UNDERSTANDING ACADEMIC PROGRAM COSTS AND MARGINS

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Director – Management Consulting
RSM
PERSONAL OVERVIEW

- RSM Management Consulting Lead for Higher Education
- 14 years of operations consulting experience
- Focus on providing strategy development, performance assessments, financial analysis, and operational transformation.
DISCUSSION GUIDE

- Situation and Problem
- Higher Ed’s Response
- Academic Margins
- Data Presentation
- Conclusion
- Questions and Answers
SITUATION AND PROBLEM

Situation

• State funding for public universities has decreased significantly
• The U.S. government has scaled back funding for many university-based research programs
• Some are still suffering from declining enrollments
• Gross tuition rates are rising faster than education spending per student
• Net tuition rates are also rising as both need and merit aid programs diminish and families are left with a larger fraction of the bill
• Significant shift in modality
• The ability to scale (up/down) the cost of instruction is generally limited

Problem

• Transformational cost structure changes need to occur while also focusing on a strategic pivot to innovative revenue generation
HIGHER ED’S RESPONSE

Mandatory Budget Reductions (e.g. 5%)

Hiring Freezes

Indirect Spend Reduction Initiatives

Administrative Shared Services
TYPICAL COST PROFILE

Includes total wages, salaries and benefits for all employees.
ACADEMIC MARGINS
CHALLENGES AND CONSTRAINTS

What we hear:

- Difficulty gaining agreement on margin definitions
- Do not have resources or capacity internally to perform required analysis
- Have heard about a number of methods, but not sure of right approach
- Not sure how to gain agreement amongst stakeholders on results
- Systems and reporting can not produce needed information
- Data is not good or reliable
## ACADEMIC MARGINS
### TERMINOLOGY AND CALCULATIONS

<table>
<thead>
<tr>
<th>Academic Financial Contribution Margin</th>
<th>Academic Financial Gross Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Type (Rate)</strong></td>
<td><strong>Student Type (Rate)</strong></td>
</tr>
<tr>
<td><strong>X Credit Hours</strong></td>
<td><strong>X Credit Hours</strong></td>
</tr>
<tr>
<td><strong>Gross Tuition</strong></td>
<td><strong>Gross Tuition</strong></td>
</tr>
<tr>
<td>- Institutional Aid</td>
<td>- Institutional Aid</td>
</tr>
<tr>
<td>- Refunds</td>
<td>- Refunds</td>
</tr>
<tr>
<td>+ Course Fees</td>
<td>+ Course Fees</td>
</tr>
<tr>
<td><strong>Net Revenue</strong></td>
<td><strong>Net Revenue</strong></td>
</tr>
<tr>
<td>- Instructor cost by section</td>
<td>- Instructor cost by section</td>
</tr>
<tr>
<td>- Non-instructor variable direct costs</td>
<td>- Non-instructor variable direct costs</td>
</tr>
<tr>
<td><strong>Direct Cost</strong></td>
<td><strong>Academic Department Costs</strong></td>
</tr>
<tr>
<td></td>
<td>- Other OpEx (fixed direct costs)</td>
</tr>
</tbody>
</table>

**Academic Financial Contribution Margin**

- Student Type (Rate) 
- X Credit Hours 
- **Gross Tuition**
  - Institutional Aid 
  - Refunds 
  + Course Fees 
- **Net Revenue**
  - Instructor cost by section 
  - Non-instructor variable direct costs 

**Academic Financial Gross Margin**

- Student Type (Rate) 
- X Credit Hours 
- **Gross Tuition**
  - Institutional Aid 
  - Refunds 
  + Course Fees 
- **Net Revenue**
  - Instructor cost by section 
  - Non-instructor variable direct costs 
  - Other OpEx (fixed direct costs) 

**Academic Department Costs**
**Model Capabilities**

- Contribution Margins at various attributes:
  - Program
  - Department
  - Course
  - Section
  - Major
  - Instructor
  - Instructor-type
  - Student
  - Student-type
  - Term

**Benefits**

- Establishes benchmark for year-to-year improvements
- Supports what-if scenario analysis & future planning, including:
  - Changes in tuition rates
  - Growth/declines in student counts and enrollment
  - Discontinuation of a section, course or program
  - Change in cost of instruction
  - Efficiency changes (e.g. changing assumption on faculty workload)
**ACADEMIC MARGINS**

**MARGIN DIMENSIONS**

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**Net Revenue**
- Registrar
  - Course and Student
- Financial Aid
  - Institutional Student Aid
- Human Resources
  - Instructional Compensation
- Finance & Acctg
  - General Ledger/Finance

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**KEY CHALLENGES**

- Multiple disparate systems
- Timely data cleansing activities and error resolution
- Limited visibility into detailed cost data
- Reconciling data to General Ledger

- Cut-off issues with academic snapshots and summer session
  - Academic Year v. Fiscal Year
- Complexity extracting necessary data
# Academic Margins

**Capabilities and Example Insights**

**Highest five contribution margin academic programs**

<table>
<thead>
<tr>
<th>Academic Program</th>
<th>Tuition</th>
<th>Course Fee</th>
<th>Aid</th>
<th>Direct Expense</th>
<th>Margin Total</th>
<th>Margin %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undeclared</td>
<td>$12,567,105.38</td>
<td>$17,775.00</td>
<td>$1,630,764.26</td>
<td>$5,250,648.30</td>
<td>$5,703,467.82</td>
<td>45.32%</td>
</tr>
<tr>
<td>Non Degree</td>
<td>$6,690,403.00</td>
<td>$94,755.00</td>
<td>$578,131.28</td>
<td>$3,718,815.19</td>
<td>$2,488,211.54</td>
<td>36.67%</td>
</tr>
<tr>
<td>Business</td>
<td>$12,547,085.00</td>
<td>$515.00</td>
<td>$1,239,066.22</td>
<td>$8,888,123.50</td>
<td>$2,420,410.28</td>
<td>19.29%</td>
</tr>
<tr>
<td>Nursing</td>
<td>$8,952,651.13</td>
<td>$0.00</td>
<td>$928,030.69</td>
<td>$5,777,688.49</td>
<td>$2,246,931.95</td>
<td>25.10%</td>
</tr>
<tr>
<td>Education</td>
<td>$8,074,563.00</td>
<td>$480.00</td>
<td>$681,344.50</td>
<td>$5,236,023.13</td>
<td>$2,157,675.37</td>
<td>26.72%</td>
</tr>
</tbody>
</table>

** Lowest five contribution margin academic programs**

<table>
<thead>
<tr>
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<th>Margin %</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPM</td>
<td>$940,281.00</td>
<td>$0.00</td>
<td>$233,643.00</td>
<td>$1,501,216.74</td>
<td>($794,578.74)</td>
<td>-84.50%</td>
</tr>
<tr>
<td>Applied Medical Sciences</td>
<td>$202,882.00</td>
<td>$0.00</td>
<td>$40,788.50</td>
<td>$823,868.24</td>
<td>($661,774.74)</td>
<td>-326.19%</td>
</tr>
<tr>
<td>CPD</td>
<td>$376,314.00</td>
<td>$0.00</td>
<td>$130,834.00</td>
<td>$643,599.41</td>
<td>($398,119.41)</td>
<td>-105.79%</td>
</tr>
<tr>
<td>American Studies</td>
<td>$321,252.00</td>
<td>$0.00</td>
<td>$102,837.00</td>
<td>$578,372.50</td>
<td>($359,957.50)</td>
<td>-112.05%</td>
</tr>
<tr>
<td>MPH-HPM</td>
<td>$670,544.00</td>
<td>$0.00</td>
<td>$173,984.00</td>
<td>$836,394.70</td>
<td>($339,834.70)</td>
<td>-50.68%</td>
</tr>
</tbody>
</table>
**Academic Margins**  
**Capabilities and Example Insights**

**Highest five contribution margin academic departments**

<table>
<thead>
<tr>
<th>Academic Department</th>
<th>Tuition</th>
<th>Course Fee</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>$8,175,122.75</td>
<td>$71,381.25</td>
<td>$1,093,748.25</td>
<td>$2,704,525.44</td>
<td>$4,448,230.32</td>
<td>53.94%</td>
</tr>
<tr>
<td>Education &amp; Human Development</td>
<td>$11,988,619.50</td>
<td>$0.00</td>
<td>$1,054,210.95</td>
<td>$6,494,665.76</td>
<td>$4,439,742.79</td>
<td>37.03%</td>
</tr>
<tr>
<td>School of Nursing</td>
<td>$8,800,282.50</td>
<td>$0.00</td>
<td>$734,896.66</td>
<td>$5,765,537.10</td>
<td>$2,299,848.74</td>
<td>26.13%</td>
</tr>
<tr>
<td>Business</td>
<td>$11,328,549.50</td>
<td>$0.00</td>
<td>$1,031,514.73</td>
<td>$8,569,048.30</td>
<td>$1,727,986.47</td>
<td>15.25%</td>
</tr>
<tr>
<td>MFA Creative Writing</td>
<td>$2,155,626.00</td>
<td>$0.00</td>
<td>$29,261.80</td>
<td>$440,822.15</td>
<td>$1,685,542.05</td>
<td>78.19%</td>
</tr>
</tbody>
</table>

**Lowest five contribution margin academic department**

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<thead>
<tr>
<th>Academic Department</th>
<th>Tuition</th>
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<tbody>
<tr>
<td>PPM</td>
<td>$1,111,364.00</td>
<td>$0.00</td>
<td>$280,057.70</td>
<td>$1,806,317.69</td>
<td>($975,011.39)</td>
<td>-87.73%</td>
</tr>
<tr>
<td>Applied Medical Sciences</td>
<td>$393,310.00</td>
<td>$0.00</td>
<td>$88,627.21</td>
<td>$907,996.51</td>
<td>($603,313.72)</td>
<td>-153.39%</td>
</tr>
<tr>
<td>Community Planning Develop</td>
<td>$294,324.00</td>
<td>$0.00</td>
<td>$102,354.87</td>
<td>$644,873.21</td>
<td>($452,904.08)</td>
<td>-153.88%</td>
</tr>
<tr>
<td>Computer Science</td>
<td>$1,271,112.25</td>
<td>$0.00</td>
<td>$151,457.51</td>
<td>$1,529,390.56</td>
<td>($409,735.82)</td>
<td>-32.23%</td>
</tr>
<tr>
<td>American Studies</td>
<td>$315,741.00</td>
<td>$0.00</td>
<td>$102,837.00</td>
<td>$600,971.67</td>
<td>($388,067.67)</td>
<td>-122.91%</td>
</tr>
</tbody>
</table>
## ACADEMIC MARGINS
### CAPABILITIES AND EXAMPLE INSIGHTS

**Highest five gross margin academic departments**

<table>
<thead>
<tr>
<th>Academic Department</th>
<th>Tuition</th>
<th>Course Fee</th>
<th>Aid</th>
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<tr>
<td>Education &amp; Human Development</td>
<td>$11,988,619.50</td>
<td>$2,265,526.15</td>
<td>$1,054,210.95</td>
<td>$6,494,665.76</td>
<td>$1,193,964.61</td>
<td>$5,511,304.33</td>
<td>45.97%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>$8,175,122.75</td>
<td>$53,898.39</td>
<td>$1,093,748.25</td>
<td>$2,704,525.44</td>
<td>$829,983.66</td>
<td>$3,600,763.80</td>
<td>44.05%</td>
</tr>
<tr>
<td>MFA Creative Writing</td>
<td>$2,155,626.00</td>
<td>$2,497,543.39</td>
<td>$29,261.80</td>
<td>$440,822.15</td>
<td>$1,814,416.65</td>
<td>$2,368,668.79</td>
<td>109.88%</td>
</tr>
<tr>
<td>School of Nursing</td>
<td>$8,800,282.50</td>
<td>$556,048.73</td>
<td>$734,896.66</td>
<td>$5,765,537.10</td>
<td>$1,195,633.15</td>
<td>$1,660,264.32</td>
<td>18.87%</td>
</tr>
<tr>
<td>Psychology</td>
<td>$4,110,281.75</td>
<td>$0.00</td>
<td>$529,181.88</td>
<td>$1,930,154.19</td>
<td>$188,906.57</td>
<td>$1,462,039.11</td>
<td>35.57%</td>
</tr>
</tbody>
</table>

**Lowest five gross margin academic departments**

<table>
<thead>
<tr>
<th>Academic Department</th>
<th>Tuition</th>
<th>Course Fee</th>
<th>Aid</th>
<th>Direct Expense</th>
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<th>Margin Total</th>
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<tbody>
<tr>
<td>PPM</td>
<td>$1,111,364.00</td>
<td>$0.00</td>
<td>$280,057.70</td>
<td>$1,806,317.69</td>
<td>$395,681.53</td>
<td>($1,370,692.92)</td>
<td>-123.33%</td>
</tr>
<tr>
<td>Music</td>
<td>$3,573,166.00</td>
<td>$307,629.77</td>
<td>$713,473.89</td>
<td>$2,980,758.03</td>
<td>$1,251,944.95</td>
<td>($1,065,381.10)</td>
<td>-29.82%</td>
</tr>
<tr>
<td>Applied Medical Sciences</td>
<td>$393,310.00</td>
<td>$5,350.00</td>
<td>$88,627.21</td>
<td>$907,996.51</td>
<td>$266,336.53</td>
<td>($864,300.25)</td>
<td>-219.75%</td>
</tr>
<tr>
<td>MPH-HPM</td>
<td>$685,195.00</td>
<td>$0.00</td>
<td>$171,984.02</td>
<td>$892,268.55</td>
<td>$341,264.86</td>
<td>($720,322.43)</td>
<td>-105.13%</td>
</tr>
<tr>
<td>Art</td>
<td>$2,220,450.75</td>
<td>$123,445.58</td>
<td>$323,333.14</td>
<td>$1,841,308.89</td>
<td>$792,505.73</td>
<td>($613,251.42)</td>
<td>-27.62%</td>
</tr>
</tbody>
</table>
DATA PRESENTATION
EXAMPLE DATA FLOW ARCHITECTURE

<table>
<thead>
<tr>
<th>Operational Systems (Source Systems)</th>
<th>Data Staging</th>
<th>Data Warehouse</th>
<th>Presentation Layer (Reporting Platforms)</th>
<th>End User Data Access/Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core ERP (Enrollment, Finance, Tuition, Financial Aid)</td>
<td>Staging Database (SQL Server)</td>
<td>Data Model (SQL Server)</td>
<td>SSAS SSRS Power BI</td>
<td>Web Browsers</td>
</tr>
<tr>
<td>HRIS</td>
<td></td>
<td></td>
<td></td>
<td>Query &amp; Analysis Tools (Power BI, Excel, etc.)</td>
</tr>
<tr>
<td>Payroll</td>
<td></td>
<td></td>
<td></td>
<td>Mobile</td>
</tr>
</tbody>
</table>

SQL Server Integration Services (SSIS)

- Data Cleanup
- Standardize
- Extract/Copy
- Transform
- Integrate
- Business Logic
- Load Data
- Prepare Data
- Create Relationships
- Create Aggregations

Data Delivery

- Data Delivery
- Data Delivery
- Data Delivery
ACADEMIC MARGINS

What is your biggest challenge to overcome in order to implement a process to review academic contribution margins?

A. Proper ownership or sponsorship
B. Agreement on methodology
C. Data integrity
D. Resource capacity
E. Other?
CONCLUSIONS

- Visibility to academic financial contributions can drive impactful sustainability improvements
- Ownership required from the top of the organization
- Need to have a vision from the top – how will the data be used
- Define the model design, document assumptions, implement processes to support improvements
- Develop a management plan that cascades accountability from the top of the organization to improve year over year margin
Questions and Answers?

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Management Consultant

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