The Quest for Efficiency in the Public Sector
Towards a Refined Action Model

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1. Introduction

A good many administrative reforms have their roots in the search for efficiency, the Holy Grail of administrative reformers (Wright, 1997, p. 11). Without doubt, New Public Management (NPM), the thinking in terms of efficiency and effectiveness within the public sector greatly encouraged. Paradoxically, however, there is much ambiguity regarding the meaning of the concepts of efficiency and effectiveness and the ways to control efficiency and effectiveness.

In this article we try to clarify some of the methodological confusion. Central is the question:

‘How can the concepts of efficiency and effectiveness be specified in order to make them more functional for control and accountability of organizations within the public sector?’

The paper is structured as follows. We start with a brief history of the efficiency movement (section 2) to be followed by a treatment of the concepts of effectiveness and efficiency (section 3). The application of efficiency in the public sector generates several methodological and practical bottlenecks (section 4). The differentiation of efficiency provides a way out of this dilemma (section 5). We would like to underscore though that the differentiation of efficiency is a necessary, but sufficient condition for the improvement of efficiency. In addition, control of the transformation process is needed to

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improve efficiency in the public sector. The paper is completed with some conclusions (section 6).

2. The Efficiency Movement

The gospel of efficiency dates from the turn of the century and that has never been away since that moment (Waldo, 1984). The efficiency movement has got a boost by the situation of fiscal stress that held the world captured in the late 1970’s, early 1980’s due to oil crises. It’s too simple to believe that administrative reform is only moved by a call for money, but it’s obvious that the deficit has provided the pressure needed to put efforts such as the NPR on the political agenda. However, the deficit was only a vehicle as illustrated by the announcement of the study by Vice-President Gore to reinvent government:

‘... the deficit is only the tip of the iceberg. Below the surface, Americans believe, lies enormous unseen waste ... And yet, waste is not the only problem ... we suffer not only a budget, but a performance deficit’ (Clinton, 1993).

The same is true for the Dutch equivalent of the NPR, which has a start in the so-called 'major operations' that were launched in the early 1980’s to reduce the sky-high budget deficit.

The pursuit of efficiency is further induced by the NPM-doctrine that is referring to a ‘wealth’ of administrative reforms such as (Pollitt et al. 2007: 4-5)

- The creation of lean and highly decentralized structures, like semi-autonomous organizations, rather than large, multi-purpose, hierarchical ministries or departments.
- The division of organization into smaller units and the establishment of relations between the units with their counterparts in the private sector (public private partnership).
- The emphasis on contracts rather than formal, hierarchical relationship between principals and agents combined with contracting out of work.
- The introduction of market-oriented mechanisms for the delivery of services, for instance, auctions and tenders.

2. The section about the efficiency movement is largely based on Maas & Van Nispen 1999 and will be revised and updated later.
The serious shift in the skills of public servants from providing advice and legal expertise towards management of organization in combination with attention for quality and a customers orientation.

- A performance orientation with its emphasis on accountability for the performance by decentralized and privatized units to principals and stakeholders as well as benchmarking with similar organizations.

- A shift towards measurement and quantification, especially in the form of systems of performance indicators and/or explicit standards.

The improvement of efficiency is, of course, not a goal in itself, but is part of the efforts to improve the performance of the government. It may even be seen as subordinate to effectiveness:

> ‘The rational model … makes effectiveness logically prior to efficiency, but by the same token it makes the assessment of effectiveness dependent on a prior definition of policy objectives. In practice, the situation is far less clear-cut. The boundary between efficiency and effectiveness is a permeable one. Attempts to improve efficiency may lead to a clarification or redefinition of objectives…’ (Metcalfe & Richards, 1990, p. 33)

The call for efficiency may cause a policy paradox as it denigrates public ethos. It will transform citizens in customers and civil servants in producers, demanding a proper remuneration: if they receive it, costs will rise; if they do not, they will have little incentive to give their best. The destruction of the public ethos is profoundly inefficient. The efficiency movement may create a policy dilemma, as the performance of the government is not solely measured by economic criteria. Additional, non-economic criteria have to be taken into account (Okun, 1975; Wolf, 1993). The proponents of the efficiency-movement don't deny the importance of the non-economic criteria, but believe that:

> ‘…it is policy or program design which should be judged by the effects on equity, while organizations should be judged on how efficiently they carry out those policies or programs’ (Wilenski, 1980, p. 1240).

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3. We would like to stress that the call for efficiency is not value-free at all (Lehning, 1991, p. 12).
The denial of ‘the big trade-off’ between efficiency and equity is one of the seven deadly sins of the public finance (Wolfson, 1988, p. 369). The conclusion will differ from case to case as well as over time (Ringeling, 2004, p. 309). However, in the last decade or so priority is given to efficiency at the cost of equity. Only recently, we witness a shift into the direction of equity. The quest for equity has its price and, therefore, we will have to accept some degree of inefficiency in the public sector.

3. On Effectiveness and Efficiency

Haselbekke et al. (1990, p. 12) look at the concept of efficiency specifically for the government. The authors distinguish different stages in the production: input, throughput (process), output and outcome (effect). The ratio between input and output indicates productivity. The ratio between realized and desired productivity is called efficiency. The ratio between output and effect is known as impact productivity, while the ratio between desired and realized productivity is referred to as effectiveness.

Figure 1: The Concept of Effectiveness and Efficiency
Effectiveness should be carefully distinguished from goal-attainment, although this view is not universally shared by everyone. The ‘Platform Doelmatigheid’ (Platform Efficiency), for instance, refers to efficiency as a container concept. In addition to the Anglo-Saxon concepts of the 3Es – economy, efficiency and effectiveness – (Boyne 2002) it includes two other E's. i.e. equity and emotions. Equity refers to essential values like equality, justice, fairness and legal protection, while emotions refers to what Leibenstein has called X-efficiency (Leibenstein 1966), the influence of motivation of employees in achieving effective action. To put it differently, the scope of efficiency is further broadened to social costs and benefits.

The concept of efficiency is not without discussion as there is a trade-off between efficiency and equity. Although not only economic, but also non-economic criteria such as justice should be taken into account, the incorporation of justice in the concept of efficiency is generally considered by most as a contradiction in terms. The same applies to the incorporation of emotions in the concept of efficiency. Finally, neither equity nor emotions provide much guidance for quantitative information.

At the heart of the efficiency movement is the ratio between outcomes (impact) and outputs (performance) and inputs (costs). Efficiency though is an important, but just one of the criteria to assess the performance of government institutions. In addition, other criteria may be taken into account. We return therefore to the stages of the production process. Effectiveness and efficiency may be broadly interpreted as a ratio between outcomes and outputs, respectively between output and input. It makes sense to explore the two concepts more in detail. Taking the concept of productivity – the ratio between output and input – as a point of departure one may raise the question how to improve productivity, i.e. a more favorable ratio is achieved by a change in numerator and/or denominator. There are basically two options: more output given a certain input (effect maximizing) or less input given a fixed output (cost minimizing). To put it differently, increasing productivity is reached either by more output given a certain input or by less input given a specific output. Productivity says something about the transformation of inputs into outputs. A similar relationship can be established between outputs and outcomes (impacts). The improvement of impact-productivity can be achieved by either more effects given a certain output, lower output given certain outcomes or a simultaneous change in numerator and denominator.
A specific value of productivity or impact-productivity does not say much yet about the efficiency or effectiveness of a production process. Only if it is related to a standard, it provides insight into the effectiveness and efficiency of the production process. The relationship between desired productivity (the standard) and actual productivity is a measure for efficiency. The ratio between the desired impact-productivity (the standard) and the actual impact of productivity is a measure of effectiveness.

In contrast to Haselbekke other scholars like Van Helden and Ter Bogt argue that the concepts of productivity and impact-productivity root (Ter Bogt & Van Helden, 1994). First, economy is not synonymous with efficiency. Economy refers to the most favorable ratio between price and quality in the acquisition or purchase of resources (input). Goal attainment should also be carefully distinguished from effectiveness. Second, as mentioned before, effectiveness should be distinguished from goal attainment. Goal-attainment has to with the achievement of the intended effects are achieved, irrespectively whether these effects are the result or not of a public policy. The last question is central to the concept of efficiency or effectiveness.
4. Efficiency in the Public Sector

The translation of the concept of efficiency has generated several problems in the practice of public administration. A distinction can be made between technical and methodological problems, organizational or behavioral constraints and bottlenecks regarding facilities.

4.1 Bottlenecks of Technical and Methodological Nature

The output of the government is somewhat ambiguous. First, the products generated by the government and services provided by the government are not always clear. Second, the costs can not always be attributed properly to a product or a service. The identification and, correspondingly, comparison of the outputs is one of the main problems mentioned in the literature about the performance of the government. It is often difficult, if not impossible, to assess the performance of public organization unambiguously, notably it involves qualitative aspects (Bordewijk & Klaassen, 2000). Besides, processes can not be captured by one single indicator, creating a problem of selection and aggregation. The question may be raised whether an indicator does not constitute an oversimplification of a sometimes rather complex situation. The formulation of objectives is often vague, projects are not specific and the link between the two weak. If activities are mentioned at all, then they are not related to the resources needed to pursue these activities (Geurtsen, 2000).

Also at the cost side loom problems. The range of products and services makes it difficult to allocate inputs to outputs. The application of Activity Based Costing, for instance, typically yields much administrative work. The attribution problem is also reflected in the efforts inter-organizational comparison of public organizations as each has its own format and method. The benchmarks of Dutch public organizations largely suffer from that flaw:

‘Even the simplest performance indicators, absolute numbers of inputs such as the number of officials, may be misleading. Organization differences, ambiguous definitions of concepts, differences in the presentation of the budget and the method of accounting may cause of differences, while it appears that effectiveness or efficiency varied’ (Haselbekke et al. 1990).
A comparison of the historical cost (within the same organization) is often the best they can do, but that is no guarantee that all ‘budget air’ is squeezed out of the budget:

### 4.2 Bottlenecks of Organizational or Behavioral Nature

Several authors point out the danger to loose the context when performance indicators are introduced in the government. First, commitment of a public organization is needed when comes to an improvement of efficiency. Second, building trust is required to be successful. One must be careful to provide information on efficiency to third parties (Haselbekke cs, 1990, p. 131). In addition three other factors matter in this context:

*‘Investing in systems of performance indicators is more risky as the policies deviate more widely. In particular, problems may be expected where the pursuit of rationality and symbolism conflict. The same applies in case of a conflict between the pursuit of efficiency and effectiveness versus equity. Analog problems will arise when interest groups are disagree about the choice between major changes or incremental improvements’* (Haselbekke 1990, p. 129).

The introduction of performance indicators is running the risk of dysfunctional behavior when they are used to measure performance of individual employees:

*‘A control system based on such measurements is likely to systematically reward a narrow range of maladaptive behavior, leading ultimately to organizational decline’* (Ouchi, 1979, p. 845).

A similar argument is provided by Hopwood pointing at different patterns in the behavior of principals and agents or other forms of strategic or tactical behavior. In the worst case, data manipulation and shadow administration are created in order to counterbalance unwanted information (Hopwood, 1972). The introduction of performance indicators in order to improve efficiency should be decoupled therefore from spending cuts and cut-back management. A more promising route to improve efficiency is the integration of these efforts to a broader concept of strategic management accounting, with the explicit emphasis on process and change management (Lapsley & Pettigrew, 1994).
The attention for performance information for the improvement of effectiveness and efficiency in the public sector is still low. The utilization of performance information, if available, is hardly used by political or management (Ter Bogt, 2000). The low use of such information is probably more to do with the lesser importance attached to quantitative data, rather than the technical possibility of this information. Striking verbal information is used relatively more than written reports (budget reports, financial statements, etc.). (…) 

Furthermore, we would like to stress that the performance of public organizations and even semi-autonomous organizations (agencies, quango’s) cannot be expressed only in terms of economic criteria. The need for performance information varies per user as politicians require another kind of information than managers. The lack of explicit objectives and transparency makes it difficult to establish criteria for the steering of public organizations. One could even argue that the ability of politicians to intervene in government is reducing the support among managers for the establishment of clear-cut arrangements and to behave accordingly. More in general, political sensitive issues are difficult to capture in clear-cut arrangement (Hazeu, 1999).

A similar lack of interest in performance information is identified by Van Helden who argues that:

‘… the interest in the budget is considered high, but this does not apply to the management on the basis of performance in the budget. The interest in measures to promote efficiency and effectiveness emerging from planning and control documents might be relatively low’ (Van Helden, 1999).

The same applies to planning and control documents by managers. The utilization of these reports is limited to an assessment of the efficiency and effectiveness of a public policy. One reason for this could also be found in the decentralized resistance that exists against the use of centralized planning and control systems, such as BBI system (Van Helden, 1999). The flexibility with which one can differentiate the instruments and attention to keep the context may also play a role, as well as the planning attitude of the users of the instruments.
4.3 Bottlenecks of Facility Nature

The development of performance information requires additional efforts regarding the administrative capacity and professional expertise of the staff (Ter Bogt & Van Helden, 2000, p. 276). Attention for training is necessary. Besides, input-oriented formats are less appropriate and relevant for the registration of output-oriented information. A new system of ICT may be required to deal with performance information. A number of dilemmas arise with respect to administrative capacity. On the one hand, the development and interpretation of performance indicators can be done best in the agencies and line units which are responsible for that public policy as they have a sharper eye on the context in which these processes take place than a staff unit which is not involved in the primary process. On the other hand, the reliability of performance information may suffer when agencies and line units are driven by fear for spending cuts. The development of performance indicators is therefore sometimes commissioned to a concern-wide staff unit. Here we encounter one another dilemma as these units do not always enjoy enough confidence among the agencies and line units, while confidence is precisely what is needed to get access the correct information and the development of meaningful and relevant performance indicators. The outcome may be a vicious circle with the performance indicators becoming increasingly less meaningful, diminishing trust and, consequently less relevant performance information making performance indicator even more useless.

5. Towards a Refined Action Model

The bottlenecks regarding the application of efficiency as a standard to measure performance of the government has induced all kinds of differentiation models which we will discuss now in this section. We would like note from the very start that a comparison of these models runs the risk of comparing apples and oranges as they use different dimensions.
5.1 Three Models of Efficiency

In order to deal with before mentioned bottlenecks, conceptual refinements have been made. In some cases even input systems are accepted, depending on the identification of the outputs and the homogeneous of products and services. The concept of efficiency is scrutinized by Mol in terms of inputs, processes and outputs. The

‘... analysis focuses on two relationships: the determination of the alignment of activities and resources and the determination of the coherence of activities and goods and services. In the first case the question is addressed to what extent the functions in the production process can be broken down into homogeneous activities. Homogeneous activities could unequivocally be related to the input, so that the standard cost can be calculated for these activities. In the second case the question is raised how the functions in the production process can be derived from a specific output. When detectable, activities can be based on a standardized with regard to performance’ (Mol, 1989).

The analysis leads to a differentiation of budget types (aspiration levels of budgeting and performance budgeting). The matrix thus generated is as follows:

Figure 3: A Typology of Budget Systems

<table>
<thead>
<tr>
<th>Activities</th>
<th>Output</th>
<th>Identifiable</th>
<th>Not identifiable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homogeneous</td>
<td>A. Performance Budget</td>
<td>B. Process Budget</td>
<td></td>
</tr>
<tr>
<td>Heterogeneous</td>
<td>C. Project Budget</td>
<td>D. Input Budget</td>
<td></td>
</tr>
</tbody>
</table>


In sum, Mol is using different degrees regarding the specification of the concept of efficiency. The aspiration level in terms of performance budgeting and, therefore, efficiency diminish when the output is unclear or vague and consequently, the costs cannot be attributed unambiguously to the outputs.
In general it is complicated to come to a performance- or project budget. That complexity is, inter alia, caused by (Van Helden 2000, Van Helden & Ter Bogt 2001):

- The quantity of the needed information which is very large;
- The fact that sometimes inputs cannot be solely attributed to a certain project or certain performance (joint products);
- The fact that the indicators that are selected fail to portray the project or the performance adequately (completely and unequivocally);
- The fact that often the relation between the realization of an output and the activities undertaken is blurred, although they are indispensable for a project or performance budget;
- The fact that the allocation of costs is not complete (and extremely costly to make complete).

The idea to differentiate the concept of efficiency to the type of product and type of activity is widely supported nowadays. A warning is issued by Van Helden against the tendency of aggregating incompatible outputs that often takes place in practice. Instead, he opts for a selection of the most politically relevant outputs, depending on how heterogeneous the output (Ter Bogt & Van Helden, 1994). The selection of outputs is determined by the level of quantification and the degree of aggregation of the output. A high degree of aggregation and quantification enables a specification of outputs by the average of totals. The importance of quality begins to increase as the degree of aggregation and quantification decreases (Ter Bogt & Van Helden, 1994).

One of the first who used a differentiation model was Ouchi placing the degree of measurability of performance at the center:

‘The essential element which lies under any bureaucratic or market form of control is the assumption that it is feasible to measure, with reasonable precision, the performance that is desired’ (Ouchi, 1979, p. 843).

The measurability is determined by the extent to which output can be measured. In addition, insight in the transformation process (the means-goal relationship) is playing an important role. Combined together, the following matrix with on the one ax the ability to measure the output more or less coinciding with the possibility to identify the output and
on the other ax insight in transformation process associated with the homogeneity of activities.

Figure 4: Conditions Determining the Measurement of Behavior and Output

<table>
<thead>
<tr>
<th>Ability to Measure</th>
<th>Knowledge</th>
<th>Perfect</th>
<th>Imperfect</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td>A. Behavior or Output Measurement</td>
<td>B. Imperfect Output Measurement</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>C. Behavior Management</td>
<td>D. Ritual and Ceremony, ‘Clan’ Control</td>
</tr>
</tbody>
</table>

Source: Ouchi 1979, p. 843 (adapted)

At first glance both models are more or less equal. A closer inspection though is revealing some important differences. Where Mol prefers a form of process for budgeting in a situation where the activities are homogeneous, but the output can not be identified, Ouchi is in favor of a form control that influences behavior (‘behavior measurement’). Another difference is further that Ouchi is talking about ‘clan’ control, where Mol expects input budgeting. It takes place through a careful recruitment and personal policy:

‘What happens in such circumstances is that the organization relies heavily on ritualized, ceremonial forms of control. These include the recruitment of only a selected few individuals, each of whom has been through a schooling and professionalization process which has taught him or her to internalize the desired values and to revere to the appropriate ceremonies’ (Ouchi, 1979, p. 844).

Clan control is characterized by a very high degree of social control and a highly selective entry requirements. In addition to these two factors the matching of goals as a determinant for an appropriate form of governance. The question then arises whether the normal forms of governance are appropriate for public organizations that are characterized by a high degree of ambiguity and lack of opportunities for measurement.
A slightly different model is introduced by Van Helden & Johnsen built upon two variables ambiguity and uncertainty (Van Helden & Johnsen, 2002). Uncertainty regarding the relationship between goals and means and ambiguity concerning the objectives are the determining factors in this model from the perspective of the contingency theory. Ambiguity has to do with bottlenecks in in reaching an agreement about the objectives. Uncertainty is inter alia referring to the size of the organization with could bring complexity and with the information asymmetry in favor of the agents in relation to the principals.

In case of both agreement and predictability (Cell A) the use of both input and output-oriented seems to be the most appropriate. In case of agreement about the objectives, but relative uncertainty (Cell B), principals will use performance information. In the opposite case (Cell C) routine and standard procedure seem to be more appropriate to hold grip on agencies. In case of both ambiguity and uncertainty (Cell D), performance information will be used symbolical in order generate external legitimacy (Van Helden and Johnsen, 2002, p. 12). In the latter situation, a form of governance through recruitment and personnel (cp. ‘clan control’, Ouchi, 1979), procedural arrangements and negotiations (political control) would do best.

Figure 5: The Conventional Wisdom on Organizational Control

<table>
<thead>
<tr>
<th>Uncertainty</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unambiguity</td>
<td>A. Input or Output Control</td>
<td>B. Output Control</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>C. Behavior (Rule) Control</td>
<td>D. Decoupling, Clan and Political Control</td>
</tr>
</tbody>
</table>

Source: Van Helden & Johnsen 2002: 83 (adapted)

Before-mentioned models of efficiency all take the realized output-input ratio as compared against a standard. In practice this idea is difficult to draw due to the definition and measurability of the output. The problems are closed related with the implicit ‘requirements of comparison’. The standard definition of efficiency implies a comparison between ‘is’ and ‘ought’ and so both components of the two ratios should be known. The
output is considered as the output of the organization which leads to secondary problems, notably the control of the transformation process.

### 5.2 Control of the Transformation Process

The differentiation of the concept of efficiency may be seen as a necessary, but not sufficient condition for the improvement of efficiency. In addition, managers should be able to control the process of transformation. It requires a common understanding of the design of the transformation process without intervening variables that are beyond their control or influence.

The consequences of the degree of control may be far. So, it is sometimes more important to know if there is support for the output in politics and/or society than how to identify the output. Contrary to Mol’s matrix, outputs that are still subject of discussion may induce another impact on efficiency. In some cases it is more important to trace the control of the transformation process rather than the homogeneity of activities.

The factor of control of the transformation process comes actually prior to the concept of efficiency. Although the assumption is that a high degree of control will lead to a high degree of efficiency may result, both concepts are not identical. We assume in this article that control is a critical variable for the dependent variable efficiency.

### 6. Conclusion

Although the idea of New Public Management is very clear and easy to understand, in practice all kinds of obstacles are to overcome. The same is recognizable for two key words in NPM: efficiency and effectiveness. Although in many organizations there is sometimes much confusion about the definition of the terms used, in theory effectiveness and efficiency can be defined very clearly. Nevertheless the actual implementation of the concepts in the practice of public administration can cause many problems. Apart from the technical limitations that are often associated with the fact that output is not always straightforward to identify, it provides definitions output passing the necessary administrative and managerial resistance, and may even lead to perverse effects. The use
of differentiation models provides a useful format to avoid problems (for example the use of output indicators in situation with ambiguous goals). Although this approach is a logical answer to challenge to problems as indicated in the paper, a differentiation model does not provide a sufficient answer to the question of how efficient and effective organizations actually act. In this paper one factor, which also determines the degree of efficiency and effectiveness is added: the degree in which the production process can be managed. Many stakeholders with more or less equal power will probably cause delays in decision making processes and will hinder implementation. The extend to which the managerial aspects of the production process are in control, will determine the effectiveness and efficiency of the performance of the public organization.
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Literature


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