by the sample data shown in Table 1). Furthermore, the term has ideological (White, 1999) conventional (*Websters*, 1976; *OED*, 1989) and utilitarian (Gilpin, 2001) meanings that are used to report upon, and justify, a range of management actions (White, 1999).

**Table 1: Sample of Usage of Term “efficiency” in the Australian Public Sector Annual Reports 2000-2001.**

No. of times used in Report	Efficiency defined?	Examples of usage
16 <i>tech</i> 4 <sup>a</sup>	No	“This Charter has built-in mechanisms to monitor and review the efficiency and effectiveness of the Department in dealings with clients.” (Agriculture, Fisheries & Forestry, 2001, p. 100)
11	No.	“This has led to significant improvement in the efficiency of our support services” (Education Science and Training, 2001, p. 6)
15	No.	“The Charter’s principles of access, equity, communication, responsiveness, effectiveness, efficiency and accountability are highly relevant” (Employment and Workplace Relations, 2001, p. 171)
7	No	“Independent assessment of the performance of selected Commonwealth public sector activities including the scope of improving efficiency and administrative effectiveness” (Prime Minister and Cabinet, 2001, p. 9)
11	No	“...major progress in achieving a nationally competitive rail sector by improving efficiency on the interstate rail network...” (Transport and Regional Services, 2001, p. 54)
11+ econ.. 3 <sup>a</sup>	No	“Treasury’s contribution to the development of policy in these areas seeks to improve the effectiveness and efficiency of Commonwealth expenditure” (Treasury, 2001, p. 4)

Source: Original Table. All sources available at <http://www.gold.gov.au> (19 August 2002). <sup>a</sup> Tech = Technical efficiency; Econ = Economic.

In the English language, the origins of the word *efficient* can be found in the Latin *efficiens* which means *effective* (*OED*, 1989, p. 208) and is also related to “*efficio*, to make out..., to effect, execute, and complete” (Lewis & Short, 1879/1969, p. 629). In French *efficiency* (*efficacit *) is said to have the Latin *efficacitas* as its origin, meaning either *efficacy* (*OED*, 1989, p. 208), or “power” (Lewis & Short, 1879/1969, p. 629). The word *efficiency* has been in English language usage since 1663AD (*OED*, 1989) and applies to the completion of some intended outcomes at an adequate level of performance.

In French, the term has been in use since 1495 (Robert, 1979), and its meanings include the ability to produce the greatest result with the least effort, signifying a much higher standard of performance than is suggested by general English usage. This perception is strengthened by the opinion offered in *Fowler’s Modern English Usage* (Fowler, 1968, p. 146), which suggests that:

*effective, effectual, efficacious, efficient ... all mean having effect, but with different applications and certain often disregarded shades of meaning ...*

**Table 2: Language-Based Definitions of Efficiency.**

"Fitness or power to accomplish, or success in accomplishing, the purpose intended; adequate power, effectiveness, efficacy .... (OED, 1989: Vol 5, pp. 83-85)
Capacité de produire le maximum de résultats avec le minimum d'effort, de dépense ... " ... ability to produce the best results with the least effort ... (Robert, 1979, p. 608)
"efficient operation as measured by a comparison of actual results with those that could be achieved with the same expenditure of energy ..." (Webster's, 1976, p. 725)

A number of conclusions can be drawn about the term *efficiency* as a language-based concept. First, the term *efficiency*, in terms of British English, (OED, 1989), implies adequate performance, while the usage in the USA (Webster's, 1976) and France (Robert, 1979) suggests a specific standard of performance. In the light of these varying possibilities, a number of meanings for *efficiency* may be regarded as technically reliable: success or competency in performance which produces (unspecified) effects or adequate outcomes. In other words, in common usage the term *efficiency* may not imply any predetermined standard or excellence in performance.

Second, the application of the notion of *efficiency* occurs in a diverse range of disciplines. In philosophy, for example, an "efficient cause (*causa efficiens*) is that which brings about change" (Aristotle, in Mautner, 1999, p. 90). The accounting profession evaluates technical *efficiency* in a number of ways including the measurement of financial return on equity, assets and sales (Keong, 1997), and the assessment of financial risk (Markowitz, 1952 in Bernstein, 1996). In a number of engineering disciplines, technical *efficiency* is a well-established principle, where *process* and *design efficiency* are also differentiated (for example, Veblen, 1904; Reed, Lemak & Montgomery, 1996). In economics, Heilbroner and Thurow (1994, p. 181) describe the contribution of *efficiency* to a description of markets in a way that implies both a high standard of performance, or a high level of "effectiveness":

*That word efficiency ... is the ability of markets to allocate goods and services more effectively than any other systems of rationing, particularly planning in one form or another.*

Third, a number of adjectives have been added to the term *efficiency* to provide more specialized definition, which is also subject to variation in meaning. Waldo (1948, p. 203) attempted to enhance the meaning of the term within the management literature, by describing *descriptive efficiency*, as being "valid and useful, but only within a framework of consciously held values." Another adjective applied by economists to the notion of *efficiency* results in the term *allocative efficiency*, which suggests "the "best use" of resources in conditions of perfect competition, while *technical efficiency* relates to achieving the greatest results at "least cost".

Fourth, *economic efficiency* appears in the literature of environmental science (Parker & Blodgett, 2001), labor relations (Collins, 2001), and value chain management (Abernathy, Dunlop, Hammond & Weil, 1999). The term also appears in more populist publications such as government reports (ICI, 1993; Table 1) and newspapers, though not very often in the contemporary literature of management development. These shortcomings in the ability to define the concept of *economic efficiency*, have not acted as a deterrent to the spread of the ideology of *efficiency* within management praxis.

## EFFICIENCY IN THE MIND OF MANAGERS

Management history portrays different elements of key theorists involved in the development of *efficiency* as an organization process. For example, while Frederick Taylor has been granted the status of a management theorist (Taksa 1992; Kanigel, 1999), his contribution to the *efficiency* debate arose through the development of models of working that focused on the processes involved in increasing *efficiency* of workers and machinery. Furthermore, his theories included the use of training and a form of management development to match work requirements, worker capabilities, *efficiency* goals, and management attitudes, and arguably, his contribution to an early model of knowledge management (Taylor, 1911). While Taylor focused most of his effort on the micro-behavior of individuals, his contemporary, Henri Fayol (1949) developed a macro-theory to describe the roles and

responsibilities of administrative managers, in the belief that management theory was essential to support the development of management praxis.

In comparison, economic history provides a perspective on the almost cyclical emergence and decline of the notion of *laissez-faire* over the past one hundred and thirty years. This constant theoretical and pragmatic change, according to the socio-politico-economic variations that occurred at various times during this period, provides the basis of a “rich picture” (Checkland, 1991) of the conjunction of economic, political and social change. The links between economic and management theory and praxis are an inescapable feature of this history. While the literature reveals that economic theory and praxis predated the emergence of a formal discipline of management, there was a moment in the 1870s when economic practice had won the battle for economic freedom, a high moment for *laissez-faire* (Williamson, 1931). Around the same period, early management thinkers such as Frederick Taylor and Henri Fayol were attempting to solve problems of *technical efficiency*, their distinctive views provided new models of behavior for workers and managers as well as new theories. An obvious paradox was that at this time of economic *laissez-faire*, there was deep interest in improving management control and, with it, worker and machinery *efficiency* (Taylor, 1911) and management *efficiency* (Fayol, 1949).

Economists have created an influential working definition of *economic, allocative and technical efficiency*, which may have supplanted the earlier, process-focused model of *technical efficiency* in management praxis. Unlike concepts such as strategic management, human resource management and management development, which have a well-defined body of knowledge, the notion of *efficiency* has no comparable body of knowledge to support its application within management praxis. A review of the literature reveals that in spite of 130 years of development, the theory of *technical efficiency* is no more developed in the management discipline than it was at the start. Furthermore, the literature suggests that the management focus upon *efficiency* has shifted towards the achievement of *economic efficiency* rather than *technical efficiency* goals. This phenomenon was anticipated by Veblen (1904) who argued that *efficiency* was not a concern of top management, his so-called “captains of industry”, who were charged with the accumulation of corporate wealth, while other managers were expected to deal with issues of technical performance.

These dilemmas made it necessary to undertake further research to establish the types of concepts of *efficiency* that were typically understood by managers. To provide some preliminary evidence an empirical study was undertaken with a number (n = 102) of mature age students (older than eighteen years of age) who were proficient in the English language and currently undertaking a management subject in a formal university program at the time of the survey. The respondents were working on a breadth of management issues within their courses of study, and were expected to have a diverse range of management and work experiences. The respondents were drawn from Europe, Asia, and Oceania, and represented a least 15 cultural groupings. Although almost 50 per cent of the sample involved students engaged in an MBA program, the sample is too small to evaluate the results against assessments such as that conducted by Shipper (1999, p. 158) who found that the MBA “does not provide an individual with a detectable advantage in managerial skills over either those who have received only a bachelor’s degree or some other masters degree.”

The survey comprised three groups of questions. Part One gathered quantitative, statistical information about age, gender, education, management experience, work experience and industry participation of each respondent. Part Two asked open-ended questions about the meaning of the notion of *efficiency* and working examples of applications of *efficiency* in management praxis. Part Three, which is not reported in this paper, asked respondents to record the frequency with which they read articles discussing *efficiency* in management.

The survey population can be described as being predominantly between 19 and 39 years of age (87%), mostly female (68%) and possessing post-school qualifications (73%). More than 85 per cent had completed high school and an undergraduate degree, with the remaining 15 per cent having already completed one postgraduate award. Most respondents reported work experience of one year or greater (84.5%) while only 45 per cent indicated that they had more than one year of management experience. In terms of occupation, nearly one third (32.4%) reported employment in health and community services, with the remainder being distributed across a broad range of occupations. In summary, the respondents were well educated by global standards, were actively involved in a course of study relevant to management praxis, and were accustomed to working with academic literature.

The discourse of *efficiency* disclosed in Part Two of the survey presented some analytical challenges. The written responses to these questions were transcribed and reinterpreted in terms of the quality of response. This resulted in a subjective assessment being made by the researcher in response to each answer. Analysis of the responses to the open-ended questions about the nature of *efficiency* showed a significant variation in the way in which supposedly informed respondents described the term. Table 3 details the distribution of the types of definition of *efficiency* allocated to each category on the basis of the best match between the various notions of *efficiency* uncovered by the research.

**Table 3: Summary of Responses: Understanding of the term “efficiency”?**

Response	Percentage (%)
No response able to be recorded	18.6
Language-based definition (able to achieve outcomes)	17.7
Technical efficiency (least cost/time) (Both a management and economic concept)	35.3
Allocative efficiency (maximum outcomes minimal inputs) (Economic concept only)	28.4

Source: Original Table drawn from Survey responses

Almost 20 per cent of respondents were unable or omitted to define *efficiency* or were unable to provide a response that could be related to any meaning of the concept. The remaining responses ranged from one word to a long paragraph detailing the respondent’s understanding of the notion of *efficiency* in one form or another. Both time and cost represent significant examples of *efficiency* from a historical, management perspective. The economic measures of *allocative efficiency* and “input-outputs” were also favoured by a significant number of respondents.

The outcomes suggest that although *efficiency* is widely used in management discourse, there is no generally accepted meaning within this discourse. This finding is reinforced by the responses to the subsequent question which asked respondents to provide an example of the application of notion of *efficiency* in a management praxis environment. In this case, the majority of respondents were unable to provide an identifiable example of how pressures for *efficiency* influence management praxis (Table 4). On the most generous evaluation, just over 35% were able to make a meaningful response compared to the 81.4% of respondents who were able to define *efficiency* in one way or another. This outcome tends to confirm that while the notion of *efficiency* is well established as a language based notion, its transfer into an application in management praxis may be limited.

**Table 4: Summary: Example demands for efficiency influence management practice**

Response	Percentage (%)
No example provided	29.4
Example of limited value relating to <i>efficiency</i>	35.3
Example of possible use relating to <i>efficiency</i>	27.5
Satisfactory example of <i>efficiency</i>	2.9
Useful example of <i>efficiency</i>	4.9

Source: Original Table drawn from Survey responses.

## CONCLUSION

*Efficient* and *efficiency* are words that appear in management discourse as if there is a common understanding of their meaning and that they have a generally accepted, perhaps scientifically verifiable, meaning. In both historical and contemporary usage, this paper explores the probability that precise definition of *efficiency* does not exist in the English language, and attempts to apply the term as a scientific guide to management praxis have failed to establish what might be defined as an optimal (*efficient*) state.

In the absence of an adequate definition of the basic notion of *efficiency*, and therefore a developed theory of management *efficiency*, management praxis is now being informed by theories and opinions developed outside the management discipline and likely to be focused, at best, on management outcomes relevant to Chief Executive

Officers (CEOs), rather than on the management processes that deliver *technical efficiency* in relation to the people and technologies available to an organization. The implications for CEOs and other stakeholders are significant. Where CEOs may have once relied on their subordinate management to pursue outcomes that were designed to achieve optimal outcomes from their given labor and technological resources, the evidence reported in this paper suggests that CEOs are now reliant on managers that do not have a clear idea of their operational *efficiency* objectives and lack the knowledge and insight to conceptualize and implement management processes that can be deemed *technically efficient*. The evidence suggests that the appropriate rhetoric is regularly presented, but the capacity to convert the rhetoric into management praxis is limited.

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