



Implementing Responsibility Centre Management in a Higher Educational Institution

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Abstract

Purpose – The purpose of this study is to examine the design, development, and implementation of responsibility centre management at a mid-sized Canadian university, within the context of decentralized decision making. More specifically our study focused on the design, development and implementation of a revenue and cost allocation process known as transparent activity-based budgeting system (TABBS).

Design/methodology/approach – The authors conducted this study using a qualitative case study methodology, rooted in grounded theory, as the primary approach to collect and analyze data, and report the findings. Primary data was collected from ten participants using semi-structured interviews.

Findings – The main takeaways from our research are that (1) such systems take time to design, develop and implement, (2) consultation, communication and information sharing, and model adjustment and refinement are important enabling mechanisms, (3) internal and external events posed significant challenges, (4) although such systems are often designed keeping in mind several intended outcomes there exists the possibility of experiencing some unintended consequences, and (5) the juxtaposition of the above has the potential to negatively or positively impact organizational performance.

Originality/value – The research demonstrates that the design, development, and implementation of a complex resource allocation model is an important element of a responsibility centered approach to planning and decision making. It highlights the importance and contribution of enabling mechanisms as well as the challenges that large, complex organizations may confront when introducing change.

Keywords – Responsibility centre management, Management control systems, Resource allocation, Budgeting, Higher educational institution.

Paper type – Reflective practice

1. Introduction

The concept of new public management (Pollitt and Bouckaert, 2004) has been adopted by many public sector organizations across the world (Brignall and Modell, 2000; Christensen, 2011; Angiola *et al.*, 2018), including higher educational institutions (HEIs) (Alach, 2017; Kenno and Sainty, 2017; Mourato and Patrício, 2019). According to Dobija *et al.* (2019), “this ... change has often been associated with a rise in new public management and a growth in managerialism in the application of private sector methods within the public sector” (p. 751). New public management (NPM) “seeks to produce a smaller, more efficient and more results orientated public sector.... There is a concentration on goals of efficiency, value for money and performance rather than democracy or legitimacy” (Ferlie *et al.*, 2008; p. 335). Essentially, NPM includes several elements of a generic management control system (MCS) such as budgeting and performance measurement which “... provide information used by managers in making decisions, and ... enable managers to foster the behaviours they desire” (Bobe and Kober, 2020, p. 235). In general, MCS are designed to enable planning, coordination, communication, performance measurement and decision making (Anthony and Govindarajan, 2007; Merchant and Van der Stede, 2017).

An important management control approach that resides within the purview of NPM is responsibility accounting and responsibility centre management (RCM) (Strauss and Curry, 2002; Merchant and Van der Stede, 2017). The concept of RCM has its roots in decentralization which was primarily operationalized by large for-profit corporations via the implementation of divisionalized organizational structures. RCM includes three elements: (1) resource allocation, (2) decision authority and (3) performance measurement (Anthony and Young, 2003). The interest in RCM, especially in HEIs, is largely attributable to constrained revenue streams, rising costs, and increasing organizational complexity (Smeenk *et al.*, 2009; Fethke, 2014). Our study is motivated by the observation that despite “... the growing number of RCM adopters and the cost of implementation, the current state of scholarship is lamentable” (Jacquette *et al.*, 2018, p. 644).

The purpose of this study is to examine the design, development, and implementation of responsibility centre management at a mid-sized Canadian university, within the context of decentralized decision making. A central element of the RCM structure of this university (referred to as UCAN in the rest of this paper) is a cost and resource allocation model known as ‘Transparent Activity Based Budgeting System’ (TABBS) which has been implemented over the past decade. The focus of our paper is on the TABBS model in terms of its design, development,

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3 implementation, enabling mechanisms and challenges. In doing so, it directly builds upon the
4 work of Kenno and Sainty (2017) who studied the implementation of a new activity-based
5 budgeting model at a different Canadian university.
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8 Our research found that the TABBS revenue and cost allocation model utilized by UCAN
9 included five phases: (1) Conceptualization, (2) Design, (3) Development One, (4) Development
10 Two and (5) Implementation. The three main objectives associated with implementing TABBS
11 were as follows: (1) implement a new resource allocation model, (2) improve internal controls and
12 (3) enhance transparency. An overarching desired outcome was to enhance the alignment between
13 budgeting and strategic planning. Whether achieving this desired alignment will also lead to
14 improved performance along the dimensions of research and teaching, as well as in other areas
15 (e.g., enhanced transparency, increased interdepartmental collaboration, greater efficiencies)
16 identified as important to the university, will likely not be known until sometime in the future.
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19 Our research suggests that the TABBS execution was largely successful in achieving its
20 primary objectives. Despite that, the execution of RCM did realize some unintended outcomes
21 (e.g., gamesmanship). The two main enabling mechanisms identified were consultation at multiple
22 organizational-levels and top-down communication. However, in the Development Two phase,
23 communication was largely focused on senior-leadership within the respective units, and on key
24 University Council committees. This more focused approach was negatively perceived by others
25 who had previously been involved, thus threatening their acceptance of the system.
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28 This research has the potential to stimulate additional research at the UCAN, other higher
29 educational institutions and public organizations in general, to examine the design, development
30 and implementation of RCM at a system level or its individual components identified throughout
31 the analysis. This research contributes to both practice and theory. The practical application of
32 this research is that it documents the design, development, and implementation of an RCM system,
33 thereby providing an opportunity to reflect upon the entire process and offer lessons applicable to
34 other public organizations. From a theoretical perspective this paper examines the role of resource
35 allocation as a management control mechanism.
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38 **2. Literature Review**

39 The practice of adopting management systems that historically were more prevalent in private
40 sector businesses into public organizations is not new (Peters, 1993; Vogel and Hattke, 2018;
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3 Bobe and Kober, 2020). Drawing upon the works of Metcalfe and Richards (1987) and Pollitt
4 and Bouckaert (2000), Try and Radnor (2007) noted: “While precise definitions of NPM are
5 difficult ... four key ideas: efficiency, management, accountability and organizational culture, are
6 common in [the] discussion of NPM” (p. 656). They also note that implementing the ideas of
7 NPM “... explicitly requires sufficient managerial flexibility to respond to changing
8 circumstances and emerging needs” (p. 666). Managerial flexibility represents enhanced
9 decision-making authority, access to financial and other resources, and a lack of procedural
10 hurdles which are also the tenets of a decentralized management structure and RCM (Savoie,
11 2003; Anthony and Govindarajan, 2007; Try and Radnor, 2007).

12 13 14 15 16 17 18 19 *2.1 Responsibility Centre Management*

20 According to Fabozzi *et al.* (2008), responsibility centre management (RCM) may be defined as
21 the “...designation of decision centers – referred to as responsibility centers – and the development
22 of a system of data collection and analysis of financial information to evaluate the performance of
23 these responsibility centers” (p. 330) thereby making it both a planning and a control technique.
24 A fundamental purpose of RCM is to communicate corporate values through its resource
25 allocations and ensure that each of the decentralized units is financially responsible for the
26 common costs they incur (Whalen, 1991; Strauss and Curry, 2002; Melnyk *et al.*, 2014), which
27 collectively should contribute to enhanced organizational performance.

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34 Within the academic context, “[r]esponsibility center management devolves budget
35 responsibility and decision making to academic units while creating financial incentives for
36 academic units to pursue goals valued by central administration” (Jacquette *et al.*, 2018, p. 638).
37 Consequently, a desired outcome of RCM is goal congruence whereby “... *the actions people are*
38 *led to take in accordance with their perceived self-interest are also in the best interest of the*
39 *organization*” (Anthony and Govindarajan, 2007, p. 98; emphasis original). Furthermore, the two
40 important elements of RCM are (1) allocation of both revenues and costs, which enable units to
41 carry out their activities, and (2) performance measurement in order to hold them accountable for
42 achieving the desired outcomes (Merchant and Van der Stede, 2017). Deering and Sá (2014)
43 suggest that whereas RCM originally tended to be adopted to better align budgeting with planning
44 and organizational performance, more recent adoptions have been driven by a desire for efficiency.

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53 First applied to post-secondary settings in the late 1970s (Lang, 1999), RCM has gradually
54 become more accepted in HEIs with the publication of Whalen (1991) and Strauss and Curry
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(2002). Deering and Lang (2017) note that currently upwards of 70 major universities in United States and Canada use some form of RCM – although they also note that nomenclature varies. The literature related to RCM is not deep and tends to fall into three general categories: descriptive articles explaining what RCM is (e.g. Szatmary, 2011); expository works either advocating (Kosten, 2016) or decrying (Dubeck, 1997) the approach; and case studies which often focus on the technical details of a particular attempted implementation of RCM (Hearn *et al.*, 2006). Lang (1999) presents a thorough discussion of both the benefits and challenges of RCM.

There are many ways to parse the potential advantages of RCM (Lang, 1999) but most of these advantages flow from the notion that RCM places financial decision making and responsibility closer to the specific areas of the organization impacted by those decisions and by the supposition that moving the decisions in that way will result in more entrepreneurial behavior when managing revenues and more care when managing expenses (Hearn *et al.*, 2006). In terms of potential challenges or problems with RCM, Dubeck (1997), in a cogent critique of RCM, points out, among other issues, that the starting point for RCM calculations will largely determine the fairness of the resulting allocations and that, in the event of cost cuts, more efficient units could be disadvantaged because they have already dealt with inefficiencies and have less margin for further cost reductions. Lang (1999) also cautions that both the information and the managerial savvy necessary to successfully implement RCM may not be available.

Regardless of advantages and challenges of RCM, implementing such systems can be a daunting task and our paper documents and highlights this process. Cantor and Courant (2003) argue that full implementation of RCM is potentially damaging to the core identity of universities and must be modified in some way. Fourteen years following this observation, Deering and Lang (2017) assert that, in fact, RCM is virtually never fully implemented by post-secondary institutions. Our study focuses on steps taken to develop and gain acceptance of RCM at a mid-sized Canadian research university.

2.2 Budgeting

A significant element of RCM is resource or budgetary allocations to organizational units. Drawing upon the work of Wildavsky (2002), Benedetto *et al.* (2013) note that it “... is impossible to overestimate the importance of budgeting in public and private organizations, as well as in public administration ...” (p. 59). Brewer *et al.* (2020) define budgeting as “... the process used by [organizations] to describe, in financial terms, how they intend to achieve their financial and

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3 nonfinancial objectives - in other words, their strategy.... A budget is a quantitative plan for
4 acquiring and using financial and other resources” (p. 272). However, in order for budgeting to
5 be a meaningful process, it must be integrated with strategic planning and strategy implementation
6 to ensure that revenue and cost allocation also aligns with the organization’s short- and long-term
7 plans (Jones, 1995; Haberaecker, 2004; Zierdt, 2009; Libby and Lindsay, 2010). Fairbairn (2017)
8 notes that “budgets are a critical way to communicate what is important to an institution (plans,
9 priorities, strategy, values), and – most concretely – they allocate the resources that leaders in the
10 organization are mandated to use to fulfill priorities” (p. 32).

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17 Barr and McClellan (2018) highlight a variety of approaches used in post-secondary budgeting
18 at the institutional level. These approaches include all-funds budgeting, formula budgeting,
19 incremental budgeting, initiative-based budgeting, zero-based budgeting, and responsibility centre
20 budgeting. Responsibility centre budgeting (RCB) is a management control mechanism that
21 allocates both revenues and costs to individual units and aligns with a decentralized approach to
22 structuring an organization (Myers, 2019). “A central element of the logic behind RCB, [within a
23 university context], is to face faculties with the university’s financial problem (i.e., the budget
24 constraint). From an economics perspective, this allows *aligned* decentralization of decision-
25 making authority to the faculty level, where the faculty makes the academic decision but faces the
26 university’s financial realities” (Myers, 2019, p. 14; emphasis original).

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34 The traditional incremental budgeting approach, which slightly modifies historically allocated
35 amounts, may be difficult to justify in a more dynamic environment due to the differential and
36 changing needs across organizational units. In contrast, activity-based budgeting (ABB) “... is a
37 resource-based budget model that focuses on generating a budget explicitly from the activities and
38 resources of the organization” (Kenno and Sainty, 2017, p. 497). A critical requirement of an
39 activity-based model is an understanding of the activities, the resources, and the basis for allocating
40 resources and costs. Recently, Kenno and Sainty (2017) documented the challenges of
41 implementing ABB at a Canadian university. Understanding budgeting in HEIs is critical because
42 these institutions are organizations like any other decentralized corporation or public institution
43 and a critical component of society. Consequently, it is important that they be properly managed
44 in order to achieve their goals and objectives thus providing value to their various stakeholders.
45 Benedetto *et al.* (2013) offer several reasons “... why a better understanding of budgeting is of
46 high relevance in the context of Higher Education Studies” (p. 75). Our study highlights the
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3 structure of the resource allocation system used at UCAN as well as examines the process of
4 introducing change. The next section discusses the methodology that we used to conduct this
5 study.
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10 **3. Methodology**

11 The purpose of this study is to examine the design, development, and implementation of RCM at
12 a mid-sized Canadian university within the context of decentralized decision making. We used a
13 qualitative case study methodology, rooted in grounded theory (Glaser and Strauss, 1967; Glaser,
14 1992), as our primary approach to collect, code, analyze and report the data. Yin (2009) describes
15 a case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-
16 life context” (p. 18). A qualitative approach was most appropriate given the study’s exploratory
17 focus on the ‘why’ and ‘how’ of RCM implementation. The qualitative approach is “... an
18 umbrella term covering an array of interpretive techniques which seek to describe, decode,
19 translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less
20 naturally occurring phenomenon in the social world” (p. 520).
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29 We collected primary data, using semi-structured interviews, from a total of ten relatively
30 senior individuals (see Table 1 for more information about the study’s participants) of whom three
31 were from central administration and the remaining seven from individual operating units (we use
32 the terms responsibility centre, revenue centre, academic unit and college interchangeably
33 throughout this paper when referring to an individual operating unit).
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39 Additionally, one of the authors was closely involved, at a senior-level, with TABBS
40 implementation over a five-year period starting with the Development Two phase which offered a
41 unique and insightful perspective when examining this system (but was not among the ten
42 participants whom we interviewed as part of our study).
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46 We selected participants who were knowledgeable about the system either because they
47 were involved in the design, development, and implementation or because they had directly
48 interacted with central administration regarding resource and cost allocation. The descriptive and
49 exploratory nature of this study did not lend itself to using a set of structured interview questions.
50 Rather, our interviews were focused on addressing broad themes such as the objectives (purposes)
51 of implementing RCM, the process underlying its design, development, and implementation,
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enabling mechanisms, and outcomes. Prior to conducting the interviews, all participants were informed about the objectives of the study and the kinds of information we were looking to collect in accordance with the research ethics guidelines governing our study. All interviews were approximately 60 minutes long and were conversational in nature. We also collected relevant secondary data from various organizational documents, videos, and presentations available on UCAN's website. Our use of a grounded theory (Glaser & Strauss, 1967; Glaser, 2008), involved a 'bottoms-up' or inductive approach to constructing/developing a theory derived from the data, was used to code, organize, and report emergent themes arising from the data.

4. Findings

Although the long-term success of RCM and TABBS at UCAN remains to be determined, there were several immediate and short-term effects and findings. In the short-term the TABBS budget model has been implemented and is informing revenue and cost allocation decisions. In alignment with the approach used in the interviews we present our findings regarding the objectives of TABBS, its design, development, and implementation, enabling mechanisms, challenges, and outcomes.

4.1 Objectives of TABBS

Prior to the early 2000s budget allocations at UCAN were determined based on historical allocations plus some (normally positive) adjustment or "... incremental budgeting, a centralized top-down approach characterized by central control of all unrestricted revenues" (Myers, 2019, p. 13). The challenge with this approach for central administrators was that there was no way of knowing with confidence whether individual colleges were receiving allocations proportionate to their achievements and contributions to the university's mission, or, conversely, there was no way of determining if individual college expenses were appropriate given their activity levels. One may argue that the allocation system of the past did very little to motivate or enhance organizational performance.

The centralized incremental budgeting approach essentially meant that the current year's budget was primarily based on the previous year's line item budgets and, consequently, deans had very little discretion in the use and college-level allocation of their budgets. This lack of freedom limited both the ability and the motivation of deans to manage their expenses and revenues and one potential consequence of this is that they were forced to "... construct individual simplified

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3 cause-effect models of the reality they are confronted with” (Bobe and Kober, 2020, p. 235) .
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5 Finally, just as central administrators were not always confident in the appropriateness of the
6 allocation decisions, the logic of the historical allocation that was assigned to individual colleges
7 was not always clear to the broader campus community or other stakeholders.
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10 Given the above background, TABBS had three primary objectives: (1) implement a new
11 revenue and cost allocation model, (2) improve internal controls, and (3) enhance transparency.
12 The “TABBS” acronym, “Transparent Activity Based Budgeting System” was intended to reflect
13 those three primary objectives. An overarching desired outcome of TABBS was to enhance the
14 alignment between budgeting and strategic planning, and to enhance organizational performance
15 (i.e., effectiveness and efficiency).
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20 *4.2 Design, Development, and Implementation*

21 Designing, developing, and implementing the TABBS model occurred over an extended time-
22 period. Indeed, in certain critical ways it is not yet completed in that, although the model is
23 informing allocations, it continues to be modified and refined. As illustrated in Figure 1, the
24 process unfolded over five distinct phases: (1) Conceptualization, (2) Design, (3) Development
25 One, (4) Development Two and (5) Implementation.
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32 UCAN introduced an integrated planning process in 2002 with each plan extending
33 approximately five years. The problem of revenue and cost allocation was identified during the
34 first integrated planning process and a commitment to develop a solution was made in the second
35 plan, or about 2007. Phase one of the process, then, began in approximately 2002. During the
36 Conceptualization phase it was concluded that what was really required was an alternate way of
37 managing budgeting and the overall finances of the university. Initially the emphasis was on
38 simply developing a budgeting tool. That tool eventually evolved into TABBS. As one participant
39 from central administration noted,
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47 [the goal was to develop] budgetary tools that would give us a line of sight into our
48 expenditures and our resources and give us some comfort that we were resourcing our
49 priorities.
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52 As the discussion unfolded, it became evident that simply providing unit leaders additional insight
53 into their budgets and finances served no purpose if they were not also given more discretion in
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3 managing those finances (Try and Radnor, 2007). Consequently, financial decision-making
4 authority and responsibility was placed in the hands of leaders within individual responsibility
5 centres. However, this delegation of decision-making authority and responsibility requires a
6 careful understanding of the relationship between the individual responsibility centres and the
7 financial services office at the university level, as observed by a participant representing central
8 administration.
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15 There's a lot more responsibility now placed in the hands of deans and financial
16 analysts in the units than there would have been before. So, there has to be a lot of
17 renegotiation ... of the relationship between [the] financial services division [at] the
18 university [level] and all of these multiple units out there that are managing their
19 budgets.
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22 The implication is that rather than TABBS being developed as one element of RCM, the effort to
23 develop a more transparent budgeting tool led to the adoption of RCM. From a broader
24 implementation perspective this finding also suggests that management control systems are not
25 necessarily implemented using a specific template or by following a linear path (i.e., the decision
26 to decentralize precedes the development of individual elements of the system).
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31 Whereas exploratory conversations and consultations were conducted during the
32 conceptualization period, beginning in 2009 (Phase 2), concerted efforts to design the system
33 began. This design phase included a literature review as well as interviews with key people from
34 several other universities in Canada, the United States, and overseas, that had previous experience
35 with RCM. Specifically, a senior central administrator and member of the design team noted as
36 follows:
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42 The universities that we interviewed were the University of Toronto, the University of
43 Otago in New Zealand, Indiana University [Bloomington], the University of Michigan
44 and Iowa State [University].
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47 Internally, extensive consultations were held including open town-hall meetings. During
48 the design phase objectives were articulated and modified. A participant from one of the academic
49 units (revenue centre) outlined the approach:
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52 We had workshops and the workshops were small group discussions. [Then, we were]
53 brought back together to talk about different allocation elements and when we talked about
54 tuition allocation, how should that be allocated and why. So, there were multiple options
55 presented to the teams and then we came back, and we would go away. We would talk
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3 about it in our small groups. We would consider other models. We would come back and
4 say we agree with this option.
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7 As a result of the consultation process, seven principles were agreed upon that would ultimately
8 provide the foundation and guidelines to develop the model. Those principles were: transparency;
9 strategically aligned, incentive-based; highly consultative; informative; sustainability; stewardship
10 and accountability; and comprehensive and pervasive scope. It was agreed that the critical
11 elements of the model would be (1) a responsibility management structure, (2) revenue allocation
12 of both tuition and the provincial operating grant, (3) expense allocation of both direct and indirect
13 expenses to those units that benefit from the expenditure, (4) creation of a central strategic fund
14 (that would allow for a modest amount of revenues to be strategically allocated, at the discretion
15 of central administration, outside of the model) and (5) a staged transition period.
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22 Given the general understanding stemming from the conceptualization and design phases,
23 the approach taken in the Development One phase was quite methodical. The work of developing
24 the model was undertaken by administration. An ad hoc advisory committee, the Model
25 Development Oversight Committee (MDOT), was struck, and there were frequent consultations
26 with various academic committees that reported to University Council (the academic governance
27 body of UCAN), and management committees that were chaired by, or reported to, the Provost.
28 The resulting model distinguished between revenue centres and support centres. In practice the
29 revenue centres are the colleges (academic units) and the support centres are the administrative or
30 support units (e.g., facilities), as illustrated in Figure 2.
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39 In the first iteration of TABBS, revenues allocated to the academic units (colleges)
40 originated from two sources: student tuition and the provincial government grant. Additional
41 revenue, such as donations or targeted and federal grants were not allocated through TABBS.
42 Tuition and the provincial grants were allocated using two overarching drivers that reflected the
43 university's mission: teaching activity and research, which, in turn, had several sub-drivers (see
44 Figure 3). Tuition revenue was allocated based on the relative proportion of teaching responsibility
45 of each college. For example, if a student was registered in one academic unit but taking a course
46 in a different one, the tuition for that course was shared.
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3 The provincial grant was allocated to the revenue centres based on weighted student
4 numbers and tri-council research grants.¹ The first iteration of TABBS used an algorithm similar
5 to what the province initially used to allocate the grant to the university (i.e., an algorithmic
6 approach). With this approach the TABBS model explicitly adopted an activity-based budgeting
7 approach (Cooper and Kaplan, 1999) that calculated the budget allocation based entirely on
8 activity without the consideration of historical budgets. On the cost side, support centre costs were
9 allocated to the academic units (i.e., revenue centres) using a combination of the principles of
10 reciprocal service cost allocation (Datar and Rajan, 2017) and activity-based costing (Brewer *et*
11 *al.*, 2020). The final allocation bases were student headcount, faculty and staff headcount, research
12 activity and physical space occupied (see Figure 4).
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22 The first version of the TABBS model revealed several potential problems. Using the
23 algorithmic approach to allocate the provincial government grant resulted in an extremely complex
24 and volatile model which was very difficult to explain to affected stakeholders. As the TABBS
25 model was subsequently refined the allocations changed significantly creating further confusion
26 amongst campus leaders. Adopting this first version of the model would have resulted in a major
27 realignment of the budget, in some cases amounting to millions of dollars transferring in or out of
28 individual colleges, thereby creating an impression of winners and losers and those terms
29 becoming the language and characterization of the model (a potentially undesirable outcome).
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36 The Development One phase came to an end in 2012 due to a major disruption in the
37 university's senior leadership team. Within a period of a few weeks the provost resigned, and the
38 university's president was fired. As a result, the model was set aside. Interim leadership was put
39 in place and the model was not revisited until 2014 when a second round of development work
40 was undertaken.
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44 The Development Two phase was characterized by consultations that were held primarily
45 with deans and administrators and select key committees of University Council, but general town-
46 halls were discontinued. Unfortunately, the more focused consultations created the perception in
47 some quarters that consultations had completely ceased as noted by a revenue centre administrator,
48 potentially leading to frustration among at least some individuals.
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3 They [initially] had town halls on ... every module and people could come out and say
4 what they thought of it ... but then when they made this fundamental change a couple
5 a years ago, that I talked about, it was pretty much developed behind closed doors.
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8 Throughout the second phase of development the primary and original objectives and guiding
9 principles were retained, as were the main components of the model (although the underlying
10 measures of those components were further revised). Two key changes were made. First, while
11 maintaining the variables (i.e., metrics) used in the provincial allocation model the underlying
12 complex algorithm was discarded. With that change, whereas previously only tri-Council grants
13 were considered in the model, all types of research grants were rewarded with tri-Council grants
14 being given a higher weighting than grants from other sources (see Figure 3b).
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22 The second significant change related to how TABBS was to be used. Rather than using
23 the model to determine a unit's entire funding envelope, a "hold-neutral" implementation year was
24 adopted. Consequently, TABBS did not immediately reset budgets, but began to impact budgets
25 incrementally going forward. In other words, it was constructed so that the decisions made over
26 the years during which the historical budget had been derived and used, were assumed to be
27 legitimate and therefore the historical budget could be used as a starting point. TABBS, therefore,
28 was implemented as a key influence of future budgets rather than as a tool intended to set right
29 any possible historical inequities. This change was more aligned with the idea of continuous
30 improvement rather than one of 'wholesale transformation'. Critically, the revised approach was
31 intended to eliminate the perception of winners and losers – at least initially.
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39 Following the second development phase the model was fully implemented.
40 Implementation involved establishing a base year and then using TABBS to calculate incremental
41 changes to college allocations. These changes were based on the relative performance of a college
42 as compared to other colleges. If a college's teaching activity or research activity increased relative
43 to other colleges, then, assuming stable or increasing funding to the university, that college's
44 allocation would likely increase. Costs were allocated in a similar way: if a college's proportion
45 of cost drivers, for example, staff head count, increased relative to other colleges' then that college
46 was assigned a greater proportion of costs. Administrators also retained a portion of the overall
47 budget to allocate, outside of the TABBS model, on more of a strategic basis. This approach
48 allowed allocations to be made prospectively based on strategic plans, thereby enhancing the
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3 alignment between budgeting and strategic planning which was a desired overarching outcome. It
4 also allowed the allocations to be smoothed over time in the event that the TABBS allocation
5 resulted in an unmanageable change in a year-over-year allocation.
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8 TABBS has informed allocations at UCAN for three years as of this writing. From at least
9 some perspectives, TABBS can be considered a success, but some significant challenges have also
10 arisen which are still being managed. Several enabling mechanisms that have contributed to its
11 successful implementation are identified next, followed by a discussion of some of the challenges
12 and outcomes.
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17 *4.3 Enabling Mechanisms*

18 The study's participants identified three enabling mechanisms that contributed positively to the
19 design, development, and implementation processes: (1) consultation, (2) communication and
20 information sharing, and (3) model adjustment and refinements.
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24 During the design and development phases, especially the first phase, there was extremely
25 broad-based consultation and information sessions open to any campus member who wished to
26 attend. Communications in the second phase focused primarily on responsibility centre leadership,
27 but also involved numerous workshops and consultations. Additionally, as changes were made to
28 the model that information was communicated and shared with relevant stakeholders. Objectives
29 and timelines for implementation were also shared. Finally, the consultations resulted in
30 adjustments to the model based on feedback and, in some instances, group problem solving. The
31 following statements made by a central administrator and a responsibility centre dean,
32 respectively, captures the prevailing sentiment regarding the opportunity to provide feedback:
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39 The deans, in various forms, have the ability to provide feedback.
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41 Feedback through verbal commentary at Deans' Council, feedback through offering
42 the verbal commentary at our meetings here [within the college], occasionally e-mails
43 if it felt appropriate, but the main commentary—the main way of providing feedback
44 would be verbal.
45
46

47 Collectively each of the enabling mechanisms contributed to providing an opportunity or venue
48 for the program to operate.
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50 *4.4 Implementation Challenges*

51 The design, development, and implementation of a system such as the RCM at a large public
52 institution is unlikely to happen without hurdles or challenges. The loss of a key administrative
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3 champion of TABBS and RCM in 2012 set back the development several years. Once developed,
4 a major challenge to the successful implementation of TABBS was simply unfortunate timing. The
5 year when TABBS was first implemented, the total provincial allocation to UCAN was cut by
6 approximately eleven percent through a series of permanent and one-time adjustments. The result
7 was that all colleges received a budget cut regardless of their performance on TABBS metrics.
8 The effect was that an evaluation of TABBS was confounded by a shrinking resource pool.
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13 A third challenge, as predicted by Dubeck (1997), was that choosing a single year as the
14 budget base going forward raised the risk that the year chosen was anomalous for some colleges,
15 thereby under or overstating what their base budget should have been. For example, one college
16 had just experienced several years of exceptional student growth after which baseline metrics were
17 established for RCM purposes; consequently, this college's base budget may have been inflated
18 relative to other colleges. Several participants noted this issue; one revenue centre administrator
19 commented,
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26 It [the base year allocation] flowed through to us in the first year of the model and
27 unfortunately it continues to haunt us.
28

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30 The fourth challenge is that TABBS rewards growth, but only if the growth exceeds the
31 relative performance of other colleges. Couple that dynamic with a shrinking overall budget and
32 the potential for unhealthy competition between colleges becomes very real. Within the context
33 of the formula for tuition revenue allocation, a responsibility centre dean observed as follows when
34 discussing the hypothetical benefits of offering their own courses for subject matter that was
35 historically taught by other colleges,
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41 We are not supposed to be doing that because that is cherry picking from other colleges
42 but that is the environment that we are kind of in. But at Deans' Council, as deans, we
43 try to work together so that we don't actually end up doing that.
44

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46 The competitive nature of TABBS has also created a perception that the model inhibits
47 intercollege/interdisciplinary work and cooperation.
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49
50 Related to the fact that TABBS rewards growth, some colleges note that they do not have
51 proportionate growth opportunities. Lack of growth opportunity can arise simply because of
52 limited seat availability for students. For example, several professional colleges have caps on their
53 admissions related to job placement opportunities for their graduates. Conversely, as budget cuts
54 were realized concurrently with the introduction of RCM, one college which had previously been
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3 operating and covering its direct costs primarily on tuition revenue without benefit of the
4 government operating grant was now expected to further reduce its costs (as predicted by Dubeck,
5 (1997)).
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8 A final, and somewhat vexing, problem for revenue centres under TABBS is that they have
9 no control, and very little insight, into the budget allocations of support centres, even though the
10 support centre budgets are pulled from the revenue centres. This point was captured by
11 administrators from two different responsibility centres as follows.
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16 Right now, there is no accountability of the support centres back to the revenue centres
17 who are paying for those services.
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20 We know the total costs at an institutional level now of the support centres. We know
21 what our share of that is based on the different methods ... what's not easy to see is
22 the support centre's budget.
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5. Discussion

In an enduring effort to enhance organizational productivity, performance, and transparency the use of responsibility centre management as an approach to management control, within the broad concept of new public management (Pollitt and Bouckaert, 2000; Ferlie *et al.*, 2008) has been steadily increasing in higher education institutions over the past few decades (Jacquette *et al.*, 2018; Myers, 2019). Integral to RCM is resource allocation (Anthony and Young, 2003; Benedetto *et al.*, 2013) which can take several forms (Barr and McClellan, 2018). TABBS, the resource allocation model adopted by UCAN, draws upon the concepts of responsibility centre budgeting, activity-based budgeting/costing, and reciprocal service department cost allocation (Cooper and Kaplan, 1991; Datar and Rajan, 2017; Myers, 2018; Brewer *et al.*, 2020).

Implementing any kind of change is usually a complex exercise regardless of the nature of the organization or its size. Two factors important to our study further enhance the complexity of this exercise – first, the context of our study is a large complex public institution, and second, the change involves (and therefore affects) revenue and cost allocation. Among the challenges that many Canadian universities likely face are factors such as governance mechanisms, the presence of unions and institutional constraints such as capacity. On a more positive note, however, it is important to recognize that despite the vacuum created at the senior most leadership level during 2012-14, the program was not aborted. Regardless, a natural question that follows when such change is introduced is whether the institution has achieved its primary objectives, which were as follows: (1) implement a new resource allocation model, (2) improve internal control and (3) enhance transparency.

As of this writing the TABBS model is in use at UCAN and continues to be used to partially allocate resources with a portion of unit budgets being allocated on strategic or prospective criteria. The model is currently under review, with attention being devoted to allowing interdisciplinary and inter-college activities without disadvantaging individual colleges. In acknowledgement of cost-allocation concerns expressed by some revenue centres, work is also underway in order to provide revenue centre administrators better insight and input into support centre costs and budgets. It should also be noted that Deering and Lang's (2017) observation that RCM is never fully deployed holds true at UCAN. A significant portion of the budget allocation does not flow through TABBS but is allocated on other grounds (i.e., restricted and/or strategic allocations). Further, the change in the implementation of TABBS which began from a base year rather than a

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3 full-blown allocation of revenues and costs based solely on current activity marked a necessary
4 but significant step back from the underlying RCM principles.
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7 More generally, TABBS has undoubtedly impacted conversations around the campus,
8 decision making among deans, and influenced how those decisions are communicated. For
9 example, several colleges have adjusted assignment of duties to individual faculty based on
10 TABBS metrics. Consequently, the model is being viewed with increasing skepticism and
11 occasionally outright hostility by some faculty. UCAN's Faculty Association has recently
12 expressed its opposition to the use of TABBS for allocation decisions. The long-term effect of
13 these misgivings remains to be seen. It is perhaps fair to say that other possible outcomes and their
14 potential effects on performance along the two important dimensions of research and teaching are
15 difficult to predict.
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22 The cost allocation side of the TABBS model is quite complex; however, the allocation
23 exercise has attracted the attention of revenue centres to these costs. This allocation also provides
24 an opportunity for revenue centre managers to raise efficiency and accountability related questions
25 of the different support centres. It also allows central administration to identify ways to derive
26 and/or enhance the efficiency of the 26 service departments grouped under the five support centres
27 (see Figure 4). It is well documented that allocation systems that are built on the principles of
28 activity-based costing offer the advantage to organizations to conduct activity analyses in order to
29 identify value-added and non value-added activities (Brewer *et al.*, 2020; Cooper and Kaplan,
30 1999), sometimes in conjunction with other practices such as lean management (Gopalakrishnan
31 *et al.*, 2017; Lu *et al.*, 2017). Two recent changes are the centralization of routinized transactional
32 work as well as information and communications technology. The campus is still adjusting to
33 these last changes, but it has been noted by some deans that the desire to decentralize decision
34 making while centralizing certain service functions, potentially creates a structural tension which
35 may need to be resolved at a future point.
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48 **6. Conclusions**

49 The purpose of this study was to examine the design, development, and implementation of
50 responsibility centre management at a mid-sized Canadian university within the context of
51 decentralized decision making. The main learnings from our research are that (1) such systems
52 take time (years) to develop and implement, (2) consultation, communication and information
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3 sharing, and model adjustments and refinements are necessary and important enabling
4 mechanisms, (3) internal and external events are likely to pose significant challenges, (4) although
5 such systems are often designed keeping in mind several intended outcomes there exists the
6 possibility of experiencing some unintended consequences, and (5) the juxtaposition of the above
7 has the potential to positively or negatively impact organizational performance.
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12 Our study also highlighted the sensitivities associated with adopting new allocation models
13 that impact both the revenue and cost side of resource allocation. These sensitivities can
14 potentially lead to dysfunctional behaviour among academic unit managers, and UCAN's senior
15 leaders must at least become "... aware of and sensitive to the behavioral implications of their ...
16 planning models" (Kaplan and Atkinson, 1989; p. 79). One way to mitigate potential dysfunctional
17 behaviour is to enhance the transparency of the allocation process, via constant communication
18 and feedback mechanisms, so that key personnel at the responsibility centre level do not see the
19 allocation model as a 'black box'. In other words, the central administration should be accountable
20 to the revenue centres in helping them unlock the black box and doing this can potentially enhance
21 the confidence among responsibility centre managers with respect to the allocation process and the
22 revenues and costs that are ultimately allocated to their individual revenue centres. In return
23 responsibility centre managers may be more willing to maintain accountability at their end not just
24 for the effective utilization of resources but also for providing central administration with relevant
25 and accurate data to be used as input in the allocation process. This double-loop of accountability
26 (see Figure 5) can foster a healthier relationship between central administration and the individual
27 revenue centres (i.e., academic units). As such we strongly believe this double-loop of
28 accountability is an important tenet of an effective responsibility centre management system.
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43 On a final note, it is hard to predict how TABBS and, indeed, the RCM framework will
44 continue to unfold in the foreseeable future, what it might look like, whether it will even continue
45 to exist, or how it might impact organizational performance. For instance, some key players may
46 even begin to question the purpose of RCM and TABBS implementation given that cost and
47 revenue allocations are a zero-sum game. Whalen (2002) observes that the true test of RCM "lies
48 in whether or not it results in more effective use of academic resources" (p.9). To date no study
49 has attempted to directly address the effectiveness question and, at UCAN, several more years will
50 need to pass before any attempt can be made to systematically consider the program's
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effectiveness. Clearly, UCAN is operating with significantly fewer resources than it did in the recent past. Nonetheless, it must be conceded that the situation of reduced budgets was contextual rather than either a driver or an outcome of RCM.

Upon reflection, our study highlights resource allocation as a critical managerial tool in that it has the potential to influence many of the desired outcomes of a management control system including "... planning, coordination, communication, evaluation, decision making and behaviour influencing" (Klassen *et al.*, 2019; p. 106). Resource allocation is integral to budgeting and especially so in a decentralized setting; Benedetto *et al.* (2013) emphasize this point as follows:

We argue that budgeting is a central locus where [internal organizational processes] can be observed and measured: first, control and management of resources is a central set of organizational processes which are critical for organizational control; second, given its direct connection with resources and organizational activities, budgeting is a place where the practical implications of organizational change can be observed more directly than, for example, looking at formal structures and strategic documents (p. 69).

An important contribution of this study is that it documents the journey of RCM implementation at UCAN, using primary data collected via interviews and secondary data via relevant internal documents accessed through UCAN's website. In doing so, it provides valuable information about the importance of an open, participative and iterative process that a complex organization must adopt en route to implementing what could be labelled as a systemic change that has the potential to disrupt existing strategic planning and operational practices. Such information, coupled with the findings regarding enabling mechanisms and implementation challenges, can be useful to other similar organizations that may be contemplating such change. We strongly believe that this study's contribution also extends to other complex public organizations (e.g., school system, healthcare, government). This research contributes to teaching in that it provides an opportunity for students to study management control concepts, such as RCM, in a context that is outside of large corporations as well as one that students are part of and intimately familiar with.

This study has the potential to stimulate additional research at the UCAN, other higher educational institutions and public organizations in general, to examine the design, development and implementation of RCM at a systemic level or related to its individual components as identified throughout the analysis. Possible questions for future exploration could include the consistency of practice, the extent to which the principles of RCM are understood and implemented

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3 uniformly from one institution to another, the objectives of RCM and why are institutions moving
4 to RCM, as well as the efficacy of RCM: once implemented, are the desired management and
5 strategic outcomes being achieved? These questions are important given the move towards both
6 new public management (Dobija *et al.*, 2019) and responsibility centre management (Strauss and
7 Curry, 2002) in higher educational institutions, and the critical role of budgeting (resource
8 allocation) in a decentralized setting (Benedetto *et al.*, 2013).
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11 Our study is not without limitations. The first limitation is that this is a single case study.
12 The second (related) limitation is that our data was collected through interviews with only ten
13 individuals. The third limitation is the timing of the data collection (January to March 2017) –
14 during the period that the first budget using TABBS was in the process of being rolled out.
15 Consequently, some of the respondents may have been apprehensive about the model. A final
16 limitation may be related to our and the respondents' understanding and interpretation of the model
17 and individual biases pertaining to the model.
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Table 1. Study's Participants

Participant Reference	Representing	Title/Position	Gender
CAP – 1	Central administration	Senior Administrator (Academic)	Male
CAP – 2	Central administration	Administrator (Planning)	Male
CAP – 3	Central administration	Administrator (Financial Services)	Female
RCP – 1	Responsibility centre 1	Dean	Male
RCP – 2	Responsibility centre 1	Director (Resources)	Female
RCP – 3	Responsibility centre 2	Dean	Female
RCP – 4	Responsibility centre 2	Chief Operating Officer	Female
RCP – 5	Responsibility centre 2	Director (Finance)	Female
RCP – 6	Responsibility centre 3	Director (Administration)	Female
RCP – 7	Responsibility centre 4	Director (Finance & Administration)	Male

Figure 1. Implementation Process

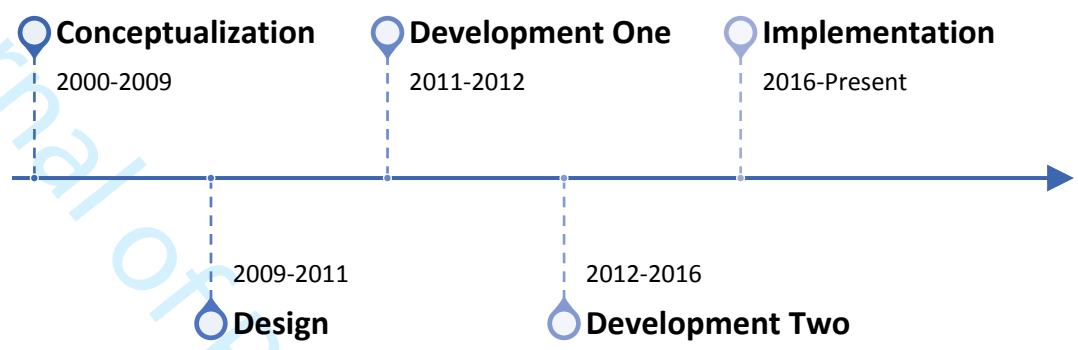


Figure 2. Responsibility Centres

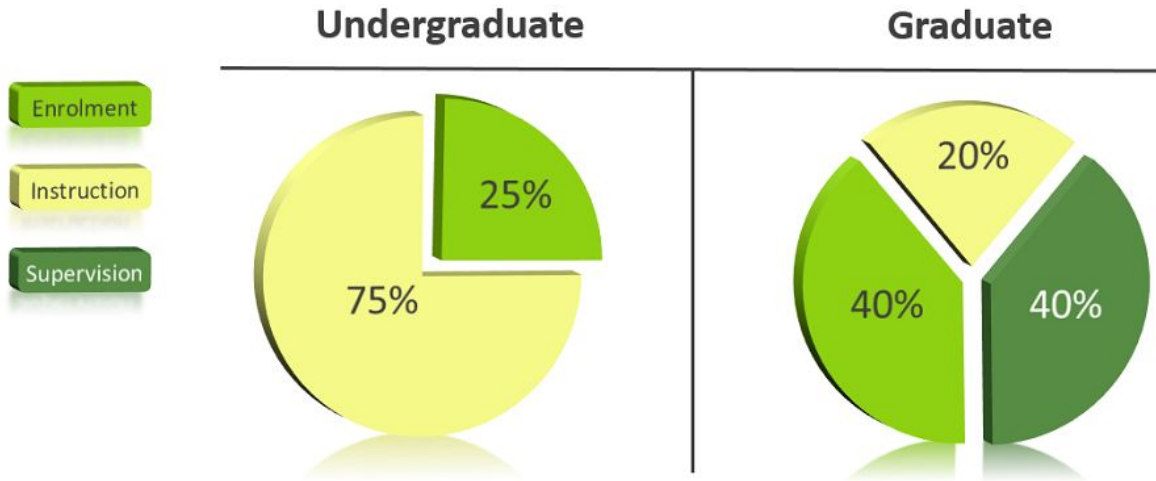
Responsibility Centres



Source: [UCAN'S website](#)

Figure 3a. Allocation of Tuition Revenue

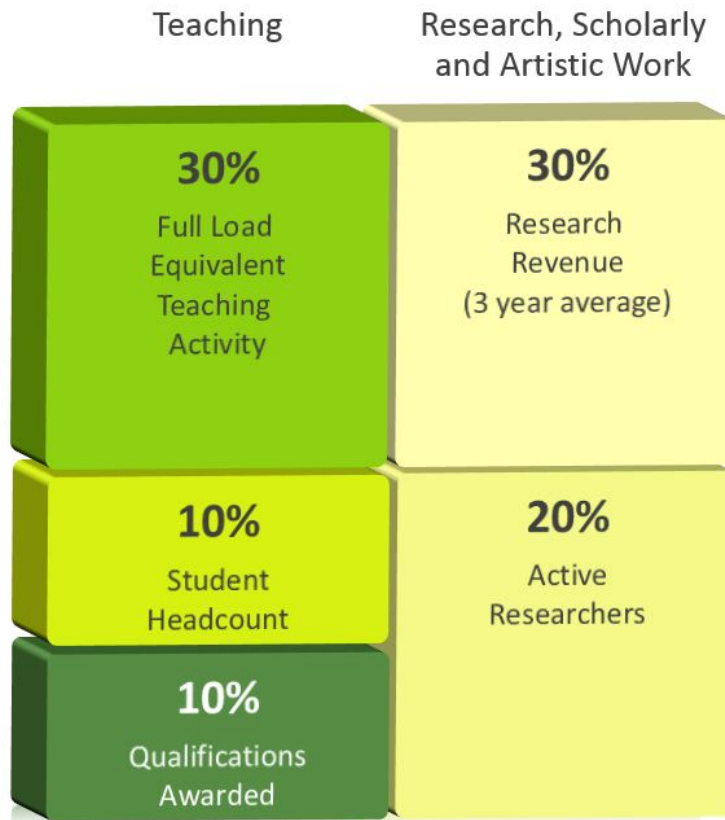
Tuition Allocation Percentages



Source: UCAN's website

Figure 3b. Allocation of Provincial Grant Revenue

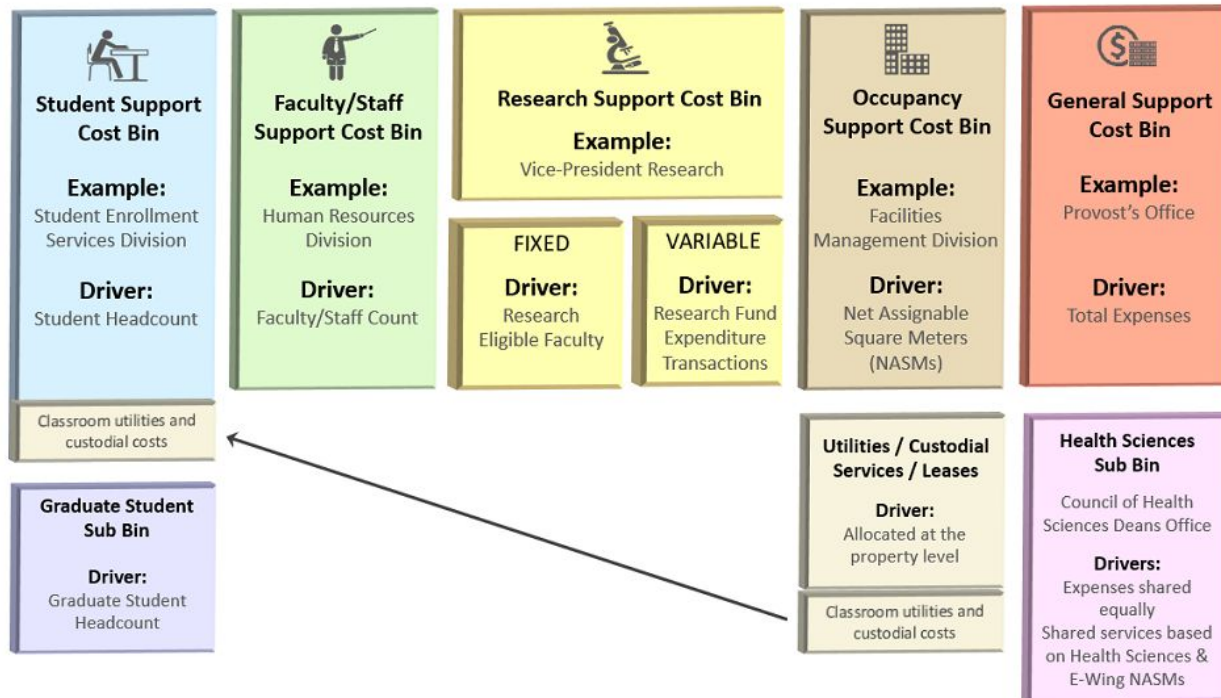
Unrestricted Provincial Operating Grant



Source: [UCAN's website](#)

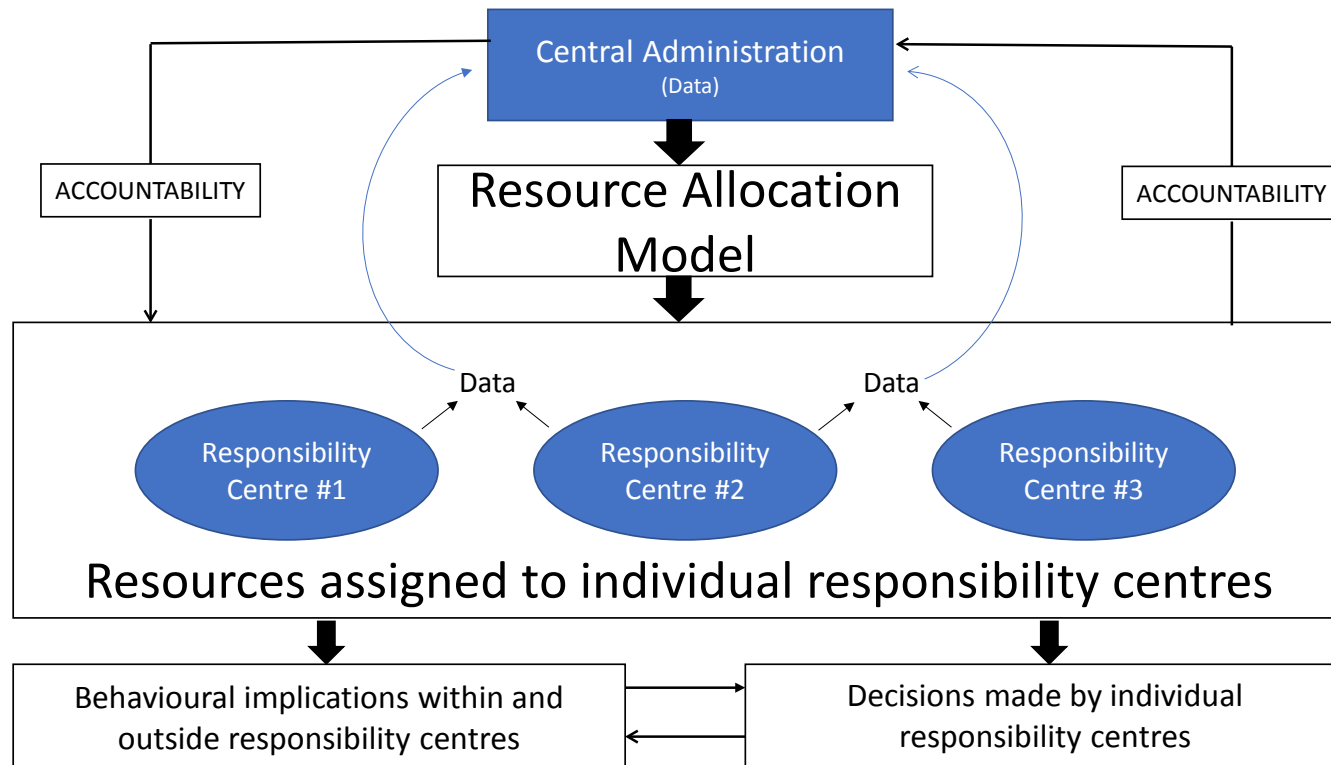
Figure 4. Allocation of Support Centre Costs

Indirect Cost Bins & Cost Drivers



Source: [UCAN's website](#)

Figure 5. Resource Allocation and Accountability in an RCM Setting



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Notes

ⁱ The term tri-council includes three granting agencies: Natural Sciences and Engineering Research Council (NSERC), Social Sciences and Humanities Research Council (SSHRC) and the Canadian Institutes of Health Research (CIHR).

International Journal of Productivity and Performance Management

Implementing Responsibility Centre Management in a Higher Educational Institution Response to Reviewers' Comments

Reviewer 1

Recommendation: Minor Revision

1. Please divide your paper into sub-sections so that the readers more understand the flow - the broader until to the deeper discussion of the paper.

For example:

2. Literature Review

2.1 Introduction

2.2 RCM

Thank you for your suggestion; we have done this.

2. Please be consistent with the writeup in the whole paper. For example, the objective of this study is missing the word 'development'. The objective written in the abstract, page.6 and conclusion are not same. So please revise it.

Thank you for your suggestion; we have now revised the wording of our research objective and ensured that it is stated consistently in different parts of the paper.

Additional Questions:

1. Originality: Does the paper contain new and significant information adequate to justify publication?: Yes. the paper is suitable for the publication purpose. The authors are able to provide strong justification/arguments in each section of the paper.

Thank you

2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work ignored?: Yes, the paper demonstrate a good flow of literature review. Nevertheless, it is suggested that the paper should be divided into sub-sections so that the readers more understand the flow - the broader until to the deeper discussion of the paper.

For example:

2. Literature Review

2.1 Introduction

2.2 RCM

Thank you. We have organized the literature review section into sub-sections as suggested.

3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual work on which the paper is based been well designed? Are the methods employed appropriate?: There is no argument about the

methodology part of this paper. This paper has presented an excellent writeup for methodology part. The authors expert in the qualitative method.

Thank you

4. Results: Are results presented clearly and analysed appropriately? Do the conclusions adequately tie together the other elements of the paper?: Yes. The results presented clearly and analysed appropriately and achieved the objective of this paper.

Thank you

5. Implications for research, practice and/or society: Does the paper identify clearly any implications for research, practice and/or society? Does the paper bridge the gap between theory and practice? How can the research be used in practice (economic and commercial impact), in teaching, to influence public policy, in research (contributing to the body of knowledge)? What is the impact upon society (influencing public attitudes, affecting quality of life)? Are these implications consistent with the findings and conclusions of the paper?: 1.The paper has identified clearly the implications of this research especially to the higher education sector.

2. Yes. It clearly stated the gap between theory and practice.

3. This research can be used in the Higher Education sector in regards to the resource allocation model of RCM, which I think very few higher education institutions have applied this approach.

4. The flow of this paper is easy to understand, which consistent with the findings and conclusions of the paper.

Thank you

6. Quality of Communication: Does the paper clearly express its case, measured against the technical language of the field and the expected knowledge of the journal's readership? Has attention been paid to the clarity of expression and readability, such as sentence structure, jargon use, acronyms, etc.: The quality of this paper in terms of language is accepted. But I suggest that this paper to be sent to proofreading as to improve the way of the academics writeup style.

Thank you for the suggestion; we, and another individual external to this study, have proof-read the revised version.

Reviewer 2

Recommendation: Reject

Comments:

I am sorry on this occasion I have not been able to provide a positive recommendation. Authors may wish to consider the possibility of submitting this paper to an academic journal (higher education, studies in higher education,...). I hope these recommendations help you to improve your manuscript.

Additional Questions:

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3 1. Originality: Does the paper contain new and significant information adequate to justify
4 publication?: I think that the purpose of your paper is not clear enough, neither in the
5 introduction. It needs to be explained and stated more clearly. Then, readers will be able to
6 follow your argument and logic more easily. In addition, I do believe that your proposal is an
7 interesting first step in this field of research. However, I cannot see the real contribution of your
8 manuscript. In my opinion, I think that you should give it a greater emphasis to responsibility
9 centre management in the current context. In this sense, a good approach could be to make a
10 theoretical analysis about management control in university context.
11
12

13 Thank you for your observations and suggestions. We have made revisions throughout the paper
14 to address each of your comments. Additionally, we have enhanced our focus on responsibility
15 centre management in the literature review, findings, and discussion sections (please see our
16 responses below to the remaining points).
17
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19 For instance, we have reworded the objective of the paper to read as follows:
20

21 The purpose of this study is to examine the design, development, and implementation of
22 responsibility centre management at a mid-sized Canadian university, within the context of
23 decentralized decision making.
24
25

26 We have identified other changes in response to your comments provided below.
27
28

29 2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the
30 relevant literature in the field and cite an appropriate range of literature sources? Is any
31 significant work ignored?: In my opinion, the organization of the ideas in your paper can be
32 improved. The structure is not clear, and this makes it difficult to follow your analysis and
33 reasoning. You have done an important effort explaining systematically each of the figures
34 included. However, I think that you have paid too much attention to some aspects that have been
35 well developed in the responsibility centre management in higher education institution. For
36 instance, in my opinion, you should clarify the centre management in academic context. Also, I
37 think that the paper needs a greater number of papers that complete the theoretical framework.
38 Here you find some examples:
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40

41 Bobe, B.J. & Kober, R. (2020) University dean personal characteristics and use of management
42 control systems and performance measures, *Studies in Higher Education*, 45(2), 235-257
43

44 Vogel, R. & Hattke, F. (2018) How is the Use of Performance Information Related to
45 Performance of Public Sector Professionals? Evidence from the Field of Academic Research,
46 *Public Performance & Management Review*, 41:2, 390-414,
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48

49 I would recommend you to be more systematic and coherent when discussing the variables, you
50 have included and I would encourage you to present clearer preliminary and partial conclusions.
51 On the other hand, I think that one of the most interesting contributions of your work would be
52 the design of responsibility centre management in academia. From my point of view, you should
53 go a step further in this element of your study and to bring it centre-stage in your argument.
54 Please, look for more and recent references to complete this section of your manuscript.
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4 Thank you for your suggestions. We have reorganized the literature review section by including
5 individual sub-sections on responsibility centre management (RCM) and budgeting.
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8 As suggested, we have significantly expanded the discussion on responsibility centre
9 management as shown below (Section 2.1).
10

11 According to Fabozzi *et al.* (2008), responsibility centre management (RCM) may be defined as
12 the "...designation of decision centers – referred to as responsibility centers – and the development
13 of a system of data collection and analysis of financial information to evaluate the performance of
14 these responsibility centers" (p. 330) thereby making it both a planning and a control technique.
15 A fundamental purpose of RCM is to communicate corporate values through its resource
16 allocations and ensure that each of the decentralized units is financially responsible for the
17 common costs they incur (Whalen, 1991; Strauss and Curry, 2002; Melnyk *et al.*, 2014), which
18 collectively should contribute to enhanced organizational performance.
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22 Within the academic context, "[r]esponsibility center management devolves budget
23 responsibility and decision making to academic units while creating financial incentives for
24 academic units to pursue goals valued by central administration" (Jacquette *et al.*, 2018, p. 638).
25 Consequently, a desired outcome of RCM is goal congruence whereby "... *the actions people are*
26 *led to take in accordance with their perceived self-interest are also in the best interest of the*
27 *organization*" (Anthony and Govindarajan, 2007, p. 98; emphasis original). Furthermore, the two
28 important elements of RCM are (1) allocation of both revenues and costs, which enable units to
29 carry out their activities, and (2) performance measurement in order to hold them accountable for
30 achieving the desired outcomes (Merchant and Van der Stede, 2017). Deering and Sá (2014)
31 suggest that whereas RCM originally tended to be adopted to better align budgeting with planning
32 and organizational performance, more recent adoptions have been driven by a desire for efficiency.
33
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36 First applied to post-secondary settings in the late 1970s (Lang, 1999), RCM has gradually
37 become more accepted in HEIs with the publication of Whalen (1991) and Strauss and Curry
38 (2002). Deering and Lang (2017) note that currently upwards of 70 major universities in United
39 States and Canada use some form of RCM – although they also note that nomenclature varies. The
40 literature related to RCM is not deep and tends to fall into three general categories: descriptive
41 articles explaining what RCM is (e.g. Szatmary, 2011); expository works either advocating
42 (Kosten, 2016) or decrying (Dubeck, 1997) the approach; and case studies which often focus on
43 the technical details of a particular attempted implementation of RCM (Hearn *et al.*, 2006). Lang
44 (1999) presents a thorough discussion of both the benefits and challenges of RCM.
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48 There are many ways to parse the potential advantages of RCM (Lang, 1999) but most of
49 these advantages flow from the notion that RCM places financial decision making and
50 responsibility closer to the specific areas of the organization impacted by those decisions and by
51 the supposition that moving the decisions in that way will result in more entrepreneurial behavior
52 when managing revenues and more care when managing expenses (Hearn *et al.*, 2006). In terms
53 of potential challenges or problems with RCM, Dubeck (1997), in a cogent critique of RCM,
54 points out, among other issues, that the starting point for RCM calculations will largely determine
55 the fairness of the resulting allocations and that, in the event of cost cuts, more efficient units
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could be disadvantaged because they have already dealt with inefficiencies and have less margin for further cost reductions. Lang (1999) also cautions that both the information and the managerial savvy necessary to successfully implement RCM may not be available.

Regardless of advantages and challenges of RCM, implementing such systems can be a daunting task and our paper documents and highlights this process. Cantor and Courant (2003) argue that full implementation of RCM is potentially damaging to the core identity of universities and must be modified in some way. Fourteen years following this observation, Deering and Lang (2017) assert that, in fact, RCM is virtually never fully implemented by post-secondary institutions. Our study focuses on steps taken to develop and gain acceptance of RCM at a mid-sized Canadian research university.

We have also included material on responsibility centre budgeting in the second paragraph of Sub-section 2.2.

Responsibility centre budgeting (RCB) is a management control mechanism that allocates both revenues and costs to individual units and aligns with a decentralized approach to structuring an organization (Myers, 2019). “A central element of the logic behind RCB, [within a university context], is to face faculties with the university’s financial problem (i.e., the budget constraint). From an economics perspective, this allows *aligned* decentralization of decision-making authority to the faculty level, where the faculty makes the academic decision but faces the university’s financial realities” (Myers, 2019, p. 14; emphasis original).

Where appropriate, we have cited the following additional references

Bobe, B.J. and Kober, R. (2020), “University dean personal characteristics and use of management control systems and performance measures”, *Studies in Higher Education*, Vol. 45 No. 2, pp. 235-257.

Fabozzi, F.J., Drake, P.P., and Polimeni, R.S. (2008), *The Complete CFO Handbook: From Accounting to Accountability*, John Wiley & Sons, Hoboken, NJ.

Glaser, B. (2008). *Doing Quantitative Grounded Theory*, Sociology Press, Mill Valley, CA.

Jacquette, O., Kramer, D. A. II and Curs, B. R. (2018), “Growing the pie? The effect of responsibility center management on tuition revenue”, *The Journal of Higher Education*, Vol. 89 No. 5, pp. 637-676.

Myers, G. M. (2019), “Responsibility center budgeting as a mechanism to deal with academic moral hazard”, *Canadian Journal of Higher Education*, Vol. 49 No. 3, pp. 13-23.

Vogel, R. and Hattke, F. (2018), “How is the use of performance information related to performance of public sector professionals? Evidence from the field of academic research”, *Public Performance & Management Review*, Vol. 41 No. 2, pp. 390-414.

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3 Finally, in response to your suggestion regarding making RCM the central element of the study,
4 we have added the following text, in the second paragraph of the Conclusions section. As well,
5 we have included a new Figure 5.
6

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8 One way to mitigate potential dysfunctional behaviour is to enhance the transparency of the
9 allocation process, via constant communication and feedback mechanisms, so that key personnel
10 at the responsibility centre level do not see the allocation model as a 'black box'. In other words,
11 the central administration should be accountable to the revenue centres in helping them unlock the
12 black box and doing this can potentially enhance the confidence among responsibility centre
13 managers with respect to the allocation process and the revenues and costs that are ultimately
14 allocated to their individual revenue centres. In return responsibility centre managers may be more
15 willing to maintain accountability at their end not just for the effective utilization of resources but
16 also for providing central administration with relevant and accurate data to be used as input in the
17 allocation process. This double-loop of accountability (see Figure 5) can foster a healthier
18 relationship between central administration and the individual revenue centres (i.e., academic
19 units). As such we strongly believe this double loop of accountability is an important tenet of an
20 effective responsibility centre management system.
21

22 << Insert Figure 5 about here >>
23
24

25 3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or
26 other ideas? Has the research or equivalent intellectual work on which the paper is based been
27 well designed? Are the methods employed appropriate?: This section would be interesting to
28 provide more information about the participants (experience, age, gender, etc.) and the case
29 study. In my opinion, you should provide a table to analyze the information of the participants
30 and the case study. Also, I think that the participants should know the objective of your research
31 in order to deepen the case analysis, as well as the questions to be raised (see page 7 of your
32 manuscript).
33
34

35 We have included a table (Table 1) which provides details of the participants that were
36 interviewed and included the following text, in the last paragraph of the Methodology section,
37 which clarifies other observations made above.
38
39

40 Prior to conducting the interviews, all participants were informed about the objectives of the
41 study and the kinds of information we were looking to collect in accordance with the research
42 ethics guidelines governing our study. All interviews were approximately 60 minutes long and
43 were conversational in nature. We also collected relevant secondary data from various
44 organizational documents, videos, and presentations available on UCAN's website. Our use of a
45 grounded theory (Glaser & Strauss, 1967; Glaser, 2008), involved a 'bottoms-up' or inductive
46 approach to constructing/developing a theory derived from the data, was used to code, organize,
47 and report emergent themes arising from the data.
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50 4. Results: Are results presented clearly and analysed appropriately? Do the conclusions
51 adequately tie together the other elements of the paper?: I have serious doubts about how they
52 have related each of the stages of the results and the interpretation of their comments. I believe
53 that a triangulation of the findings is missing. Also, I think that you should analyze the specific
54 comments of each participant in each section. For that, I recommend that you list each
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3 participant so that it is easier to identify them. Finally, in my opinion, I think this study should be
4 accompanied by a quantitative methodology to complement the design of responsibility centre
5 management.
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8 Thank you for your observations. This research project was exploratory which is why we used a
9 qualitative research design which, we believe, more closely aligns with the exploratory nature of
10 this research. Consequently, we did not collect any quantitative data. Having said that, future
11 research may collect data that can be examined using quantitative analytical tools.
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13
14 With respect to the analysis, we used a grounded theory approach as mentioned at the end of the
15 Methodology section. This approach was used while collecting data and to code the data to
16 identify the emerging themes resulting from the interviews. Additionally, information collected
17 from relevant documents available on UCAN's website has also been incorporated into the
18 analysis in an effort to triangulate the data and findings.
19

20
21 As suggested, we have revised the Findings section to clearly highlight quotes from participants
22 by double-indenting them and placing them as separate standalone paragraphs (see example
23 provided below) and by making several editorial changes to enhance the clarity of our
24 presentation of the results.
25

26
27 There's a lot more responsibility now placed in the hands of deans and financial
28 analysts in the units than there would have been before. So, there has to be a lot of
29 renegotiation ... of the relationship between [the] financial services division [at] the
30 university [level] and all of these multiple units out there that are managing their
31 budgets.
32

33 We have also revised the Discussion section by including the following at the start of the section:
34

35
36 In an enduring effort to enhance organizational productivity, performance, and transparency the
37 use of responsibility centre management as an approach to management control, within the broad
38 concept of new public management (Pollitt and Bouckaert, 2004; Ferlie *et al.*, 2008) has been
39 steadily increasing in higher education institutions over the past few decades (Jacquette *et al.*,
40 2018; Myers, 2019). Integral to RCM is resource allocation (Anthony and Young, 2003; Benedetto
41 *et al.*, 2013) which can take several forms (Barr and McClellan, 2018). TABBS, the resource
42 allocation model adopted by UCAN, draws upon the concepts of responsibility centre budgeting,
43 activity-based budgeting/costing, and reciprocal service department cost allocation (Cooper and
44 Kaplan, 1991; Datar and Rajan, 2017; Myers, 2018; Brewer *et al.*, 2020).
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47 5. Implications for research, practice and/or society: Does the paper identify clearly any
48 implications for research, practice and/or society? Does the paper bridge the gap between theory
49 and practice? How can the research be used in practice (economic and commercial impact), in
50 teaching, to influence public policy, in research (contributing to the body of knowledge)? What
51 is the impact upon society (influencing public attitudes, affecting quality of life)? Are these
52 implications consistent with the findings and conclusions of the paper?: You need to be more
53 explicit about paper's implications for practitioners, academics and the society. In my opinion,
54 the implications section is weak and do not show the contribution of your work.
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4 Thank you for your suggestion regarding clarifying the contributions of our paper. We have
5 included the following in the Conclusions section of the paper (third paragraph from the bottom).
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8 An important contribution of this study is that it documents the journey of RCM implementation
9 at UCAN, using primary data collected via interviews and secondary data via relevant internal
10 documents accessed through UCAN's website. In doing so, it provides valuable information
11 about the importance of an open, participative and iterative process that a complex organization
12 must adopt en route to implementing what could be labelled as a systemic change that has the
13 potential to disrupt existing strategic planning and operational practices. Such information,
14 coupled with the findings regarding enabling mechanisms and implementation challenges, can be
15 useful to other similar organizations that may be contemplating such change. We strongly
16 believe that this study's contribution also extends to other complex public organizations (e.g.,
17 school system, healthcare, government). This research contributes to teaching in that it provides
18 an opportunity for students to study management control concepts, such as RCM, in a context
19 that is outside of large corporations and also one that students are part of and intimately familiar
20 with.
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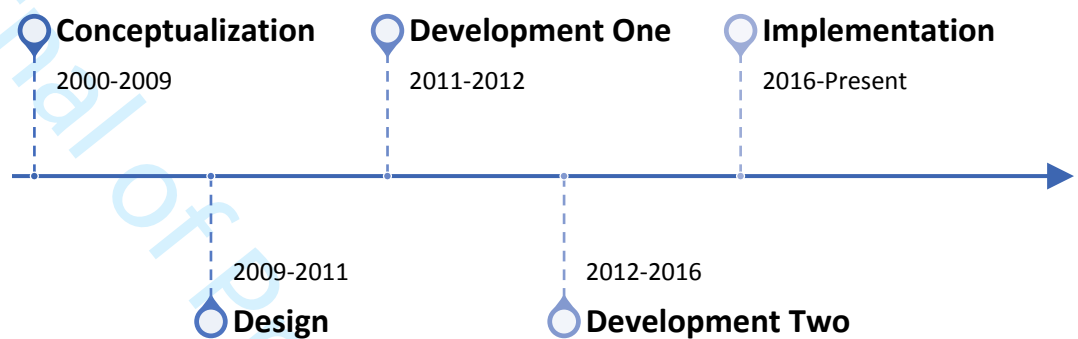
24 6. Quality of Communication: Does the paper clearly express its case, measured against the
25 technical language of the field and the expected knowledge of the journal's readership? Has
26 attention been paid to the clarity of expression and readability, such as sentence structure, jargon
27 use, acronyms, etc.: This manuscript has a clear and technical language of the field. Quality of
28 communication is adequate.
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31 Thank you
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Table 1. Study's Participants

Participant Reference	Representing	Title/Position	Gender
CAP – 1	Central administration	Senior Administrator (Academic)	Male
CAP – 2	Central administration	Administrator (Planning)	Male
CAP – 3	Central administration	Administrator (Financial Services)	Female
RCP – 1	Responsibility centre 1	Dean	Male
RCP – 2	Responsibility centre 1	Director (Resources)	Female
RCP – 3	Responsibility centre 2	Dean	Female
RCP – 4	Responsibility centre 2	Chief Operating Officer	Female
RCP – 5	Responsibility centre 2	Director (Finance)	Female
RCP – 6	Responsibility centre 3	Director (Administration)	Female
RCP – 7	Responsibility centre 4	Director (Finance & Administration)	Male

Figure 1. Implementation Process



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Figure 2. Responsibility Centres

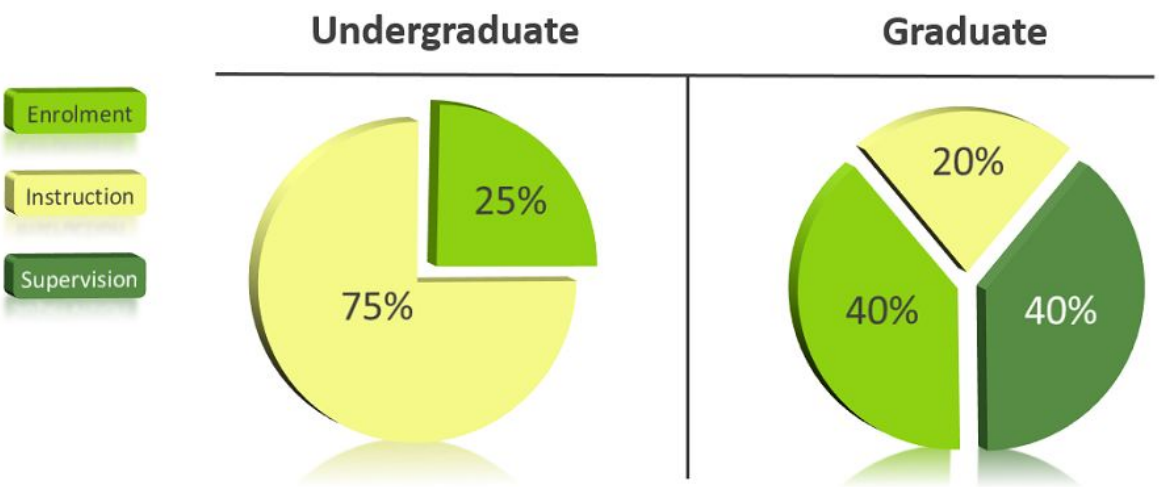
Responsibility Centres



Source: [UCAN'S website](#)

Figure 3a. Allocation of Tuition Revenue

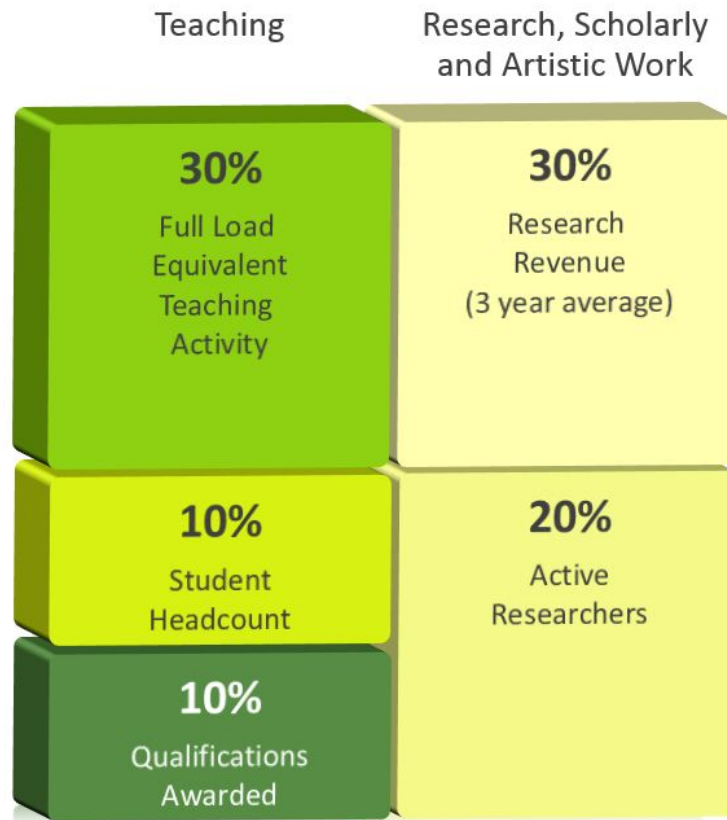
Tuition Allocation Percentages



Source: UCAN's website

Figure 3b. Allocation of Provincial Grant Revenue

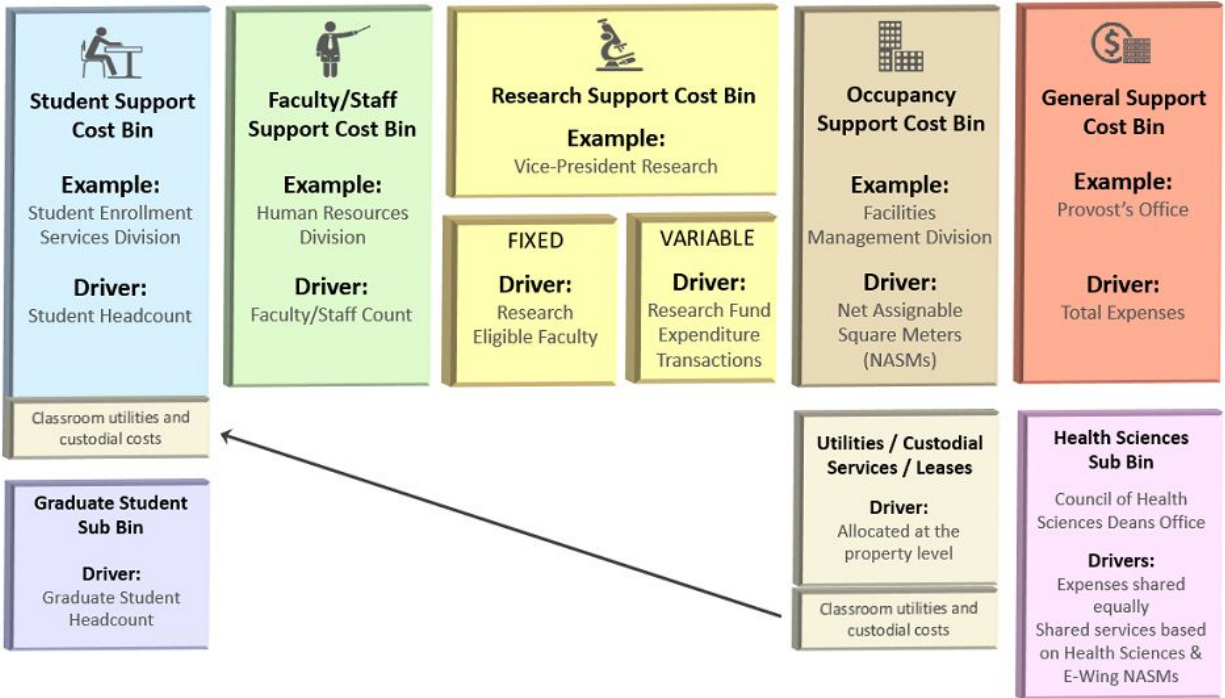
Unrestricted Provincial Operating Grant



Source: [UCAN's website](#)

Figure 4. Allocation of Support Centre Costs

Indirect Cost Bins & Cost Drivers



Source: [UCAN's website](#)

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Figure 5. Resource Allocation and Accountability in an RCM Setting

