Effective replanning and budgetary control systems: Normative characteristics and practical structure

J.G. Kotzé

School of Business Leadership, University of South Africa, Pretoria

The formal management control system exerts a powerful influence over the actions of middle and top level managers in an organization. To ensure that these actions are in the best interests of the organization as a whole, careful thought should be given to the design of such a control system. The design should incorporate certain desirable characteristics. These characteristics are identified, described and listed in the format of a normative model. A practical management control system which has been implemented in several organizations is subsequently discussed and evaluated against the requirements of the normative model.

S. Afr. J. Bus. Mgmt. 1984, 15: 8 – 20

Die formele bestuursbeheersisteem oefen 'n sterk invloed op die aksies van middel- en topbestuurders in 'n organisasie uit. 'n Sodanige beheersisteem moet versigtig ontwerp word om te verseker dat bestuuraksies wat daardeur gemotiveer word die oorkoepelende belang van die organisasie as geheel dien. So 'n ontwerp moet sekere wenslike eienskappe inkorporeer. Hierdie eienskappe word geïdentifiseer, bespreek en gelys in die formaat van 'n normatiewe model. 'n Praktiese bestuursbeheersisteem wat in verskeie organisasies geïmplementeer is, word vervolgens beskryf en geëvalueer aan die hand van die vereistes deur die normatiewe model gestel.

S.-Afr. Tydskr. Bedryfsl. 1984, 15: 8 – 20

Prof. J.G. Kotzé
School of Business Leadership, University of South Africa,
P.O. Box 392, Pretoria,
0001 Republic of South Africa

Accepted September 1983

Introduction

Meaningful strategic control in an organization consists of replanning (reformulation of strategies). This managerial action is motivated by what has become known as strategic planning gaps in recent literature. These gaps can be identified and reported by the management control process if this process conforms to certain requirements.

The process of management control involves managerial communication, interdepartmental liaison and other forms of informal management contact. In addition, a formal management control system usually forms part of the management control process. Although the formal management control system is only a part of management control it plays a significant role in shaping managerial actions. Managers work within a systems infrastructure which exerts a powerful influence over their behaviour. The formal management control system can be described as a closed loop (Anthony & Dearden, 1980: 19 – 20) consisting of the following sequential components:

(a) Objectives and goals derived from the strategic and management planning processes.

(b) Financial budgets reflecting the anticipated financial impact associated with the achievement of the objective and goals. These budgets integrate the major elements (statistical forecasts, subjective predictions and the impact of anticipated new management actions) of the planning processes into a projected set of financial statements.

(c) A responsibility accounting framework providing measurements of actual performance as well as comparisons with planned performance.

(d) A financial reporting framework to communicate variances, trends and analyses. These reports serve to trigger management action, normally in the form of replanning which closes the loop.

This article deals with components (c) and (d) of the management control system. An attempt is made to develop a list of normative characteristics which will enhance the effectiveness of replanning and budgetary control systems.

Subsequently, the major structural elements of a practical system which has been introduced in several organizations is discussed and evaluated against the list of normative characteristics. This particular system does seem to meet to a significant extent the major requirements of effective replanning and budgetary control.

Characteristics of effective replanning and budgetary control reports

To be effective, replanning and budgetary control reports must:

(i) reflect the organizational responsibility structure, (Morse, 1981; Dopuch, Birnberg & Demski, 1974; Sweeny & Wisner, 1975; Horngren, 1982);

(ii) emphasize the controllability criterion, (Shillinglaw, 1977; Crowningshield & Gorman, 1979);

(iii) motivate efficient and effective managerial decisions, (Schutte, 1981; Anthony & Herzlinger, 1980);

(iv) motivate decentralized managerial decisions that benefit the entire organization, (Morse, 1981; Horngren, 1982; Gee, 1976);

(v) lead to control of aggregate factors at the higher organizational levels, (Morse, 1981; Horngren, 1982);

(vi) lead to managerial action, (Schutte, 1980);

(vii) lead to an optimal trade-off between timeliness and cost, accuracy and relevance, (Morse, 1981);

(viii) provide feedforward as well as feedback information, (Schutte, 1981; Schutte, 1980).

Reflect the organizational responsibility structure

During the planning process a set of programmes is developed. A programme is a specific activity which an organization plans to undertake in pursuance of its objectives. The budgeting process brings about a change in emphasis: Each programme is 'translated into terms that correspond to the sphere of responsibility of each manager who is charged with executing the programme or some part of it.' (Anthony & Dearden, 1980:20). The plans originally expressed as individual programmes are accordingly reformulated in terms of the responsibility structure of the organization.

This structure consists of various decision centres (engineered cost centres, discretionary cost centres, revenue centres, profit centres and investment centres) throughout an organization. The managers in charge of these decentralized responsibility centres have the freedom to exercise their discretion but have to accept responsibility for the results as reflected in periodic control reports. These reports can foster effective decentralized managerial behaviour by reporting on a regular basis how the manager and the portion of the organization he is responsible for, are doing.

Requirement: Effective replanning and budgetary control reports should recognize the various decision centres throughout the organization and should trace the appropriate elements of costs, revenues, assets and liabilities to the managers in charge of these centres (Horngren, 1977:156 – 157).

Emphasize the controllability criterion

Within the responsibility structure, budgetary performance reports should emphasize those factors controllable by the responsibility centre managers. The controllability criterion implies that managerial performance reports be so structured as to exclude all variances that are not to some significant extent within the control of the particular manager. This, however, is an exceptionally difficult requirement. The difficulty is directly related to the number and type of noncontrollable or semi-controllable performance variables that exist in a particular situation. Unfortunately, few performance variables are ever completely controllable. This implies that 'controllability' has to be defined as the ability to influence to a 'significant extent' a particular cost, revenue, asset or liability (Horngren, 1982:146 – 147).

The danger lies in carrying this approach to the extreme by adopting a contribution definition for a particular responsibility centre that eliminates so many of the possible sources of variances that the manager is relieved of most responsibilities. Apparently the best approach is to ask the following question: 'Who in the organization exercises the most control over this particular item?' Responsibility for this particular item is then assigned to this particular manager. The principle that all items of cost and revenue are controllable by someone in the organization given a long enough time span of control must be recognized in the structure and operation of performance reports (Horngren, 1982:147).

A clear distinction has to be made between the performance of the manager in charge of a responsibility centre and the performance of the responsibility centre as a subunit of the organization (Gee, 1976:51).

The manager should be evaluated on this basis of his controllable performance. Managerial performance reports compare the actual controllable performance of a responsibility centre with what the performance should have been under the prevailing circumstances. Every responsibility centre might to some extent operate under unique circumstances: Differences may exist between different centres in the same organization in terms of the age and condition of productive facilities; the number, location and reliability of suppliers; the number and major characteristics of customers and competitors, as well as a host of other factors. This implies that the performance of every manager should be evaluated in terms of the situation in which his responsibility centre operates.

Care should be exercised in drawing any intercentre comparisons. Under most circumstances, the most equitable method to employ is to compare actual with budgeted performance. Such a comparison eliminates the problem of comparing centres with differing profit potentials. These differential performance potentials might be due to certain centres operating in less profitable industries or in less profitable geographical areas (Reece & Cool, 1978:46).

In contrast, the performance of the responsibility centre is evaluated to determine how well it has fared as an economic entity. In this case, some costs that are uncontrollable by the manager of such an organizational subunit may be logically assigned to the centre. An economic performance report would ordinarily contain all the costs of the responsibility centre, including those costs which have been incurred centrally on behalf of the centre. The intention is not to allocate all centrally incurred costs to the responsibility centres. Estimates have to be made of those central costs which would cease to be incurred if the particular centre is discontinued. These costs should be included in the economic performance reports of the responsibility centres (Gee, 1976:56).

Requirement: Replanning and budgetary control reports should be structured in such a way that the performance of the responsibility centre manager as well as the performance of the responsibility centre as an economic entity can be evaluated.

The manager should be evaluated on the basis of a comparison of actual with budgeted performance. Only those items of cost or revenue 'significantly controllable' by him should be included in this portion of the performance reports. For the purpose of an economic evaluation of the responsibility centre, all other items of cost and/or revenue incurred by or on behalf of the centre should be included in the remaining portions of the performance reports.

Motivate efficient and effective managerial decisions

The performance of an organizational subunit is normally evaluated in terms of both efficiency as well as effectiveness.

Efficiency is most often expressed in terms of the quantity of output per unit of input (Anthony & Dearden, 1980:8). An efficient responsibility centre will produce a given quantity of output with a minimum consumption of input or maximum output from a given utilization of input.

The group of managers primarily responsible for efficiency in an organization 'tend to operate in an environment which is to a large extent buffered from the uncertainties of the external environment: they thus function in a relatively closed system' (Schutte, 1981:5). This makes it possible to develop standards of acceptable performance (often expressed as budgeted units, or budgeted costs). These standards, once set, do not change except if the underlying circumstances should change and represent the 'ideal' or 'best' achievement possible under a particular set of circumstances.

Control in closed systems is aimed at achieving these preset standards. As this standard is the ideal, any performance falling short of the standard is subject to corrective action. Corrective action is aimed at bringing performance back to standard (Schutte, 1981:105 – 106).

Effectiveness is related to the achievement of results: it reflects the extent to which an organizational unit achieves planned (budgeted) sales volumes, production output, profits, etc. As such, effectiveness is always related to organizational objectives and goals (Anthony & Dearden, 1980:8). This does not, however, imply that an effective responsibility centre consistently produces actual performance that conforms to budgeted performance. In contrast to the efficiency criterion, those managers primarily responsible for effectiveness, operate in an open system in which frequent environmental changes make the achievement of pre-set objectives very difficult, if not impossible. Accordingly, an effective responsibility centre might be described as one that produces actual performance that is consistent with organizational objectives and goals.

The effectiveness criterion motivates managerial action that improves on an existing situation, irrespective of the level of current performance. This requires creative mental efforts which should be formalized in action programmes (Schutte, 1980:4 – 5 & 11 – 12). These programmes contribute towards the achievement of organizational objectives and goals and represent the real contribution of the particular responsibility centres to overall organizational survival, growth and profitability (in the case of profit-oriented enterprises).

A responsibility centre should perform well in terms of both efficiency as well as effectiveness (Anthony & Herzlinger, 1980:6): An organizational unit consistently producing an output which represents an inadequate contribution to the accomplishment of the organization's objectives, is ineffective even though it produces this output with the lowest consumption of resources. Depending on the type of responsibility centre or on the managerial level, the emphasis can, however, shift from one to the other criterion.

In general, the issue of effectiveness is of major importance to the higher managerial levels in the organizational hierarchy while the efficiency criterion plays a significant role in lower level managerial decisions (Schutte, 1981:5).

All responsibility centre managers are concerned with both criteria but the major emphasis in the cost centre usually falls on efficiency considerations. In contrast, revenue centre as well as profit and investment centre managers are normally more concerned with effectiveness (Morse, 1981:442 – 443 & 485).

The replanning and budgetary control system should motivate managerial actions appropriate to either efficiency or effectiveness required of every responsibility centre and of every managerial level in the hierarchy.

Requirement: Replanning and budgetary control reports addressed to lower level management should identify any actual costs that exceed budgeted costs or any actual revenues that fall short of budgeted revenue as an unfavourable variance. These variances should be described as unsatisfactory managerial performance.

Budgetary control reports addressed to higher level management should make use of the principle of predictive control (Schutte, 1981:133) and should identify a performance gap between a monthly updated forecast of what the responsibility centre is likely to achieve at the end of the financial year and the original objective as specified in the budget. This performance gap (favourable or unfavourable) should trigger the development of action programmes to improve upon the existing situation, irrespective of whether the updated forecast might fall short or exceed the objectives as reflected in the original budget (Schutte, 1981:139 – 140).

Within the foregoing, general requirement the following more specific requirements might be identified:

Engineered cost centre[a] managers should receive performance reports that compare actual to budgeted costs (adjusted to output level achieved); identify actual costs that exceed budgeted costs as unfavourable variances and classify these as unsatisfactory performance.

Discretionary cost centre[b] managers should receive performance reports that compare actual to budgeted costs and also include certain 'service measurement variables'. These variables, normally nonmonetary in nature and of great importance to the effective operation of the discretionary cost centre balance the cost control requirement. Without this balance, the manager of a discretionary cost centre can reduce costs by reducing the service his department renders (Anthony & Dearden, 1980:176 – 178).

Revenue centre managers should receive performance reports that compare actual marketing contribution (sales less controllable marketing expense) to budgeted marketing contribution.

Profit and investment centre managers should receive performance reports that compare the actual difference between revenues and expenses (profit) to the budgeted profit. In the case of investment centres the amount of profit should be related to the investment required to generate that profit (profitability). Profit and profitability measures fulfil the dual role of measuring efficiency as well as effectiveness. They are measures of effectiveness because the objectives and goals of a profit-seeking organization are normally stated in terms of amount of profit, return on investment and related financial performance measurements. According to Anthony (1980:174) these measures can, however, also be used to measure efficiency:

> 'Since profit is the difference between revenue, which is a measure of output, and expense, which is a measure of input, profit is also a measure of efficiency.'

---

[a]Engineered costs are elements of cost whose optimum amount (input) given a particular output can be determined with a reasonable degree of accuracy.

[b]In the case of discretionary cost centres, there is no objective way of determining the optimum quantity of inputs (costs) required to achieve a particular desired result. Examples are staff departments such as personnel and finance.

He also points out that such an overall measure of performance eliminates the requirement of deriving an optimum balance between effectiveness and efficiency.

Motivate decentralized managerial decisions that benefit the entire organization

Effective replanning and budgetary control reports should contribute towards the achievement of a harmonious balance in the operation of the organizational sub-units. The replanning and budgetary control process should motivate managers to take those actions that will not only improve the performance of the responsibility centre under their control but will benefit the organization as a whole. This requirement necessitates clear and unambiguous signals from top management. A useful approach is to ask the following two questions: (Anthony & Dearden, 1980:42)

- What action does a particular control practice motivate managers to take in their own perceived self-interest?
- Is this action in the best interests of the organization?

Except for possible problems that may be caused by common revenues[c] and common costs,[d] managerial actions in cost and revenue centres that benefit the responsibility centre will normally also benefit the organization as a whole. In the case of profit and investment centres, however, problems may arise.

Profit and investment centre managers are evaluated on some basis of profitability; in the case of profit centres, normally in terms of some absolute amount of profit or contribution; in the case of investment centres, usually in terms of some measure relating the amount of profit (contribution) to the asset base utilized to achieve that profit figure. Undue emphasis on profit figures while disregarding the investment base employed to generate these profits is a one-sided performance objective. The performance of profit centre managers should, therefore, be interpreted with caution.

To the profit-generating objective of the profit centre manager, is added an additional performance objective for the investment centre manager: the expansion of the investment centre by means of judicious investment in additional resources.

The majority of companies (Reece & Cool, 1978:29 – 30) use return on investment (ROI) measures when evaluating investment centre managers. Some companies employ the residual income (RI) measure when relating profits to the investment base.[e]

Requirement: Profit centre replanning and budgetary control reports should measure the performance of the manager in charge of the centre in terms of the difference between actual and budgeted 'controllable contribution margin' which is normally defined as revenues minus all expenses controllable by the profit centre manager.

Investment centre replanning and budgetary control reports should measure the performance of the manager in charge of the centre in terms of either ROI or RI measurements. Performance should be evaluated in terms of the difference between actual ROI's or RI's in comparison to target ROI's or RI's. These target (budgeted) measurements should be set for each investment centre based on an analysis of the profit potential of that centre. Managerial performance should not be evaluated by comparing actual ROI's or RI's achieved by the different investment centres (Reece & Cool, 1978:43).

Lead to the control of aggregate factors at the higher organizational levels

The replanning and budgetary control system should recognize the differing needs of different levels of management in the organizational hierarchy for performance information. Performance reports addressed to higher level managers should be in a more condensed form than those flowing to lower level managers. Executives on the lower levels are the closest to actual operations and therefore require frequent, timely and correct feedback about operations under their control. The performance reports flowing to these managers should accordingly be detailed, deal with specific items of cost and/or revenue and deviations of actual from budget (standard) for these specific items.

Higher levels of management are further removed from actual operations. Their need for frequent and rapid feedback, therefore, decreases. The emphasis in performance reports should move away from specific functional items (direct material, wages, travelling expenses) to more general performance standards dealing with responsibility (performance of a production line, a factory, a branch office).

Too much detail in the performance reports addressed to top management tends to obscure important facts, trends, threats and opportunities. This frequently has the effect that higher level managers disregard the formal replanning and budgetary control reports and rely on some informal mechanism to supply them with the information that they actually use in their decision making processes.

Requirement: Replanning and budgetary control reports addressed to higher level management should be as terse as possible and reflect performance in terms of responsibility segments reporting to the manager to whom the report is addressed.

Lead to managerial action

Performance reports, especially those addressed to higher level management, should be, as stated in the previous section, as concise as possible. Excessive detail on every aspect of operations frequently obscures potential problems and opportunities. The design of the replanning and budgetary control reports should direct attention to these problems and opportunities. This is, furthermore, very difficult to achieve in an organizational culture where an unfavourable variance plus an acceptable explanation is regarded as satisfactory performance. The explanation is usually acceptable because the unfavourable variance is a true reflection of current operating conditions which differ completely from the anticipated operating conditions on which the budget was originally based.

The emphasis should move from a requirement that variances (usually unfavourable) should be explained to one requiring that something be done about the variances. The variances should be analysed and interpreted as a starting point to creative management action. The creative management action in this case should be aimed at capitalizing on perceived opportunities and minimizing the unfavourable impact of pro-

[c]Common revenues result from situations where more than one revenue centre participated in the work that gave rise to the revenue.

[d]Common costs are costs that are caused by the actions of more than one cost centre.

[e]For an explanation of the methods employed to calculate ROI and RI, refer to Morse, 1981, pp.744 – 745 and 752 – 753.

Refer to the following sources for an exposition of the advantage and disadvantage associated with the use of ROI and RI as managerial performance measurement: Anthony & Dearden, 1980, p.290; Shillinglaw, 1977, p.791; Bierman & Dyckman, 1976, p.391; Reece & Cool, 1978, pp.29 – 30; Dearden, 1969, p.124; Sweeney & Wisner, 1975, pp.16 – 22.

blems (threats).[f]

Requirement: Replanning and budgetary control reports should not only reflect the variances between actual and budget for the control period covered by the control report but should also extrapolate these trends to the end of the financial year to establish a new planning base. Given this new planning base, creative management action, in the form of action programmes, must be developed to improve on this base, irrespective of the fact that the base may fall short (unfavourable variance) or exceed (favourable variance) the budget (Schutte, 1981: 129 – 140)

Lead to an optimal trade-off between timeliness and cost, accuracy and relevance

The need of lower level managers for frequent and rapid feedback leads to a situation where a significant portion of the information in an operational control system[g] is in 'real time (information is reported as the event is occurring)' (Anthony & Dearden, 1980:15). This also ensures that operational control information is quite accurate.

In contrast, the information in a management control system,[h] is usually retro-active and some elements, at least, are not absolutely accurate. In designing replanning and budgetary control reports, as important element of the management control system, the trade-off between accuracy, relevance, timeliness and cost should be kept in mind. The manager of a revenue centre can be supplied with last year's sales figures which will be absolutely accurate, but not very relevant or timely.

Requirement: Replanning and budgetary control reports should contain information about only those factors which are controllable by the user of the reports; this information should be relevant to the efficient and/or effective execution of the major responsibilities of the user; the reports should be received in time to enable the user to change the probable course of events during the remaining portion of the budget period. Finally, the supply of any (additional) information, on a regular basis, to the manager of a responsibility centre, should be developed in a cost/benefit framework.

Provide feedforward as well as feedback information

Most replanning and budgetary control reports do not reflect the anticipated impact of any developing trends to date on the year-end performance. The emphasis is usually on the historical deviation of actual from budgeted performance of the previous month and the year-to-date. This approach frequently, especially during declining phases of the business cycle, leads to 'very unpleasant surprises, particularly in decentralized organizations, towards the end of the financial year' (Schutte, 1980:7). Although this 'feedback' approach is relevant to the major responsibilities of relatively low-level cost and revenue centres whose managers are primarily involved in operational control, a change in emphasis is required in performance reports addressed to managers in charge of responsibility centres where management control is the prime responsibility.

Performance reports addressed to such executives should be built around the principle of 'predictive control' (Schutte, 1980:8 – 12). Some mechanisms must be developed to reflect the anticipated year-end results given the existing year-to-date performance level. This mechanism could operate on a very simple and quite effective basis by applying the actual year-to-date to budgeted year-to-date ratio to the annual budget figures. As the typical budgetary control period is a month, this will provide a forecast of year-end results immediately after the end of the first month of the financial year. This forecast will be updated on a month-by-month basis and will become increasingly more realistic as the end of the financial year is approached.[i]

This procedure shifts the emphasis from one of analysing, interpreting and explaining past results to a forward-looking, creative focus on probable future results and the necessity to generate management action on a timely basis to improve these probable future results.

Requirement: Replanning and budgetary control reports addressed to lower-level managers primarily involved in operational control should supply a comparison of actual versus budget for the previous month as well as a similar comparison for the year-to-date. Replanning and budgetary control reports addressed to higher-level managers primarily involved in management control should, in addition to the foregoing, add a column that reflects a mechanistic forecast[j] of year-end performance as well as a column that allows the responsible manager to react to this mechanistic forecast by adjusting it analytically to more accurately reflect the predicted year-end results.[k] This approach will motivate managers who are primarily responsible for management control functions, to change their contol focus from a backward-looking one to an ongoing concern with the financial year-end results.

A practical replanning and budgetary control system

The basic structural elements of a replanning and budgetary control system which has been developed for a bus transport organization[l] is now illustrated. This company consists of 12 operating centres (depots), divided into two regions, and a head office. A simplified organization chart for the typical depot is presented in Table 1.

The report supplied to the traffic manager supplies only the variances in absolute amounts and as a percentage from budget of the month just past (May in this case). This is because the month just past is not very important within the management control context; what is important is the trend exhibited in the year to date figures and the extension of these trends to provide a mechanistic forecast of year-end results.[m] This forecast

[f] Refer to Schutte (1980) for a more comprehensive discussion of the philosophy underlying this approach to creative managerial action.

[g] Operational or technical control is the process of ensuring that specific tasks are carried out efficiently . . . it involves . . . managers at supervisory level where physical tasks are performed' (Schutte, 1981:6).

[h] Management control is the process of ensuring that resources are obtained and used effectively in the accomplishment of the organization's objectives.' (*Ibid*) This process involves managers at the middle and top levels in the organizational hierarchy.

[i] Refer to Schutte (1980) for a discussion of the assumptions underlying this approach and the modifications to the initial 'mechanistic' forecast to derive an 'analytical' forecast which forms the base line for the creation of action programmes.

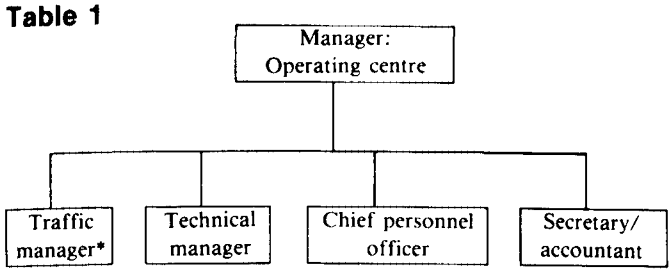
[j] A mechanistic forecast is calculated by applying the year-to-date actual percentage of year-to-date budget to the annual budget.

[k] An analytical forecast is a mechanistic forecast adjusted by the responsible manager to reflect the anticipated impact of events that are yet to occur in the remaining portion of the budget period.

[l] This particular system has been introduced in quite a number of organizations. The development within this particular transport organization will serve as illustration.

[m] The mechanistic forecast is derived by applying the actual year-to-date to the budgeted year-to-date ratio for every cost and revenue element to the annual budget figures.

Table 1



*The traffic manager is the basic profit (contribution) centre within each operating centre.
The monthly financial performance report as presented to him appears in Table 3

is a very powerful control tool for higher level managers as it is the result of a basic statistical calculation; there is no subjective judgment involved.

The traffic manager can now react to the mechanistic forecast and prepare for the monthly management meeting by adjusting the mechanistic figures for anticipated environmental changes which may occur during the remainder of the financial year in the column provided for that purpose. The anticipated financial impact of action plans developed by himself and his subordinates to improve on the situation represented by this 'adjusted mechanistic forecast' (usually called an analytical forecast) are entered in the appropriate column.

An example of an action plan actually developed by this official is supplied in Table 2.

The net results are summarized in the column . . . 'Projected Financial Performance'. The elements contained in this column, when placed in comparison with the annual budget, result in a planning gap[n] which can be positive or negative.

The elements of revenue and expenses contained in the report (Table 3) are all controllable by the traffic manager.

The technical manager has the overall objective of maintaining the bus fleet in good operating condition. This is a cost centre with elements of both engineered as well as discretionary costs involved.

The financial performance report addressed to this official is presented in Table 4.

The reports for the chief personnel officer and the secretary/accountant appear in Tables 5 and 6. Both typical discretionary cost centres, their cost control responsibility is balanced by the inclusion on their financial reports of certain selected statistical data which measures the trend in the efficiency and effectiveness with which they render their respective services.

Table 7 is an illustration of the report flowing to the manager in charge of the operating centre. From the operating profit of the centre, all the remaining expenses which have not been allocated to the subordinate centres, are subtracted to yield a 'controllable profit'. The performance of the operating centre manager is evaluated by means of this concept. All remaining expenses of the centre are deducted from this figure to arrive in the 'net profit'. This figure is used to apply against the investment in the centre to supply information on the performance of the centre as an economic entity.

The operating centres report, depending on their geographical location, to one of two regional managers who, in turn, report to the managing director.

The performance reports addressed to the regional manager is shown in Table 8 and the reports flowing to the managing director in Table 9.

Table 2 Operating centre: Action plan no.: PT 1
Objective: To decrease sundry operating expenses by R. . . by the end of March, 1983

Steps	Participating officials	Completion date
1. Decrease traffic lines by institution of training program	Personnel manager	31st July, 1982
2. Decrease maintenance expenses of operating equipment by instituting preventative maintenance program	Technical manager	31st August, 1982

Anticipated financial impact

Cash outflows

— Cost of training program	R	
— Cost of preventative maintenance program		R . . . . .
Cash inflows		
— Projected decrease in traffic fines (R . . . . . per month: effective August, 1982-March, 1983)	R	
— Projected decrease in maintenance expenses (R . . . . . per month: Effective Sept. 1982 – March, 1983)	R	R . . . . .
Net financial impact		R

[n]The 'planning gap' is usually interpreted as a motivator for top management strategic action to close the remaining gap (or improve upon a favourable gap) after lower level managers have contributed fully *via* ongoing action plan development.

Evaluation and conclusion

The major structural elements (performance reports) of the replanning and budgetary control system described in the previous section are tested for conformity to the list of normative characteristics in Table 10. A positive (+) sign denotes conformity to a particular normative requirement; a negative (–) sign denotes divergence from a requirement and N/A denotes that the requirement is not applicable to that particular control report.

Tables 3 and 4, addressed respectively to the Traffic Manager and the Technical Manager, denote conformance to five of the requirements, divergence from two of the requirements, while one requirement is not applicable to reports addressed to this level of management.

Replanning and budgetary control reports addressed to these two officials reflect the responsibility sphere of each of these managers; the reports are designed in such a way that they should motivate efficient as well as effective managerial decisions; they consist of feedforward as well as feedback information that allows ample time for meaningful managerial action.

The requirement that the emphasis should fall on aggregate factors is not relevant as these performance reports are addressed to a level of management where the emphasis falls on those functional elements of revenue and/or cost over which the responsible manager has a significant degree of control.

The replanning and budgetary control reports described in Tables 3 and 4 do not, however, completely conform to the controllability criterion, nor to the requirement that decentralized managerial decisions should benefit the entire organization. (continued on p. 18)

S.-Afr. Tydskr. Bedryfsl. 1984, 15(1)

Table 3 Operating centre:
Financial performance report for the period ending: 31st May 1982
Responsible official: Traffic manager

	Month		Year to date									
Account	Variance	%	Actual	Budget	Variance	%	Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
Operating revenue												
Workers: Cash												
Subsidy												
Casual passengers												
Private hire												
Total expenses												
Wages: Bus drivers												
Learner drivers												
Accident costs												
Sundry operating expenses												
Traffic: Salaries G.E.D												
Traffic: Salaries Co.												
Ancillary Vehicles costs												
Sundry traffic expenses												
Depreciation: Buses												
: Operating equip.												
Inter-Co. Hire: Buses												
Licences & Permits												
Bus Replac. Reserve												
Insurance: Operating												
Operating contribution												

Table 4 Operating centre:
Financial performance report for the period ending: 31 May 1982
Responsible official: Technical manager

	Month		Year to date									
Account	Variance	%	Actual	Budget	Variance	%	Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
Diesel												
Lubricants and grease												
Tyre usage												
Tyres new buses												
Salaries: C.E.D.												
Company												
Ancillary vehicle costs												
Units used												
Spares used												
Consumables												
Prov. obsolete stock												
C.E.D.: Bonus and leave												
Company contribution												
Housing												
Uniforms												
Co.: Bonus and leave												
Company contribution												
Housing												
Uniforms												
Travelling and subsistence												

Table 4 (continued) Operating Centre:

Account	Month		Year to date				Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
	Variance	%	Actual	Budget	Variance	%						
Rental and leases												
Water and electricity												
Maintenance: Equipment												
Maintenance: Buildings												
Small tools												
Expenses recovered												
Depreciation: Workshop equipment												
Body docks												
Total Maintenance Expenses												

Table 5 Operating centre:
Financial performance report for the period ending: 31 May 1982
Responsibie official: Chief personnel officer

Account	Month		Year to date				Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
	Variance	%	Actual	Budget	Variance	%						
Recruitment Expenses:												
Traffic												
Maintenance												
Administration												
Canteen expenses												
Training: Admin.												
Medical expenses												
Depreciation: Training equip.												
Total: Personnel costs												

Table 5 (continued)
Additional performance report for period ending: 31 May 1982
Responsible official: Chief personnel officer

	April	May	June	July	Aug.	Sep.	Oct	Nov	Dec	Jan	Feb	March
(i) Labour turnover ratio												
(ii) Number and duration of vacancies												

Table 6 Operating centre:
Financial performance report for the period ending: 31 May, 1982
Responsible official: Secretary/Accountant

Account	Month		Year to date				Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
	Variance	%	Actual	Budget	Variance	%						
Salaries: C.E.D.												
Company												
Ancillary vehicle costs												
Printing and stationery												
Telephone and postage												

Table 6 (continued) Operating centre:
Financial performance report for the period ending: 31 May, 1982
Responsible official: Secretary/Accountant

Account	Month Variance	%	Year to date Actual	Budget	Variance	%	Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
C.E.D.: Bonus and leave												
Co. contributions												
Housing												
Co. : Bonus and leave contributions												
Housing												
Uniforms												
Travelling & subsistence												
Rental and leases												
Insurance: Admin.												
Cash collection fees												
Bank charges												
Maintenance buildings												
Donations												
Audit fees												
Business licences												
Total Admin. Expenses												

Table 6 (continued) Additional performance report:
Responsible official: Secretary/Accountant

	First six months of financial year	Second six months of financial year
Number of unfavourable comments in audit reports relating to:		
— System deficiencies (including internal control)		
— Accounting errors		

Table 7 Operating centre:
Financial performance report for the period ending: 31 May, 1982
Responsible official: Manager: Operating centre

Account	Month Variance	%	Year to date Actual	Budget	Variance	%	Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
Traffic Dept. Contribution												
Operating Revenue												
Expenses												
Contribution (A)												
Maintenance expenses												
Personnel expenses												
Administration expenses												
Expenses (B)												
Operating Profit (A) – (B) = (C)												
Operating Centre Expenses												
Entertainment												
Interest												
T & A Fees												

Table 7 (continued) Operating centre:
Financial performance report for the period ending: 31 May, 1982
Responsible official: Manager: operating centre

Account	Month Variance	Month %	Year to date Actual	Year to date Budget	Year to date Variance	Year to date %	Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
Depreciation: Ancillary vehicles												
Office furniture												
Office equipment												
(P)L on sale of fixed assets												
Total expenses (D)												
Controllable Profit (C) - (D)												
Other expenses												
Sundry Revenue												
Depreciation: Land & Buildings												
Bus routes												
Directors fees												
Total												
Net profit												

Table 7 (continued) Operating centre
Additional performance report for period ending: 31 May, 1982
Responsible official: Manager: Operating centre

1. Residual income	April	May	Feb	March
RI				

Table 8 Organizational centre: east division
Financial performance report for the period ending:
Responsible official: Divisional manager: East

Account	Month Variance	Month %	Year to date Actual	Year to date Budget	Year to date Variance	Year to date %	Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
Operating revenue												
Depot A												
Depot B												
Depot C												
Depot D												
Division												
Controllable profit												
Depot A												
Depot B												
Depot C												
Depot D												
Division												
Net Profit												
Depot A												
Depot B												
Depot C												
Depot D												
Division												

Table 8 (continued) Organization centre: east division
Additional performance report for period ending: 31 May, 1982
Responsible official: Divisional manager: East

Residual income	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
Depot A												
Depot B												
Depot C												
Depot D												

Table 9 Operating centre:
Financial performance report for the period ending:
Responsible official: Managing Director

Account	Month		Year to date				Mechanistic forecast	Adjustment for environmental changes	Action plans	Projected financial performance	Annual budget	Planning gap
	Variance	%	Actual	Budget	Variance	%						
Operating revenue												
East Division												
West Division												
Group Total												
Controllable profit												
East Division												
West Division												
Group Total												
Net profit												
East Division												
West Division												
Bus Operations: Contribution												
Service Operation Contribution												
Total Contribution												
***Less* Staff Department Exp.**												
Financial												
Manpower												
Services												
Development												
Liaison												
Net Profit (Loss)												

The report of the technical manager contains the following elements:

Diesel and Tyre usage. This is a shared cost responsibility. Excessive usage of both items are caused by inadequate maintenance, servicing and tune-ups (responsibility of the technical manager) as well as by poor planning of bus routes (responsibility of the traffic manager). The control system has failed to devise a satisfactory proportioning of this joint responsibility. This violates the controllability as well as the total organization requirement and is illustrative of the general problem of common costs in performance evaluation.

The replanning and budgetary control report addressed to the chief personnel officer, which is illustrated in Table 5, again denotes conformance to five of the requirements, divergence from two of the requirements, while the requirement of a focus on aggregate factors at higher managerial levels is again not applicable.

The area of divergence concerns the requirements of motivating efficient and effective decisions and that decentralized decisions should benefit the entire organization. The chief personnel officer is responsible for the efficient and effective functioning of a discretionary cost centre. The performance report illustrated in Table 5 will motivate efficient cost control but this might be at the expense of effective service rendering by this department. The statistical measures used as counterbalancing performance motivators are clearly inadequate. The labour turnover ratio, for instance, is affected by the actions of line managers as well as by the actions of the personnel manager. This ratio is also extremely sensitive to labour market influences. Much the same arguments can be advanced against the use of the number and duration of vacancies as a performance measure.

The foregoing can create a situation where the chief personnel officer is motivated to be cost efficient at the expense of being service effective. This can result in decisions taken by the chief personnel officer which will benefit his depart-

Table 9 (continued) Organizational centre: Company:
Additional performance report for period ending: 31 May, 1982

Department	Action programme number	Action programme objective	Anticipated final completion dates	Anticipated financial impact
East division	ED 1	....	....	R ....
	ED 2	....	....	....
West division	WD 1	....	....	R ....
	WD 1	....	....	....
	WD 3	....	....	....
Financial	F 1	....	....	R ....
Manpower	M 1	....	....	R ....
	M 2	....	....	....
Services	S 1	....	....	R ....
Liaison	L 1	....	....	R ....
	L 2	....	....	....
Development	D 1	....	....	R ....
	D 2	....	....	....

Table 10 Evaluation of budgetary control system

Characteristics \ Reports	Table 3 Traffic manager	Table 4 Technical manager	Table 5 Chief personnel officer	Table 6 Secretary/ accountant	Table 7 Manager/ operating centre	Table 8 Divisional manager East	Table 9 Managing Director
Reponsibility structure	+	+	+	+	+	+	+
Controllability criterion	–	–	+	+	+	+	+
Efficient and effective decisions	+	+	–	+	+	+	+
Decentralized decisions benefit entire organization	–	–	–	+	+	–	+
Aggregate factors at higher levels	N/A	N/A	N/A	N/A	+	+	+
Motivate action	+	+	+	+	+	+	+
Optimal trade-off	+	+	+	+	+	+	+
Feedforward and feedback	+	+	+	+	+	+	+

ment (actual costs are kept equal to or below budget) but might be to the detriment of the organization as a whole (poor personnel service).

The replanning and budgetary control report addressed to the secretary/accountant (Table 6), conform to seven of the requirements while the aggregate factor requirement is again not applicable. This requirement is applicable to the report addressed to the manager of the operating centre (Table 7). This performance report conforms to all eight requirements.

The replanning and budgetary control report addressed to the divisional manager (Table 8) conforms to seven of the requirements and exhibits a divergence from one requirement. This is the requirement that decentralized decisions should benefit the entire organization. The performance of the managers of the operating centres is evaluated by comparing the RI's of these operating centres. As discussed in this article the performance of investment centre managers should be evaluated in terms of the difference between actual RI and budgeted RI and not on the basis of a comparison of actual RI's achieved by the different investment centres.

The performance report addressed to the managing director (Table 9) exhibits conformance to all eight requirements

As a general conclusion, it might be stated that this particular replanning and budgetary control system does seem to offer, in spite of the deficiencies described above, the potential of developing into a system that will supply managers, on a timely basis, with just the right amount and just the right kind of information to effectively discharge both their operational as well as their management control responsibilities and to serve as a very effective motivator of meaningful strategic control.

References

Anthony, R.N. & Dearden, J. 1980. *Management Control Systems,* Homewood, Illinois: Irwin.

Anthony, R.N. & Herzlinger, R.E. 1980. *Management Control in Non-Profit Organizations,* Homewood, Illinois: Irwin.

Bierman, H.J. & Dyckman, T.R. 1976. *Managerial Cost Accounting.* 2nd Edition. New York: Macmillan.

Crowningshield, G.R. & Gorman, K.A. 1979. *Cost Accounting: Principles and Managerial Applications.* 4th Edition, Boston: Houghton Mifflin.

Dearden, J. 1969. The Case against ROI Control. *Harv. Bus. Rev.,*

May/June.
Dopuch, N. Birnberg, J.B. & Demski, J. 1974. *Cost Accounting*. 2nd Edition. New York: Harcourt Brace Jovanovich.
Gee, K.P. 1976. Divisional Performance Measurement in an Inflationary Economy. *Manage. Int. Rev.*, vol. 16.
Horngren, C.T. Cost Accounting. 1977. *A Managerial Emphasis*, 4th Edition and 5th Edition. (1982). New Jersey: Prentice-Hall.
Morse, W.J. 1981. *Cost Accounting*. 2nd Edition. Reading, Mass.: Addison Wesley.
Reece, J.S. & Cool, W.R. May/June. 1978. Measuring Investment Center Performance, *Harv. Bus. Rev.*, vol. 56.
Schutte, F.G. 1981. *Integrated Management Systems*. Durban: Butterworths.
Schutte, F.G. 1980. Budgetary Control Systems for the Eighties. *J. Gen. Manage.*, vol. 5, no. 3.
Shillinglaw, G. 1977. *Managerial Cost Accounting*. 4th Edition. Homewood, Illinois: Irwin.
Sweeny, A & Wisner, J.N. Feb. 1975. Budget Control through Responsibility Centers. *Supervisory manage.*