



MIAMI UNIVERSITY

**ISA**

Information Systems & Analytics

# THE EVOLUTION OF AN ANALYTICS CURRICULUM: EXPERIENCES OF A PIONEERING BUSINESS SCHOOL

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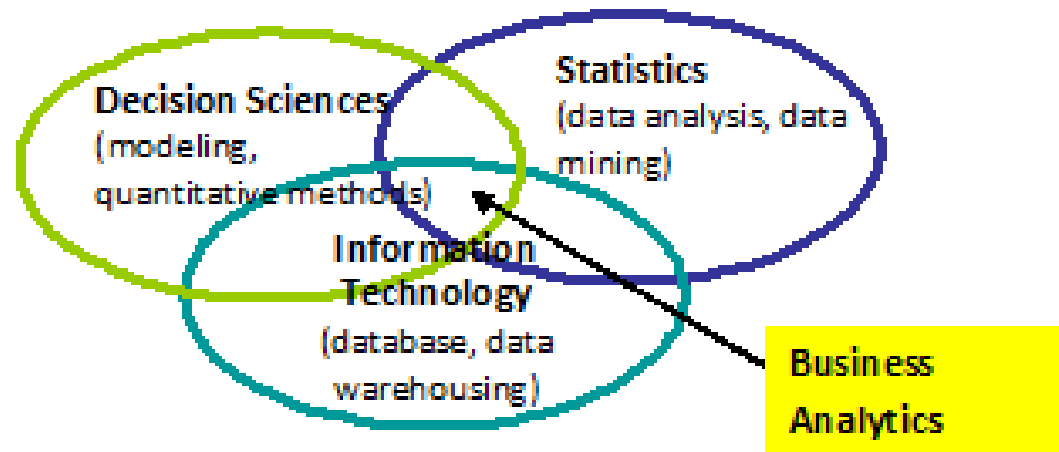
Miami University, Oxford, OH 45056

# GROWTH OF ANALYTICS PROGRAMS

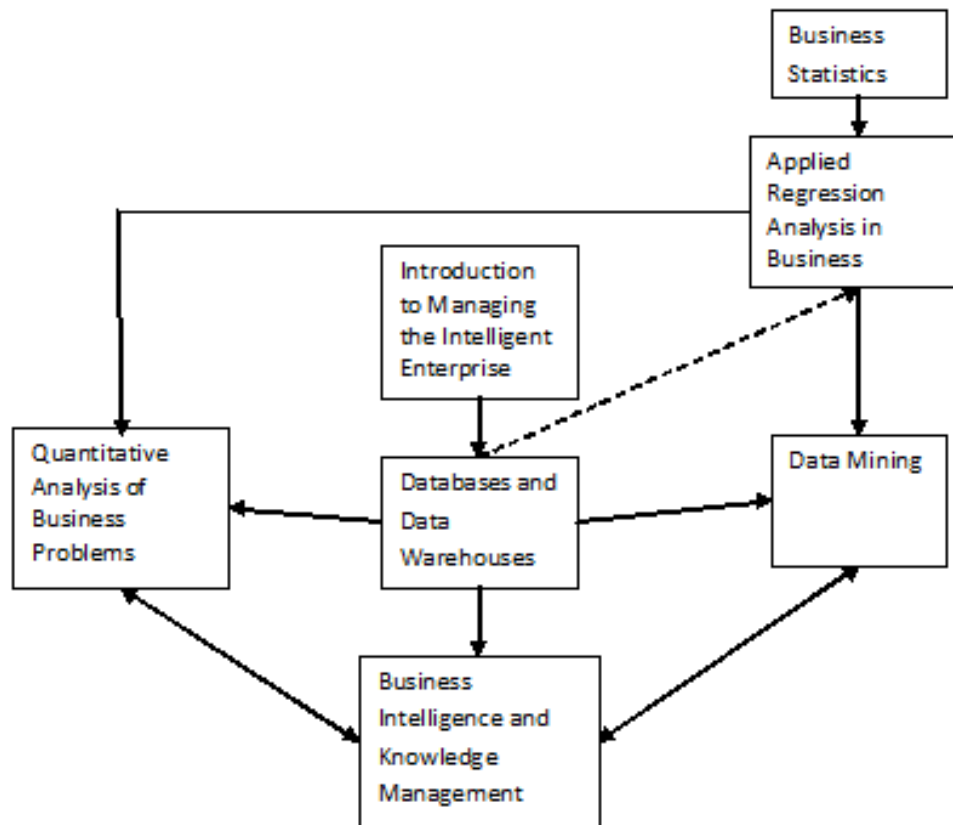
- **47 universities now offer concentrations/majors in BI/BA at the undergraduate level; 74 at the graduate level.**
- **18 universities offer degrees in BI/BA at the undergraduate level; 42 at the graduate level.**

**Note that graduate majors and degrees far outnumber undergraduate offerings.**

# THE FIELD OF BI/BA



# PHASE 1: BUSINESS INTELLIGENCE/BUSINESS ANALYTICS PROGRAM

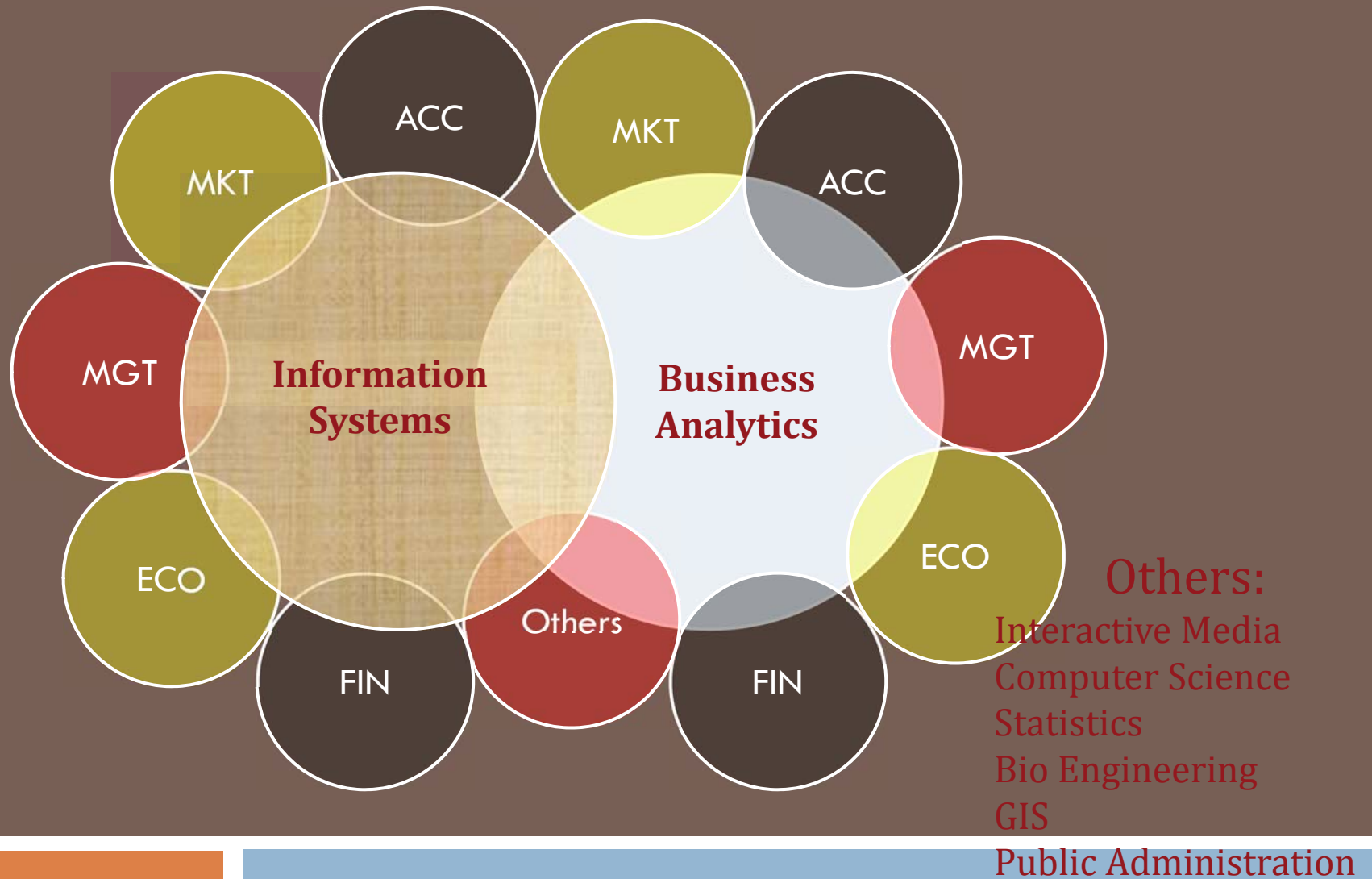


# PHASE 2: EXPANSION TO INCLUDE OTHER FIELDS



- **Three tracks: one being original program**
- **Second track for those who didn't want the Data Mining course**
- **Third track for other fields such as health care, criminology, biology, national defense, etc.**

# Multidisciplinary Vision for our ISA Programs



# PHASE 3: EXPANSION TO INCLUDE A CO-MAJOR



- **competitive pressure from other academic institutions**
- **demand from industry for our graduates and**
- **emphasis on “big data” and visualization**

# PHASE 3: EXPANSION TO INCLUDE A CO-MAJOR (cont.)

- **describe the uses of analytics to process large data sets, so-called "big data", being generated throughout society**
- **construct and manipulate both structured and unstructured data to produce data sets for analytical purposes.**
- **apply appropriate methods for data analysis including predictive models and visualization methods**



# CO-MAJOR CURRICULUM



**CORE coursework is to be satisfied by all co-majors (18 or 19 credit hours) as follows:**

- Data description and summarization**
- Data management – Structured**
- Regression models**
- Visualizing data and digital dashboards**

# CO-MAJOR CURRICULUM (cont.)



In addition to the common core, each co-major is required to complete one of two 15 credit hour tracks:

**Track 1: Business analytics**

**Track 2: Predictive Analytics**

**Other prospective tracks:**

- bioinformatics**
- health care**
- geographical analytics**

# PHASE 4: ADDITION OF A GRADUATE CERTIFICATE IN ANALYTICS

**Courses required of all students:**

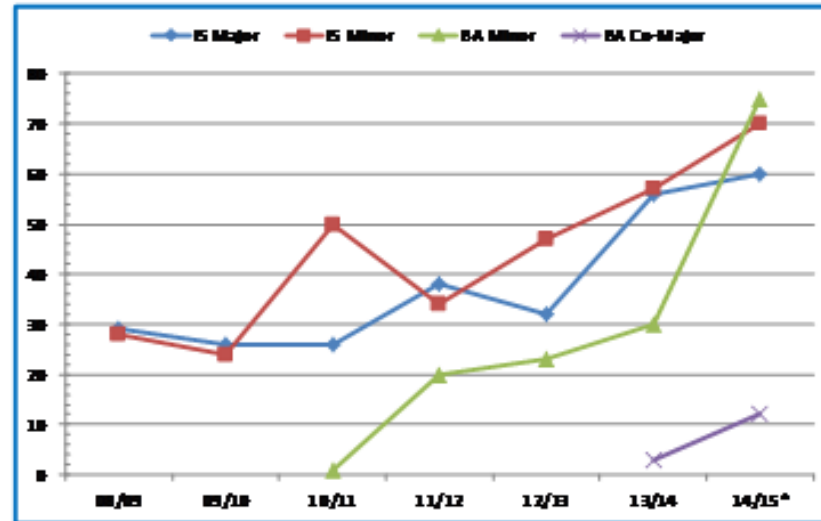
- **Introduction to Predictive Modeling**
- **Managing Data for Business Analytics**
- **Statistical Programming and Data Visualization**
- **Predictive Analytics and Data Mining**

# STRUCTURE OF THE CERTIFICATE



- **4 courses offered during a calendar year**
- **Structure will be 10 weeks + 2 week break + 10 weeks + 2 week break + 10 weeks + 2 week break + 10 weeks.**
- **Courses will be delivered in a hybrid model that is mostly online with 8-10 required campus visits over the course of the year.**

# REFLECTIONS



# REFLECTIONS (cont.)



- Growth means additional aptitude filters would need to be implemented in order to maintain quality
- Hiring of new faculty members in the current climate of scarce resources
- significant investment in training: big data management and processing, text analytics and visualization

# REFLECTIONS (cont.)



- **integration of coursework from the students' point of view (common data bases and projects)**
- **very few candidates for courses from other disciplines**