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Proposal for

Masters of Science Business Analytics

April 2015

Raymond A. Mason School of Business
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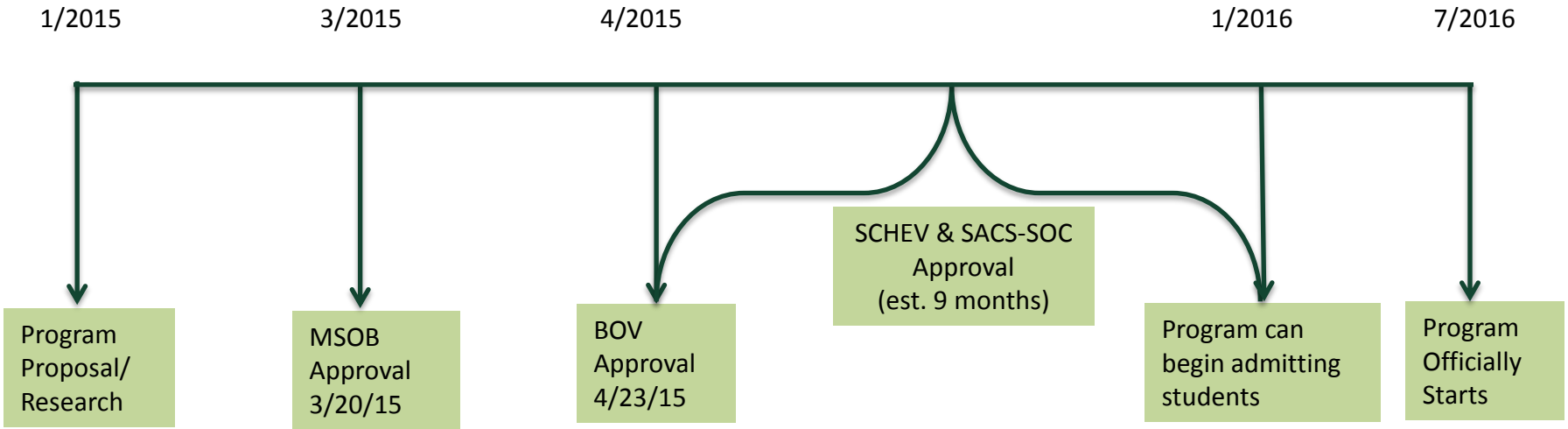
Time Line

Launch Plan for Master of Science in Business Analytics



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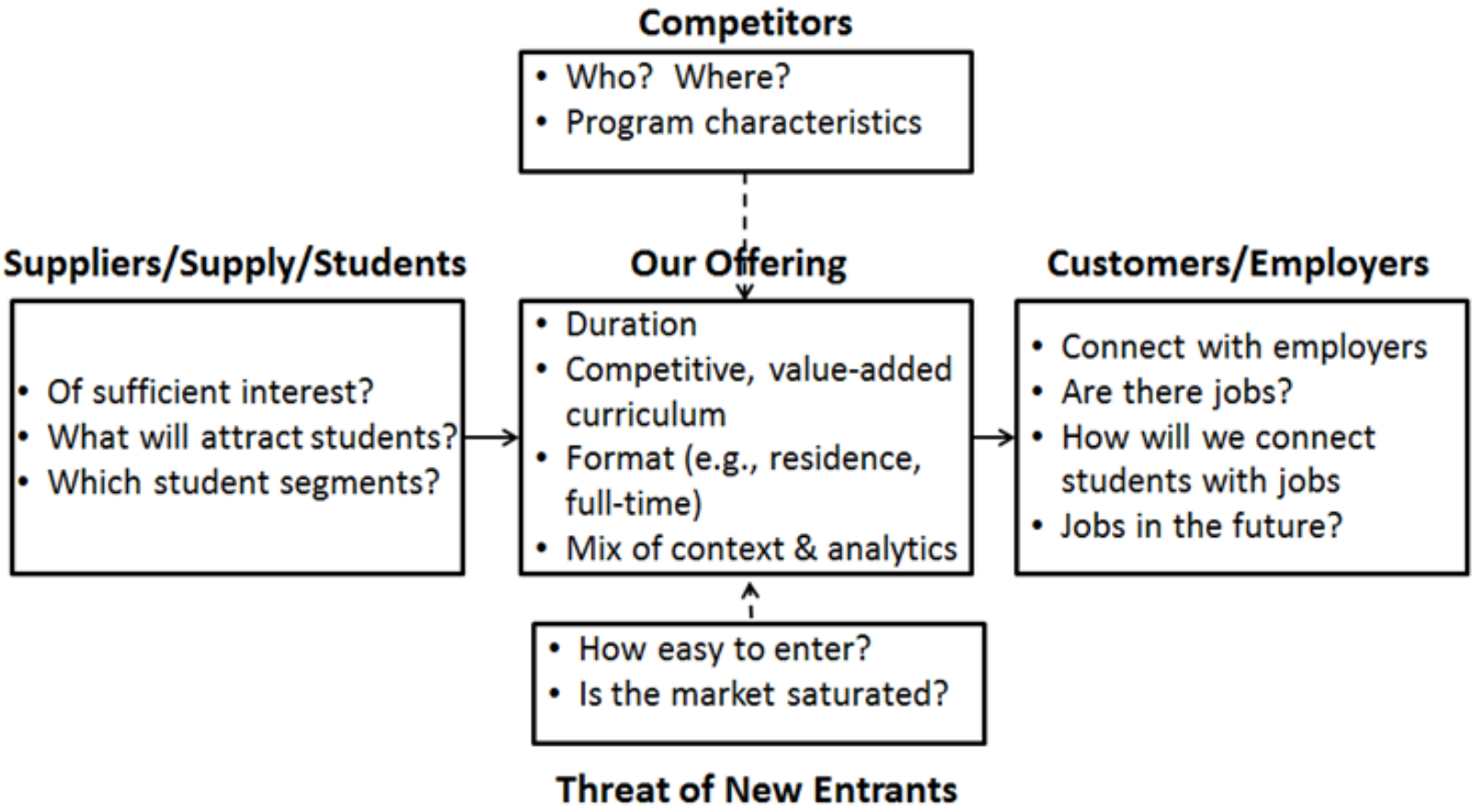
Strategic Approach



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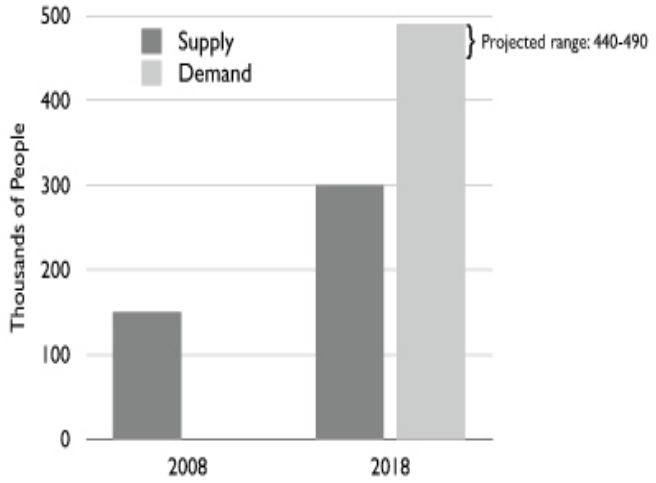
Opportunity

Big Data is one of the most hyper-growth niches in a century.

By 2018 there will be a shortage of 1.5 million managers and analysts with the know-how to use big data to make effective decisions.

The growth rate in the business analytics hires is up 67% over the past year and 136% over the past three years

Demand for deep analytical talent in the U.S. could be 50-60% greater than its projected supply by 2018

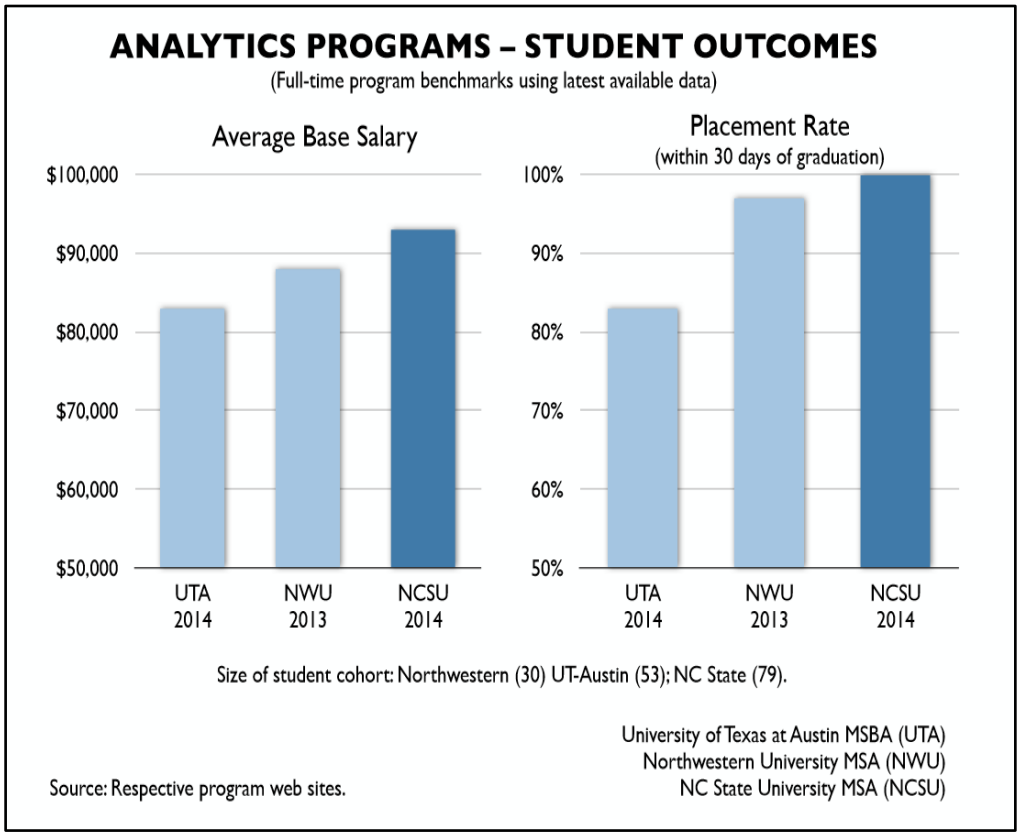


Source: McKinsey Global Institute, *Big Data: The Next Frontier for Innovation, Competition and Productivity* (May 2011).

http://www.mckinsey.com/features/big_data
http://www.forbes.com/sites/forbesinsights/2013/08/02/analysis-shows-jump-in-marketing-analytics-jobs

Opportunity

Currently, growing but still underserved market



Source: NC State Master in Science Analytics: http://analytics.ncsu.edu/?page_id=4184

The NCSU Experience

Recruitment:

- 2014: 800 applications for 100 spots
- Increasing capacity to 160 students/year
- New 26,000 ft^2 building

Placement:

- High starting salaries: near $100K
- High placement rates: 100%

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Recruitment: Target Students

Current W&M Undergrads

- Opportunity for some students to graduate early and get a Masters Degree in year 4 (3+1 scenario)
- A recent survey indicated that we can expect up to 26 students a year from our undergraduates (4+1 scenario)

Recent Graduates from other schools

Current Master students

- Joint Degree (MBA/MAcc/others)

Military Personnel

International Students

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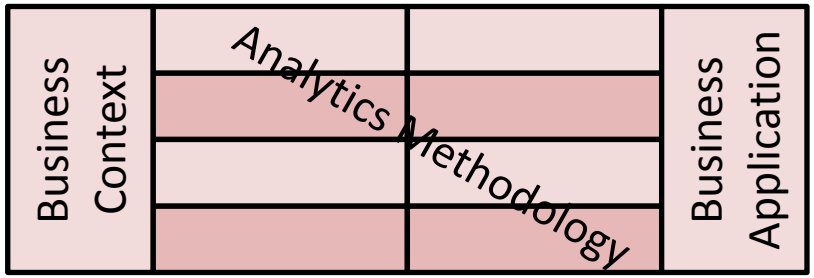
Our Offering: Strategy

Best Practices*:

- Short, intensive programs (avg. 30 credits)
- Deep dive / cutting edge curriculums
- Data science requires extracting knowledge from data and requires contextual and analytical expertise

Our design follows that strategy:

- Business context
- Deep dive analytics
- Practical business application



*M. F. Gorman, R. K. Klimberg (2014), Interfaces 44(3), http://dx.doi.org/10.1287/inte.2014.0739

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Our Offering: Curriculum Structure

<table>
<tr><th>Pre-requisites (offered on-line)</th><th colspan="2">Fall (15 credits)</th><th>Winter Break</th><th colspan="3">Spring (15 credits)</th></tr>
<tr><td rowspan="4">• Probability*
• Statistics*
• Linear algebra*
• R Programing*
• Python Programming*
• Foundations of Business**

* Not required for students who have previously completed coursework in topic or have passed a competency exam

** Required for non-business majors</td><td rowspan="4">Competing through Business Analytics

(3 credits)
2 weeks</td><td>Optimization & Algorithms
3 credits, 13 weeks</td><td rowspan="4">Analytics Internship*

*optional</td><td colspan="2">Big Data
3 credits, 13 weeks</td><td rowspan="4">Capstone Project

(3 credits)
2.5 weeks</td></tr>
<tr><td>Intermediate Probability and Statistics
3 credits, 13 weeks</td><td>Heuristic Algorithms
1.5 credits,
6.5 weeks</td><td>Data Visualization
1.5 credits,
6.5 weeks</td></tr>
<tr><td>Machine Learning 1
3 credits, 13 weeks</td><td colspan="2">Machine Learning 2
3 credits, 13 weeks</td></tr>
<tr><td>Database Management
3 credits, 13 weeks</td><td colspan="2">Artificial Intelligence – Neural Networks, Genetic Algorithms
3 credits, 13 weeks</td></tr>
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