



**FACULTEIT ECONOMIE
EN BEDRIJFSKUNDE**

**HOVENIERSBERG 24
B-9000 GENT**
Tel. : 32 - (0)9 - 264.34.61
Fax. : 32 - (0)9 - 264.35.92

WORKING PAPER

Innovations in Governmental Accounting Systems: the Concept of a "Mega General Ledger" in Belgian Provinces

Johan CHRISTIAENS
Vakgroep Accountancy, Beheerscontrole en Fiscaliteit

Christophe VANHEE
Vakgroep Accountancy, Beheerscontrole en Fiscaliteit

September 2001

2001/113

Acknowledgements

The technical and practical support of the committee "Provincial accounting reform" consisting of provincial treasurers, the staff of the Belgian Ministry of Internal Affairs and professors J. Umans (LUC), F. Khrouz (ULB), C. Dendauw (UCL), is gratefully acknowledged. Working Paper Forum RUG presented 14/5/01.

D/2001/7012/14

Abstract

This paper summarizes the technical problems of introducing business accounting next to the existing and differing cameralistic accounting in governments. It attempts to show that many accounting conflicts are due to the lack of knowledge and technical means of combining harmoniously the different governmental accounting systems. Having previous research findings in mind, a technical integrated approach combining the cameralistic system with the new accrual system together with a new analytical system, is worked out. The purpose is to keep the strengths of the former cameralistic systems and achieving the accrual accounting advantages. This integrated concept of a "Mega General Ledger" is tested based on a field research in all of the Belgian provinces, which are recently undergoing an accounting reform. Transferring business accounting to governments may have a better vehicle using the proposed integrated accounting approach, which could be an answer to the drifting apart of governmental accounting systems.

Keywords

Accounting techniques, public sector accounting, accounting reform

1. INTRODUCTION

In the last years Belgian public sector organisations such as Flemish Universities (1995), Flemish High Schools (1995), municipalities (1995) and OCMWs¹ (1998) have been reformed from **cameralistic/cash accounting** towards business-like **accrual accounting**.

Recently, the Belgian legislator prepared the accounting reform of provincial governments (1999, 2000) starting as of 1st January 2002.

The Belgian local governments mainly consist of 589 municipalities, which have dealt with an important accrual accounting reform since 1995 and 589 official centres for mutual welfare (OCMWs), which were recently reformed. These local governments are part of 10 provinces, which are currently confronted with an accounting reform inspired by the municipal accounting reform.

Generally, the provincial accounting reform implies a maintaining of the traditional cameralistic accounting system together with the introduction of accrual accounting in order to obtain a patrimonial view of each province. Although provinces are more extensive than local governments, they have mostly a centralised accounting system.

Governmental accounting reform studies show a lot of conflicts and debates when governments are being reformed towards accrual accounting in light of New Public Management intentions. Implementing a system of business-like accounting often creates resistance and a number of technical, managerial and political problems in respect of the traditional ruling cameralistic accounting system. Particularly the technical problems of combining and integrating accrual accounting in governments is hypothesized to be one of the explaining factors regarding the adoption problems.

This paper aims at focusing on the technical questions and problems with respect to the combination of *new* accrual accounting in the context of the *old* cameralistic accounting. Those problems are examined looking at the development of a governmental accounting innovation: the "Mega General Ledger". This innovation reveals a possible technical solution of keeping the strengths of the former cameralistic systems and gaining the accrual accounting advantages.

Therefore, an integrated approach for the traditional cameralistic system with the new accrual system together with a new analytical system, is elaborated.

Apart from an examination of previous research, this innovation is based on preceding field work in preparing detailed decrees regarding the drawing up of the first balance sheet and evaluation rules for provinces, which was a research project last year on behalf of the Ministry of Internal Affairs in Belgium.

The study is not considering the reasons for the reform, nor the usefulness of adopting accrual accounting in governments. The concept of integrating the different accounting systems in a "Mega General Ledger" is studied only from a technical point of view.

This paper is organised in 5 sections. After presenting a literature review, part 3 focuses on the

¹ An OCMW (*Official Centre for Mutual Welfare*) is a governmental non-profit entity providing a number of additional municipal services such as health care, care of the elderly, etc. Each municipality is related to just one OCMW and vice versa, both providing well-defined municipal services. In Belgium the OCMWs are juridically separated from the municipality, whereas in other countries such entities are part of the municipality.

research questions. In part 4 forms of possible integration of accounting systems are discussed. The remainder is devoted to the setting up of the so-called "Mega General Ledger" based on principles derived from "integrated cost accounting" and on field experiences in the provinces.

2. Literature review

For the last years a number of studies have been worked out considering governmental accounting reforms and the transition from cameralistic/cash accounting to business-like accrual accounting.

Lüder's Contingency Theory

Several studies are devoted to the causes of those governmental accounting reforms inspired by Lüder's "Contingency Theory" (Lüder 1990). This theory is almost the only one that succeeds in presenting a theoretical, contextual explanation for governmental accounting reforms.

The "Contingency theory" aims at explaining the more informative governmental accounting innovations in a certain country or jurisdiction through interactions in social, political, administrative factors consisting of stimuli, external structural social variables, internal structural variables and implementation barriers.

Lüder's "Contingency Theory" has always had a number of followers and today it is still supported. It has become a kind of paradigm² around which analyses, studies and communicating accounting reforms are built up.

Several researchers have attempted to apply this conceptual theory in different countries. Without being exhaustive Godfrey, Devlin & Merrouche (1996) have done so in Kenya, Tanzania and Uganda for state and local governments and for local governments in Algeria and Morocco (1999); Mussari (1995) in Italy for local governments and Pallot (1996) for the state New Zealand. Even in other sectors such as health care attempts have been made to apply Lüder's theory and a reconsidering of the concept of the accounting innovations was proposed by Monsen & Näsi (1997, 1998).

This theory and its followers examine the reasons behind the reform, not the according accounting practices nor how the former system is modified into a new accrual accounting system. In other words, the Contingency Theory emphasises context over content (Chan, Jones & Lüder 1996, p. 11). Chan, Jones & Lüder (p. 17) suggest that a greater attention has to be paid to the content itself (i.e. governmental accounting system) by a process of innovations. "The process of innovation has remained mostly like a black box." (Monsen & Näsi 1997, p. 9). Indeed Lüder's model is capturing the innovations as a situation, a kind of an event which is either reached or not, without respecting the implementation as a phase along with the consequences during that phase. Lüder's approach seems to skip the phase of conceptual framework and implementation.

² Monsen & Näsi (CIGAR 1997, p. 8) call it "the dominating research paradigm in CIGAR".

Explorative, descriptive studies

In previous research there are some descriptive, exploratory studies regarding governmental accounting practices, often set up by regulatory authorities. Examples are GASB: Jones et al. 1985, CICA 1980 and CICA 1985 for American and Canadian States and local governments. Through examining the annual accounts these studies empirically describe the different types and possibilities of accounting techniques, assertions and principles (e.g. full accrual vs. modified accrual and cash; consolidated vs. fund type of statements).

They also focus on conceptual framework issues sometimes leading to debates about the best suitable accounting practices. The findings are mainly descriptive and result in the formulation of recommendations in a normative way concentrated on principles, forms and contents of financial reports.

Other studies concentrate on the compliance of adopted governmental accounting practices with accounting regulations. Faber & de Jong (1988) looked at the municipal accounting reform towards accrual accounting in The Netherlands involving the investigation of annual accounts. The major findings were non-compliance to regulations and a serious heterogeneity (p. 38).

For local authorities in England and Wales (counties and districts) Jones & Pendlebury (1982) focused on the conformity of accounting practices 1977/78 to the extant professional and statutory requirements. Their survey revealed that conformity with existing professional and statutory requirements was poor in substantial respects. For the accounts 1987/88 a similar survey was again conducted (Jones & Pendlebury 1991) showing improvements, albeit still weak.

Chandler & Cook (1986) came to similar conclusions in their accounting practice research for local authorities in England and Wales 1983/84. Instead of adhering to the spirit of the regulations, local authorities appear to follow the letter and the published information is of limited value to citizens and voters.

Appraising, critical studies considering cash vs. accrual accounting reforms

In order to throw the main accounting systems into relief Table 1 shows a summary of the main features of cash and accrual accounting in governments.

Table 1 Main features of cash and accrual accounting systems

CAMERALISTIC CASH ACCOUNTING	ACCRUAL ACCOUNTING
<p>Definition Budgeting system is a means to define income and to allocate resources. Cameralistic accounting records these resources and appropriations, it is a system of authorised spending and financial controls</p>	<p>Financial accounting system records revenues and costs when earned leading to results with respect to the equities being part of the balance sheet</p>
<p>Objective Budgetary and appropriation processes Showing the compliance with budgetary and other legal limitations Limits to spending; Control of the public purse</p>	<p>Disclosing financial economic information in terms of "True and fair view"</p>
<p>Concept Strongly based on internal decisions in respect of the authorised budgets</p>	<p>Based on financial economic relationship external-internal</p>
<p>Method Differing accounting methods, e.g.</p> <ul style="list-style-type: none"> • <i>cash accounting,</i> • <i>modified accrual accounting,</i> • <i>debt charge accounting,</i> • <i>encumbrance accounting</i> 	<p>Principally always <i>full accrual accounting</i></p>
<p>Accounting techniques Single entry</p>	<p>Double entry</p>
<p>Reporting Aims at service providing, compliance with regulations, balance of budgets Accountability</p>	<p>Aims at disclosing performance measurement in terms of economic and financial results Profitability</p>

Table 2 provides an overview of a number of studies classified from different angles and discussed hereafter.

Conceptual studies favouring accrual accounting

Some studies or parts of studies believe in the need for business-like accrual accounting mainly starting from a dissatisfaction regarding the cameralistic/cash accounting. Their rejection is ascribed to the traditional dissatisfying concept of cash accounting in which only receipts and disbursements are recorded. They could be right, but there are reasons to believe that also shortcomings in the functioning of cash accounting in practice (Jaruga & Nowak 1995 p. 95; Christiaens 2000) are an important reason for the need to reform.

All those favouring studies could be seen as being part of the "protagonists" and they focus on the advantages of accrual accounting and on the related management tools. For example, Jones (1995, p.40-42) agrees with the lasting necessity of being able to obtain budget balances by means of cameralistic acc, but he criticizes the exclusion of assets and liabilities. Others view governments as close to enterprises if seen from a financial economic point of view and argue that there should be one world of accounting in which enterprises and governments should prepare similar financial statements (Anthony 1989; Mellemvik & Monsen 1995). However, this idea of uniqueness is needs not to be shared by everyone. According to Jones & Pendlebury (1996) there are different possible accounting methods (Table 1) and a government could adopt more than one method simultaneously.

Conceptual studies favouring cameralistic accounting

On the other hand some studies are not convinced of the necessary adequacy and presupposed uniqueness of one business-like accounting system and they evidence the advantages of the traditional cameralistic system. They could be called the "antagonists" who stress the particular governmental features such as the absence of stockholders, the overestimated focus on profitability and the need for a system of financial controls in a democratic government. Montesinos, Pina & Vela (1995) motivate the cameralistic accounting system by referring to the role of the legal control, which is the monitoring of the budget execution process and accountability. Caperchione (1995, p. 68) posits that accrual accounting is a step forward, but undergoing an accrual accounting reform does not imply automatically the supply of managerial tools applicable for governments.

Monsen & Näsi (2000, p. 2) are somewhat disappointed that seemingly the experiences of local government accounting are not enough taken into account when adopting a reform. In their study they quote an older source (Johns 1951): "In the public sector it is only possible to prepare a *financial income statement*, in the private sector a *performance income statement*". This tells a lot of the intrinsic differences of governments with respect to enterprises. Finally, they mention the difficulty of summarising the result of government's activities by a single accrual accounting figure. Therefore, they argue that the cameralistic point of view managing the tax money remains an important objective. The current study will show that the two groups of accounting methods need not to be polarised and that a concept of combining them harmoniously can be elaborated.

Table 2 Overview appraising, critical studies considering cash vs. accrual accounting reforms

CAMERALISTIC CASH ACCOUNTING	ACCRUAL ACCOUNTING
<p><i>Conceptual studies favouring cameralistic/cash accounting</i></p> <p>Montesinos, Pina & Vela 1995 Caperchione 1995 Monsen & Näsi 1997, 1998, 2000</p>	<p><i>Conceptual studies favouring accrual accounting</i></p> <p>Likierman 1994 Jones 1995 Anthony 1989</p>
<p><i>Conceptual studies combining cash and accrual accounting</i></p> <p>Caperchione 1995 Jaruga & Nowak 1995 Jones & Lüder 1996 Christiaens 2000</p>	
<p><i>Accounting practice studies concerning technical implementation of combined reforms</i></p> <p>Jones & Lüder 1996 Caperchione 1995 Montesinos & Vela 1996 Cotte, Milot & Nante 1995 Christiaens 2000 Caperchione 2000</p>	

Conceptual studies combining cash and accrual accounting

Some of the earlier discussed studies or parts of them or other studies pay also attention to the combination and the transition of the two accounting systems.

Caperchione (1995, p. 70) considers the risk that the two opposite schools of thinking (protagonists and antagonists) will create compromises in terms of neither fish nor flesh. This will lead to obstacles and giving up a further interest in management needs. Similar conclusions can also be found in Jaruga & Nowak (1995, p. 95) stating that despite the adoption of accrual accounting, the government's cash approach still prevails due to its major role in providing budgetary information. Also in Belgium this budgetary prevalence is maintained in local governments and even dominates the accrual accounting system (Christiaens 2000).

Accounting practice studies concerning reform's technical implementation

Referring to some studies included in Table 2 the technical relationships between the former cash accounting and the new accrual accounting appear to be strongly different across different countries and governments. For central governments in Germany the study of Jones & Lüder (1996 p. 64) evidences that the basic accounting system has remained a cash accounting system

resulting in an accrual accounting after reclassifications, eliminations, additions and accrual adjustments. This situation is similar for German local authorities (Lüder 1994, p. 71-75).

Accrual accounting = cash based + adjustments

In the Italian local governments (Caperchione 1995, p. 71; Anessi & Steccolini 2000, p. 23) cash accounting is not abandoned; appropriation processes continue to be executed in terms of cash.

Accounting system	Reporting
Basis = cash accounting	Budgetary financial statements
In addition at year end through adjustments without of general ledger	Balance sheet and P/L account

Thus, the Italian local governments have chosen for an additional accrual based reporting maintaining the cameralistic system rather than introducing accrual accounting. The pursued advantages of accrual accounting being introduced just as a kind of an "add-on", could be questioned. In UK agencies (Jones & Lüder 1996, p. 68) accrual accounting has to be adopted, but similarly as in Italy one could expect only an "add-on" to the traditional cash based accounting. In UK local governments new accrual accounting is developed separately from the budgetary system without being just an "add-on" (Glynn 1993).

For local governments in Spain (Montesinos & Vela 1996) and in France (Cotte, Milot & Nante 1995; Perreault 1995) the two accounting systems are included in one accrual-accounting-like general ledger by a division of the numbers of the accounts.

	General Ledger double entry	
Country	Cash accounting	Accrual accounting
Spain	0, 4	1-5 , 6-7
France	9	1-7

The cash accounting numbers are used during the accounting period in order to record authorizations and encumbrances without immediately having in mind the patrimonial consequences. The resulting amounts receivable and amounts due lead to changes in assets and liabilities and are recorded in the accrual accounting system. In France the accrual accounting accounts are used only at year-end and there reasons to believe that this is also the case in Spain in practice.

One could criticize both of these kinds of integration in that *firstly* 0, 4, 9 accounts are not exclusive for cash accounting, they also used in accrual accounting and their use can create confusion. *Secondly*, cash accounting is disguised as accrual accounting by using its techniques and therefore it could create an adoption to the letter but not to the content. *Thirdly*, the different measurement focus and basis of accounting does not appear to be regulated, which might unsuccessfully lead to a full accrual accounting approach disregarding cash accounting or a

factual dominance of the former cameralistic system though dressed in a accrual chart of accounts. Finally, this kind of reform is hard to impose since the accounting staff has to switch strongly its basic habits. Keeping the former system in force and enlarging it with additional accounting processing could avoid this problem.

On the other hand a first approach of integrating the two systems exists and breaking down the class 9 into the budgetary classification of accounts, brings the two systems together.

In Belgian municipalities (Christiaens 2000) the existing budgetary accounting numbers were enlarged with an according accrual accounting number. An entry in the budgetary system creates on-line a journal entry in the financial accounting system.

Accounting system	Reporting
Cash accounting + accrual accounting in one general ledger	Budgetary financial statements
	Balance sheet and P/L account

Apart from the automatic link between them, there are a limited number of possible entries in the financial accounting system, which are not recorded, in the budgetary accounting system. These unlinked accounts mainly represent non-cash items like depreciations, writing-off's, revaluations and stock movements.

This obligatory technical combining of budgetary and financial accounting, which are in many respects incompatible, creates a conflicting situation implying an unplanned dominance of the former system.

In summary, these studies reveal a lot of different approaches across different countries and organisations apart from the implementation problems mentioned earlier. The reasons for this "chimera" (Jones 1995) are not clear. Some researchers argue that the difference and the numerous problems are due to a lack of conceptual framework in transferring business accounting concepts into the public sector (Christiaens 1999, 2000, Ellwood 1999, Anessi-Pessina & Steccolini 2000) and that this lack could lead to further irrational and expensive mix of systems (Caperchione 1995, p. 73).

Another explaining factor is the incorrect assumption that a sudden reform will be adopted and implemented immediately just like that without any condition or consequence. On the contrary, reforms should be regarded and treated as projects in harmony with cultural aspects and with well-studied generally governmental accounting standards and not as facts.

A third possible reason is the following: one could hypothesize that the diversity and the implementation problems are caused by a lack of technical accounting knowledge how to combine both systems in a technical way. Adapted accounting techniques being the means to implement the reforms are lagging behind the new public management intentions.

3. RESEARCH QUESTION

Almost none of the previous studies and even the last ones, which concentrate on practical issues, succeed in examining and explaining the technical questions of relating the two accounting systems. The relationships between the two systems are not enough examined from a theoretical or a practical point of view. Particularly the different accounting principles, the different concept of timing of recording, the different typology of classification of accounts and subaccounts, the IT and behavioural aspects of introducing a second accounting system with its characteristics is neglected or disregarded. Thus, many practical questions remain unanswered and there could be argued that an underestimation of their importance undermines the successful working out of the reforms.

The lack of accounting research on this topical subject, the presumed occurrence of a poor adoption and a weak harmony in reforming public sector accounting and the differing function of a central provincial government, lead to the research questions of this paper:

RQ1 To what extent can the conceptual and implementation problems governmental accounting reforms are facing be explained by the lack of technical accounting knowledge respecting the specific governmental characteristics?

This research question is of the type of a causal study

RQ2 To what extent can the "Mega General Ledger" being a technical integration of cameralistic accounting, accrual accounting and cost accounting be a solution to prepare and to continue the transition?

This research question belongs to the normative research in which a best practice is proposed and examined.

In this study attention is given to the technical aspects of integrating different accounting systems in governmental reforms. This study is firstly based on the findings of an earlier empirical study of the financial accounting reform in Flemish municipalities and Belgian provinces (Christiaens 2000, 2001). Secondly, the concept of the reformed provincial accounting legislation and particularly the intensive collaboration in the workshops together with the provincial treasurers and officials preparing the provincial accounting reform has permitted to work out the proposed concept of a mega general ledger.

The several contacts with the provincial officials have made it possible to examine more thoroughly how the provincial accounting reform will be adopted and which aspects play a role.

4. FORMS OF POSSIBLE INTEGRATED ACCOUNTING SYSTEMS

Governments cannot think away their former mostly cameralistic system at the time of introducing new accounting systems.

Due to the strict technical linking of budgetary accounts with their according general accounts in Belgian municipalities as shown in the literature above, it is the cameral accounting that dominates the accrual accounting system. General journal entries e.g. costs, cannot be made insofar that there are no budgets foreseen even if those costs are economic reality.

Some Belgian provinces would prefer a similar approach as in the reformed municipalities, which is the system of keeping the traditional budgetary accounting system and linking it with a new form of financial accrual accounting. Other provinces seem to be resistant to the business-like accounting reform and prefer to keep the traditional cameralistic accounting system without a serious accounting reform.

A third possibility would be a reform inspired by the accounting system of Flemish OCMWs in which the accrual accounting system is prevailing combined with a business-like cost accounting system. Driven by this new accrual accounting system, budgets and budgetary accounts are set up and are followed up.

In Table 3 such possible accounting systems are summarised accompanied of three other possibilities.

In Belgium, an evolution in local governmental accounting reforms appears: coming from an unsuccessful addition of accrual accounting to cameralistic accounting in municipalities ten years ago, to the abandoning of cameralistic accounting in return for accrual accounting in Official Centres for Mutual Welfare 3 years ago, the evolution results in a rehabilitation (come-back) of cameralistic accounting set-up in harmony with the new accrual accounting in the provinces very recently preparing the possibility for an integration.

Table 3 Forms of possible integrated accounting systems

Integrated accounting systems	Strengths, weaknesses
1/ Maintaining of the budgetary accounting system in combination with (strictly linked) the new accrual accounting system (reformed accounting system of municipalities)(e.g. municipalities and Walloon OCMWs)	<ul style="list-style-type: none"> + Accrual accounting is introduced and budgetary accounting is maintained - Such a linked system needs compromises - Unsuccessful combination leading to conflicts
2/ The traditional budgetary accounting system is abandoned. New accrual accounting with an integrated cost accounting system and in addition an according budgetary accounting system, which is not any more a cameralistic system (e.g. Flemish OCMWs)	<ul style="list-style-type: none"> + Accrual accounting is prevailing + Integrated system of cost accounting - Lay-out of budgetary accounting is defined by accrual accounting concepts - Overemphasis on accrual accounting
3/ Cameralistic accounting system (e.g. current accounting system of non-profit organisations although being in reform)	<ul style="list-style-type: none"> + Tool of control of the “public purse” - No patrimonial view - No system of management accounting
4/ Maintaining of the budgetary accounting system extended with a separated system of accounting adjustments and reclassifications at year end in order to develop additionally at the year accrual accounting reports (e.g. Italian municipalities (Anessi-Pessina & Steccolini 2000))	<ul style="list-style-type: none"> + Budgetary accounting is maintained + Rather easy to implement + Different reports for different purposes - Accrual accounting information supporting management purposes is not available during the year
5/ Fund accounting in which the different activities of the government are separated and accordingly treated: thus different accounting systems for different activities (=funds) (e.g. governments USA)	<ul style="list-style-type: none"> + Different approaches and different reports for different purposes + Advantages of the other systems are kept whereas the disadvantages are avoided - Need for defining the different funds - No consolidation possible
6/ "Mega general ledger" consisting of an harmonious combination of accrual accounting, budgetary accounting, cost accounting (e.g. in development in Belgian provinces)	<ul style="list-style-type: none"> + Integrated accounting system - Still in development

5. MEGA G/L: BUDGETARY - GENERAL – ANALYTICAL ACCOUNTING

After having undergone the unsuccessful reform in Belgian municipalities, it was the intention of the provincial accounting reformers to firstly maintain the characteristics and advantages of the cameralistic accounting and secondly to achieve simultaneously the advantages of business accounting. It can be argued that many occurring problems of combining those accounting systems are due to the separate and often opposite principles. However, keeping the rules of each system in force and respecting those of the other system, can lead to a consensus in terms of the expression like for the euro:

“NO COMPULSION, NO PROHIBITION”

This means that in the approach of the "mega general ledger", it is the intention that the budgetary system respects its own budgetary rules without implications to the accrual system and vice versa. Likewise the analytical system plays the same role.

Instead of introducing accrual accounting without a general ledger (Italy) or making the cash accounting part of the accrual accounting general ledger (Spain, France) or imposing the same accounting rules for the two systems (Belgian municipalities), the mega general ledger attempts to keep three general ledgers simultaneously as shown in Table 4.

Table 4 "Mega general ledger"

Budgetary accounting	Financial accounting	Analytical accounting
Single entry	Double entry	Double entry (single also possible)
G/L: Ecocodes	G/L: Accounts 0-7	G/L: Accounts 8-9
Budget Budgetary account	Annual accounts	Cost accounting statements

Processing

In the case of Belgian provinces the budgetary accounts to be used are the so-called "economic codes" (ecocodes), which have the first three digits of the more detailed financial accounts in common.

In order to process all financial economic transactions correctly, a distinction is made between the accounting activities during the accounting period (e.g. a month or a trimester) and those specifically at the end of each accounting period.

During the accounting period all transactions are recorded simultaneously in single entry budgetary accounting by using the ecocodes as well as in financial accounting with their according journal entries and lastly with their journal entries in analytical accounting.

Until then the accounting systems are up to date in budgetary terms. In order to get a "true and fair view" a number of accrual adjustments are entered at the end of each period combined with their journal entries in analytical accounting. Most of these end of period recordings take place in the financial and analytical accounting system.

The three general ledgers can be visualised generally in Appendix 1. Particularly for the cycle of purchases Appendix 2 provides a zoom in a spreadsheet with three groups of columns. Each line represents the consequences of a transaction and this in three kinds of accounting systems. For a number of transactions the recording takes place simultaneously in the three systems; other kinds of transactions influence only one or two systems.

Advantages, strengths and opportunities

Adequate information using the according accounting system becomes possible: information concerning certain appropriations of certain budgets can be consulted as well as information about accounts receivable, etc. These kinds of information differ and a condition to succeed is the fact that one has to get used to think in three accounting systems with different results. Preparing periodically a state of reconciliation between the accounting systems would be an advice.

Another advantage of the "mega general ledger" is that unwanted interference among the three accounting systems can be avoided. Each system corresponds with its own rules, not with the rules of the other systems and this is an improvement because empirical research has shown that often problems are due to mixing up different rules.

In terms of "accounting engineering" the "mega general ledger" is set up as a modular system, which means that each of the three accounting systems can stand alone. If desired, one could postpone implementing the cost accounting system without losing the advantages of combining the other two. Furthermore, the technical innovation is not an obstacle against the choice for certain accounting methods such as fund accounting.

Contrary to the situation in countries where accrual accounting could be called just an "add-on" at year end and where the management cannot use the accounting in the middle of the year, accounting information can be used more frequently in the "mega general ledger".

Attention is paid to the contextual aspects in that governmental accounting persons are used to process cameralistic accounting and they can maintain their knowledge and habits. This facilitates the adoption of the additional financial and analytical accounting methods since one starts from an unchanged well-known situation.

Nowadays many enterprises are integrating their financial accounting system and cost accounting (e.g. Activity Based Costing) as well their operational and strategic performance measurement system (Cooper & Kaplan 1999). This integration has in many cases been accomplished with enterprise resource planning systems (ERP) that integrate and coordinate all major business functions such as purchasing, production, marketing, sales, logistics, order fulfilment, plus support services (e.g. human resources, accounting). The facilities of ERP could also be used in governmental accounting. Apart from the financial accounting system, the cost accounting system and the operational and strategic performance measurement

system, there will be a need to integrate a fourth system which is the budgetary accounting system. Using the technology of ERP governments could bring together their separate information systems into a single integrated system and the development of a "mega general ledger" is in line with this evolution. Unfortunately, research efforts regarding ERP in governments seem to be limited.

In the public sector reforms convergence (Ellwood 1999, Christiaens 2001a) appear to be an important objective. It is noteworthy to mention that the concept and the adoption of a "mega general ledger" across different kinds of public sector organisations and different countries is a means to support/improve the aim for convergence of systems. For the moment one misses a generally accepted technical vehicle or device to carry out the reformed accounting job. IPSAS are being developed, but until now the themes remain general and the technical and automation aspects are not enough taken into consideration.

Critical issues

A traditional problem which is seldom explored, is the differing typology of accounts comparing cameralistic and financial accounting. In the latter, accounts are classified according to an external way of reporting. In the former the classification of accounts is driven by an internal authorisation point of view. Sometimes both of the classifications consider the same account, but there are also a lot of accounts having another meaning or content. In the approach of the Belgian provinces, one has installed the so-called "ecocodes" whose numbers are the same as the first three digits of the general accounts. This approach is not perfect and could be criticized since it makes compromises necessary. In summary, there is a need for studying a reconciled typology of the budgetary accounts and the financial accounts and one could hypothesize that the differing typologies probable occurring in many countries are an important factor explaining the current adoption problems.

One could argue that the introduction of a "mega general ledger" will neither be value neutral nor policy neutral in practice. Therefore, the success of this innovation depends on the climate of receptivity amongst governments (Ryan 1998) and further research is needed.

Caperchione (2000, p. 74) remarks that there is a basic problem shared by many innovation attempts: an accounting system cannot meet widely divergent information needs at the same time. He mentions that the coexistence of cash accounting and accrual accounting creates risks for the quality of information referring to the probable dominance of the traditional cameralistic accounting. One could agree that indeed one accounting system should not be hybrid and that one's rules should not be dominant for the other. In the "mega general ledger" three autonomous accounting systems are harmonised and integrated meeting three different kinds of information needs.

In the current concept little attention is paid to the third central issue, which is the analytical accounting system. Implementing cost accounting systems necessitates the definition of cost centres, functions, products, etc. In the Belgian provinces one has chosen for a continuation of the former predefined functions. Although the provincial committee had the opinion that this classification of functions and thus cost centres and responsibility centres had to be reviewed and ameliorated, these aspects were temporarily set aside.

6. CONCLUSIONS

This paper attempted to show that in governmental reforms many technical accounting problems and conflicts are due to the lack of a technical means of combining and integrating harmoniously the different accounting systems governments are running into.

Based on a review of existing accounting techniques and on the field experience in the standard setting activities in the Belgian provincial accounting reform, an accounting innovation (i.e. "mega general ledger") could be worked out. This innovation integrates three different accounting systems and could be useful also for other kinds of governments. Also in countries in which budgetary accounting of the kind of a cameralistic, authorization type always has prevailed, this innovation could be valorised.

A positive characteristic regarding its implementation is the fact that the former cameralistic accounting system primarily remains keeping its own rules and that the advantages of accrual accounting are achieved simultaneously without interfering.

Being interested in governmental accounting reforms, it is not necessary to abandon the existing cameralistic system. Many negative perceptions seem to be due to the processing in practice, not to the concept itself.

There remains certainly need for further testing of the innovative concept in practice taking behavioural and IT aspects into account. A remaining problem is the search for a convergent typology of budgetary accounts and financial accounts.

Hopefully, transferring business accounting to governments will have a better vehicle using the proposed integrated accounting approach and then the drifting apart of the governmental accounting systems could be stopped. Examining the conditions and contextual variables of implementing this proposed integration was not discussed, it could also be interesting for further research.

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Appendix 1 Registration Process Mega General Ledger

Registration process	Budgetary accounting	Accrual accounting	Analytical accounting
<i>During the accounting period</i>			
Purchases			
1/ Definition of the budget	S	-	-
2/ Appropriation	S	-	-
3/ Delivery	-	-	-
4/ Receipt of the invoice and charging	S	D	D
5/ Payment	-	D	-
Revenues out of taxes			
1/ Definition of the budget	S	-	-
2/ Amounts receivable	S	D	D
3/ Receipt of the payment	-	D	-
Revenues out of services			
1/ Definition of the budget	S	-	-
2/ Delivery of services	-	-	-
3/ Billing	S	D	D
3/ Receipt of the payment	-	D	-
Investments			
1/ Definition of the budget	S	-	-
2/ Appropriation	S	-	-
3/ Delivery	-	-	-
4/ Receipt of the invoice and charging	S	D	D
5/ Payment	-	D	-
Staff			
1/ Definition of the budget	S	-	-
2/ Appropriation	S	-	-
3/ Voucher	S	D	D
4/ Payment	-	D	-
Miscellaneous			
...			

<i>Adjustments at the end of the accounting period (e.g. month)</i>			
1/ Stock movements	-	D	D
2/ Invoices, credit notes to receive	-	D	D
3/ Depreciation and revaluatio	-	D	D
4/ Written-off amounts	-	D	D
5/ Transitory items			
6/...			

S = Single entry
D = Double entry
- = No entry

Appendix 2 Detail Mega General Ledger: Purchase Cycle

Purchases during period	BuAcc	Fin.Acc		An.Acc	
		Dt	Ct	Dt	Ct
1) Definition of the budget	X	-	-	-	-
2) Appropriation	X	-	-	-	-
3) Delivery	-	-	-	-	-
4) Receipt of the invoice and charging	ecocode 60,61,64	60,61, 64	440, 48	/98, /90 Ind.c.	-
5) Payment		440	55	-	-
Adjustments at end of period	BuAcc	Fin.Acc		An.Acc	
		D	C	D	C
Invoices to receive	-	60,61	440	/98, /90 Ind.c.	-
Stock movements start	-	609	3	/98 PI	-
Stock movements end	-	3	609	-	/98 PI
Disposal of material	-	-	-	89, 90	98 PI
Written-of amounts on stocks	-	63	3X9	-	-
Transitory items: deferred charges, deferred income, (analoguous accrued charges, accrued income)	-	490	60,61	-	-



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