ORIGINAL PAPER

Strategic management accounting in universities: the Italian experience

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Abstract   This paper presents an investigation of management accounting in four major Italian universities, which have been struggling to build their strategy in a context of significant change. Following many OECD countries the Italian government has been changing its higher education system by giving more autonomy to universities. These changes pose a number of challenges for management and accounting systems in Italian Universities. Drawing on self-referential theory and its applications to accounting research the paper analyses the construction of Strategic Management Accounting (SMA) in four Italian universities, which are immersed in a similar context of change. The focus is specifically on two aspects of decisions: (1) resource allocation and (2) new academic programme.

Keywords   Strategic Management Accounting · University · Decision-making

Introduction

The progressive reduction of public resources has led many governments to rethink their organisations to become more managerial, by drawing on practices and models from the private sector (New Public Management) (Hood, 1991; 1995). This change started at the beginning of 1980s to the public sector in general, and it has also affected universities, in particular altering the balance between central governments and academic institutions, increasing the decentralisation of responsibilities.

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In many countries within Europe, the reforming process affected higher education, with different path and time, however, sharing some common characteristics: (1) more emphasis on universities' autonomy, both in academic and management issues, (2) the use of financial models for allocating public funds as incentives schemes for promoting better performances and (3) the role of the assessment procedures and agencies for guaranteeing the quality of educational processes (OECD 2003).

In Italy, the government has been slow to initiate reforms, but has recently introduced significant changes in its higher education system. The first step in reforming the system was a law approved in 1993 (Law no. 537/1993) which defined new principles for determining resources flowing from central government, which contributed to the budgetary devolution. A second important step was made in 1999 (Ministry Decree no. 509/1999), when the central government increased the autonomy of universities in deciding their teaching programmes. The increased autonomy and the decentralisation of several decisions, have indeed given new opportunities to universities, but at the same time it has posed challenges to their management and academic boards, highlighting many difficulties in defining and developing their strategies.

This contribution is focused on a specific issue within this process: the identification of a set of information to support strategic decisions, that is the definition of a *Strategic Management Accounting* (*SMA*). The importance of SMA is rooted in its potentiality for enhancing both management accounting and the definition of the strategy. This is particularly relevant, and of recent interest, within the NPM movement where public organisations, struggling in managing their increased autonomy, are searching for new supporting instruments. However, the discussion of the role of accounting in supporting strategic decisions is not new (Bromwich, 1990; Bromwich & Bhimani, 1994; Kaplan, 1994; Lord 1996; Simmonds, 1981; 1982), however, there has recently been a revival of interest.

There are several possible dimensions for analysing SMA: the information included, the process by which organisations build these systems and finally their relation with strategy. Previous contributions do not identify a shared reference framework, creating uncertainty around the definition of SMA and its characteristics. However, some common elements emerge, which characterise (or should characterise) these systems: the attention to the *market* and *external shareholders*, the focus on *competitors* and a *long-term orientation*. The empirical evidence (e.g. Guilding, Cravens, & Tayles, 2000; Seal, 2001) shows that not all SMA systems reflect these characteristics; they are often the result of non-linear processes driven by many external and internal pressures, in which the search for appropriate information and organisational identity overlap.

The perspective adopted here for analysing these complex patterns draws on *self-referential theory* and *institutional theory* which provide elements in interpreting two apparently opposite organisational behaviours: the bias to include internal, consolidated indicators, which are usually already available in the accounting systems (*self-reference*) and the desire to collect data on central government and similar organisations in the field (in this case other universities) to conform to their external environment (*isomorphism*).

Starting from this background the paper presents a study of SMA in four Italian universities. These institutions, involved in a similar context of strategic change, are a particularly interesting field for investigating the information used for supporting strategic decisions and the path followed in their definition and research.

Specifically the study compares the information used at present (*present SMA*) and the information considered necessary (*desired SMA*) in two strategic areas: the *allocation of financial resources* and the *definition of teaching programmes*. These systems were analysed on the basis of two dimensions: (1) the type of information included (from *standard* to *distinctive*) and (2) the information orientation (from *internal* to *external*). This framework facilitated the investigation of SMA in the light of isomorphism and self-referential theory, highlighting different attitudes, and levels of sophistication both in the present and desired systems.

The article is divided into five sections: (1) the context of transformation in the Italian university system, (2) the conceptual framework—self-referential theory and isomorphism, (3) the research approach, (4) the results and (5) conclusion and discussion.

The context

Since the beginning of the 1990s, the Italian university system has been changing significantly through the enactment of several reforms. Traditionally, central government played a very important role: it had to directly establish new universities, to set requirements for courses, to control the enrolment and upgrading of teaching and teaching staff.

The real watershed was a law approved in 1993 (Law no. 537/1993); this decree defined new principles for determining resources flowing from central government, which contributed to budgetary devolution. Previously the Italian system was characterised by the centralised authority of the MIUR—(Italian Ministry of University and Research), which determined the overall resources and the budget for each university; further, within each budget, the government decided the allocation to specific subject areas (e.g. social science, medicine) and line of expenditure (teaching and non-teaching staff, research financing). Nearly half of the overall budget used to be assigned directly to faculties and expense centres, without flowing through university central management. The 1993's reform, mentioned above, changed this by introducing a single line budget of financial resources, including all the specific items previously assigned to expense centres (called *Fondo di Finanziamento Ordinario—FFO*).

A second important reform was introduced in 1999 with the approval of a ministry decree (no. 509/1999) which increased teaching autonomy. Italian universities now have the freedom to define their teaching programmes, as the type of courses they offer, in which disciplines, the limits for matriculation. The central government defined only two limits: (1) a "minimum set of contents" for degree programmes in each scientific area; (2) "minimum quantitative standards" for each programme, in terms of number of teaching staff and services (equipments, buildings, libraries).

These reforms gave new opportunities to universities in defining and pursuing their strategy, however, they posed challenges to managers and their capability to face new tasks and decisions. The role of accounting information is crucial here to provide new information on stakeholders, their needs and their influence on university life; among these stakeholders students are fundamental. However, MIUR continues to remain influential, as it maintained the role of setting general

objectives for the system and as it defines the rule for allocating the single line budgets.

Finally it is important to highlight that the context described is far from being settled and some recent interventions of the government have renewed the debate on the actual capability of universities to govern their autonomy.

Conceptual framework

Management accounting systems has received considerable attention from researchers and managers since the beginning of the 1980s, when they started to recognise their inadequacy in providing useful information (Johnson & Kaplan, 1987; Kaplan, 1983; 1984; 1988). Devising new techniques and approaches has led to a high diversification of these systems, driven by the attempt to adapt to the specific characteristics of the organisations in which they are implemented and to the continuous change of the competitive environment in which they are immersed. The relationship between strategy and accounting is not new and its investigation has produced a number of contributions which include the analysis of the theoretical validity of new techniques (such as activity-based costing and the balanced scorecard), the investigation of the selection, adoption of innovative approaches and the exploration of technical problems in implementing these systems.

In this debate, SMA, as a "system," has gained increasing importance, highlighting the opportunity to revise the role of management accounting in supporting strategic decisions (Brignall & Ballantine, 2004; Choe, 2004; Dubois, 2003; Guilding et al., 2000; Roslender, 1996; Roslender & Hart, 2002; 2003). Its origin goes back to Simmonds (1981; 1982); he developed the concept of SMA, picturing it as a collection of management accounting information about the business and its competitors, which are used in developing and monitoring the organisation's strategy. Simmonds stressed the need to have an holistic accounting basis including internal and external data: cash flows and resource utilisation, volume, market share, relative competitive position. These seminal contributions and its further developments highlighted the potentiality of this tool for enhancing both the field of accounting and strategy. Firstly, SMA introduces a longer term and more external perspective than traditional accounting systems; secondly, it emphases the opportunity to rationalise the information used for building the strategy.

The empirical contributions are however still limited and often related to specific areas (e.g. Marketing), further at the theoretical level there is no convergence on what constitutes SMA per se, in its dimensions and structure. However, there are some common elements which seem to characterise "ideal" SMA systems: (1) an orientation towards market and external stakeholders, (2) a focus on present and potential competitors and (3) a long-term orientation.

The SMA studied so far do not always exhibit these "ideal" characteristics and they are often the result of a design process, which is non-linear, and overlaps with organisation strategy. The investigation of these processes and in particular a recent contribution from Seal (2001) reveals a logic behind these paths, highlighting some pressures which shape the selection of information and hence SMA: *self-reference* (Maturana & Varela, 1980; Mingers, 1995) and *isomorphism* (DiMaggio & Powell, 1983).

Self-referential theory suggests an auto-reflexive attitude in defining SMA, which leads managers to select information looking *inside* their organisations and referring to standard, consolidated information. This attitude can be interpreted as a desire to rationalise the effort involved in searching for information, minimising resources devoted to this and reducing the time for data collection. However, the self-referential approach can be interpreted as an introspective path; the numbers and the indicators produced by an organisation represent their identity, their interests and their worries (Morgan, 1988). This interpretation is particularly interesting in analysing institutions immersed in the context of significant change (as universities in Italy): here strategy is often under revision and internal information represents a ''known world'' which organisations can deal and refer to.

The second perspective, *isomorphism*, introduces external forces as the dominant influence. These interpretations suggest that the definition of new techniques and information is enacted by organisations conforming to their environment. This process is shaped by different pressures: political and institutional influence (coercive isomorphism), competitors' behaviours (mimetic isomorphism) and the presence and behaviour of professional bodies and consultants (normative isomorphism) (DiMaggio & Powell, 1983, 149 pp.).

These two theories interpret accounting innovation using two focal points: internal for the first one (self-referential theory) and external for the second one (isomorphism). Nevertheless they are not opposing but complementary and they facilitate scrutiny of SMA as a result of internal and external pressures, which overlaps research of defined *strategies*, *organisational identity* and external *legitimation*.

The Italian university system is an ideal investigation area for these issues; the decentralisation of responsibilities described above has created a shared context in which each institution has the opportunity to redefine their positioning. However, the new tasks have challenged university managers by stressing the necessity to devise an information system for their decisions in which the self-understanding and external legitimation appear central.

This study analysed four Italian universities studying their present information systems (*present SMA*) and the information they consider necessary (*desired SMA*) in the light of the two theories presented, with a specific focus on two decisions: the *allocation of resources* and the *definition of their teaching programmes*. These decisions are crucial for all universities, not only in Italy, they are strategic but they are also more frequent than other decisions (e.g. resource allocation is done in Italy every year). These elements evidence the opportunity to have a reliable information system for supporting top management decisions.

The framework adopted is based on two dimensions: (1) the type of information included (*standard* towards *distinctive*) and (2) the information orientation (*internal* towards *external*), as shown in the following picture (Fig. 1).

The framework permits scrutiny of these organisations behaviour in relation to the theories previously described. For example the situation represented by A would reflect a strongly isomorphic attitude in which SMA is tailored on external standardised information. The B situation instead reveals an internally focused approach based on standard information. Further the second dimension analysed (vertical axis) provide elements on the capability of institution to include ''distinctive'' information, showing a more reactive or proactive approach. The representation
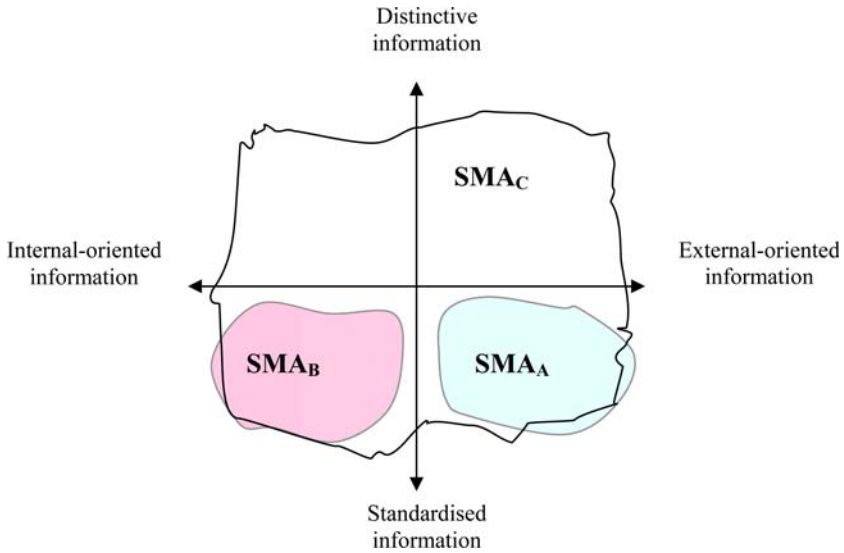
Fig. 1 The graphical representation of SMA

adopted will show graphically the presence of more complete systems (as for example SMA$_C$) or selective systems (as for example SMA$_A$ and SMA$_B$).

Besides this analysis the data collected allowed us to investigate the nature of the information used in the SMA, including financial data (FI), other quantitative data (QT) and qualitative data (QL). We consider as *standardised* information the set of data annually required by the Ministry and CNVSU, mainly composed of QT and FI. Instead, we consider as *distinctive* information QL and performance indicators (PI). We define them as a particular elaboration of quantitative and FI used for obtaining synthetic information about determined activities performances.

The methodology

The approach adopted in the study reflects the need to shift the discussion on SMA design and implementation from the theoretical to the empirical level in specific contexts in which SMA may a valuable management tool. The need to answer to "how" and "why" questions, and the desire to compare different systems in the light of the conceptual framework, prompted the adoption of a multiple case study methodology (Cunningham, 1992; Cunningham & Harris, 2001; Yin, 1994).

The selection of the four cases studied was based on organisations which were supportive to the transformation and which tried, or have been trying, to reposition themselves after the reform. The following table shows the main characteristics of the universities included in the study (Table 1).

The research was carried out over 10 months from February to November 2004 and the data collection was divided in two phases: (1) a preliminary investigation, (2) the SMA analysis. The first phase was necessary to focus the analysis by selecting a limited set of strategic decisions which were considered crucial by members of the academic boards and university managers. The second phase was centred on the definition of information actually used and considered necessary for a future SMA.

Table 1 The main characteristics of the organisations studied

	No. of students	Total incomes (thousands euros)	Teaching staff	Non-teaching staff
A	<15,000	<250,000	<500	500–1,000
B	25,000–50,000	250,000–500,000	1,000–2,000	1,000–2,000
C	>50,000	>500,000	>2,000	>2,000
D	15,000–25,000	<250,000	1,000–2,000	500–1,000

Different instruments were used in collecting this data: a questionnaire, interviews with key actors within the organisations (managers and governing board members), analysis of public documentation, a study of internal documents which are not in the public domain. The multiple sources of evidence analysed allowed a triangulation of this data, to ensure the validity of results in the case study approach (Denzin, 1978).

Results

This paragraph presents the results in four sections analysing the SMA of the four organisations involved in the study.

The centre of the analysis is the set of information supporting strategic decisions tackled, defining on one hand the information used at present (*present SMA*) and on the other hand the information that the academic board and top management would like to be included in the system (*desired SMA*). However, an initial indication of each organisation's characteristics is provided, to better understand the following analysis and enhance the comparison of the four universities. The main elements analysed are: the policy of the university and the decision-making processes in resource allocation and the establishment of new courses. The two SMA are represented qualitatively, for each case, with the graphical framework adopted.

University A: a comprehensive, proactive and efficient SMA

University A is a generic small university, with less than 15,000 students. The analysis of official documents and the interviews showed a clear and strong strategy where the quality of teaching and the creation of external relations (local areas) are leitmotivs as the manifesto of their strategy shows:

> "University A delivers quality for students who want a high quality education. This is the commitment and the objective of University A towards young people, but also towards the local area, companies and society. [...] If the principle "small is good" can still be considered valid, the creation of a net of local and international partners is necessary for winning the challenges of competition and quality. The research of public and private partners contributes to the diversification of financial resources and in particular it allows to share educational and research projects with a strict relation with the needs of the local area."

This declaration is widely reflected in its policy and its programming processes, which give evidence of a mature decision-making environment, where roles and timelines for actions have been clearly defined. In this institution divisions are responsible and accountable for their activities; they draft a 3-year plan which is
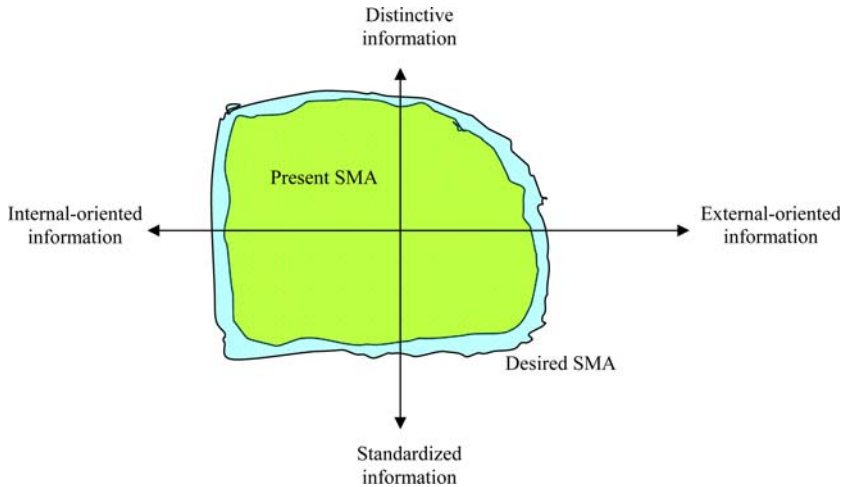
Fig. 2 Desired SMA and present SMA, University A

further developed yearly, identifying their specific objectives for the year and targets pursuing the strategic objective goals of the university as a whole. The structures of the plans vary but each division is required to insert the projection for specific item of costs which are then processed centrally.

The discussion with governing boards showed that the decision-making processes are supported by a wide set of information. The accounting system of this university provides on a routine basis many different kind of information: FI and non-FI; historical data and projections; qualitative and quantitative information. This information basis is actually used in decision-making and the comparison between the desired SMA and the present SMA shows a substantial match (Fig. 2).

This system is complete, considering both axes of analysis, highlighting the pro-active approach of this university. Its attempt is to search for "distinctive" data, different in nature and typology, and in particular to use projections for orienting strategic decisions. A particular attention is devoted to external information analysing the students' attitudes but also conducting yearly some studies on labour market needs, in partnership with the Chamber of Commerce[1]. Degree courses decision makers complete this set of information with internal ad hoc analysis on rates and performances of students, and some studies available to the public (as *AlmaLaurea* and *Excelsior*[2]), which however tend not to be used by other universities. This approach reflects the declaration in their manifesto where the students and the link with the local area are fundamental.

Finally, it is important to underline that SMA is also "efficient" providing timely information to decision makers as they need it.

University B: a selective, proactive and inefficient SMA

University B is a science and technology university specialised in engineering and architecture disciplines. Its a medium-sized university, with a number of students

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[1] The Chamber of Commerce is a local institution representing industries.

[2] National analysis of occupational profiles of graduates. Website: www.almalaurea.it.

enrolled between 25,000 and 50,000. B has a reputation for entrepreneurial activity because of its capacity to generate income from financial sources. Research, and its link with innovative teaching, is a mainstream of its strategy together with the internationalisation of its researchers and students. The declaration of their objectives clearly shows this approach:

> ''B has always been based on quality and innovation in teaching and research, resulting in a prolific relationship with the economic and manufacturing worlds through experimental research and the transfer of technology. Today, research is increasingly and more closely connected to teaching and represents a priority commitment which makes it possible for us to attain high level results at international level. [...] There are several teaching and research areas in which B has distinguished itself in the past, which have fuelled a tradition of excellence that has been progressively updated: developing excellence and at the same time striking alliances with other Italian and foreign universities and research centres makes it possible for the university to carry out fully its teaching function, improving its offering to students, and to carry out its role of stimulating innovation and therefore Italy's development.''

The academic boards are pursuing these objectives with goal-oriented actions related to research excellence and income generation, jointly they have been increasingly adopting accounting devices to influence indirectly managers and teaching staff. The general accounting system is actually under revision and, at the moment, there are different initiatives being carried out to provide the information required by managers. Through this evolution people interviewed have highlighted some problems. In particular some types of information required by top managers, are not available: projections about expenditures and revenues for the following academic year; projections about financial needs; projections about costs for staff and buildings expenditures; information about labour market needs (to make decisions about the establishment of new courses).

A characteristic of this university is selectivity. Top management is not guided solely by the information available, but they ask and search for new data, aggregations and reports. The misalignment between the information basis and the information required can be explained by the misalignment between an old system tailored on government needs and the entrepreneurial view of B, which continues to develop after the reform of the Italian university system. Government policy is mainly focused on increasing the number of students and graduates; the objective of B is innovation, quality of students and its autonomy. The management's idea is that the competitiveness of this university depends on its ability to improve its reputation as an ''excellent university.''

Contrary to other universities in this research they are not particularly focused on the data yearly required by MIUR and CNVSU[3], but they only analyse the information considered useful for making their strategic decisions.

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[3] Universities annually must transmit to the Ministry of Education (Miur) and to the National Evaluation Committee (CNVSU) a set of data, mainly concerning information about characteristics of teaching activities (number of students, number of teachers, number of administrative staff, etc.). For more details, see the website www.cnvsu.it, and in particular the document no. 04/04 (CNVSU, 2004).
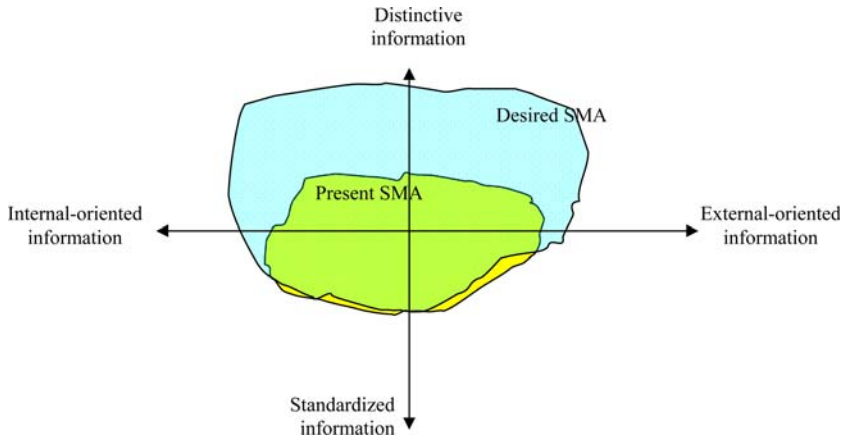
Fig. 3 Desired SMA and present SMA, University B

Analysing the information used the main attention of management is on quality of teaching and research, using qualitative measures and PI. For example the decision about the level of student fees is made in relation to the quality of courses (and not to their previous values). This means that the academic board evaluates the capability of each course to attract students with innovative contents and valuable teachers, rather than to the level of fees in the previous academic years; so, university uses fees as a ''signal'' of the courses' quality and value. Its important to note, however, that there is an exogenous limit to this policy, because the national law (Decree no. 306/1997) imposes that each university cannot collect fees for an overall value higher than 20% of the public transfers (FFO).

A further example is the allocation of resources for teaching staff among their departments, which is based on a mathematical formula considering three elements: publications, educational credits and commercial income. Adopting this approach, departments are encouraged to increase their performance in the two areas which they can directly govern: research publications and self-raised income. Finally, the establishment of new courses is decided not on the numbers of students, but analysing the labour market needs (a critical area of the SMA) and the financial sustainability of the course (Fig. 3).

University C: a selective, reactive and efficient SMA

University C is recognised as one of the oldest universities in Europe with more than 50,000 students. Teaching has been the main strength of this institution, however, academic boards have recently showed increased attention to research as instrumental in teaching excellence, as declared in many official reports:

''Degrees of international level. Extraordinary investments for guaranteeing the quality of teaching and future in the labour market. In this way University C has enacted the reform. We want to sign a contract with student coming here for studying which has its reference points in quality of study, favouring best students and creating job opportunities. We have been committed in building a reform in line with the European Union guidelines which represent for our student a passport for Europe. [...] For facing these new and important task

opened by the reforming process we need to stress that the quality of teaching is strictly related to the quality of research. Everything in universities starts from the research, because the particularity of our institutions is being a place where research become communication; communication towards young people (education) and society (knowledge transfer).

The interviews with members of governing boards reveals the existence of a consolidated decision-making process based on C's ancient tradition and its focus on teaching. The accounting system is well-rounded, providing quantitative and qualitative, financial and non-financial information.

The main characteristic of this accounting system is being "reactive", following the trends in the Italian university system. The central source of information for strategic decisions is the database required by MIUR and CNVSU as institutional fulfilment; managers tend not to use other information which are in the systems. For example, there are information about courses of competing universities and non-financial indicators about the improvement of existing services. This approach is confirmed by our analysis of decision-making processes.

The definition of student tax rates is mainly based on historical data (drop out rates, number of students, etc.), though some attempt to integrate this information has been highlighted (projections about FI—costs, financial needs—and non-financial indicators). The allocation of teaching staff resources is made using historical data: staff costs and numbers of teachers; top managers have avoided the introduction of PI even though they are available in the accounting system (e.g. publications and teaching demand). Finally, the decisions on degree programmes are based on historical data such as the number of students enrolled in the last 3 years, without using information on labour market needs. This situation reflects the history of University C where excellence in teaching and the "ancient" relation with government, which strongly influences strategic decisions. Looking at the capability of providing the information required by this university in the SMA can be considered efficient; data are readily available in the system.

So far the selectivity of the University C SMA seems to be strongly influenced by government policy; however, the interviews highlighted an incremental path to innovate by focusing on the "urgent" area: research. These actions reflect a selective attitude, which is based on a strategic priority and entails a more proactive SMA in the future. The comparison between the desired SMA and the present SMA shows that this university is looking for new and detailed information about its internal characteristics (projections on costs, qualitative opinions by students and by internal evaluation committees) and about labour market needs (Fig. 4).

University D: a selective, reactive and inefficient SMA

University D is a generic medium university, with the number of students between 20,000 and 25,000, mainly focused on teaching. D is the only university in this study which has not published an official document on their strategy; documents available to the public describe in detail services, organisational structure, teaching programmes but not the general guidelines of the academic boards. The interviews revealed a "confusing" situation, in which top management is trying to rationalise university strategy, their decision-making processes and its accounting system. The need to search for a "point of reference" appears clearly at each stage of the
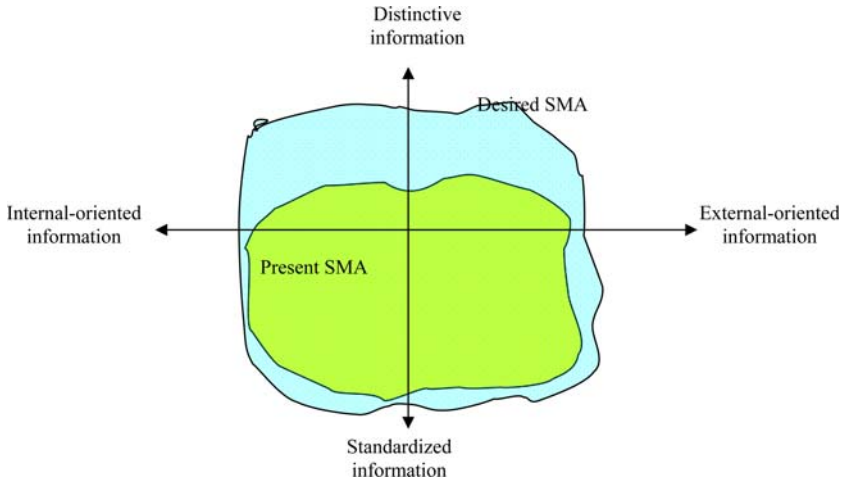
Fig. 4 Desired SMA and present SMA, University C

research in this university's desire to conform to its environment: government policies and those of other universities.

The search for external legitimacy emerges both in resource allocation decisions and in the establishment of new degree programmes: managers are keen to know government funding policy to forecast financial effects and to plan the activities of the university. In particular, the level of students' tax rates is defined with careful attention to the rules and the standards stated by the government. A similar situation is reflected in the information processed for establishing new degree programmes; the university gives a relevant weight to government rules as, for instance, the allocation of resources to incentive work-periods in companies and students mobility among universities and different countries. This research and mirroring the external environment is evident also in the search for QT on other universities; however, in this case, data are not still available.

Focusing on the typology of information, the preliminary interviews showed particular attention to FI, which was confirmed by the second stage of the research, pointing out some characteristics of the desired SMA and the present SMA. Resource allocation decisions are based on historical data produced by the accounting system. In detail, the decision about student fees is based on the average value of fees and on previous values of expenditures, revenues and financial needs. Instead, the allocation of financial resources is linked to projections about FI and to indicators requested by CNVSU (e.g. the availability of spaces for students and staff). There is a similar situation in the decision about the establishment of degree programmes, in which traditional indicators are used (for instance, number of students, drop out rates).

The comparison between the desired SMA and the present SMA reveals an attempt to develop from the existing schemes, orienting the decision-making process towards a deeper analysis of their internal processes while still maintaining considerable attention to external pressures (Fig. 5). University D shows interest in quantitative projections, as revenues, expenditures, financial needs and costs, both in allocation resources decisions and in teaching ones. However, these projections are
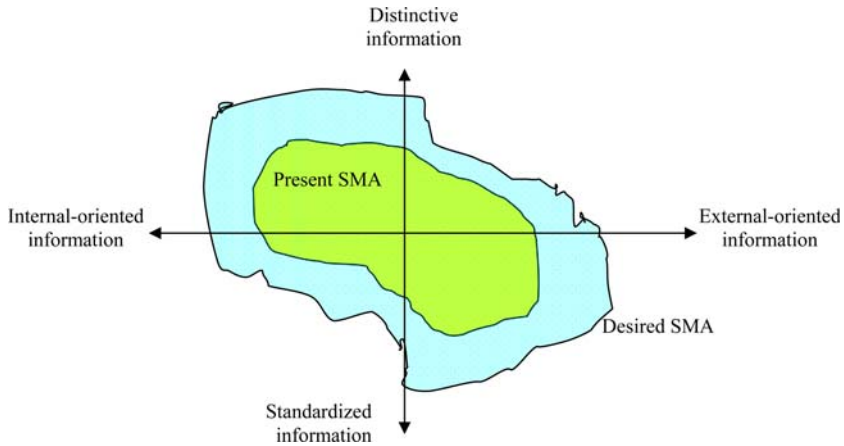
Fig. 5 Desired SMA and present SMA, University D

not yet available (or they are not available in a timely fashion, i.e. when managers have to make decisions).

Conclusions

This research stemmed from the rapidly changing environment in which European universities have been involved since the middle of 1980s. The initial reforming movement was restricted to some countries, such as UK and New Zealand, which opened the way to many other governments. Following this movement, the Italian central government introduced a new financing system for universities in 1993, moving from a centrally managed to more devolved single line budgets for universities. Furthermore in 1999, the Italian central government increased the decentralisation of responsibilities by assigning to universities the possibility of defining their own teaching programmes. This budgetary devolution and autonomy in defining their activities opened up new opportunities to universities, but at the same time it posed new challenges to managers and academics; they now have to deal with decisions previously made centrally by government, which gives rise to the need to define an information basis for guiding their strategy enactment: a SMA system.

The definition of SMA is not unique and this label covers different techniques and approaches, which do not provide a shared framework. However, this research converges on some common characteristics of the ideal SMA: (1) the orientation towards market and external stakeholders, (2) the focus on present and potential competitors, (3) the long-term orientation. The limited empirical evidence available does not always reflect these characteristics, showing systems which have been apparently constructed by following a random path. Recent research has studied this phenomenon by searching for a logic behind this path and exploring the close relation between the search for a strategy and the design of SMA. This paper has followed this stream of research by seizing the opportunity to study SMA in four Italian universities, which are immersed in the same context of significant change.

The perspective adopted in this multiple case study is based on two theories: *self-referential theory* and *isomorphism*. In particular the study investigated the present and desired SMA of these institutions with reference to two main decisions: resource allocation and teaching programme definition. The analysis framework was based on two dimensions: *information orientation* (external versus internal) and *information typology* (standardised versus distinctive).

The results presented in the paper show a differentiated situation among universities on two levels: the reflection of the two theories and the completeness and efficiency of the systems. The responses to external pressure (isomorphism) and self-reference is differentiated in the four case studies. Universities A and B appear to be less sensitive to external pressure by including in their SMA the information which they consider useful for supporting their strategy. There is however a difference, A has mature information systems and decision-making processes which allow it to process and manage a higher volume and range of information. University B by way of contrast instead has clear strategic guidelines, which are not however translated into sub objectives and programmes. The selective SMA of this organisation seems to reflect the need to focus on a few, though sometimes distinctive, measures and its scarce capability in having (information system inefficiency) and processing (decisional system immaturity) data.

On the other hand, University C has a complete decision-making process, based mainly on historical data, but this is not efficient in providing projections and non-financial indicators. The focus of this university is on making innovations within its existing accounting system, including information from outside, to make decision processes more transparent to stakeholders (students and their families, labour market, local governments).

Lastly, University D shows a particular orientation to designing on SMA where the search for external conformation is evident. This university is characterised by an unclear strategy and the construction of SMA can be seen as process of understanding their role in the changed context.

This paper offers many elements for further discussion, but what seems particularly challenging is the contemporary but separate exploration of four elements which overlaps here: strategy, decision processes, SMA and information systems. They influence each other and their analysis as distinctive activities is difficult; however, the results of the paper offer a starting point (SMA) which can be seen as a focal point for understanding, in detail, the decision processes enacted during the years. There could be several future developments of this research, which this research team is undertaking. First of all, the SMA exploration will be extended to a wider number of Italian universities, to compare their different characteristics. Moreover it will be possible to observe changes of SMA systems over several years and analyse which characteristics are affecting these changes. Finally, there is a case for the analysis not only of data and information used for making strategic decisions, but also decision-making processes.

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