

PRASE



Final Report of the Working Group on Budget Modeling Stage 1

27 June 2012

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EXECUTIVE SUMMARY

The budget context for York continues to become increasingly complex and challenging. York has seen tremendous enrolment growth since its establishment, especially in the past 12 years, but the budget processes and functions have not kept pace with the growth making it difficult to provide appropriate incentives to Faculties and units, and to align resources effectively. The incremental adjustments made year over year have moreover contributed to a lack of understanding and transparency with respect to budget decisions. In order to address these challenges, the PRASE Working Group on Budget Models (WGBM) recommends that York adopt budget processes and functions that will provide a decentralized, transparent and accountable model for resource allocation and management. Maintaining the status quo is not an option.

The WGBM developed principles to guide its research and to inform its work and recommendations. Those principles are that a new budget model for the University would need to: align with institutional goals and priorities; be transparent; provide predictable and sustainable basis for planning; have performance incentives and accountability; and have clear and straightforward allocation methodologies.

Having evaluated potential models against these principles, the WGBM recommends a *Shared Accountability and Resource Planning (SHARP)* budget model for York University.

Key features of SHARP are:

- Resource allocation to Faculties based on the revenues they generate (primarily grant and tuition income) with costs of university-wide expenses being charged back in a transparent and repeatable manner;
- A formalized Budget Committee with broad representation;
- Rigorous shared accountability for resource management that is closest to the activity and/or decision (e.g. enrolment targets set at institutional level; Faculties responsible for achieving local enrolment targets and for costs incurred locally);
- A University Fund that provides resources for the transition to a new model and for strategic initiatives in line with University priorities (e.g. interdisciplinary and comprehensiveness, graduate education); and
- A formal contingency fund to manage institutional risks and unforeseen costs.

SHARP is based on an activity-based budget model (ABB) that has been modified to include elements of other budget models. These elements introduce their own strengths, but also minimize the drawbacks of ABB, maximize incentives for activities, strengthen York's existing Integrated Resource Planning (IRP) framework, and mitigate the risks associated with the devolution of responsibility of resource management through a clear accountability framework.

Broad consultation regarding the recommendation took place in May and June (2012) and input from the community has been incorporated in the final Stage Report 1. Moving forward with Stage 2 requires the approval of the PRASE Executive Sponsors and the University's Budget Committee. Transitioning to a new budget model will require careful consideration of complex financial, human resource and systems

implications. A key deliverable for Stage 2 will therefore be a detailed conceptual model and a recommendation on transition strategies and the length of the transition period.

THE CONTEXT

The revenue supporting higher education institutions in Canada comes predominately from government grants and tuition fees. Among the provinces, Ontario has historically had the lowest operating grant per full-time equivalent student (COU, 2007; COU, 2012). The rising costs of other public expenditures such as health care as well as increasing global competition for both faculty and students in the last decade have intensified the external pressures facing the post-secondary sector. A resultant trend has been an increase in expectations for public sector institutions to display ostensibly rational budget procedures that incorporate purposive action, accountability and performance measures, and environmental responsiveness.

These external pressures impact on the internal functions of universities in a number of ways. In an extensive review of over 50 years of accounting research literature, Banović (2005) states that high budget pressures result in interpersonal conflicts, distrust, budget slack and upward biasing. Reducing these dysfunctional budget effects requires the active participation of institutional members. Foremost, open communication is needed to ensure that the primary role of the budget in enabling the University to fulfill its mission is understood. While there is no universally appropriate budgetary approach that applies equally well in all organizations, resources must be aligned with strategic priorities in such a way as to achieve maximum benefit. To do so requires a transparent budget model and an accountability framework that holds managers responsible for those things over which they have reasonable control.

In response to increasing budget complexity and the need to understand budget allocations better, York University undertook a Budget Process Review (BPR) in 2006. The report concluded that the current centralized budget model was complicated, historically-based, poorly understood, informal, disconnected and resource intensive. The importance of ensuring a sustainable budget model to align resources with strategic priorities as articulated in planning documents was stated as an imperative. Beginning in September 2007, the University implemented a fully Integrated Resource Planning (IRP) framework and in 2009, the University underwent an intensive planning phase culminating in the White Paper and a new University Academic Plan 2010 - 2015 (UAP).

To ensure that adequate supports were in place for the successful implementation of the UAP, the President charged the Provost and Vice President Academic, and the Vice President Finance and Administration to conduct a comprehensive budget resources review (BRR) to examine institutional and divisional level revenue and expenditure processes and practices. This process expanded into the Process Re-engineering and Service Enhancement (PRASE) project and *PricewaterhouseCoopers* (PwC) was hired to assist York in identifying challenges and opportunities for advancing institutional goals. The PRASE Report identified the budget model together with the development of a broader

accountability framework as one of four critical areas for the University. The Working Group on Budget Models (WGBM) was thus created in the summer of 2011 to develop *Terms of Reference* (see Appendix 1) and to undertake Stage 1 that was to culminate in a recommendation for a new budget model for York University (see Appendix 2 for further methodological details).

The remainder of this Report provides:

- an overview of the principles that provide the rationale for assessing budget models
- a brief summary of budget models that exist in other post-secondary institutions
- a brief summary of the methodology used to arrive at the recommendations provided in the report
- the recommendation for a *Shared Accountability and Resource Planning budget model*
- key features that will require further consideration and/or decisions
- next steps including consultations with members of the community
- relevant appendices

PRINCIPLES FOR ASSESSING BUDGET MODELS

In the context of the concerns previously identified in regards to York's current budget model and the PwC Report, it was clear that the status quo was not an option. The WGBM identified five principles for assessing budget options in order to provide for an appropriate recommendation. These principles were validated through extensive consultations with community members (see Appendix 3). It was agreed that the new budget model must:

- 1) support the academic goals of the institution through the alignment of resources to priorities as outlined in our planning documents (the White paper, University Academic Plan and Faculty/School plans, IR Plans);
- 2) be transparent;
- 3) provide for a predictable and sustainable framework for budget planning;
- 4) provide performance incentives and ensure accountability (i.e., clarifying how budget plans are made and at what levels of university administration, and ensuring that those responsible are accountable for the decisions made); and
- 5) provide for clear and straightforward allocation methodologies.

AN OVERVIEW OF BUDGET MODELS

An extensive review of the literature highlighted an important clarification that is relevant to our understanding of budget models. Budget models are comprised of a *budget allocation method* as well as an accountability framework that specifies the processes by which decisions about the budget are made including discretionary elements such as the authority and values of relevant decision makers (Hanlon, 2008). There are five commonly used types of budget models that distribute revenue differently and with different implications for the budget system that supports the allocation of resources. Case studies from various universities show however that institutions adjust the models to fit "their contextual characteristics of culture, history and structure" (Jarzabkowski, 2002) and in most cases elements of one or more models have been combined. The five models and brief definitions for each are provided below:

1) An *incremental budget model* takes the previous year's budget and adds or subtracts from it to arrive at the proposed period's budget. York University's current budget model is predominately incremental. Each year the base budget of each division is increased to cover the costs of negotiated salary increments and strategic funding, and decreased by across the board budget cuts, if relevant. The budget of the academic division is also adjusted according to enrolment increases or decreases. This budget approach is repeated within divisions through incremental adjustments to the base budgets of the faculties and units in the other divisions as appropriate.

2) A *formula-based budget model* analyses the historic institutional costs to determine how much funding is necessary to run programs at a given level of demand and distributes resources using a formula that reflects those costs (Lasher and Sullivan, 2004; Goldstein, 2005). Vandament (1989) points out that the basis for the formula might also include estimated trends and/or negotiated parameters to generate requested funding levels so essentially "formula budgeting is a method that calculates the amount of funding a program requires by applying selected measures of unit costs to selected output measures."

3) A *performance-based budget model* allocates funds to Faculties based on their ability to attain specific outcome measures defined in qualitative and/or quantitative terms (Goldstein, 2005). According to Young (2003), this type of budget model: i) sets a goal or goals to which monies are "connected" and distributes funds based on the specific objectives associated with each goal; and ii) compares progress with past performance (such as number of credits or sections taught, number of students and/or graduates) to allow meaningful comparisons between expected and actual progress (see also Gibson, 2009).

4) A *zero-based budget model* assumes the budget begins at a base of zero on an annual basis. Nothing is taken for granted or assumed to continue at the previous level without a rationale. Each Faculty does a

¹ Hanlon (2008) uses "budget system" to encompass the budget model (the allocation of resources) and the associated discretionary elements (including the authority and values of relevant decision makers) of the model. The nomenclature is inconsistent in the literature however and we have chosen to use the more common expression of "budget model" and we understand it to include both the budget resource allocation and accountability framework.

cost-benefit analysis that evaluates priorities and objectives, justifies the need for various activities, assesses alternatives and presents detailed plans to a university budget committee or senior administrative group (Boyd, 1982). Funds are flowed accordingly to support individual activities or programs, although in practice, the model is not used in any large or research-intensive public universities (i.e., institutions with doctoral programs) (Green, 2011) or only applied to a portion of the budget (Lang, 2000).

5) An *activity-based budget model* (also referred to as responsibility centered management or budgeting) assumes that revenue is allocated to Faculties based on the revenues they generate; Faculties are subsequently responsible for costs associated with the administration of their academic units and/or programs. These typically include space, service teaching, and a proportionate share of service costs delivered centrally by non-revenue generating offices (e.g., the admissions office). Incentives are created and barriers removed to allow Faculties to increase income and reduce costs consistent with their academic plans and priorities. Decision-making, including enrolment and tuition fees, is generally devolved to the faculties; however, an accountability framework determines decisions that require the authorization of the senior administration (Lang, 2000).

Table 1 on the next page provides a summary of the major weaknesses and strengths of each approach in the context of the five principles (for further elaboration including case studies and references - see Appendix 3). On the basis of that assessment and the internal interviews (discussed below), the WGBM is unanimous in its view that the current incremental budget model lacks the advantages of the ABB approach in particular, and a modified version of ABB should be developed incorporating certain features of other budget models to address

potential challenges that have been associated with ABB (e.g., supporting inter-faculty collaboration and ensuring adequate support for service learning).

In particular, York's incremental budget model shares weaknesses that have been identified in the literature regarding this approach. As each year's budget is based on the previous year, an incremental budget tends to lack the flexibility for the effective reallocation of resources to support new strategic priorities and as a consequence there is less incentive for innovation and efficiency. The year over year adjustments also involve multiple allocation formulae and make it difficult to account for historical arrangements that may be based on circumstances that no longer exist. While the model is reasonably predictable, the potential for a lack of alignment between revenue generation and allocation calls into question its sustainability.

Activity-based budget models generally receive higher marks. They are found to be effective for strengthening the link between planning and budgeting because decision-making is made by those who have the expertise and responsibility for the activities. This approach also encourages accountability, as the budget implications of academic decisions and the costs associated with centrally-provided services are transparent. Using repeatable formulae ensures a high level of predictability and allows for contingency planning at the divisional and Faculty levels. While ABB has been assessed as the approach that best addresses the weaknesses of York's current model and aligns best with the identified principles for effective budgeting, every budget model has some challenges. Those that have been identified in regards to ABB (see Table 1) will need to be addressed at the next stage when the full conceptual model is developed.

Table 1. Summary of Budget Strengths and Weaknesses

Principles	Budget Models				
	Incremental	Formula	Performance	Zero	Activity
Alignment of resources and priorities	Limited -assumes that priorities and objectives stay the same -insufficient flexibility for effective reallocation of resources in response to changes in strategic priorities or workload -acts as a disincentive for innovation	Potentially -centralized control allows for offering incentives that further institutional priorities -can result in perverse incentives to retain revenue-producing programs even if they no longer contribute to the mission or goals	Yes -aligns resources with outcomes -allows centralized approach to rewarding performance that the institution wants	Yes -funds are flowed to support priorities and objectives -limitation is that 80% or more of a Faculty budget continues each year in the form of fixed costs for personnel and other expenses	Yes -found to be effective for strengthening link between planning and budgeting because decision-making is closer to the front line where expertise is greater -community more likely to be engaged when impact of academic decisions on financial consequences is clearer
Transparency	No -may involve many historical arrangements -limited ability to account for use of funds	Yes -quantitative approach depoliticizes budgeting and reduces conflict if debate does not move to technical details of the formulae	No -difficulties with identifying quality indicators	No -involves a great deal of paperwork and effort on an annual basis but evaluations have shown that decisions do not differ from incremental approach	Yes -revenue earned by faculties is explicit -costs that are often known but not recognized are exposed including full costs of research and ancillary services -transparency around cross-subsidization including service teaching important to avoid unproductive competition and revenue poaching through "repatriation" of courses
Predictability and sustainability	Partially -conserves time and energy -pragmatic -maintains long-term commitments -generally understood by board members -but over time potential for a lack of alignment between revenue generation and the activities generating revenue	Partially -formulae used to allocate resources -based on costs so sustainable if funding is sufficient -little incentive for efficiencies	No -funding variable depending on performance -uncertainty about sustainability when nothing is taken for granted	No -impractical -unit planning extremely difficult because of uncertainty -has not resulted in increased efficiency	Yes -using repeatable formulae ensures high level of predictability and allows for contingency planning at the Faculty-level -inadequate managerial skills at the local level can be a problem for decentralized decision-making
Performance incentives and accountability	No -non-aggressive -little incentive to justify continuance of programs or to go after new opportunities -based more on inputs than outputs	No -Faculty does not necessarily keep revenue or savings from efficiencies -can discourage new programs and other innovations	Yes -incentives to make adjustments to programs during budget cycle to close performance gaps -emphasis on accountability	Yes -cost-benefit analysis done annually -all activities have to be justified -detailed plans submitted for approval	Yes -motivates entrepreneurial behavior and the generation of revenue to support Faculty -encourages efficiencies -redistribution of responsibilities to Faculties enhances accountability on part of managers for matters over which they have control -higher level managers able to focus on long term planning and policymaking -encourages efficiencies and enhanced service -many decisions devolved to Faculties so accountability framework is essential -coordination needs attention including incentives for interdisciplinary programs
Clear and straightforward allocation methodologies	No -complicated -often involves multiple methodologies built one on top of the other	Partially -straightforward, quantitative approach assuming that there is agreement on cost drivers -cost allocations may be problematic as units and programs often not discrete entities	No -debates about evaluation measures creates confusion -complexity of cause and effect relationship can be difficult to measure	No -cost allocations are problematic as units and programs often not discrete entities	Yes -allocation processes less subject to political manipulation -may assume more knowledge of revenue and costs than institution has available -high level support of budget information systems required

THE METHODOLOGY²

The WGBM has relied on several sources of information in arriving at the recommendation for a new budget model. The Working Group met with external institutions that had undergone similar reviews or were implementing a new budget model (see Appendix 4), performed an extensive literature review and research on budget models (results provided in Appendix 5), and conducted interviews with over 70 internal administrators directly involved in the preparation of budget plans (see Appendix 3). The AVP Finance and Chief Financial Officer, a member of the WGBM, provided an overview of York's current budget model and each member of the Working Group received a binder of reading materials including case studies of different budget models and analyses of budget models in post-secondary institutions most notably in the US and Canada.

The WGBM also elected to ask the Associate Vice President Graduate/Dean of Graduate Studies to form a subcommittee of the WGBM to reflect specifically on how a new budget model for the University might best support graduate education. The members of that subcommittee and the report they submitted to the WGBM are provided in Appendix 6.

The WGBM found a significant level of convergence between the insights from the internal interviews, the external practice and the literature on leading practices related to institutional resource planning and allocation methods. Combining these findings with the financial reality facing the post-secondary sector in Ontario, the WGBM concluded that a Shared Accountability and Resource Planning budget model has the greatest potential for meeting the expectations as set out in the Terms of Reference for a new budget approach at York University.

THE RECOMMENDATION FOR A SHARED ACCOUNTABILITY AND RESOURCE PLANNING (SHARP) BUDGET MODEL

The WGBM recommends a shared accountability and resource planning (SHARP) budget model. The model includes both a resource allocation method and an associated accountability framework that clarifies the authority for decision-making at the University. The resource allocation method of this model is a modified version of ABB that assumes shared financial responsibility for certain types of activities. Features of other budget models have been incorporated to introduce additional strengths, minimize the drawbacks of ABB, maximize incentives for activities, and to strengthen York's existing IRP framework.

SHARP is a custom budget model that builds on the foundation of the University's IRP framework by encompassing a transparent resource allocation method and a concomitant accountability framework that aligns with the University's collective priorities. SHARP is based on an understanding that, to the extent possible, accountability should be closest to those areas in which the activities take place and where responsibility for activities is located. The elements of the institutional accountability framework will need further development in subsequent stages but will clarify the institutional, divisional and Faculty roles and responsibilities as they relate to planning, decision making, service delivery, performance evaluation and financial stewardship.

It should be emphasized that the WGBM recommendation applies to the institutional level allocations to divisions and faculties. SHARP does not make presumptions about how funds would be distributed within faculties to academic units or to offices within the non-academic divisions. Each Faculty and Division will have to review for themselves the feasibility of cascading SHARP to their departments/units especially as cross-subsidization is typical at the local level.

The SHARP budget model essentially allocates resources to faculties based on the revenues they generate (including grant and tuition income) and faculties in turn are responsible for costs associated with the administration of their academic units and/or programs. Faculties also share responsibility for indirect costs including central services based on transparent formulae or cost drivers that would be developed in subsequent stages of the process.

Although some universities have restricted the application of a new budget model to "net new growth revenue," the dominant perspective on the part of the internal members who were interviewed and the recommendation of the WGBM, is to base the calculations on all relevant revenue. It is particularly challenging to limit the application of a new budget model to new revenue given that not all faculties are planning to grow in the near future and funding for enrolment is expected to slow in Ontario after 2015-16. A further challenge in focusing on growth revenue is that the largest portion of the base budget would still be subject to the same criticisms of the current incremental model including lack of transparency and the limited capacity to make budget adjustments.

Rigorous shared accountability for resource management is recommended based on the proximity to the activity. In the case of SHARP, for example, mandate agreements negotiated with government would be an institutional responsibility whereas faculties would be responsible for achieving local enrolment targets as agreed between the Faculty and the Office of the Vice President Academic/Provost. The model also recommends that a formulaic approach be taken to service teaching to ensure adequate and fair compensation for that activity, and that Divisions and Faculties be held accountable for the activities for which they have responsibility.

A central feature of the accountability framework that emerged from the interviews and literature review is the endorsement of a formal University Budget Committee that would include representatives from

² See Appendix 2 for further details.

key constituencies responsible for managing budgets (such as deans and executive officers) as well as those with central accountability (such as the Vice President Academic/Provost and Vice President Finance and Administration). The responsibilities of institutional-level budget committees vary but might include feedback on integrated resource plans, review of specific projects and/or performance metrics and evaluation, discussion of competing priorities and recommendations to the President or PVP.

The model also proposes that a University Fund or “set aside” be created for institutional priorities. Initially, a significant portion of the University Fund might be needed to hold faculties “harmless” during even relatively long transitions but then through faculty adjustments and/or increases that may occur as a result of revenue growth, the University Fund may be used for strategic allocations including incentives for institutional priorities, assistance for faculties on special projects and/or to help alleviate challenges.

Lastly, the model requires a formal contingency fund to manage institutional risks and unforeseen costs.

Should SHARP be adopted as a new budget model for the University, Stage 2 would focus on the development of a detailed conceptual model. The next section of this report outlines key features based on the analyses completed in Stage 1 that will need confirmation and/or further exploration.

KEY FEATURES OF A SHARED ACCOUNTABILITY AND RESOURCE PLANNING BUDGET MODEL

Eleven specific features are highlighted below based on input from Stage 1:

1) An Accountability Framework is an Essential Ingredient for Successful Implementation of SHARP

As noted in Figure 1, a major strength of budget models that are based on an ABB resource allocation is the associated redistribution of responsibilities to those managers for matters over which they have control (Whalen, 1991; Lang, 1999). This shift of responsibilities aligns decision-making with the organizational structure of the divisions and faculties within the university. In the case of SHARP, faculties would, for example, be encouraged to develop integrated resource plans based on the best combination of revenues and costs for the teaching, research and service activities that they manage. But they would do so within an accountability framework that ensures fairness, financial sustainability, and alignment with institutional planning documents such as the University Academic Plan and White Paper.

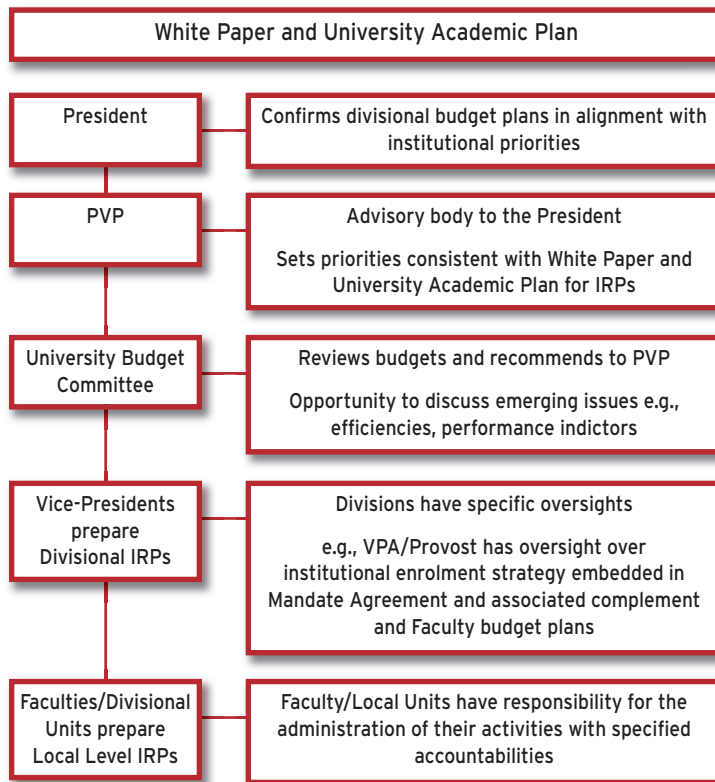
A fully formed accountability framework would articulate the structure (e.g., the division of labour including those services that would be performed centrally) and processes (e.g., planning, reporting, authority and decision-making, performance measures and evaluation) that are

optimal in terms of supporting strategic priorities (see Figure 1) (Horváth, 2011). More specifically, such a framework: i) clarifies roles and responsibilities at different levels of the University; ii) creates a space for having discussions about the balance between coordination and independence including shared responsibilities; iii) shifts the focus from control and compliance to priorities and outcomes; iv) provides senior administration with more opportunities to focus on institutional goals; and v) encourages accountability based on performance metrics for all divisions including faculties and central services. As noted above, many universities have a University Budget Committee that functions between the divisions and the senior academic administration and offers feedback on plans and recommendations to the President or senior academic administration regarding budgetary matters.

2) Importance of Planning for Transition

There was strong consensus among the internal administrators who were interviewed in Stage 1 that the current budget model does not align well with the principles articulated in the terms of reference. At the same time, there was broad appreciation that transitioning to a new budget model will have complex financial, human resource and systems implications requiring a reasonable transition period. Depending on the state of readiness for such a change, other universities have taken between one to five years. Faculties may need time to develop strategies for addressing any gap between current and new budget allocations. The University may not have easy access to the data it needs to estimate cost drivers and attribute costs of shared services. It may be necessary to provide training around financial planning to ensure that managers have adequate skills for supporting the new model (Lang, 1999). A common approach at other universities that has the support among those interviewed at York is to provide a guarantee of “no harm” for an agreed-upon period of time so that Faculties are able to make incremental adjustments toward the new budget model. The University of Toronto, for example, set aside approximately 10% of operating funds to hold the university harmless between the 2006-07 and 2007-08 budget years. Faculties were provided with the difference as a guarantee. In subsequent years, as a result of revenue growth and Faculty adjustments, the University Fund was increasingly able to focus on strategic priorities. Finally, consideration must also be given to historical commitments at York (e.g., fixed debt repayment) that will require accommodation under a new budget model.

Figure 1. Preliminary Illustration of an Accountability Framework to support SHARP



3) Central Services

An important consideration for SHARP is the support of central services. As Lang (1999) has pointed out, activity-based budgeting helps to expose costs that are known but not recognized including the full cost of research and ancillary services. This knowledge forces a reconciliation of revenues and expenses by program and encourages interest in the identification and costs of “backroom” operations. A potential advantage aside from ensuring that research activities are adequately supported is that there is a stronger disposition towards evaluating and benchmarking services in terms of “best available” rather than just against similar services in other institutions.

In order to enhance these processes and ensure an achievable guaranteed level of service across the University, the WGBM does not support allowing Faculties to opt out of centrally-provided services. Over time, there will be opportunities for evaluating the effectiveness of central services (including their ability to respond to individual needs) and implementing efficiencies (e.g., PRASE). Although views are mixed on differentiation in quality of services, a more decentralized approach that encourages entrepreneurship and allows faculties some level of discretion in setting priorities (even within a specified accountability framework), may result in the desire and ability of some faculties to “top up” services offered centrally.

The success of SHARP will depend however on York’s ability to develop credible performance metrics that can be applied to all key activities and services. In Stage 2, some of these metrics will be delineated for further discussion and development.

4) Revenue

There is general agreement that the revenue includes all operating funds including government grants, strategic funding, tuition fees, research overhead funding and other block grants. An issue raised in the literature that is relevant for SHARP is that a resource allocation based on ABB is insensitive to any asymmetry between government funding formulas and actual institutional cost structures (Lang, 1999). The Ontario funding formula was not intended to reflect institutional costs at the program level. This limitation of the program weight scheme was clearly articulated in *A Formula for Operating Grants to Provincially-Assisted Universities in Ontario*, the report in which the Ontario BIU weights were established (Committee on University Affairs, 1966: 13-14):

It cannot be over-emphasized that the formula is designed to produce a reasonably equitable over-all distribution of basic university income. It is not intended as a pattern for spending. [sic]

The formula weights do not reflect the very important differences in costs among the various subjects within a given program or among course years. These differences are averaged out in the weighting process and not significant for the relatively simple income producing formula proposed.

As the BIU weights have been contentious since they were first introduced and are considered flawed by many, some institutions have considered implementing a system of internal weights. The University of Toronto *Task Force to Review Approaches to Budgeting* decided against it, however, because of the difficult and potentially controversial process that would be involved in developing internal BIU weights especially given the widely varying costs of their programs (University of Toronto, 2006). The Task Force felt that they would need to agree on acceptable student-to-faculty ratios, salary levels, and space needs reinforcing the negative impact of budget disputes that institutions are trying to minimize by adopting ABB in the first place (see as well University of Saskatchewan, 2011). Those interviewed in Stage 1 largely concurred that grant monies should flow to faculties based on the current BIU weights. While flawed, the challenges associated with trying to develop a York-specific alternative are viewed as substantial, and may have their own problems. Nevertheless, specific issues deriving from BIUs might have to be addressed in the future if, for example, the Ministry of Training, Colleges and Universities were to make adjustments to the funding formula with significant impacts on faculty budgets.

5) Graduate Education

The funding of graduate education needs special attention. York University has some unique features and a strong commitment to the current structure. A point made in the literature, however, is that it can be challenging to implement an ABB-type model along with a unitary school of graduate students as much of the decision-making is split off from the faculties that provide the resources to support the activities. In anticipation of the importance of this area, the WGBM asked the Dean of Graduate Studies to form a sub-committee to discuss how a new budget model might best support graduate education at the University (see Appendix 6 for the membership, mandate and summary

recommendations). Importantly, the committee recommends further graduate decentralization to the resource faculties for planning and budgeting purposes. This recommendation seems to align with the principles for assessing the appropriate budget model (discussed above).

At the same time, the committee states that the Faculty of Graduate Studies (FGS) has an important role in matters such as enrolment planning and ensuring compliance with the collective agreement as it relates to graduate student support as well as sharing responsibility in matters of governance such as quality assurance. The FGS also allows for coordination and efficiencies in areas such as graduate admissions, student petitions, and the administration of dissertations. A shared accountability model provides an opportunity to engage the resource Faculties more directly in graduate education and better support the integration of undergraduate and graduate planning while at the same time supporting a joint reporting relationship to the resource Faculty and FGS. The implications of a new budget system involving a more decentralized approach to graduate education requires further consideration and broad consultation with all relevant stakeholders especially to the extent that it impacts on decision-making authority, FGS Council and its related committees.

6) Interdisciplinarity and Comprehensiveness

Interdisciplinarity and comprehensiveness are objectives endorsed in the University Academic Plan for 2010 - 2015. ABB has been criticized for discouraging cross-Faculty initiatives because such programs are seen to pull resources away from the home faculty (Lang, 1999; Hearn, 2006; Gasteiger, 2011). While it will be valuable to be attentive to this concern, SHARP was modified so that there would be sufficient flexibility to support these objectives. Specifically, resources and responsibilities can be shared among two or more faculties. A University Fund can also be used to create incentives for interdisciplinary programs.

7) Service Teaching

There was consensus in the internal interviews that there needed to be adequate recognition and support for service teaching as well as a general appreciation for the principle that the costs of service teaching should be based on fair compensation (for example, using a similar ratio of full-time and part-time course instructors as to what exists now). The balance is to provide sufficient resources to reflect fair costs of teaching (i.e., understanding that course directors are comprised of a combination of tenure stream and contract colleagues) while not creating incentives to poach revenue through the "repatriation" of courses or to have curricular decisions driven by revenue generation. An important consideration that arose from the external interviews is that arrangements pertaining to service learning might be best facilitated centrally as it had caused disputes amongst the deans at least one institution. The WGBM proposes that these types of arrangements not be left entirely to negotiations among the deans but rather be based on a shared accountability model with input from the Provost and/or an institutional budget committee as to appropriate formulae for calculating transfer payments between faculties.

8) Estimating Cost Drivers

To facilitate straightforward and clear methodologies for the allocation of resources under SHARP, the WGBM highlights the value of repeatable formulae that will reduce the need for negotiation. Generally speaking estimates of cost drivers are agreed-upon and then subject to periodic reviews of the methodologies. Two related challenges that may be relevant for SHARP are that the model may assume more knowledge of costs than an institution currently has available and high level support for financial information systems is required. Some universities have found it helpful to use "rough justice" in estimating costs and to minimize the number of cost drivers that are used in the allocation methodology (e.g., University of Michigan) and the interviews indicate support for this approach.

9) Space and Capital Projects

SHARP needs to consider the capital plan, debt management, deferred maintenance costs and how broader institutional needs can be met such as common infrastructure, student space, utility infrastructure etc. outside of local needs. In addition the budget model needs to reflect the full cost of space (to be determined in later stages of WGBM work). As noted in 8 above, Faculties are generally responsible for their costs including space (although there is work to be done in terms of estimating space use). There was also broad support among those interviewed that Faculties would have responsibility for deferred maintenance, although consistent with the SHARP budget model being proposed, there was sympathy for the view that the cost driver might be based on an average deferred maintenance fee to offset the advantages that one Faculty might have over another due simply to variations in the age and state of buildings.

10) Ancillaries

While the issue of ancillary operations was not fully pursued in Stage 1, SHARP assumes that the budget model principles will apply to ancillary operations. Ancillary operations are expected to continue to run much as they do now - namely, that continuing education and professional development operations would continue to be managed within the academic division (e.g., Schulich Executive Centre) and that the non-academic ancillary operations (e.g., the bookstore or parking) would continue to be segregated from the operating budget. As the non-academic ancillary operations are responsible for their own revenue generation and fund their own capital expenditures and maintenance, they would be subject to the applicable central cost allocations that would be developed (some elements of these are already in place including utilities, land rent in some cases, IT support and other costs) and presumably benefit from the clarity and transparency of how central costs are charged. It is relevant to note however, that at some universities where ABB models have been adopted, the non-academic ancillary operations have been more fully integrated. Input received during the community consultation has made clear that it will be important to distinguish between *ancillary operations* relating to: i) continuing education and professional development; ii) non-academic

entities such as the bookstore; and iii) *ancillary fees* paid by students for targeted student services.

11) Contingency Fund

A fundamental concern that has motivated the review of the budget model and processes in the last several years at York has been the challenges that Faculties face with annual budget cuts. SHARP is intended to enhance long-term planning, flexibility and autonomy for faculties, and to encourage faculties to seek net new revenue in support of academic priorities while achieving balanced budgets. It is unlikely however that all contingencies will be anticipated and to ensure the financial well-being of the institution, York may want to consider adopting the practice of some universities to establish institutional and/or faculty contingency funds (over and above a University Fund) to mitigate the risks associated with changes in funding models external to the University and other unforeseen developments. The University of Michigan instituted such a fund of approximately 1% of the General Fund budget to "...buffer mid-year recessions in State appropriations" (Hanlon, 2008).

NEXT STEPS

Stage 1 was intended to provide the recommendation for a new budget model "based on an iterative developmental process with input from the PRASE Steering Committee, PVP, University Executive Committee (UEC) and Deans as agreed" (*Terms of Reference*). The next important step was to solicit input from the broader York community with the aim of producing the final Stage 1 report for the York University Budget Committee (YUBC) by June 2012. The Terms of Reference indicate that each stage toward the development and implementation of a new budget system requires the support of the President and the two PRASE Executive Sponsors, the VPA and Provost and VPFA (i.e., the York University Budget Committee). With approval to proceed, the next step will be to confirm the scope and deliverables for Stage 2: Designing a Conceptual Model for SHARP. Factors to be considered in this stage include the approval framework for the new budget model; organizational and system implications; and best practices for the calculations related to allocations and costs. Subsequent stages will involve the development of a shadow budget, preparation of an implementation plan, training, and ongoing monitoring of progress, including assessing accountability, transparency and effective budget processes. Ongoing communication about the budget model (both the resource allocation and accountability framework) and its implementation is essential for a successful transition, and is required across all stages.

GLOSSARY OF SELECTED TERMS

Terms	Definition
Accountability Framework	A set of elements that support an organization through the formalization of roles, responsibilities, structures and processes. More specifically, such a framework would clarify locus of decision making, monitor performance and report on progress towards plan for stakeholders.
Activity-based budget (ABB)	A budget model that allocates revenues to Faculties based on the revenues (grant and tuition) they generate with university-wide expenses being charged back to those Faculties that incur them. The current budget model at the University of Toronto is an example of ABB.
Ancillary services	Revenue generating services that are not directly linked to the academic mission of the University. Examples include parking, residences and food services. At York University, ancillary services (as an aggregate) are run on a cost-recovery basis.
Basic Income Unit (BIU)	A unit of enrolment that is used by the Ontario government to allocate operating grants to universities. A BIU is a full-time equivalent enrolment (FTE) weighted by program according to assumptions about relative program cost. One set of BIU weights applies equally to all Ontario universities.
Central services	Types of services that are administered centrally at York University. These services include (but are not limited to) Finance, Human Resources, Information Technology, Procurement, Communications, Campus Services and Business Operations, Student Services, Research Services and University Management.
Comprehensiveness	The degree to which a university covers a wide variety of academic disciplines. Programs of study that are applied, professional, research or science-based, such as health, business, and engineering or graduate programs contribute to York's comprehensiveness.
Contingency Fund	A budget allocation or set-aside fund that serves to mitigate the risk of unforeseen events that may have a negative impact on the financial position of the University.
Cost driver	An activity that is considered highly correlated to a cost, so that it can serve as a metric for allocating such costs. Square footage could be a cost driver for the operating costs of space.
Deferred maintenance	Costs for repairs and maintenance that have been postponed due to budgetary considerations.
Formula-based budget	A budget approach that typically distributes resources using a formula and uses historical (or other) institutional costs to estimate how much funding is necessary to run programs. The current budget model at Ryerson University is an example of a formula-based budget.
Full-time equivalent (FTE)	A unit for counting persons relative to a full-time workload. Applied to enrolment, an FTE is equivalent to a student at a full-course load. One student studying at a 50% course load is 0.5 FTEs. One student at a 50% load and another at 60% are 1.1 FTEs together.
Hold harmless	A commitment to mitigate the impact of changes to the financial position of a Faculty or Department by linking future funding levels to the current one. A hold harmless approach can take many forms, such as committing to having funding levels never drop below current levels or freezing current funding levels as a new base.
Incremental Budget	A budget approach that takes the previous year's budget and adds the impact of incremental revenue or subtracts from it the impact of budget gaps through budget cuts to arrive at the proposed period's budget. York University's current budget model is predominantly incremental. Incremental budgeting is currently the most utilized budget approach by Canadian Universities.

Terms	Definition
Integrated Resource Planning (IRP)	IRP is an institution wide, comprehensive approach to planning that is intended to further York University's mission, advance its academic goals, and support decision making through the effective integration of institutional planning activities and the alignment of University resources with strategic and academic priorities.
Interdisciplinary	An academic field that crosses traditional boundaries between programs of study or disciplines.
Operating Revenues	Revenues that are intended for the general purpose of operating the university, such as tuition and grant monies. York University currently generates just over \$700 million a year in operating revenues, of which nearly 98% is from fees and government grants.
Performance-based budget	A budget approach that allocates funds to Faculties based on their abilities to attain specific outcome measures defined in qualitative or quantitative terms. There is no current Canadian example of a University that allocates funding solely on a performance basis.
PRASE	The PRASE (Process Re-engineering and Service Enhancement) program was introduced in late 2009, to assist York University in identifying and in developing more effective services and use of resources in support of its core mission in teaching, learning, research and public service.
Responsibility Centre	A unit within an organization that holds responsibility for revenues and expenses. In a university, a faculty would be one example of a responsibility centre.
Restricted Revenues	Revenues that have been generated for a specific purpose, such as donations, research grants or capital funding and which must be used for their intended purpose. York University currently has about \$244 million in restricted revenues.
Rough justice	In the absence of detailed costing of a particular activity or set of activities, this term describes the approach of applying an average model to determine a fair approach to allocate the costs related to these activities. This term is often used to express general comfort with a perceived inability to fully measure or cost an activity.
Service teaching	The act when Faculties, departments or schools teach students from other Faculties, departments or schools within the same University.
Transition	An agreed upon approach and timetable to move Faculties or Units from one budget model approach to another.
Transparent	Reliable, understandable, accessible and open to view by all relevant stakeholders.
University Fund	A set-aside fund that is intended to support institutional priorities that is typically managed by a University Budget Committee. It may also be used to assist during transition to the new budget model. The University of Toronto currently has a University Fund that is calculated as 10% of operating revenues and is managed by a University Budget Committee.
Working Group on Budget Modeling	Created in August 2011, the Working Group on Budget Modeling was tasked to bring forward recommendations to the Provost and Vice-President Finance and Administration at York University on guiding principles underlying a new budget model, including recommendations and options explored.
Zero-based budget	A budget approach that assumes each budget begins at a base of zero on an annual basis. Nothing is taken for granted or assumed to continue at the previous level without a rationale. There are currently no examples of a Canadian university that uses solely a zero-based budget.

PRASE



Appendices

Appendix 1 – Terms of Reference for the Working Group on Budget Modeling

1.0 Context for Action

As part of the Process Re-Engineering and Service Enhancement (PRASE) initiative currently underway at York University, the Phase 1 PwC report identified the development of a broader accountability framework as critical for the University's overall success. The budget is key to this recommendation as it is the primary tool in the management of the University and in enabling it to fulfill its mission and achieve its academic goals. Preliminary analysis has suggested that a different budget model may have the potential to enhance accountability throughout the University and lead to greater transparency and support for the academic enterprise. This further supports the 2007 Budget Review Process Report recommendations that spurred the implementation of an Integrated Resource Planning framework at the University to better align priorities and resources.

Movement towards a new budget model that will achieve optimal results for the University requires detailed and careful analysis. The Vice-President Academic & Provost (VPA&P) and Vice-President Finance and Administration (VPFA), who are co-sponsors of PRASE, have been given responsibility for bringing forward a recommendation for a new budget model to the President and the VP group (PVP). The VPA&P and VPFA have charged a working group to review relevant background materials, analyse relevant data at York University pertaining to revenue and expenditures (including cost drivers such as enrolment and research activities) and to bring forward one (or more) budget models along with any advice on the practicality and merits of adopting the recommended approach.

2.0 Mandate of Working Group

The Working Group on Budget Modeling (WGBM) is accountable to the VPA&P and the VPFA and the Working Group will report to the PRASE Steering Committee of York University. Given the size and complexity of the tasks to be undertaken by the WGBM, the work has been organized into four stages noted below. Each stage is in sequence and will require support from the PRASE Executive sponsors VPA&P and VPFA before proceeding to the next stage.

Throughout stages of the project the WGBM will have the responsibility and authority to:

Stage 1: Explore Alternative Budget Model Approaches

- Investigate various budget models used in other universities as well as the processes undertaken in their design and implementation.
- Identify key questions/issues that require decisions for input throughout the process.
- Examine the current budget allocation model at York University.
- Develop a detailed process for consultation with timelines, objectives and reports.

- Present possible models and recommend a preferred model(s) based on an iterative developmental process with input from the Steering Committee, PVP, University Executive Committee (UEC) and Deans as agreed.
- Assess different options for revenue allocation and expense recognition/distribution.

Stage 2: Conceptual Model Design

- Identify an approval framework suitable for the new budget model.
- Identify/explore organizational and system implications of new model.
- Ensure that best practices are used in the determination of data sets and cost drivers.

Stage 3: Modeling Results and Transition Development

- Design new budget approval framework and develop a shadow budget.
- Prepare an implementation plan for the new budget model.

Stage 4: Model Implementation, Training and Shadow Year

- Implement new approach with appropriate training.
- Monitor ongoing progress to assess continuous improvement, enhanced accountability, transparency and effective budget processes.

3.0 Project Scope and Key Deliverables

Project Scope for recommendations by the WGBM includes expectations that:

1. Members bring forward an institutional focus as part of their deliberations.
2. Analyses are primarily focused on unrestricted/operating revenues and operating expenses.
3. Different budget approaches are explored, including the application of current models developed or underway at North American universities (such as ABB and other models).

Key deliverables of the Working Group include:

- Develop guiding principles underlying the new budget model
- Policy paper outlining WGBM recommendations and options explored
- Communication plan (as appropriate) to PRASE Steering Committee, PVP, UEC and Deans.

4.0 Guiding Principles for Working Group Decision Making

The recommendation and the subsequent development of an alternate budget model for York University will be guided by the following principles:

- Supports the academic goals of the institution through the alignment of resources to priorities. *Budgets should be aligned in a manner that best support academic priorities as outlined in our planning documents (the White Paper, University Academic Plans and Faculty/School plans, IR Plans)*
- Budget model and processes are transparent
- Model provides for predictable and sustainable framework for budget planning
- Model provides performance incentives and ensures accountability
- Allocation methodologies are clear and straightforward.

5.0 Meeting Schedule and Timelines

Meetings to be scheduled monthly starting in August 2011 and are expected to last approximately 2-3 hours based on volume of content required. A report after each stage will be issued to the Steering Committee and Executive Sponsors for review. A detailed work plan outlining objectives, timelines and key deliverables for each stage will be developed by September 2011. It is expected that the Working Group will issue its Stage 1 report to the PRASE Steering Committee by March 2012.

A finalized agenda will be sent out prior to each Working Group session with associated briefing notes and materials as required.

6.0 Membership and Roles

The following table outlines the proposed membership for the Working Group. In addition, a smaller Coordinating Group, led by the Co-Chairs, will hold regular meetings with the VPA&P and VPFA to provide ongoing updates. Additional community members may be invited to attend Working Group meetings to provide expertise, discuss specific topics etc. on a case-by-case basis.

Membership		
1.	Rhonda Lenton (Co-Chair)	Vice-Provost Academic
2.	Trudy Pound-Curtis (Co-Chair)	Assistant Vice-President Finance & CFO
3.	Sarah Cantrell (Project Director)	Director, Integrated Resource Planning Office
4.	Alison Macpherson	Associate Professor, School of Kinesiology & Health Science
5.	Bill Praamsma (Secretary)	Senior Advisor, Policy and Process, IRPO
6.	Donna Smith	Senior Executive Officer, VPRI
7.	Glenn Craney	Executive Director, OIRA and Senior Policy Advisor to the President
8.	Richard Irving	Associate Professor, Schulich School of Business
9.	Richard Ooi	SEO/Executive Director, Academic Administration
10.	Joanne Nonnekes	Executive Officer, Graduate Studies
11.	Richard Smith	Senior Policy Advisor, Office of the AVP Finance & CFO
12.	Anthony Barbisan	Director, YU Card & Food Services

Appendix 2 – Methodology

The WGBM met several times to draft the Terms of Reference and to discuss the preliminary information about budget models in the literature as well as the presentation from the CFO summarizing York's budget. On the basis of this information, the WGBM determined that it would be helpful to conduct both internal and external interviews with individuals directly involved in budget planning. The internal interview schedule was intended to solicit information about the strengths and weaknesses of the current budget model, the improvements that were needed, and to follow up on specific issues that were evident in the literature review.

The external interviews were intended to better understand the factors that had led them to undertake budget reviews, the challenges they encountered throughout the process, the decisions they made and why, and what they would do differently if they were starting over. Institutions were chosen on the basis of their comparability to York University and/or having recently been through their own budget review process.

The interviews were conducted throughout the fall 2011 and early winter 2012 by several members of the WGBM in each case. Written summaries of individual interviews were prepared by assigned note takers, and members of the WGBM then prepared overall summaries of common views, dissenting points, and issues to be explored. The WGBM met several times to review the data from the interviews and to reach consensus on the recommended model for York University as well as the dominant themes that should be incorporated in the report.

Appendix 3 - Internal interviews

List of internal interview participants	
1.	Mamdouh Shoukri, President and Vice-Chancellor
2.	Patrick Monahan, Vice-President Academic & Provost
3.	Gary Brewer, Vice-President Finance & Administration
4.	Robert Tiffin, Vice-President Students
5.	Robert Haché, Vice-President Research & Innovation
6.	Paul Cantor, Chair, Board of Governors
7.	David Denison, Finance and Audit Committee Chair, Board of Governors
8.	Samuel Schwartz, Academic Resource Committee Chair, Board of Governors
9.	Martin Singer, Dean, Faculty of Liberal Arts and Professional Studies
10.	Cynthia Archer, University Librarian
11.	Alice Pitt, Professor and Dean, Faculty of Education
12.	Barbara Rahder, Dean, Faculty of Environmental Studies
13.	Allan Hutchinson, Dean & AVP Graduate
14.	Kenneth McRoberts, Principal, Glendon College
15.	Lorne Sossin, Dean, Osgoode Hall Law School
16.	Janusz Kozinski, Dean, Faculty of Science and Engineering
17.	Harvey Skinner, Dean, Faculty of Health
18.	Dezsö Horváth, Dean, Schulich School of Business
19.	Lorna Wright, Associate Vice-President International
20.	Bob Gagne, Chief Information Officer
21.	Richard Francki, Assistant Vice-President (Campus Services & Business Operations)
22.	Joanne Duklas, AVP, Enrolment Management and University Registrar
23.	Senior Executive Officer Group Session - Richard Ooi, Leanne Kipfer, Kevin Wilson, Steve Dranitsaris, Donna Smith, Ijade Maxwell Rodrigues
24.	Faculty Executive Officer and Financial Officer Group Session - Valerie Peticca, Mary Verrilli, Mario Verrilli, Helen McLellan, Paul Elliott, Gilles Fortin, Andreas Torres, Joanne Nonnekas, Glenn Cumming, Nick LaRocca, Renata Gritsyuk, Wendy Booth, Brenda Fernandes
25.	Final Group Session - Carol Altilia, Aldo DiMarcantonio, Helen Huang, Sheila Forshaw, Steven Jacobson

Summary of Main Points

Guiding Principle: Supports the academic goals of the institution through the alignment of resources to priorities. <i>Budgets should be aligned in a manner that best support academic priorities as outlined in our planning documents (the White Paper, University Academic Plans and Faculty/School plans, IR Plans)</i>	
1. In your opinion, what are 2-3 essential elements that a new budget model at York University should have?	<ul style="list-style-type: none"> Increased transparency and clarity with budget allocations was the dominant theme in looking at a new budget model. One participant stated, "The current model is not transparent and there is a lack of understanding as how priorities are reflected in the process. This breeds suspicion, envy and negative perceptions." Other common themes include the need for a strengthened accountability and governance framework; increased decentralization and alignment of decisions to Faculties; and the better alignment of budget allocations with proprieties by using more incentives for performance.
2. What should be the main roles of the Board of Governors, Faculties, Central administration and Non-academic areas in the budget process?	<ul style="list-style-type: none"> An increased appetite for autonomy and empowerment of Deans would need to be tempered by institutional priority-setting by central administration and financial oversight by the Board of Governors of the global budget.
3. In your opinion, what is the best way to ensure resources align with priorities?	<ul style="list-style-type: none"> Although there was acknowledgement that the current integrated resource planning framework is a good start, a need to create stronger, more conscious links between priorities and resources still exists. In particular there was widespread support for creating a University Fund in order to finance academic initiatives and priorities. "You cannot give all the money to the Faculties. The academic integrity of the university cannot be secondary. There is a need to create a central strategic initiatives fund to provide a catalyst for transformation and to stimulate collaborative efforts between Faculties."
Guiding Principle: Budget model and processes are both transparent and predictable	
4. How should volatility and uncertainty be managed in the budget model?	<ul style="list-style-type: none"> Having a contingency fund was seen by many interview participants as a potential option in managing uncertainty and unforeseen events. Additional options included having a policy that required more conservative projections required including risk assessments; increased use of scenario-building with budget approvals; smoothing budgets using slip years to add stability; re-aligning enrolment uncertainty to the decadal level; and managing endowment and pension risk as special cases.
5. What level of transparency do you believe is currently absent or needed?	<ul style="list-style-type: none"> Consistent with the earlier theme of wanting increased transparency and clarity with budget allocations, a desire to better understand current budget decisions was expressed. "York's current model is incremental, with an accretion of decisions, which make it hard to unpack". In addition increased transparency with respect to ancillary fees and carry forwards were cited.

Guiding Principle: Model provides for a sustainable and performance-based framework for budget planning	
6. What if per student funding increases do not match cost inflation within the University? What approaches should be taken to address long-term financial sustainability?	<ul style="list-style-type: none"> • Significant concerns were raised by many interviewees that core operations may not be financial sustainability under current approaches and that revenue-enhancing initiatives cannot solve the problem on its own. <i>"There is no silver bullet and I do not believe revenues can solve the issue 100%. The current delivery model for academic services is not sustainable and effective deficits between revenue and expenses mean we need to look at different models for teaching and academic delivery."</i> • In addressing long-term financial issues a platform to make tough decisions and need for an increased entrepreneurial culture was also identified.
7. In transitioning to a new budget model, should historical funding inequities be addressed or should the new model only apply on a go-forward basis?	<ul style="list-style-type: none"> • A significant portion of interviewees felt that the new budget model should be applied to all revenues (as appropriate) and that the key issue to be resolved was amount of support given to Faculties in transitioning to the new approach. <i>"It is tough to manage a budget when 90% is salary and you have already made commitments to those people that need to be honored. Cannot really fix or adjust things quickly, you need to do it over time"</i>. • However, many individuals felt that a go-forward strategy (applying the new model only to incremental revenues) was a better approach. <i>"We need to focus on moving forward and being able to manage new opportunities. I recommend a clean slate and consider the past a sunk cost. It is important to preserve historic agreements and initiatives, so I do not think it is possible to fully hit the reset button"</i>.
8. How can the budget process or model best support increased performance?	<ul style="list-style-type: none"> • A dominant theme from many participants was the need to strengthen the culture of planning and consequences at York University. <i>"The budget model is only a tool. Better planning, decision-making and accountability are where the real impact is."</i> • A commitment to developing quantitative performance measures and better defining merit or performance across the University was also seen as key features.
Guiding Principle: Model ensures accountability	
9. How should due diligence be built into the budget process? How should non-performance be assessed and what consequences are fair or appropriate?	<ul style="list-style-type: none"> • Formalizing financial oversight processes and clarifying assumptions and expectations was seen to be an important component of building due diligence into the budget process and managing non-performance. • In addition, strengthened processes and a clear accountability framework would be required. <i>"Accountability involves determining targets for Faculties through their Deans, and ensuring reasonable expectations. It is important to have a mechanism to bring forward budgets for review and give feedback prior to being approved. You also have to deal with non-performance whether it is delinquency or poor performance."</i> • Building capacity and skill sets (professionalize budget management roles at the University) and enhancing team skills (perhaps with custom training courses) were also seen as required.

10. How should decisions related to university-wide resources be made (e.g. deferred maintenance, energy, security, new capital construction)?	<ul style="list-style-type: none"> • In general, Faculties were seen as not being able to opt-out of basic centrally-mandated services. <i>"The University should offer only basic services that could be enhanced through external contracts"</i>. • Many individuals supported the idea of developing a formal budget committee to review Faculty and Non-Academic area budgets and to define service levels. <i>"I would like some kind of mechanism that shows you why decisions get made and how some priorities get funded and others do not. There is currently no clear mechanism on how to get funding for a good idea. I support the idea of a central budget committee where division leaders could justify their allocations and lobby for initiatives."</i> • New capital construction was mostly seen as a special case where a shared responsibility between Faculties and central administration would be required.
Guiding Principle: Allocation methodologies are clear and straightforward	
11. What are the best mechanisms to ensure that allocation methodologies are made clear? Are there any budgetary supports you feel are currently lacking or would like to see improved that would facilitate more effective resource management?	<ul style="list-style-type: none"> • Forwarding tuition and grant revenue to Faculties as it is currently structured in provincial funding mechanisms was seen as the best option by many. " • However the adequacy of provincial funding in some circumstances was seen as a concern that would require cross-subsidization in some form. • In addition, many individuals saw that 'rough justice' in setting components of the new model was needed to allow for it to be more easily adopted. <i>"In balancing simplicity versus cost certainty, we need to keep it as simple as possible"</i>.
Closing Questions	
12. Are there any concerns or recommendations that you would like to add at this point that were not previously covered?	<ul style="list-style-type: none"> • Resolving how service teaching would be treated under the new budget model and a desire to see further decentralization to Faculties of graduate responsibilities were identified by many individuals as potential concerns. • More standardization of processes between Faculties and non-academic areas was also seen as a potential concern.
13. Do you have any other insight pertaining to the York University budget model or process that you have not been able to share?	<ul style="list-style-type: none"> • Overall, a general acceptance of activity-based budgeting was expressed with some specific concerns identified about some elements. • As part of adopting an activity-based budget model, a strengthened accountability and governance framework was seen to be needed with greater clarity on decision processes; the realignment of roles with expectations; and the addressing perverse incentives or overlap.

Appendix 4 - External interviews

List of external interview participants	
1.	Barbara Sainty, Interim Dean, Faculty of Business & Joanne McKee, Associate Vice-President of Finance (Brock University)
2.	Cristina Amon, Dean, Faculty of Engineering (University of Toronto)
3.	David Graham, Provost (Concordia University)
4.	Ilene Busch-Vishniac, Provost (McMaster University)
5.	Meric Gertler, Dean, Faculty of Arts and Science (University of Toronto)
6.	Paul Stenton, Vice-Provost, University Planning (Ryerson University)
7.	Safwat Zaky, former Vice-Provost, Planning and Budget (University of Toronto)

Summary of Main Points

Context for Change and Principles Underlying the New Model	
1. What prompted you to engage in developing a new budget model for your University? (What problem were you trying to resolve and what options did you explore?)	<ul style="list-style-type: none"> The sample group of external interviews included institutions that were implementing (or already had implemented) a broad series of budget models. These experiences ranged from moving an incremental budget model towards activity-based budgeting; implementing a formula-based budget model on a go-forward basis; and moving to an incremental budget model back from an activity-based budget model. Overall, many of the external interview participants cited a need to make their budget model more transparent as the primary reason for engaging in a review process. One participant stated, <i>"People didn't understand how the (budget) model worked and didn't know how they could get access to more money"</i>. Additional issues that were identified included the need to address historical inequities; better align funding with enrolment growth; and offer incentives to drive change within the organization. <i>"There was little opportunity for change and innovation and little incentives for Deans to be entrepreneurial and watch costs"</i>. Another participant commented on a need for additional oversight within the University, <i>"There were instances of bad behavior by Faculties where enrolments were consciously poached from each other without consultation; costs reduced by creating higher class sizes, using more contract staff ... and lowered admission standards to boost numbers...Overall this led to a number of initiatives that produced bad outcomes"</i>. One participant (whose University had rejected activity-based budget modeling) stated, <i>"Doubted that Faculties had the resources to manage under ABB and felt cross-subsidization would be too big of an issue for them to resolve. Didn't think they had a broken system; just needed to be changed to direct the incentives better"</i>.
2. Is your budget model principle based? If yes, what are the principles that guide the budget model?	<ul style="list-style-type: none"> The major theme identified by most participants was that the budget model must align to the academic vision, mission and priorities of the University. Improving transparency, along with increased accountability - defined as reflecting both financial and academic responsibilities at the appropriate level, were also seen as a major emphasis. <i>"The budget is a primary tool in the management of the University in enabling it to fulfill its mission and achieve its academic goals... Every Dean should know what revenue they generate for the University and what costs are incurred by the University on their behalf."</i> Additional principles identified that the budget model should include are: provide stability and predictability; be understandable and simple; support ability to respond to innovation and emerging funding opportunities; support efficiencies and service enhancement; and provide better information for decision-making.

3. How are central administration functions, University overhead and shared services funded?	<ul style="list-style-type: none"> The dominant approach by Universities pursuing an activity-based model appears to be some form of cost attribution estimated through cost drivers. Exceptions noted by some interview participants include: <ul style="list-style-type: none"> Major capital projects Salary increases and progression through the ranks (PTR) Inflation Retirements and allocation of new appointments Accounting for space usage was seen to be particularly useful. <i>"Costing space has made space usage more efficient. Deans ask whether the space they use is necessary and have been more vigilant about utility usage"</i>. Some type of central set-aside, University Fund and Faculty reserve was required by participants to finance major capital investments. To a large extent, graduate education was devolved to Faculties with central administration having a defined role in regards to student support.
a. How are salaries/benefits, progression through the rank or faculty complement decisions treated?	
b. How are decisions made on new buildings or major renovations?	
c. How is graduate education funded or managed in your budget model?	

Accountability and Decision-Making Processes	
4. What approval process / accountability structure have been put in place to support the model? Are there quality/performance or activity-based components?	<ul style="list-style-type: none"> All institutions that were interviewed had a formalized budget committee that was an important part of approval process. Performance indicators were also identified as part of the accountability process even if the budget model does not directly incorporate performance.
5. How does your budget model ensure that University wide strategic initiatives (academic and non-academic) are achieved?	<ul style="list-style-type: none"> Most budget processes included the presentation of 5-year rolling budgets (including strategic priorities, complement and enrolment planning) to Provost and/or the Budget Committee. Varied levels of central controls around faculty complement, enrolment plan and other spending overseen by Provost were identified along with varied levels of central set-aside funds for strategic initiatives through institutional funds. One interview participant cited the expected benefit of their new model in the following terms, <i>"Fairness for our University is when everyone is on the same playing field and there are no more special deals"</i>.
6. How is budget risk managed within the model? What happens if an area runs a deficit?	<ul style="list-style-type: none"> Most participants identified varied levels of revenue forecasting, in-year tracking and contingency as the primary tools in managing risk. Regardless of the budget model, budget deficits were to remain the responsibility of the Faculties. <i>"We track expenditures against budget really carefully. We have never had a Faculty that runs a deficit, but we have had departments that run into deficit. If a department looks like it is running into trouble, the administration will intervene in-year."</i> The University Fund was also seen as a tool to respond to requests for help from Faculties facing financial difficulties (sometimes as a loan).

<p>7. Is there a governance structure that oversees it? Who has or what area has responsibility for the budget model?</p>	<ul style="list-style-type: none"> In developing a new budget model, many institutions used committees or task forces that were often organized into phases involving different membership. Broad based consultation including with Deans and senior team and other stakeholders important.
<p>Implementation issues</p>	
<p>8. What type of start-up resources were required to implement your model? What process and change management initiatives were put in place to support transition and how was it resourced on a go-forward basis?</p>	<ul style="list-style-type: none"> Transition to a new model is seen as a multi-year process. Change management strategy including consultation plans important with some institutions dedicating full-time staff to project management.
<p>9. Does your new budget model require any significant new or different skills for effective management within an academic or non-academic unit?</p>	<ul style="list-style-type: none"> Expectation that skill set needed might change with activity-based budget models, <i>"We believe that the new skills will be enhanced data access and information and resource support. Skills required will include a full understanding of the mission of the University and an ability to articulate that mission as it relates to expenditures (budget). This may be a new skill set for some budget developers."</i>
<p>10. Does your model utilize a Central Fund to smooth the impact of the implementation of the new budget model? Is there an expectation that the Central Fund will continue to smooth annual funding shifts and/or support cross-subsidization?</p>	<ul style="list-style-type: none"> A variety of approaches were used (or proposed) by participants to smooth the impact of change, including slip-year funding, time-sensitive hold harmless provisions, and application on a go-forward basis only, and other incremental change options.
<p>11. If your model has a Central Pot to Fund Strategic Investments what is the relative size of the Fund to your total budget.</p>	<ul style="list-style-type: none"> Existence of some sort of strategic or University Fund with varied levels of a fixed percentage off the top - ranging from 2% of gross revenues, 5%, 10% of revenue. <i>"There needs to be some funding flexibility with fungible money, so we will create a University Fund... In the beginning the UF will buffer Faculties from dramatic reallocations when the University transitions to the new model. In the future, it will be used to fund areas of excellence and to approve other areas."</i>

<p>General advice for Universities Contemplating Change</p>	
<p>12. What would you identify as the key success factors for your process or budget model?</p>	<ul style="list-style-type: none"> Key success factors that were identified include advice to: <ul style="list-style-type: none"> Delay showing financial numbers of the shadow budget until consensus on fundamental concepts achieved; Maintaining principle that revenue generation and resource allocation are separate (some cross-subsidization will be inevitable); Deal with long-standing issues as part of moving to new model (e.g. supporting interdisciplinary programs, graduate, service teaching, space); Proper process (including lots of consultation) is important Consider staged approvals of high-level concepts at Executive table; Take the time to do it right and map process out in advance - phased approach; and Buy-in and consensus of Deans to new approach is required. In particular, one participant stated, <i>"Buy-in is needed. When the model was being considered, the President insisted that approval should be based on consensus. The Deans normally have only advisory status, not executive, but they approved it unanimously."</i>
<p>13. Is there anything that you would do differently?</p>	<ul style="list-style-type: none"> A number of areas related to project management were identified as things participants might do differently. These include more consideration on what amount of resources were required to support the process; and more communication and solid change management strategy should include what the process will be. <i>"Things that I would have done differently. I would have prepared to lay out the whole project from start to finish in advance and would have involved more communication from the beginning".</i> In addition, participants also recommended looking at various aspects of the budget model, including cost drivers, inter-Faculty "deals" such as covering costs of service teaching, relationship to enrolment projections, and committing to evaluating the budget model every 5 years or so. One participant stated, <i>"There is no ready-made structure for sorting out interdivisional teaching disputes. The assumption in the Provost's office was that this could be sorted out Dean-to-Dean, but this has not worked in practice."</i>
<p>14. Moving forward, what remaining challenges are you anticipating?</p>	<ul style="list-style-type: none"> Interview participants identified a number of remaining challenges that were related to design elements of the model. These include, increasing the comfort level with the cost drivers, linking to the improvement of quality/performance metrics, finalizing transition phase, design model to avoid bad behavior, re-examining Graduate funding allocations. <i>"No model is intrinsically superior to any other model. The centralized versus decentralized question is like a pendulum... Depending on the place, the results will vary."</i> In addition, participants also identified some practical concerns about managing within their new budget models that were no thought of previously, such as how to apply budget cuts (when necessary), the increasing importance on revenue generation, increasing use of budget model in academic decisions, and managing central decisions made in collective bargaining. One participant stated, <i>"People are running out of easy budget cuts such as increasing class sizes, number of sessional, or reduction in hours of instruction. I worry about what else is next".</i>

Appendix 5 - Literature review

This review discusses five different types of budget model, however the majority of the literature focuses on activity-based budgeting (ABB) and its variants. Consequently, there is more space accorded to that model. We have supplemented discussion of the other models with case studies from other universities.

Budgeting- General issues

All budget models have strengths and weaknesses. Dušan Banović (Banović, 2005) reviewed the literature on budget models and summarized more than fifty years of accounting research in eight key points. These are (with minor editorial changes):

- 1) High budget pressure leads to stress, interpersonal conflicts and distrust, which then cause dysfunctional behaviors such as gaming, reduced effort, poor communication and budget slack
- 2) The key to successful budgeting is communication. Management must communicate to employees that budgeting is the most effective way of corporate planning and control. It has to pass its goals and goal achievement strategy down the hierarchy.
- 3) Budget biasing (budget slack and upward biasing) is a common element of the budget process that occurs when budget variances are used to evaluate performance. It can be reduced using participation and tight budgetary control...
- 4) Budgets should not be administered rigidly. ... Managers should be held responsible only for things over which they have reasonable control.
- 5) Budget goals should be negotiated through budget participation and be set at a tight, but attainable level.
- 6) Management must clearly define what constitutes successful budget performance and link extrinsic rewards to its accomplishment. This system must be transparent and consistent...
- 7) Participation is an essential part of effective budgetary planning and control and is the primary tool for reducing the dysfunctional effects of budgeting. Participation affects – directly and indirectly – budget performance through various intervening variables and it leads to higher motivation and satisfaction with budget related activities.
- 8) There is no universally appropriate budgeting system that applies equally well in all organizations. Its development and use is contingent on the circumstances faced by the organizations which vary depending on organizational variables such as size, strategy, culture, environmental uncertainty, organizational structure and technology.

(Jarzabkowski, 2002) studied the overall approach to budget planning (i.e. centralized or decentralized) employed in educational institutions and concluded that:

- 1) Universities have different models of resource allocation in accordance with their contextual characteristics of culture, history and structure
- 2) Differences are manifested in a tension between centralization/decentralization and varying degrees of balance between locus of strategic direction, cross-subsidy and control. As such, [the choice of resource allocation model] is less a matter of best

practice, neatly transferable between institutions, than one of internal fit

- 3) All forms of resource allocation are inherently problematic when carried to extremes; therefore internal fit is, ideally, flexible to changes in the university and the wider environment
- 4) There is substantial relevance to universities of theory taken from the private sector and commercial organizations

These conclusions fit well with the more general conclusions reached by Banović. In particular, Jarzabkowski's conclusion three mirrors and expands on Banović's conclusion eight.

In other words, the budget model and processes must fit with the organizational culture and structure. When one element changes, some adjustments may be necessary to the other two elements as well.

Hearn also observes that too much centralization may lead to local missed opportunities, while too much decentralization may bring inefficient duplication of internal activities and externally-offered services, and inattention to institutional goals. (Hearn, 2006) However, to make reasonable decisions about adjustments to budget models, organizational culture and organizational structure; one needs a set of tools. One approach is described below.

(Çekiç, 2010) cites a framework for considering organizational culture and how decision-making works within an ABB context. His case is based on the University of Indiana.

He identifies two main purposes of budgets, based on (Carnaghi, 1992), p. 1:

- 1) To provide a framework for rational, efficient, and predictable allocation of resources
- 2) To translate financial resources into actionable purposes and objectives for people

He suggests that the budget must be understood within the context of several organizational frames:

- 1) The **Structural frame** looks at the regulations, policies and goals of an institution
- 2) The **Human Resource frame** focuses on the needs, skills and relationships of the organization's inhabitants
- 3) The **Political frame** is attentive to the politics of the institution and focuses on power, conflict, negotiation and competition for resources
- 4) The **Symbolic frame** - focuses on an organizations myths, stories, ceremonies and institutional heroes

He found that at Indiana University, faculty tended to favour the human resource frame (collegiality), while administrators tended to favour the structural frame. Furthermore, faculty members had low interest in budgets because the complexities in the administrative culture hindered any effort from faculty members to understand and involve themselves in budgetary decision-making (p. 97)

Çekiç also found that there was a movement toward more rational decision-making (evidenced by greater use of the structural frame) and an erosion of the human resource frame and symbolic frame, but does

not attribute them to adoption of activity-based budgeting. Interviewees thought that:

- The erosion in collegiality was due to growth and to the use of technology
- The erosion in the symbolic frame was due to the growth in the institution

While his conclusions are tentative, it is possible that the frames he suggested may prove useful when we consider the organizational implications of changes to the budget model at York. At minimum, they provide a basis for understanding the discourse with our stakeholder groups

(Hanlon, 2008) distinguishes between a budget model and a budget system. He deems a budget *model* to be a set of rules for arranging the elements of a budget. A budget *system* includes all of the discretionary elements (including the authority and values of relevant decision makers) as well as the budget model that policymakers use to help them with budgeting.

Budget Model Approaches

The Working Group on Budget Modeling (WGMB) has identified five basic budget models, defined in Table 1. These are Formula-based, Performance-based, Zero-based, Incremental and Activity-based (ABB).

Table 1: Five basic Budget models

Formula-based	<ul style="list-style-type: none"> • A method that calculates the amount of funding a program requires by applying selected measures of unit costs to selected output measures (Lasher and Sullivan, 2004) • A procedure for estimating resource requirements through the relationships between program demand and program cost. (Goldstein, 2005) • The basis for formula elements can be historical data, estimated trends, and/or negotiated parameters to generate requested funding levels. Put another way, formula budgeting is a method that calculates the amount of funding a program requires by applying selected measures of unit costs to selected output measures (Vandament, 1989).
Performance-based	<ul style="list-style-type: none"> • Resources (inputs) are related to activities (structure) and results (outcomes). Specific outcome measures are defined in either quantitative or qualitative terms. (Goldstein, 2005) • Performance-based budgeting has four primary characteristics (Young, 2003): <ol style="list-style-type: none"> 1) It sets a goal or goals to which monies are “connected”. From these goals specific objectives are delineated and funds are subdivided among them 2) It compares progress with past performance to allow meaningful comparisons between expected and actual progress 3) Adjustments to programs are made during a budget cycle to close performance gaps 4) The program is regularly evaluated • The cardinal aim of performance-based budgeting is accountability (Young, 2003) • Examples of indicators that might be used ...are the number of credits taught, the number of sections taught, the number of students in the program, the number of graduates, the number of graduates employed, etc. (Gibson, 2009)
Zero-based	<ul style="list-style-type: none"> • Focuses on the individual program or activity, and assumes no budgets from prior years; instead, each year’s budget begins at a base of zero. (Lang, 2000) • Administrators must justify from base zero all of their departmental or agency budgeted expenditures. Nothing is taken for granted or simply continued at some previous level. Everything must be justified or discontinued through cost-benefit analysis (Boyd, 1982) • Usually not applied in practice to an entire budget - e.g., might assume that 80% of the previous year’s budget will continue as a base. (Goldstein, 2005)
Incremental	<ul style="list-style-type: none"> • Institution starts with the current budget and adds or subtracts from it to arrive at the coming period’s expenditures: (Lasher and Sullivan, 2004) Last-year’s Base Budget + Salary Growth Funding + Revenue Sharing with faculties/schools + Strategic Funding - ATB Cuts = This year’s Base Budget
Activity-Based (ABB)	<p>Operating Principles (Lang, 2000):</p> <ul style="list-style-type: none"> • All costs and income generated by each college, faculty or department are attributed to that unit, appear in its budget and are under its control • Incentives are created and barriers removed to allow each academic unit to increase income and reduce costs according to its own academic plans and priorities • All costs of administrative units are attributed to academic units • Decisions about tuition fees and enrolment are devolved to the units • Decisions about the optimal balance of costs and revenues are made by the units

The following two tables show the extent to which the models are being used (Table 2) and the percentage change in the budget model (Table 3). The tables indicate that although incremental budgeting remains by far the most common model among public doctoral universities, the trend since 2007 has been to move away from incremental budgeting (-8.5%) and toward activity-based (+14.9%) and performance budgeting (+10.6%). No public doctoral institutions report using zero-based budgeting, which is more common among private universities and colleges, and public institutions at the masters/baccalaureate level and below.

Table 2: Percentages of Surveyed U.S. Institutions Using Budget Models (Green, 2011):

	Formula	Perform.	Zero-base	Incremental	ABB
All institutions	26.1	19.6	30.0	60.2	14.2
Public Institutions	34.8	21.0	25.6	59.3	11.8
Doctoral Universities	44.7	25.5	-	78.7	21.3
Master's Institutions	25.0	19.6	16.1	73.8	8.9
Baccalaureate Colleges	31.0	17.2	13.8	72.4	20.7
Private Non-Profit Institutions	17.1	18.2	33.2	62.3	17.1
Doctoral Universities	16.0	24.0	20.0	56.0	48.0
Master's Institutions	14.8	14.8	25.9	71.6	12.3
Baccalaureate Colleges	17.4	19.1	37.6	58.4	15.2

Notes:

- 1) 433 public and 275 non-profit private institutions reported that they were baccalaureate level and above
- 2) "All institutions" and "Public Institutions" include public Associate/Community Colleges
- 3) Numbers add to >100 as some institutions are using more than one model

Table 3: Percentage Change in Budget Model Use between 2007/08 and 2010/11 among Surveyed U.S. Institutions (Green, 2011)

	Formula	Perform.	Zero-base	Incremental	ABB
All institutions	(1.0)	7.4	9.0	(8.4)	4.0
Public Institutions	(2.2)	8.2	9.0	(9.6)	4.3
Doctoral Universities	0.0	10.6	(2.1)	(8.5)	14.9
Master's Institutions	(3.6)	5.3	9.0	(5.4)	3.5
Baccalaureate Colleges	3.4	6.9	3.5	0.0	0.0
Private Non-Profit Institutions	0.3	6.6	8.5	(6.2)	4.1
Doctoral Universities	0.0	8.0	12.0	(4.0)	8.0
Master's Institutions	0.0	8.6	4.9	(4.9)	2.4
Baccalaureate Colleges	0.5	5.1	9.5	(7.3)	4.0

Notes:

- 1) "All institutions" and "Public Institutions" include public Associate/Community Colleges
- 2) 433 public and 275 non-profit institutions reported that they were baccalaureate level and above

Advantages and Disadvantages of Budget Models:

A] Formula Budgeting:

Theoretical:

Formula funding is a cost-based approach that is often used at the state/provincial level, but less frequently found within institutions. By being quantitative, it provides an objective approach that depoliticizes the budgeting process. Because of the agreed-on algorithms for distributing funds, conflict is reduced. (Lasher and Sullivan, 2004).

Disadvantages are that, despite the appearance of objectivity, it may shift the politics to a more technical level associated with the mathematical relationships in the formula (Lasher and Sullivan, 2004). It may provide incentives to retain programs or activities that contribute funding, even if they no longer contribute to the mission/goals [of the institution] (Zierdt, 2009). Formulas are primarily based on historical relationships, so tend to perpetuate existing programs and discourage new programs and other innovations (Lasher and Sullivan, 2004).

Case Studies:

Wayne State University (Wayne State University, 1999)

Up to the late 1990's Wayne State used a formula budget model that distributed funding based on the number of student credit hours taught by the unit and on the student/faculty ratio assigned to that unit by the University. In 1999 a Budget Working Group at Wayne State recommended replacing the institution's current model with an incremental model with a "strong dynamic component." This dynamic component required units to petition for new funding on the basis of their ability to meet their missions effectively.

The perceived advantages of the formula budget model were that:

- It was responsive to major changes in enrolment demand for particular programs
- Student/faculty ratios were a major building block of the model and they captured the different resource needs of programs, "albeit imperfectly".
- It allowed units that experience an increase in student enrolment over the projected level to obtain an increase in their budgets for the current year.

The expressed disadvantages of the model were that:

- The formula had not been implemented uniformly over the years, which led to the perception of inequitable results
- The student/faculty ratios assigned were thought to be inappropriate in some cases
- The funding methodology provided for faculty salaries and instructional supplies, but not general operating expenses
- By focusing on enrolment, other important priorities of the institution were deemphasized
- The reliance on enrolment could lead to short-term fluctuations in revenue and hinder long-term planning
- The model fostered inappropriate competition between units and disincented interdisciplinary activity

University of Utah (Brinkman & Morgan, 2010)

Academic units receive the bulk of their funding on an incremental basis, but can also request funding for programmatic enhancements in accord with their strategic plans. Units have access to "Productivity Funding" in which funds are provided formulaically according to the number of student credit hours generated by the unit.

Benefits include:

- The model allocates new money when enrolment increases and reallocates money when enrolment decreases or demand shifts internally
- The model incentivizes academic departments to pay attention to students' instructional needs and interests
- By adjusting the rates paid per credit hour, the university has used the funding mechanism to promote other objectives, such as providing full degree programs at remote sites and enhancing interdisciplinary offerings.

Additional information (Winter, 2010):

- Student credit hour (SCH) rates are determined by level of study, ranging from \$60 for lower division undergraduate to \$90 for advanced graduate. Remote site and interdisciplinary incentives are paid at 1.5x the regular rate. SCH funding is considered "soft" because the amount of funding varies in response to SCH production
- If sufficient funds exist and have recurred for many years, colleges can apply to have the productivity funds "hardened" (put into base)

Ryerson University (Stenton, 2011) and (Stenton, June, 2011)

Ryerson has had variants of the formula budgeting model since at least the 1980s. Three main phases:

- 1) Average cost funding based on academic contact hours with marginal revenue funding as surplus FTEs. Step function of faculty based on prescriptive workload and sectioning practice
- 2) Student Contact Hours - continuous function of SCHs weighted by mode of delivery (lecture vs. lab/studio/clinical)
- 3) Updated "Mode of Delivery Model" that changed the allocation metric from SCH to Course Registrations, adjusted the departmental cost factors and introduced incentive funding for enhanced student choice (to incent interdisciplinary and experiential learning).

Ryerson chose to continue using Formula Budgeting and reject Activity-Based Budgeting because:

- 1) The cost based system was transparent and allowed the university to build in incentives that furthered its objectives
- 2) Ryerson has a very centralized culture
- 3) It believes that ABB is problematic in jurisdictions like Ontario where institutions don't have much influence over their revenues
- 4) BIU values are not a good proxy for costs, so are not an appropriate measure for allocating revenues
- 5) It did not believe there was adequate expertise in the faculties to manage ABB
- 6) There was a recognition that some faculties would not be able to stand on their own under ABB.

B] Performance Funding:

Theoretical:

This method is rational, objective, and rewards performance characteristics the institution wants to encourage. It is primarily used as a top-down method of budgeting in hierarchical organizations. Problems with this model include: (1) the fact that quality indicators are difficult to identify; (2) agreement on appropriate measurements for evaluation is hard to obtain; and (3) the cause/effect relationship is usually complex and often difficult to measure. Thus quality indicators are often used as supplements to financial measures when evaluating the effectiveness of a cost center or department. (Gibson, 2009)

Case Study:

University of Cincinnati (Johnson et al, 2011)

The university adopted a Performance Based Budgeting model in FY 2010, replacing the historical allocation of resources for the undesignated general fund. The model is resource- and enrolment-driven with incentives for both growth and efficiencies. Each college or administrative unit is assigned a mandatory budget threshold that is to be met through growth, cost saving measures, or some combination of both. The model allows for college units to share in the growth that results from exceeding established thresholds and building enrolments.

[The undesignated general fund is approximately \$535m or 51% of total current funds.]

In the Performance Based system, the university projects flat growth across the colleges and assigns a net revenue target. Any combination of increasing revenue or reducing expenses can be used to meet the target. Exceeding enrolment targets can be used to offset cuts; not meeting revenue targets will result in mid-year or subsequent-year cuts.

C] Zero-base Budgeting (ZBB):

Theoretical:

While a ZBB approach can provide users with a better understanding of their organizational unit, there are major implementation challenges with this model. First and foremost, in reality most of a unit's budget – often 80 percent or more – continues from year to year in the form of largely fixed costs for personnel and other expenses. Because the ZBB model does not recognize past history, unit planning is extremely difficult. The process is further complicated because units and programs often are not discrete entities, making cost allocations problematic. The ZBB model also involves a great deal of paperwork. Post-implementation evaluations have shown that in practice ZBB does not lead to decisions that differ significantly from an incremental approach. (Kent State, 2007)

The major limitation of benefit-cost analysis, as it has been applied to public investments ... is that it ranks projects and programs in terms only of economic efficiency. ... But the objective of most public programs is not simply, not even principally, economic efficiency. (Maass, 1966)

Case Studies:

Texas Universities

In 1973, the governor of Texas announced that all state agencies were to use

zero-base budgeting. William Boyd analyzed two zero-based years against a regression of eight previous years of budget data. His findings were that:

"If zero-base budgeting is to seek out inefficiency and eliminate waste, the purpose was not fulfilled. In each instance of significant variation, the dollar amount was higher, not less, than the regression estimate." (Boyd, 1982)

In 1993, Texas abandoned ZBB in favour of performance budgeting. (State of Utah, 1999)

Queen's College (Queens College, 2011)

In response to fiscal challenges, in July 2011 CUNY-Queen's College implemented zero-based budgeting "...in which each expenditure, no matter how small, will have to be justified in terms of the college's goals." (Queens College, 2011)

D] Incremental Budgeting:

Theoretical:

The basic assumption is that the main objectives of an institutional organizational unit or program will not change from the current. Strengths of the incremental approach are that it conserves time and energy, increases the predictability of budget alternatives, compliments [sic] long term organizational commitments, is more pragmatic than other, more theoretical approaches, and is generally better understood by governing board members. (Lasher and Sullivan, 2004)

Weaknesses are that it is non-aggressive, provides little incentive to justify the continuance of programs, their quality or their productivity and is more based on inputs than outputs or outcomes. It may be affected by institutional politics or administrative preference. (Lasher and Sullivan, 2004)

It allows the central administration to exercise tight control and disempowers deans. (Massy, 2003)

In a study of budget model options, a budget steering committee at the University of Washington concluded that incremental budgeting had a number of severe limitations:

- It does not align revenue generation with the activities associated with the revenue.
- The full cost of programs – whether instructional, research or service oriented – is unknown, limiting the ability to make informed decisions that fully take into account efficacy, value and cost of a given program.
- It is not sufficiently transparent to external stakeholders (including taxpayers, tuition payers and the legislature), which limits the ability to account for the use of current funds or make compelling cases for new investment.
- It does not have the flexibility required for effective reallocation of resources in response to workload shifts or changes in strategic priorities, which creates a disincentive for innovation that would require new funding. (University of Washington, 2011)

Case Studies:

Incremental budgeting is the most common practice in the university sector, including at York University.

E] Activity-Based Budgeting (ABB)

The Activity-based budgeting approach is known by many other names, including:

- Responsibility-centre budgeting or Responsibility-centred management
- Responsibility budgeting or Revenue responsibility budgeting
- Incentive-based budgeting
- Revenue center management
- Revenue-based funding
- Value-centered management
- Colloquially as “every tub on its own bottom” or “eat what you kill”

In this literature review, all of the terms listed above are subsumed into “activity based budgeting” or ABB, even though there may be subtle differences among them.

Theory:

[ABB] provides an organization with a number of advantages:

- It provides a way to manage an organization that would otherwise be unmanageable.
- Assigning responsibility to lower level managers allows higher-level managers to pursue other activities such as long term planning and policymaking.
- It provides a way to motivate lower level managers and workers. Managers and workers in an individualistic system tend to be motivated by measurements that emphasize their individual performances.

However, this emphasis on the performance of individuals and individual segments creates what some critics refer to as the “stovepipe organization.” (Martin, n.d.)

An implicit assumption of [ABB] is that separating a company into responsibility centers that are controlled in a top down manner is the way to optimize the system. However, this separation inevitably fails to consider many of the interdependencies within the organization. Ignoring the interdependencies prevents teamwork and creates the need for buffers such as additional inventory, workers, managers and capacity. (Martin, n.d.)

An influential early theorist on ABB in higher education was Edward Whalen, who led the first implementation of ABB in a public university at the University of Indiana in 1990. He proposed three primary principles that support the ABB approach (Whalen, 1991):

- Proximity:** • The closer the decision maker is to the implementation point, the better the decision will be
- Proportionality** • The larger an organization, the more it can benefit from decentralization of authority and accountability
- Knowledge** • Decisions will be better in an environment that has accurate and timely information

Advantages of ABB:

Daniel Lang at the University of Toronto published a succinct primer enumerating the advantages of the ABB approach. (Lang, 1999)

- 1) Emphasizes and exposes costs that are often known but not recognized. This includes the full cost of research and ancillary

services. In doing so, ABB “forges strong and realistic links between budgeting and planning”

- 2) Motivates entrepreneurial behaviour and the generation of revenue
- 3) Enables decisions about the allocation of resources to be made where there is the most knowledge to make them intelligently
- 4) Encourages a “buy in” to planning and the acceptance of the need to plan
- 5) Reduces the scale of planning and decision making in large, complex institutions by redistributing responsibility
- 6) Encourages the creation of markets [to allocate resources more efficiently]. Lang suggests a dynamic mechanism to balance “... institutional behaviours that lead to improving the fit between social need and economic demand on one hand, and educational diversity and supply on the other hand.”
- 7) Encourages interest in the identification and cost of “backrooms”. By exposing formerly hidden costs, ABB may create a stronger disposition towards thinking in terms of acquiring services from a wider variety of sources and of benchmarking [services] in terms of “best in class” rather than just against similar services in other institutions.

Other authors cite additional advantages of activity-based budgeting:

ABB:

- 1) Encourages transparency and predictability through the use of formulas
- 2) Enhances accountability: allows deans understand the budgetary consequences of their decisions
- 3) Eliminates need for negotiation because the allocation methodology is based on repeatable formulas
- 4) Forces deans to align academic planning with financial consequences, especially in periods of funding decline (Educational Advisory Board 2, 2011)
- 5) (Hearn, 2006) believes that [ABB] encourages attention to students and other revenue providers as customers to be served.

Disadvantages of ABB:

(Lang, 1999) also lists a number of potential disadvantages of activity-based budgeting:

- 1) May assume more knowledge of costs than an institution may have. In a later article, it is suggested that this is often a bigger challenge for Canadian institutions. (Educational Advisory Board 1, 2011)
- 2) Requires high level supporting financial information systems
- 3) May demand more local managerial skills and appetites than may actually exist
- 4) There may be an asymmetry between government funding formulas and actual institutional cost structures. “...[L]arge components of revenue may be based on assumptions about costs which are either erroneous to begin with, or so generalized that they cannot be validly applied to specific programs in specific institutions.”
- 5) Service teaching and ABB are not always compatible. Cost structures may vary among programs and departments, creating an incentive for some programs and departments to “repatriate” courses and offer them themselves [e.g. “English for Foresters”]. David Gasteiger focuses this point to “service teaching and [ABB] are not always

compatible because departments are unwilling to share their resources". (Gasteiger, 2011)

- 6) Although ABB can relocate decision-making to levels most capable of making decisions, it does not ensure that those decisions will be made at those levels. It is not always clear if decisions are being made at the most competent level
- 7) Needs new regulatory arrangements, such as a dispute mechanism. Lang gives examples of decisions that might require dispute resolution: who teaches what to whom, appointment of faculty, selection of students, the determination of faculty and service teaching vs. repatriation. He provides a regulation metaphor of a "public utilities commission", but also states that the role could also be played by the chief academic officer.

In support of Lang's point 4, the following quote is taken from *A Formula for Operating Grants to Provincially-Assisted Universities in Ontario*, the report in which the Ontario BIU weights were established (Committee on University Affairs, 1966):

"It cannot be over-emphasized that the formula is designed to produce a reasonably equitable over-all distribution of basic university income. It is not intended as a pattern for spending. [sic]"

The formula weights do not reflect the very important differences in costs among the various subjects within a given program or among course years. These differences are averaged out in the weighting process and not significant for the relatively simple income producing formula proposed."

(Hearn, 2006) offers several other potential weaknesses of activity-based budgeting:

- ABB favours corporate over academic values. It may encourage reducing professors, increasing teaching loads and eliminating majors and programs with low enrolment numbers
- Teaching units may end up paying for non-instructional services without much influence over them
- Rivalries could be fed by the release of detailed budget information
- It can encourage grade inflation if units struggle for enrolment
- There is no clear empirical evidence on how ABB affects educational quality
- A weak dean can do damage

Daniel Lang and Sally Garner at the University of Toronto participated in an Educational Advisory Board Roundtable and offered opinions why Canadian institutions have been slower to adopt ABB than American ones: (Educational Advisory Board 1, 2011)

- 1) *Lack of fine-grained cost data*: American universities need to report fine-grained budget information to IPEDS and must engage in detailed cost accounting for the federal government with respect to indirect costs of research.
- 2) *Distortive funding models requires reallocation formulas that rob [ABB] of key benefits*: they cite the Ontario BIU system: "the weights in this systems were contentious when they were introduced and are

still considered flawed by many, especially given the wide variations in cost structures in place between giant universities such as the University of Toronto or York University and smaller, specialized schools. To allocate these costs in a meaningful way, some contacts argue that institutions would have to create a politically contentious reallocation formula, reinforcing the negative impact of budget fights that institutions seek to blunt by adopting [ABB] in the first place."

- 3) *Limited discretion to raise tuition prevents institutions from controlling revenue streams*: The University of Toronto considered implementing a system of internal weights when it designed its ABB system, but decided against it (University of Toronto, 2006):

"The Task Force is not recommending this approach, because the exercise of developing internal BIU weights is difficult and potentially controversial, given the widely varying costs of our programs. We would need to agree on acceptable student-to-faculty ratios, salary levels, space needs, and so on."

Activity-based budgeting has also been criticized on philosophical grounds. Some have disparaged ABB as incompatible with the ideal of the academy.

E.M. Adams criticized that ABB "...places the heart of the university a mode of rationality in decision-making that will further pervert educational policy and weaken the university's ability for corrective cultural criticism". (Adams, 1997)

David Kirp asks whether it is possible to reconcile the push for market efficiency and the realities of organizational complexity with the culture of an institution where money is not the principal metric of worth. He provides examples from ABB institutions – the University of Michigan and the University of Southern California – where departments offered academically suspect classes in order to poach students from other departments and boost their revenues. This behavior was curtailed when the administrations asserted more central control. Kirp also argues that a "cult of efficiency" has led to outsourcing of administrative service and, increasingly, to outsourcing of teaching with a proliferation of part-time and adjunct instructors. (Kirp, 2002)

(Dubeck, 1997) noted that deans in a unionized institution would be particularly challenged by collective agreement enforced labour and wage inflexibility.

Options for ABB:

In March 2011, the Educational Advisory Board (EAB) prepared a custom research brief in which they solicited advice from three institutions that had mature ABB systems on how to implement the model – the University of Toronto, University of Minnesota and University of Southern California. From this advice the EAB provided advantages and disadvantages of three cost allocation methods, as summarized in Table 4 below (Educational Advisory Board 1, 2011).

Table 4: Cost Allocation Options for ABB

Option	Advantages	Disadvantages
Consumption based: allocate according to usage	<ul style="list-style-type: none"> • Encourages optimal resource use 	<ul style="list-style-type: none"> • Usable data is difficult to obtain • Some costs remain fixed for the institution. For example heating a building costs the same whether the space within it is allocated optimally
Tax allocation: collect a percentage of all revenue or expenditure from each responsibility centre	<ul style="list-style-type: none"> • Simple and transparent • No data requirement 	<ul style="list-style-type: none"> • No connection to resource usage, so little incentive to reduce
Cost driver: use a proxy measure rather than a direct one	<ul style="list-style-type: none"> • Simplicity • Easy-to-collect data • Useful for encouraging, rather than limiting, use of services 	<ul style="list-style-type: none"> • Using enrolment as a cost driver penalizes rapidly growing units • No connection to resource usage • Some costs remain fixed for the institution

As part of their budget review process, the University of Saskatchewan created a number of “concept documents” that summarize institutional practices regarding aspects of activity-based budgeting. They synthesized secondary research and interviews with universities in the United States (Indiana University-Perdue University Indianapolis (IUPUI), Iowa State, University of Michigan), Canada (University of Toronto) and New Zealand (University of Otago). The WGBM has also added Ohio State because, like York, it is a large university in a jurisdiction with an external funding formula. Tables 5 through 8, which follow, summarize their research (University of Saskatchewan 1 through 4 except the Ohio State sections).

Table 5: Cost Allocation practices:

IUPUI	<p>For both academic and administrative/service units:</p> <ul style="list-style-type: none"> • flat tax based on rolling 3-year average and 4 cost drivers: students, staff/ faculty, square footage and contracts/grants • New construction funded through central fund, but not building maintenance
Iowa State	<p>For both academic and administrative/service units:</p> <ul style="list-style-type: none"> • Direct costs funded through a historical, incremental model • Indirect costs allocated by drivers: <i>Facilities</i>: assignable sq. footage; <i>Business</i>: employee FTE; <i>IT</i>: employee FTE & student headcount; <i>Library</i>: weighted avg. headcount; <i>Student Services</i>: student headcount; <i>Administrative Support</i>: faculty FTE • New building funded centrally and approved by committee; operating costs borne by unit
Michigan	<ul style="list-style-type: none"> • Academic units: Tax based on rolling 2 yr. historical basis: <i>General</i> 24%; <i>Research</i> 11%; <i>Auxiliary</i> 4%; <i>Financial Aid</i> by head count; <i>Facilities (plant ops)</i> by assigned sq. footage; <i>Facilities (utilities)</i> by actual usage • Admin/Svc. Units: developed through incremental budget • Operating costs of buildings borne by units
Ohio State	<ul style="list-style-type: none"> • Physical Plant: custodial service and maintenance based on square footage. Colleges could pay extra for more service, but this practice was discontinued in 2008 • Student Services: general fee and allocation to colleges based on SCH; Undergraduate Student Academic Services: % of undergraduate degrees by college (University of Arizona, n.d.)
Toronto	<ul style="list-style-type: none"> • Academic units: allocated indirect costs through 12 cost bins and 30 cost drivers • Admin/service units: Prepare 5-yr revenue & expense projection including basic (historical) expenses plus new key initiatives. Funding approved based on budget constraints & institutional priorities.
Otago	<p>Academic units – three cost methods for:</p> <ul style="list-style-type: none"> • <i>Overhead rate</i>: 114% of direct commercial labour, 103% of research labour • <i>Cost of service divisions</i>: allocated to academic units through 50 cost drivers • <i>Fee for service</i>: e.g. print shop <p>New construction and major projects funded centrally, otherwise cost centres budget for capital expenditures + depreciation under \$250k per item</p> <p>Admin/Svc. Units: prepare detailed budget bids for each cost centre, then submit for approval</p>

Table 6: Tuition allocation practices:

IUPUI	<ul style="list-style-type: none"> • 100% of undergraduate tuition revenue goes to the unit of instruction according to student credit hours (SCH) • 100% of graduate tuition revenue goes to the unit of instruction • 100% of professional tuition revenue goes to the unit of instruction • Tuition is allocated at a standard rate for all <p><i>Note: the IUPUI administration would recommend a 50/50 split to accommodate tuition differentials</i></p>
Iowa State	<ul style="list-style-type: none"> • 25% of undergraduate tuition revenue goes to the home faculty/ 75% to the faculty of instruction • 100% of the graduate tuition revenue goes to the home faculty • 100% of the professional tuition goes to the home faculty • 15-20% of undergraduate tuition revenue and 7% of graduate tuition revenue is cut from the top for financial aid • Tuition rates vary by discipline and degree
Michigan	<ul style="list-style-type: none"> • 50% of undergraduate tuition revenue goes to the home Faculty/ 50% to the Faculty of instruction • 75% of graduate tuition revenue goes to the home Faculty/ 25% to the faculty of instruction • 75% of graduate professional tuition revenue goes to the home faculty/ 25% to the faculty of instruction • Financial aid is cut off the top; rate is determined by degree • Tuition rates vary by discipline and degree and vary by residency status
Ohio State	<p>Step allocation:</p> <ol style="list-style-type: none"> 1) Distributes to base 2) Growth funds are distribute to colleges based on SCH increase or decrease as: <ol style="list-style-type: none"> a) 40% weighted for cost of delivery b) 60% unweighted 3) Remainder is shared based on SCH <p>(University of Florida, 2008)</p>
Toronto	<ul style="list-style-type: none"> • 100% of undergraduate, graduate and professional tuition revenue goes to the home Faculty • Tuition rates are by discipline and degree
Otago	<ul style="list-style-type: none"> • 100% of undergraduate, graduate and professional tuition revenue goes to the home Faculty • Tuition rates are by discipline and degree

Table 7: Central Fund Practices

IUPUI	<ul style="list-style-type: none"> • Used for initiatives, priorities and “rainy days” • Flat tax on tuition per credit hour • Disbursed at the President/Chancellor's discretion
Iowa State	<ul style="list-style-type: none"> • Used for 1) Instructional Support Fund – partly funds student recruitment, advising, retention and instructional activities of colleges; 2) Resource Management Fund – first used to balance colleges with their projected attributable revenues; later used at the discretion of the President and Provost to steer the university, carry out its mission, and accomplish the goals of the strategic plan (Iowa State University, 2007) • Taken from state appropriations • Size of distribution of fund determined each year by the President, Executive Vice-President and Provost
Michigan	<ul style="list-style-type: none"> • Reserved fund for initiatives, priorities, balancing of units • Central fund comes out of responsibility units' taxes
Ohio State	<ul style="list-style-type: none"> • 24% overall: 19% for overhead (President's Office, Office of Academic Affairs, Treasurer's Office, Controller, Public Safety, and University Landscaping) and 5% at the discretion of the provost • Tax on marginal resources the colleges earn from instructional fees and state subsidy. Flow based on credit hours excluding differential fees (University of Arizona, n.d.) and (Ohio State University, 2008)
Toronto	<ul style="list-style-type: none"> • 10% cut to units fund to support and control academic priorities and initiatives and for hold harmless guarantee
Otago	<ul style="list-style-type: none"> • Units bid for a slice of a fund for Service and Academic initiatives that is funded from the overhead rate

Table 8: Transition Period Practices:

IUPUI	<ul style="list-style-type: none"> • Transition was through two shadow years and a permanent reference adjustment. Was a two-year allowance to carry forward a debt (with an explanation)
Iowa State	<ul style="list-style-type: none"> • Three year transition: <ol style="list-style-type: none"> 1) <i>Simulation year</i> - practice and training year with no budgetary consequences to units 2) <i>Base year</i> - the year that the base level of support from the Resource Management Fund is determined for each Resource Responsibility Center. The RMF is the means of making Resource Responsibility Centers' expense budgets (direct expenses plus allocated expenses) balance with their projected attributable revenues (Iowa State University, 2007) 3) First year - model implemented, with any fluctuations in revenues or expenses managed by the units. Centre may have intervened in cases of catastrophic, uncontrollable fluctuations
Michigan	<ul style="list-style-type: none"> • Implementation over five years with one shadow year and a permanent reference level • Central fund created to help transition. Would have preferred a 1-year transition
Ohio State	<p>Five-year process. Process included:</p> <ul style="list-style-type: none"> • Adoption of new Academic Plan • Realignment of base budgets with new Academic Plan • Redefinition of the ground rules for the allocation of new resources so they are consistent with the Academic Plan • Identified colleges that gave received from/supported other colleges and created plans to reduce level of support over 5 years (Ohio State University, 2001)
Toronto	<ul style="list-style-type: none"> • During the shadow year, the new model reference level ended up being permanently guaranteed through the university fund to all units. They believe that even though they are permanently guaranteeing the “shift” from the old budget model to the new model, units should incrementally shift to no dependence on this guarantee
Otago	<ul style="list-style-type: none"> • No shadow year or permanent reference level built into cost driver rates for all units. The Government required an immediate change to the new budget model

Strategies for Mitigating Common Problems of ABB:

The EAB summarized a range of possible solutions to potential challenges engendered by ABB, which are summarized in Table 9 (Educational Advisory Board 2, 2011):

Table 9: ABB problems and mitigations

Challenge	Potential Solutions:
1) <i>Discouragement of Cross-unit investments: linking all revenue to programs provides little incentive to participate in cross-unit initiatives</i>	Establish a central strategic fund to support cross-unit activities that can be as little as 2% (3.3% at USC, 10% at U of Toronto)
2) <i>Unproductive competition and revenue poaching</i>	a) Establish a monopoly for general education courses [USC] b) Establish a fix allotment of tuition revenue for home and teaching faculties c) Require that all courses must be approved through a central curriculum committee [USC]
3) <i>Budget volatility - with high fixed costs and little labour flexibility, units cannot cope with rapid changes in revenue</i>	a) Use a rolling average for cost allocation (e.g. over 3 years) b) Create a volatility-triggered emergency fund
4) <i>Constrained TA hiring decisions - TAs from one discipline may be qualified to teach in another. It creates revenues in the TA's own unit, but costs in the other</i>	a) Centralize doctoral tuition and assistant funding to encourage units to hire the best assistants possible
5) <i>Disparities in [revenues and/or costs]</i>	b) Create subventions or cross-subsidizations
6) <i>Revenue hoarding - need to encourage revenue centres not to hoard funds, but must also permit strategic investment</i>	c) Create an intercentre bank - the University of Southern California created a "bank" for holding surpluses and issuing loans. Units with a surplus can withdraw 1/3 of the surplus per year; units with a deficit could borrow from it but had to repay within 3 years

Lessons Learned from an unsuccessful experiment:

The University of Toronto first attempted to establish an ABB system as a pilot program at the Scarborough campus (UTS) of the University of Toronto in 1997. Daniel Lang (Lang, 2002) analyzed the outcome and deemed that it was unsuccessful in that it failed to break even or generate any additional net revenue and it failed to differentiate itself from the main University of Toronto campus.

A) As reasons for the failure, he posits that:

- 1) As applied to the mix of enrolment, programs and research at UTS, government funding was lower than the university-wide average.
- 2) UTS may have confused *maximizing income* with *optimizing net revenue*. The government had earmarked certain programs for expansion that were among the most expensive UTS offered and were among those for which the BIU weight underestimated cost.
- 3) The University installed a new financial information system, which caused confusion when new financial reports looked unlike the reports to which administrators were accustomed.
- 4) There was confusion over carry-forwards. Some funds were carried-forward as positive variances that were already committed. What seemed like additional funding was actually a deferral of spending from the previous year.
- 5) UTS recruited a senior administrator from the central administration only after the pilot had begun.
- 6) The campus became responsible for its own fund-raising, but few persons at the college had experience in development, and the college found it difficult to recruit and retain experienced professional fund-raisers.
- 7) The campus found it difficult to forecast accurately the probable results of some of its initiatives.
- 8) Entrepreneurial activity is by nature competitive and the university began competing with itself for students.
- 9) UTS had similar cost structures as the rest of the University, but its programs and enrolments generated below average revenues.
- 10) The university chose to attribute revenues generated by service teaching to the faculty that provided the service. As a result the revenue from 5,000 students was not attributed to UTS

B) Lessons learned:

- 1) *Do not expect [ABB] to be useful and effective in all circumstances. Its application should be specific instead of broad.*
 - The allowance of 100 percent carry-forward of deficits (as well as surpluses), may have led to the deferral of some important decisions.
- 2) *Do not expect [ABB] to be a "quick fix" or inexpensive solution.*
- 3) *Do take the ways in which public funding is allocated to universities into account in implementing [ABB]. The success or failure of [ABB] can depend on the form that the public allocation takes.*
 - If the funding formula does not approximate the institution's cost structures, the institution should be wary
- 4) *Do not generalize the effects that [ABB] may have on collegiality and cooperation. It may be beneficial in some cases and detrimental in others.*

- On the one hand, the university expanded collegiality by increasing participating in decision-making (“vertical collegiality”); on the other hand the internal competition it created discouraged collegiality among academic units (“horizontal collegiality”)
 - Lang asserts that as vertical collegiality grew, the central administration lost some control because it had previously relied on a patronage model. He also observes that the “idiom” of discourse between a dean and the provost shifted from budgets and resources to academic plans, standards and performance measures.
- 5) *Do expect some special problems if [ABB] is not deployed in all faculties.*
- It is hard to implement [ABB] along with a unitary school of graduate students. Most of the graduate students were at the St. George campus, but most of the faculty at UTS were active researchers. The infrastructure costs were roughly equal across the campuses, but the attribution of revenue was not.
 - It was difficult to manage service teaching relationships between ABB and non-ABB faculties
- 6) *Do expect a steep learning curve for divisional administrators who have little experience in making the sorts of decisions for which [ABB] calls. Do not expect automated financial information systems to flatten that learning curve.*
- At UTS, the learning curve was too steep and was exacerbated by a new financial system. It was only flattened when two senior administrators with extensive planning and budgeting experience arrived.
- 7) *Do expect [ABB] to generate interest in raising income, but do not expect the difference between maximizing income and optimizing net revenue to be recognized automatically by faculty and campus managers.*
- Because [ABB] is often deployed in response to budgetary shortfalls that have already occurred, there is a tendency to favor the maximization of gross income over the optimization of net revenue. [ABB] is most effectively deployed in conjunction with multi-year planning and budgeting that can project the steady state effects of budget strategies.
- 8) *Do invest however much time and effort are needed to develop clear and complete protocols for the deployment of [ABB].*
- The principal objective of [ABB] is to decentralize decision-making. If faculty and administrators frequently have to seek clarity on rules from central administration, decentralization may be illusory.

Summary and Conclusions

While a number of budgeting models have been reviewed, it is clear that no one model solves all problems. The broadest conclusion we can reach is that most institutions evolve a modified model tailored to fit their unique circumstances. With this caveat, and bearing in mind the advice on ABB cited here, we conclude that, if York University adopts a new budget model, the features of the model should be determined in the context of York’s culture, structure and financial situation. Furthermore, any model the university adopts will generate fresh challenges as well as benefits.

Appendix 6 – Report of the WGBM Subcommittee on how a new budget model might best support graduate education

SUB-COMMITTEE ON BUDGET MODELING

-- Interim Report – [February 2012]

A. MANDATE

1. The mandate set for this Sub-Committee includes making recommendations on:
 - (a) what is the best structure for delivering graduate education at York University?; and
 - (b) what processes would allow funding decisions to be made in an accountable way as a result of that structure?
2. This is intended as an *interim report*. As well as meeting the general commitment set down by the Main Committee to provide an update of the Sub-Committee’s work, this *interim report* is also presented in order to allow the Main committee to obtain a real sense of where the work of the Sub-Committee is going

B. APPROACH

3. In consultation with Vice-Provost Rhonda Lenton, the nature of the membership of the Sub-Committee was established and the following members appointed and attended:
 - Allan Hutchinson, Dean, FGS
 - Don Hastie, Associate dean, FSE
 - Kim Michasiw, Associate Dean, LAPS
 - Steve Bailey, GPD, Comm. & Cult, FGS
 - Michael Zyrd, GPD, Film, FFA
 - Anna McIntosh, GSA rep
 - Steve Reisman, GSA rep
 - Joanne Nonnekes, EO, FGS
 - Aldo Di Marcantonio, Finance
4. The Sub-Committee met on a regular weekly schedule from mid-November 2011 through to mid-February 2012. The Sub-Committee covered a large number of topics in order to become fully informed about the present budget situation and the possible models that might be adopted by way of improvement.
5. So informed, the Sub-Committee set out a plan for proceeding. This involved (a) mapping the main issues and guiding principles that should shape and inform any exercise in budget-modeling for graduate studies at York. When this challenge was complete, the Sub-Committee set about (b) scrutinizing the present arrangements and identifying their failings when measured against the guiding principles for graduate studies at York. With a full grasp of the status quo, the Sub-Committee (c) debated the options available and settled upon a series of proposals that might better integrate and institutionalize the founding principles in regard to funding a high-quality and comprehensive set of graduate programs.

C. PRINCIPLES

6. The Sub-Committee deemed it essential to lay down a series of firm guiding principles that would enable it to offer a rational evaluation of existing arrangements and to propose a preferred model for the delivery of graduate studies at York. Accordingly, the following principles were deemed to be integral to making any progress in developing an improved budget model:
 - *High Quality of Graduate Studies* – Any budget-model must be absolutely committed to the overriding idea that York must offer the highest-quality of quality studies possible(see UAP, White Paper, etc.). Even though there will be strong budget constraints in place in any future budgeting process (which will likely get worse, not better in the foreseeable future), there must be a genuine and continuing commitment to the quality of the students, the programs, and work done;
 - *The Importance of Graduate Studies* – Any budget model must respect the fact that the delivery of high-quality graduate studies is given high importance. In all budget decisions that affect graduate studies, there must be an opportunity to affirm the importance of graduate studies not only at York, but also to York. There must also be involved those best positioned to champion graduate studies. While trade-offs between different goals and priorities will need to be made, this can only be done in a context in which the interests of graduate studies are fully and unconditionally represented;
 - *The Transparency of Budgeting* – Whatever model of budgeting is in operation, it must be entirely transparent. All efforts must be taken to ensure that each and every aspect of decision-making and implementation is done in as open and clear a way as possible. There should be no room for doubt as to where revenues originate from and where costs are ultimately expended. Any other course would defeat the attainment of the other principles and will raise unnecessary suspicion about the budget process;
 - *The Consistency of Budgeting* – In laying down a workable set of budget principles, pathways and processes, it will be important to ensure that they will remain stable and dependable over a relatively substantial period of time; the switching between different policies over a short period will inhibit the development of a viable and workable budget for graduate studies as well as unsettle any planning process. That said, the Sub-Committee saw no reason why there needs to be a one-size-fits-all template for budget-modeling across the University; this should be a general aspiration, not an absolute requirement;
 - *The Alignment of Academic Priorities and Budget Decision-Making* – A fundamental requirement of any budget model is that budget decision-making should be informed by and motivated by academic priorities (e.g., the quality and importance of graduate studies to the research agenda). This process needs to be done in an institutionally-entrenched way so that the temptation to elide the interests of one in favour of the other can be consistently resisted;
 - *The Accountability of Decision-Makers* – A defensible and dynamic budget process must introduce and enforce a strict level of accountability. Those institutional locations and officers charged with making budget decisions must also be held responsible for those decisions. When combined with the foregoing principles, this recognition will work to underwrite the continuing seriousness and efficacy of budget decision-making;
 - *Administrative Efficiency* – an overall assessment of the merits of any budget model must be sensitive to the costs of the administrative structure within which decision-making and implementation are made. Without an accounting of those administrative costs, any calculations about efficiency will be deficient. Moreover, any effort to achieve administrative efficiency must deal with the problem of ‘economies of scale’ (i.e., the different resource-faculties vary enormously in size and their capacity to administer different budget models varies proportionately); and
 - *The Appreciation of Realistic Constraints* – In order to settle on an appropriate model of budgeting for graduate studies (and for any university initiative), it will be essential to understand and incorporate the various constraints in play. Obviously, the overall size of the budget and its inadequacy to fund all desirable university initiatives will be a central factor. However, there are other important matters that have a particular impact on graduate studies at York. The most significant is the need to respect and enforce the terms of the various collective agreements that impact the funding of graduate studies.
7. Taken together, the Sub-Committee maintains that these guiding principles will help to ensure that any decisions taken about changes to the budgeting process as they affect graduate studies will be done in a measured, reasoned, and fair way. While it is appreciated that no scheme can be perfect, especially in a time of deepening budget concerns, a consistent and good faith commitment to these guiding principles will be even more important.

D. PRESENT ARRANGEMENTS

8. Before examining the existing structure and process for budget decision-making at York, the Sub-Committee maintained that it was important not to operate within an institutional vacuum; it was necessary to take stock of some of the *realistic constraints* that presently inform the budgeting task. Consequently, the Sub-Committee took time to come to a conclusion about whether the revenues and costs of operating graduate studies at York were roughly balanced or not. Without some appreciation of that crucial fact, the Sub-Committee felt that it would be imprudent to make recommendations as they would be both realistic and principled.
9. Utilizing conservative and wide-ranging indicators, the Sub-Committee came to the conclusion that, at present, the cost of graduate studies likely exceeds the revenues generated by graduate studies. While this imbalance is not enormous, it is sufficient to warrants serious consideration and weighting in any evaluation of different budget-models. If York is to maintain a comprehensive and high-quality range of graduate studies, then it will be necessary to accommodate this short-fall in any future changes³. Furthermore, the Sub-Committee assumed that the amount of funding available for graduate studies will likely not increase in the foreseeable future. While there may well be savings from a more efficient budget-model, it is unlikely that this will change the overall imbalance in any substantial way.
10. The difficulty with describing and evaluating the existing arrangements is that they are pervasively murky and unprincipled. It is almost impossible to isolate the precise amounts that are designated to the delivery and maintenance of graduate studies. Even a modest commitment to *transparency* and *consistency* dictates that present arrangements are woefully lacking. Moreover, this means that the effort to ensure *alignment* and *accountability* is equally elusive. For instance, there is no budget line that is specifically affixed to funds that are provided to each resource-faculty to offer and support appropriate courses and programs. As such, there are no budgetary incentives or disincentives in place for the resource-faculties to take graduate studies as seriously as they might in terms of the targets met, the programs offered or the standards maintained.
11. As things stand, responsibility for the delivery and maintenance of graduate studies is divided between the Faculty of Graduate Studies (FGS) and the various resource Faculties. The particular division of responsibilities has little logic and results from the accretion of decisions and initiatives over an extended period of time. Nevertheless, the budgetary organization of graduate studies at York can be broadly understood under three separate, but related headings:

Courses and Programs

12. It is the responsibility of the resource Faculty to offer and populate courses and programs. Each Faculty is expected to do this out of the overall and undifferentiated budget designated for all the Faculty's activities; this budget covers the costs of faculty salaries, administrative staff, undergraduate programs, etc. Targets for the number of graduate students to be admitted to different programs are negotiated by the Faculties/departments with the Provost's Office and FGS. The driving force in this fundamental exercise is the allocation of funds by the government based upon the achievement of certain agreed-upon annual targets by the University. However, the performance of each faculty/department in achieving those targets does not seem to have any direct effect on the amount and allocation of budgets from year to year; there are no budgetary incentives in place in regard to graduate studies.

Student Funding

13. It is the responsibility of FGS to coordinate and administer the funding of graduate students through TA-ships, scholarships and awards, research funding, etc. FGS does not have a budget as such, but acts as a clearing-house which submits the amounts to be paid out to graduate students to the University's Finance arm; there is a general agreement between FGS and Finance each year over the general range of monies to be paid out. The precise formula for funding students is largely determined by the collective agreements and the historical amounts paid out in each program; there are considerable discrepancies across the various faculties and programs that are largely determined by the need to be competitive with other universities' programs. FGS liaises with resource-faculties and coordinates the use of research monies and other funds for student support. However, there are some very odd features of the present scheme. For instance, TA-ship contracts are made up of (1) the "salary" component which comes from the resource-faculty budget line (this is typically just over \$10K); and the "grant-in-aid" portion which comes out of an FGS budget line (this is typically just under \$5K); and

Administration/governance

14. As well as administering student funding, FGS is responsible for the overall operation of graduate studies; it receives a budget to run its office and personnel. It assumes the task of overseeing admissions (although much work is done by Student Services), petitions, degree requirements, examinations, scholarships, awards, convocation, quality assurance, etc. FGS appoints Graduate Program Directors; they are paid a stipend and are directly accountable to FGS. The GPAs are appointed and organized by the resource-faculties. There is an FGS Faculty Council which approves all new courses and programs; membership comprises a mix of GPDs, graduate students, and representatives from the resource-faculties.

³ Any attempt to assess the overall revenues and costs of graduate studies is fraught with difficulty. At every stage of analysis, there are contested and contestable issues whose resolution will have a strong impact on the ultimate calculations made. Accordingly, it is worthwhile noting that, if a different view is held by the Main Committee as to the deficit situation, the Sub-Committee might be persuaded to adopt a slightly different approach to its application of the guiding principles.

E. PROPOSALS

15. It is the main recommendation of the Sub-Committee that, whatever budget-model is finally adopted, it must be entirely transparent in content, scope, and operation. It must be possible to 'follow the money' from its originating source to its ultimate use. While there will be many intervening stages between entry and exit, it is essential that it remains as clear as possible where the money went and was utilized. Only in this way is it possible to assess all other matters – what funds are being devoted to graduate studies, whether decisions are being made which advance academic objectives, who is accountable for decisions made, etc.. Indeed, it was the view of the Sub-Committee that even the present arrangements would be substantially improved by making its operation more transparent and less opaque.
16. It is another strong recommendation of the sub-Committee that not only budgets should be aligned in a manner that best support academic priorities as outlined in our planning documents (e.g., the White Paper, University Academic Plans and Faculty/School plans, IR Plans), but also that an appropriate institutional structure should be developed that permits and monitors this goal. This will require adjustments in both the resource-faculties as well as in FGS. The present structure is not considered conducive to the optimal development of a budget-model that satisfies the guiding principles.
17. Accordingly, it is recommended that the following structures and processes be considered in order to meet and accommodate the imperatives of the guiding principles and ensure the delivery of high-quality graduate studies in a way that allows for institutional accountability, administrative efficiency, and the alignment of academic and budgetary priorities:
- Courses and Programs**
18. In order to satisfy the goals of *alignment* and *accountability*, the Sub-Committee is persuaded that the primary responsibility for ensuring the delivery of high-quality graduate studies must be at the level of the resource-faculty that generates and expends funds. Accordingly, the operating assumption of the Sub-Committee is that any new budget-model should place the resource-faculty at the core of graduate studies in order to achieve the optimal mix of the guiding principles. This presumption is rebuttable and might be set aside in certain circumstances and for certain tasks.
19. Ideally, it would be preferable if a formula could be put in place that calculates how much one graduate student is worth to the resource-faculty. This would allow academic decisions to be made that would have a direct connection to the budget. As importantly, this formula would work to incentivize decision-makers to make decisions about the number of graduate students admitted to each program, the number of courses to be offered, the number of faculty-hours to be devoted to graduate courses, and the like. In this way, *accountability* and *alignment* could be more effectively achieved.
20. In developing such a formula, attention will need to be paid to the amounts of more general overheads towards which graduate students would need to contribute; these would include capital maintenance costs as well as the funding of FGS. Moreover, in arriving at a formula, it may well be that *administrative efficiency* suggests that there is no one-size-fits-all method; a different set of calculations will need to be made for different resource-faculties. The cost of a graduate student tends to vary from one program to the next so it will only be fair to take these variables into account when arriving at a costing formula. The Associate Vice-President (Graduate) will need to play an important role in attending to these matters.
21. An important component of such an structural arrangement would be the annual setting of targets for graduate admissions. This will be necessary in order to ensure that the University achieves the appropriate overall number of graduate students to satisfy the budgetary basis on which the University is funded by the government. An important role will be fulfilled by the Associate Vice-President (Graduate) in co-coordinating this important matter across the resource-faculties on a pan-university basis. It would be his or her responsibility to work with the resource-faculties and adjust budgets on an annual basis in order to align budgets with academic priorities and with government funding-ceilings.
22. A more Faculty-based budget model would ensure that there were sufficient budgetary incentives in place for resource Faculties to make more informed and conscientious decisions about the need for new programs, the maintenance of existing program, and possibly the attrition of some existing programs. For instance, in regard to the development of new programs, the resource Faculties are in the best position to assess the demand for graduate studies in particular areas of specialization and to measure the capacities of faculty members to deliver such new programs. Moreover, with a formula in place for calculating the revenue to be attributed to each new graduate student, the resource Faculty will have a more informed appreciation for the budgetary consequences for the development and implementation of new programs. This approach might also be helpful in regard to the admission and funding of international students as well as to the financing of unregulated programs.
23. A particular challenge is the need to ensure that York's commitment to offer a genuinely inter- or cross-disciplinary approach to graduate studies is helped, not hindered by any change in budget-modeling. A pressing danger is that any move toward a more resource-faculty focus model will tend to encourage Faculties to "look after their own" and jealously guard against the access to graduate resources from graduate students in other Faculties. Accordingly, attention must be paid to ensuring that Faculties are neither rewarded nor punished for maintaining the possibility of inter-disciplinary offerings. In this regard, cross-listing will allow greater rationalization of courses and resources. Also, the status of the three 'independent programs will need to be addressed.

Faculty of Graduate Studies

24. The move to a more Faculty-centred model for the budgeting of graduate studies does not and should not be taken as demanding a weaker or less involved FGS. It will be even more important to ensure that there exists a strong and independent FGS that is able to guarantee that the quality and importance of graduate studies is promoted and defended. Without such a presence, the concern is that the academic priorities of graduate studies will be downgraded or reduced in the budget shuffle. It is only with a strong and vibrant FGS that a genuine champion of graduate studies can be relied upon in the making of difficult decisions about the allocation of scarce budget resources; this is especially so in balancing the demands of the larger undergraduate programs and graduate studies. Consequently, although FGS may assume a less broad range of responsibilities and duties, its mandate to take overall responsibility for the quality and importance of graduate studies should be strengthened.

25. In order to give FGS a place at the table when such decisions are being contemplated and made, the involvement of the GPDs in this process will be vital. GPDs have an important role to play in academic and budgetary planning; they are the pivotal piece in the connection between the resource-faculty and graduate studies. However, at present, the relationship between the GPDs and resource-faculty is strained and uneven; there is often a conflict of purpose, no defined basis of responsibility, and an institutional detachment. In order to facilitate a better integration of academic priorities and to ensure the importance and quality of graduate studies, it is imperative that GPDs should have a close relationship with both the resource-faculty and FGS. Accordingly, it is recommended that the present *de facto* arrangements should be formalized – GPDs should be a joint and collaborative appointment between FGS and the resource-faculty. This arrangement will ensure that there is a closer and more consistent alignment of academic priorities and budget decision-making.

26. FGS will continue to deal with the task of overseeing admissions (and this will demand a reappraisal of the involvement of Student Services), petitions, degree requirements, examinations, scholarships, awards, convocation, quality assurance, etc. It should also assume responsibility for ensuring that a consistent and appropriate level of service is offered by the GPAs. Also, any structural rearrangement that shifts the budgetary and administrative focal point of graduate studies to the resource faculties will have considerable impact on the operations of (and need for?) the FGS Faculty Council as the main governance body for graduate studies. This matter demands a more thorough airing. However, whatever arrangement is decided upon, it is essential that graduate students are given strong and proportionately representative participation in governance structures.

Student Funding

27. The most difficult matter to resolve in recommending a reformed structure for budget-planning and organization is the administrative arrangements to be put in place to supervise and administer student funding. The basic operating presumption settled upon suggests that this will also fall to the resource-faculty. However, there are certain *realistic constraints* and issues of *administrative efficiency* that recommend that the FGS should perhaps retain an overarching and supervisory role in student funding.

28. The most pressing challenge for student funding is the imperative of administering the collective agreements in a consistent and principled manner; this will be seriously jeopardized in a structure that devolves responsibility to the different resource-faculties. Moreover, while a couple of resource Faculties might have the administrative capacities to do this, most of the resource-faculties are already over-stretched and will find it difficult to assume this onerous task; there are considerable savings to be made by centralizing this task. Accordingly, there are good reasons why responsibility for administering student funding might continue to be a combined task and responsibility of both FGS and the resource Faculties.

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