HANOVER RESEARCH

Inside Higher Ed

BEST PRACTICES IN MULTI-YEAR BUDGETING

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In the following report, Hanover Research examines research literature, trade publications, and case studies highlighting best practices in multi-year strategic budgeting at public universities.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

RECOMMENDATIONS

Based on an analysis of multi-year budgeting model case studies and best practices, Hanover recommends that institutions:

CONSIDER PARTNERING WITH A THIRD-PARTY BUDGET AND ENTERPRISE MANAGEMENT VENDOR TO ALIGN LONG-TERM BUDGETING WITH ANNUAL REPORTING.

Budget projections are only as sound as the data used to inform them, and early adopters of long-term budgeting strategies in the higher education space face the substantial challenge of collecting, synthesizing, and analyzing unit-level data to inform their ongoing budget modeling efforts. Third-party firms specializing in cross-functional reporting and budgeting are often used to help initiate long-term planning efforts.

ENSURE THAT PREDICTIVE BUDGETING MODELS ARE INFORMED BY AT LEAST THREE YEARS OF HISTORIC DATA AND PROJECT THREE TO TEN YEARS INTO THE FUTURE.

Relying on prior budget cycles to establish accurate baseline data and scenarios is an essential strategy. The major data points collected for these efforts typically include tuition and fees revenues, financial aid expenditures, state funding allocations, grant and contract revenues, and miscellaneous operating revenues. Expenses can include a mix of operating and capital expenses.

INTEGRATE LONG-TERM FINANCIAL PLANNING WITH STRATEGIC PLANNING.

This is a necessary strategy to ensure that long-term strategic plans are achievable with current and projected resources. Budgeting should serve planning efforts, but plans must be realistic given budgetary constraints.

KEY FINDINGS

Because long-term budgeting efforts are an emerging area of interest in higher education, and because the industry can be highly volatile in terms of revenue sources, the value proposition for long-term budgeting platforms remains unclear. One vendor selling consulting services in this field concedes that he rarely recommends that institutions look beyond three years out due to the instability of the major variables, such as tuition revenues and state funding. Since most strategic plans look five to ten years ahead, and the accuracy of financial projections is likely to diminish over time, sound predictions can be challenging to make. Hanover could find no independent scholarly sources on the costs versus benefits of investing in third party planning and budgeting platforms.

Long-term budgeting can operate under a set of assumptions that differ from operational budgeting; for instance, if a long-range budget includes capital expenditures the planners should ensure that non-operating funds devoted to those investments are counted as revenues in the model. For example, Ohio University's long-term financial projections have shown massive, multi-million-dollar annual deficits for years. In 2022 they adjusted their model to include long-term reserves devoted to planned annual capital expenditures in their annual revenues, which previously reflected only operating revenues. Their budget outlook improved dramatically as a result.

Institutions pursuing more robust long-term financial modeling are investing in extensive data collection and automation efforts to streamline the process and help them to update their projections in real time. While it is possible to create long-term budget models based on annual values, integrating routine annual budgeting data collection tasks with the model can make it more accurate and timely.

Major third-party vendors operating in the predictive budgeting market include Syntellis, NACUBO, and Huron Consulting. At least some of these platforms interface with and draw data from enterprise management software tools such as Workday and Oracle.

INTRODUCTION AND METHODOLOGY

The institution is using annual budgets and utilizing scenario modeling for longer-term financial planning. However, the scenario modeling is not fully encompassing of the budgetary and fiscal implications of current decisions at the institution.

It would like to explore utilizing a Multi-Year Budgeting model in order to better conduct financial projections and thereby to have a more solid financial decision-making processes at the university. To that end, Hanover presents this best practices report exploring multi-year budgeting at higher education institutions and more broadly in order to inform a potential implementation of multi-year budgeting.

REPORT CONTENTS AND STRUCTURE

This report draws from professional literature, vendor case studies, and academic publications to provide an overview of long-range budgeting systems in higher education. The study of this field is complicated by the fact that it is still emerging, and questions about the feasibility, utility, cost- effectiveness, and even time horizons of long-term plans persist. Some of the case studies and literature cited in this report are drawn from third- party vendors selling long-term budgeting solutions in the higher education market, so their conclusions should be interpreted with caution and may overstate their products' effectiveness.

While the initial scope of work cited the possibility of examining long-term budgeting practices among non-academic entities and organizations, we have opted in this initial report to focus on higher education. The variables cited in long-term budgeting efforts, and the mechanics of collecting and interpreting data, are unique enough to justify a higher education focus.

RESEARCH QUESTIONS

What models exist for multi-year budgeting in higher ed or elsewhere (e.g., federal, state and local governments, NGOs)?

- Are there notable higher-education examples that institutions might emulate?
- Are there unique opportunities or challenges associated with the transition to multi-year budgeting in higher education?

How do institutions (or governments, organizations) use multi-year budgets as a tool for strategic fiscal planning?

Should an institution wish to proceed with the implementation of multi-year budgeting, what steps should it take?

- Are there any tools or organizations that might facilitate the transition?

LONG-TERM FINANCIAL PLANNING MODEL AND LITERATURE REVIEW

STRATEGIC PLANNING INTEGRATION

Any discussion of long-range budgeting for universities should be integrated with strategic planning efforts, which generally cover the next five to ten years. Board Effect, a third-party provider for nonprofit and higher education institutional boards, names an institution's financial health as one of the four goals of sound strategic planning, but relegates most financial planning elements to the "Action Plans" component of strategic planning efforts. This step focuses on the realistic implementation of a strategic plan that, if it has been well-developed, should be within the realistic range of possibilities to be achieved:

> Much as it sounds, the action plan is the 'how' of the strategic plan. This section outlines the necessary resources to carry out each strategic goal including finances, people, time, and supplies.

Recently there has been a flurry of publications stressing the need for better long-term financial planning among U.S. colleges and universities. A January 2023 *eCampus News* feature describes long-range financial planning as "distinct from, but complimentary to, the cycle of annual budgeting" in that it should provide a strategic framework for strategic budgeting decisions and "ensure that resources are available to achieve the overall mission objectives." It defines long-term planning as follows:

> **The ultimate goal of LRFP is to develop a rigorous process for ensuring that financial resources are utilized in alignment with the university's mission.** LRFP empowers business officers to understand how key business decisions will play out under a wide range of possible future scenarios. Growing or declining student enrollments, investments in faculty and staff, adjustments to state appropriations, changes in the broader economic environment, and external or unforeseen shocks, are issues that confront many university leaders and for which an LRFP process can guide institutional planning.

RAND ON RESOURCING A UNIVERSITY STRATEGIC PLAN – TWO CORE STRATEGIES

The infographic below summarizes content from the RAND Corporation guide to university strategic planning, 2015, 9-12.

1. Formulate strategies that are feasible within the constraints on the university's resources	2. Align resources within the university to the priorities of the strategic plan
• "Universities in their early years of strategic planning, especially those embarking on strategic planning for the first time, need to **be mindful of financial limitations and establish goals and action plans reasonably feasible** in regard to both human and financial resources." • "Another common challenge is **finding the proper line item or budget structure [for non-traditional and interdisciplinary initiatives]. …** Publicly funded organizations, especially, may operate under a rigidly defined budget line structure that does not easily accommodate new initiatives and plans, even when overall funding is actually adequate to support the university's strategic plan." • **"Use a well drafted strategic plan to justify requests for additional funding and the addition of new item lines in the budget.** … Realistically, however, it may take one or two full cycles of strategic planning before the university can cultivate such support."	• **"A budget will not achieve the institution's goals unless it is clearly linked to the institution's strategic plan."** • "A number of universities (and some public-sector agencies more generally) are adopting performance-based budgeting practices, specifically to enable them to align resources to strategies. Theoretically, these approaches should enable universities to prioritize funding requests by how well they advance the strategic plan. But in our experience, this proves to be far from straightforward. **If strategic plans are developed without sufficient information linking clear objectives to resources, the plans may not enable university leaders to sort out competing requests for funding."** • **"Transparency regarding accounting procedures and resource allocation to support the strategic plan are important** principles to guide institutional participants in both planning and implementation."

DEFINING LONG-TERM BUDGETING

BUDGET PROJECTION TIME HORIZONS AND VARIABLES

A five-year projection seems to be largely aligned with the budgeting time horizons being marketed as "long-term" or "multi-year" in higher education, though the recommended time horizons among experts (shown at right) range from three years to up to ten years.

Approaches to time horizons reveal different levels of comfort among experts with predicting long-term trends. On the low end of the spectrum, Paul Friga of the University of North Carolina at Chapel Hill cautions against budget projections that range beyond three years into the future, though he concedes that strategic plans require institutions to project their resources up to ten years ahead. At the highest end of the range, Syntellis proposes a five-to-ten year time horizon that includes multiple scenarios and features predictions from the following:

- Income statements
- Balance sheets
- Cash flow projections
- Debt capacity
- Key ratios

Syntellis notes that data for projections needs to be collected from a range of different sources, which can be challenging to integrate:

> When crafting long-range plans to share across the administration, you'll need to integrate data from source systems — general ledger, student information system, etc. — and combine that with economic, benchmarking, and credit agency data to create a complete financial picture.

HOW DO EXPERTS DEFINE LONG-TERM BUDGETING IN HIGHER EDUCATION?

The infographic below summarizes from three sources, all of which are technology and consulting firms offering long-range planning and budgeting solutions to higher education institutions. Sources are cited using in-text hyperlinks.

3

Three Years – Paul Friga, a clinical associate professor with the Kenan-Flagler School of Business at the University of North Carolina at Chapel Hill and higher education consultant, writes that **"major strategic moves such as academic program portfolio changes, mergers/affiliations, and new building investment have a natural analysis period of 3 to 10 years."** He notes that "on my higher education strategy projects, **I usually include at least three years of historical results and three years and estimated numbers in the analysis."** Due to the "turbulent" higher education financial environment, he **recommends a budgeting time horizon that is "usually no more than three years out."**

5

Five Years – NACUBO's **BTE Macro Trends Budgeting tool uses a "five-year planning horizon" with a focus on "macro trends." They define "macro trends" as "revenue and expense trends that have recurring and sustained effects on your institution" and "often take at least three years to see clearly."** Examples include tuition and fees, tuition discounting trends, compensation trends, utility rates, insurance premiums, grant and contract trends. The process is meant to "identify [and model] the impact of programmatic and policy initiatives, and unforeseen challenges – like the coronavirus – on your institution's financial future."

10

Five-to-Ten Years – Syntellis, a budget and performance management software vendor serving higher education, proposes **a longer time horizon with plans that "should include a full set of financial statements, including a GAAP-based statement of activities, balance sheet, and cash flow statements."** They contend that **"the base case scenario should show an institution's financial outlook for the next five to 10 years,** given current trends and including all funds, debt capacity, capital plans, and cash flow."

BUDGET STRATEGY AND PREDICTABILITY

Huron Consulting, which partners with Oracle, Workday, and Anaplan to redesign higher education budget and financial models, presented on its budget redesign work with University of Colorado - Colorado Springs in November 2019. Huron had worked with "over 65 institutions on the design, assessment, and implementation of budgeting and financial planning models" as of September 2018 (8). They cite a 2016 *Inside Higher Ed* survey indicating that "that 47% of U.S. institutions surveyed have changed their budget model in the past four years with 35% of those who have not changed their institutions model planning to do so" (6). The data used to develop predictive budgeting capabilities, which Huron highlights as a central tenant of "Strategic Resource Allocation," can also be used for planning, accountability, communicating priorities and accomplishments, and incentivizing unit performance.

FORWARD-LOOKING BUDGET MODELS

Figure summarizes content from UCCS, November 2019, 9.

Strategic Resource Allocation

- Plan for developing resources
- Prioritization of resource allocations for strategic initiatives
- Explanation of the internal economy
- Mechanism to create institutional incentives
- Tool to empower department to engage in entrepreneurial activities
- Predictor of annual financial statements
- Baseline measure of accountability

Traditional Budgeting Perceptions

- Inventory of anticipated expenditures
- Mechanism to control expenditures
- Independent activity performed by department managers
- Backroom operation performed by accountants
- Spreadsheet indicating resource availability
- Performance measures reset annually

CASE STUDY – UCCS BUDGET REDESIGN

UCCS was strongly motivated to change its budgeting process to facilitate long-term planning in alignment with its strategic initiatives. Specifically, they sought to help implement an Incentive-Based model to better align the university's resources with its 2030 strategic plan, as shown below (4).

UCCS BUDGET REDESIGN CONSIDERATIONS

Figure summarizes content from UCCS, November 2019, 4, 7.

Primary Reasons for Budget Redesigns:

- Strengthen allocation methodology
- Promote revenue growth
- Drive operational efficiencies
- Increase transparency
- Align institutional incentives

UCCS 2030 Strategic Plan Core Strategies:

- Intentional revenue viability – expanding revenue sources to strengthen financial sustainability
- Supporting the growth of the university
- Providing greater services to students from all backgrounds

Reasons for Choosing and Incentive-Based Budget Model:

- Allocate resources in alignment with strategic priorities
- Provide a pool of funds to be directed toward strategic investments
- Result in a budget allocation model that is consistent and transparent

REVENUE AND EXPENSE VARIABLES

Ohio University's board of trustees models budgets five years in advance of the current budget year and bases its forecasts in part on the historic values from the previous six budget cycles. Their 2023 expense and projections are reproduced below to illustrate this strategy.

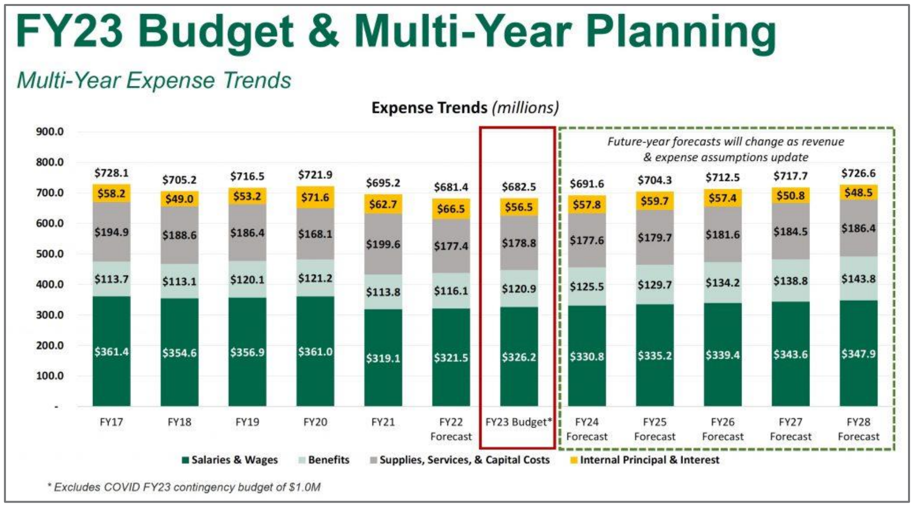


Image source: WOUB Public Media, April 2022

OHIO UNIVERSITY MULTI-YEAR BUDGET ITEMS

Figure lists revenue and expense categories in the university's long-term budgets.

Multi-Year Revenue Categories	Multi-Year Expense Categories
•State appropriations •Net tuition, fees, room & board •Grants/F&A •Private support •Internal & external sales	•Salaries & wages •Benefits •Supplies, services, & capital costs •Internal principal & interest

CASE STUDY – REFINING THE OHIO UNIVERSITY BUDGET FORECAST

Ohio University's Board of Trustees revised its multi-year budgeting, which projects five years beyond the current year's budget, to better align its anticipated revenues and expenditures. Ohio Public Radio reports that from October 2021 to April 2022 the board's projected budget underwent a "dramatic shift" from showing "what appeared to be a nearly $30 million deficit next fiscal year and even bigger deficits the following years" to displaying a "a balanced budget next fiscal year and millions of dollars in budget surpluses a few years down the road."

Spending cuts and revenue generation strategies played a minimal role in the change, which stems primarily from the university's decision to treat reserve funds to be spent on planned capital projects as a revenue source. Previously, these funds were not counted in annual budgets, since they are not, strictly speaking, revenue. Nevertheless, the university has historically treated its reserves like a savings account, drawing them down for major capital projects and counting the expenditures toward its annual expenses without accounting for the fact that it had allocated funds to the projects. As a result "it ended up looking like the university's revenue and expenses were way out of balance and tens of millions of dollars needed to be drawn from reserves each year to cover the deficit."

The university has also changed how it budgets for vacant positions and now assumes a running three percent vacancy rate across all roles when projecting the revenue they will need to devote to personnel costs. In recent years, university finance staff estimated a vacancy rate of four to five percent, so budgeting for a three percent vacancy provides a more accurate, but still conservative, estimation of the funding needed to support the university workforce. Planners estimated that this modification reduced the annual projected annual expenses by "about $10 million" and rendered proposed pay raises more sustainable in the long-term.

DEFINING BUDGET MACRO TRENDS

NACUBO's BTE Macro Trends Budgeting model promises to use "a five-year planning tool to identify the impact of programmatic and policy initiatives, and unforeseen challenges" on institutional financial viability. The aim is to provide an interactive model that allows planners to change inputs to reflect different conditions and counterfactuals and develop strategies for a range of potential future scenarios. Specifically, the model is designed to focus on:

- The impacts of 'What if' scenarios on [an] institution's financial future
- The impacts of external factors, like the coronavirus, on the revenue stream and expense levels for [an] institution
- The levers [planners] can use to create financial sustainability
- The key financial trends facing the institution
- The impacts of new initiatives and programs on the institution's financial future
- What it will take to achieve positive future financial trends

As shown in the figure to the right, this model uses a set of revenue variables that are broadly similar to the Ohio University model shown on the previous page. It divides expenses by functional area (e.g., instruction, academic support, etc.) instead of expense type (e.g., wages, benefits, etc.).

CASE STUDY – EXAMPLE MACRO TRENDS BUDGET TEMPLATE

The NACUBO revenue and expense categories shown as part of the five-year model below are outlined in orange. Note that these categories are broadly similar to those institutions report annually to IPEDS under the GASB and FASB accounting systems, though not identical to either.

ABC University
STRATEGIC BUDGET PLANNING
Modest Action

	3/20/2020	Current Year 2019 - 2020	Model Year 1 2020 - 2021	Model Year 2 2021 - 2022	Model Year 3 2022 - 2023	Model Year 4 2023 - 2024	Model Year 5 2024 - 2025
REVENUES							
Education & General (E&G)							
Total	Student Tuition & Fees	41,307,452	37,779,837	35,971,400	37,908,647	39,722,961	41,531,773
Total	Financial Aid	(9,654,658)	(7,888,076)	(6,058,340)	(6,302,854)	(6,500,295)	(6,689,046)
Net	Student Tuition & Fees	31,652,794	29,891,761	29,913,060	31,605,793	33,222,665	34,842,727
Total	Grants and Contracts	2,719,000	2,993,300	3,022,333	3,051,656	3,081,273	3,111,185
Total	Sales & Services	-	-	-	-	-	-
Total	Other Revenue Sources	1,810,000	1,828,100	1,864,530	1,864,845	1,883,493	1,902,328
Total	Education & General (E&G)	36,181,794	34,713,161	34,799,923	36,522,294	38,187,431	39,856,240
Total	AUXILIARY ENTERPRISES	3,480,210	3,391,208	3,747,655	3,858,435	3,858,435	3,858,435
Total	Special Calculations - Income	(301,920)	2,286,520	2,123,780	2,371,707	3,379,560	3,572,600
GRAND TOTAL REVENUES		39,360,084	40,390,889	40,671,358	42,752,436	45,425,427	47,287,276
EXPENSES							
	Instructional	16,034,000	16,354,680	16,681,774	17,015,409	17,355,717	17,702,832
	Academic Support	2,203,500	2,247,570	2,292,521	2,338,372	2,385,139	2,432,841
	Institutional Support	12,064,250	12,410,536	12,658,749	12,911,921	13,167,974	13,429,149
	Operation & Maintenance of Plant	4,495,283	4,583,831	4,674,265	4,766,628	4,860,965	4,956,149
	Student Services	4,944,764	5,064,923	5,188,547	5,315,761	5,446,691	5,571,307
	Auxiliary Enterprises	2,692,644	2,746,915	2,802,180	2,858,559	2,916,079	2,974,758
	Research	34,000	34,680	35,374	36,081	36,803	37,539
	Public Service	173,000	176,660	180,353	184,080	187,842	191,639
	Special Calculations - Expenses	(1,000,000)	(2,612,000)	(1,612,000)	(1,456,000)	(1,456,000)	(1,300,000)
GRAND TOTAL EXPENSES		41,641,441	41,007,795	42,901,763	43,970,811	44,901,210	45,996,214
NET REVENUE FROM OPERATIONS		(2,281,357)	(616,906)	(2,230,405)	(1,218,375)	524,217	1,291,062

Source: NACUBO

CURRENT STATE – LONG-TERM PLANNING

The Rutgers University Budget Office begins budgeting for the next fiscal year almost as soon as its current fiscal year budget is enacted, but there is little indication that, at the operational level, the university attempts long-term predictions past the two-year mark. For instance, the *FY 2024 Budget Calendar* distributes the FY 2025 budget templates starting in July 2023, with work on the two-year budget horizon largely completed by December and submitted for evaluation and approval during the spring semester. Rutgers switched from a centralized budgeting strategy to a decentralized Responsibility Center Management (RCM) budget structure in 2016.

In its June 2021 report on the first five years of RCM, the evaluation committee noted the challenges around "Communicating Priorities and Methodologies," which includes a need for better long-term budget planning. Specifically, the authors contend that "governance and design of the budget model are removed from university stakeholders who feel they are best positioned to offer guidance about the impact of decisions" (18). One of the solutions they advocate is moving from one-year to two- or three-year budget planning at the unit level, with historical baseline data based on a three-year historical average for the variable in question:

> Create more stability and facilitate planning by adjusting the budget process from 1-year planning to 2- to 3-year planning wherever feasible. Similarly, move to rolling 3-year averages to revise certain cost pool metrics and methodologies. (19)

The committee also recommended that the university "identify a comprehensive institutional strategy and plan as the context for institutional revenue, investment requirements, budget decisions and the governance process" and argued that the "strategy, plan, and budget should span a rolling 5-year window." The model should "identify capabilities for what-if scenarios on funding models and sources" (29).

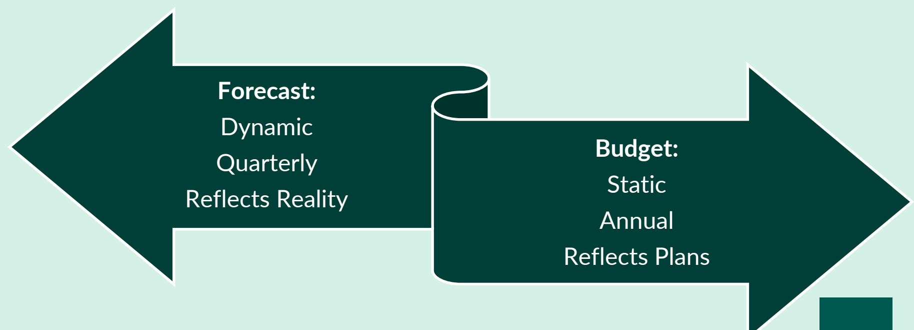
CASE STUDY – STATIC BUDGETING VS. DYNAMIC FORECASTING

In a 2019 report by the University Budget Office, Rutgers planners concede that "historically, Rutgers University has not conducted consistent strategic financial forecasting at a detailed level," and that prior forecasts were developed by the Board of Governors "without direct input from units" (2). Since the implementation of RCM, individual academic and administrative units have been granted more control over their budgets, and viable university-level budget forecasts require that planners "stay informed of changing conditions across the university, and to better anticipate and adapt to potential opportunities or issues that can arise" (2). To this end, the university has introduced an Enterprise Planning and Budgeting Cloud Service (EPBCS) to help schools and units develop "forecasts to adapt future fiscal plans to changing conditions" (3).

The EPBCS collects data from units and can be used to "apply business rules (automated calculations) to the forecast, enabling one-click changes to multiple chart segments" (5). Planners can fill in prior budget and forecast amounts and then "manually adjust the amounts to reflect predictions of how those months will actualize more accurately" (8).

RUTGERS FORECASTING VS. BUDGETING

Figure reproduces content from Rutgers University, 2019, 3.

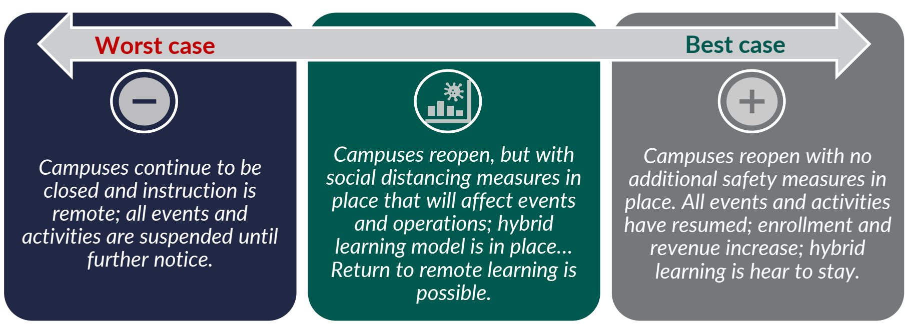


SYNTELLIS LONG-TERM MODELING

Syntellis's Axiom Long-Range Planning is a scenario-based long-term budget modeling software marketed as a resource that "enables institutions to model multiple scenarios and develop mid- and long-term financial plans that align with their strategic goals" (5). They market the program to "higher education leaders who wish to see the near- and long-term impact of fluctuating enrollment." The system is designed to:

- Create scenarios to mix and match assumptions like current enrollment, projected growth, wage inflation, and interest rates
- See the impact on both income statement and balance sheet of proposed strategic initiatives and capital projects together with existing operations
- Generate a full set of forward-looking financial statements based on the desired planning horizon
- Deliver executive-level dashboards with operational, financial, and third-party data

Axiom describes its tool as one that "helps colleges and universities tie information from the general ledger, human resources, and student information systems to financial data, eliminating data siloes." Examples of their "worst case," "base case," and "best case" scenario models from the COVID-19 pandemic in early 2020 are provided below. How these assumptions impact the financial data points name above is unclear.



CASE STUDY – UNIVERSITY OF NORTH TEXAS FIVE-YEAR DYNAMIC FORECASTING

> *"The board would ask, 'Do you have a three-, five-, or 10-year plan?' And all we could reply was, 'No, but we'll get you one,' … We wanted to blur the boundaries between our budget, our accounting structure, our annual financial reports, and our strategic plan. We wanted a more integrated financial process overall."*
>
> UNT Director of Strategy & Planning, March 2022

University of North Texas (UNT) partnered with Syntellis for its long-term financial planning in response to the Board of Regents' questions "about the potential impact of tuition increases, new programs, capital investments, and other projects on the System's long-range plan." In response, planners developed five-year plans using the Axiom system, as well as "accompanying ratio calculations to present with the annual budget" (7).

Kerry Ronnie, Director of Strategy & Planning at the university, uses the Syntellis system "to evaluate potential new initiatives, quickly run scenarios that show decision-makers a range of positive and negative impacts, and enable an integrated financial planning structure encompassing financial statements, the budget, and strategic planning." Previously, UNT's long-term planning was Excel-based and prohibitively time-intensive. Currently, they integrate balance sheet data from the general ledger with a flat-file upload. Planners also used the system to explore different plans for a new student dorm.

Actual projections generated by this system do not appear to be publicly-available. UNT's published *2022 Consolidated Operating Budget* does not look beyond the year in question.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