

BUSINESS ANALYTICS DEGREES

Disruptive Innovation or Passing Fad?

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Decision Sciences, George Washington University School of Business.

Recently asked if business analytics degrees are a fad, it shouldn't be a surprise that my answer is "no" given my role in creating the first Master of Science in Analytics (MSA).

What may be surprising is that I view the MSA not as a specialty degree, but as a new brand of professional education that is more relevant to the future of business than the conventional MBA, and perhaps could supplant it one day as the mainstay of business education.

To understand why, you need to take a closer look at the current state of graduate business education (namely, the MBA) and where the world of business is heading today.

The emerging challenge facing business education can be illustrated by juxtaposing two well-known companies that serve as perfect case studies of the industrial past and digital future of business.

Let's begin with the past.



If you were in a dying industry,
how would you know?

(Before it was obvious.)

1892

Source: Kodak

(The year Eastman Kodak was established—one of the first companies to employ full-time “research scientists.”)

5,000

Source: Kodak

(The number of employees Kodak employed by 1907.)

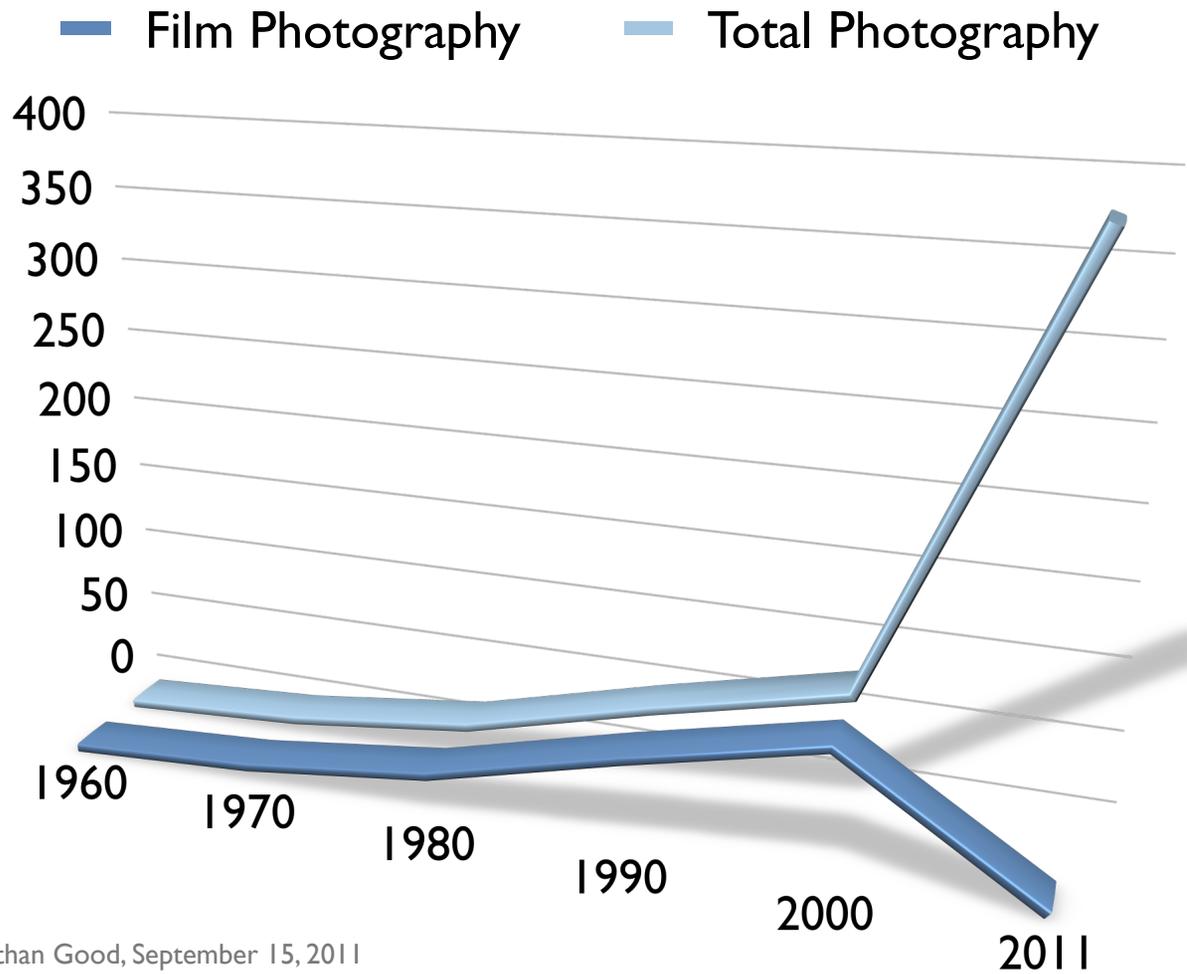
120,000

Source: Kodak

(The number of employees Kodak had at its peak in 1973.)

In its heyday, Kodak was one of the world's best known brands and most-admired companies. An industrial icon of the 20th Century with many forward-thinking business practices, its very name was synonymous with film.

(Then came digital photography.)



Data source: Jonathan Good, September 15, 2011

Today photography has never been more popular, with over 380 billion photos taken in 2011. However, after a century of growth, the demand for film—Kodak’s core business—dropped precipitously in the past decade.

2004

(The year Kodak last posted a sales gain.)

2012

(The year Kodak declared bankruptcy.)

Not Kodak's moment



Source: CNN Money

(Kodak's market cap fell from \$30B in 1997 to \$145M in 2011.)

Kodak knew digital photography was the future. In fact, the company invented the first digital camera in 1975 and held over 1,000 patents in digital imaging by 2012.

Many in Kodak knew there was a problem, but felt powerless to change things. As the leader in analog photography, Kodak was too vested in the status quo and saw itself immune from the larger forces at work.

(A conclusion drawn from my own experience as a consultant to Kodak in the late 1990's.)

2,483

Source: LinkedIn

(The number of current or past Kodak employees in LinkedIn who indicate having a MBA— about 11% of the total.)

Among the many commentaries written about Kodak's demise, no one suggests the company failed because it employed too few MBA's.

Ironically, Kodak executives—like those of other iconic industrial companies of the last century—played a significant role in shaping MBA education into what it is today. The subject of several influential case studies and sponsor of endowed professorships, their presence was strongly felt in many top business schools.

Before turning from the industrial past to the digital future of business, let's examine the current state of MBA education.

To be sure, MBA education is a large and profitable industry in the U.S.

(But is it a dying one?)

1908

Source: Harvard Business School

(The year the Harvard B-School was established—the world's first MBA program—with a faculty of 15 and 80 students.)

453

Source: AACSB

(The number of accredited MBA programs in the U.S. today.)

168,415

Source: AACSB

(The number of MBA students enrolled in accredited business schools in the U.S. in 2011. Two-year traditional MBA programs account for 25% of the total.)

Since the learning experience at the top and bottom quartiles will be dramatically different, let's focus our attention solely on the full-time 2-year MBA programs at the top 100 schools.

(Ranked in March 2012 by *U.S. News & World Report*, which used Class of 2011 data from 441 MBA programs.)

31,709

Source: US News & World Report

(The number of full-time students enrolled in the
top-100 MBA programs in 2011.)

\$74,884

Source: US News & World Report

(The median total cost of tuition for the top-100 MBA programs in 2011.)

\$1,409,735,710

Source: US News & World Report

(The total tuition revenue for the top-100 MBA degrees in 2011,
not adjusted for scholarships or other tuition discounts.)

75%

Source: US News & World Report

(The proportion of the total cost of tuition that is borrowed by graduates of the top-100 MBA programs in 2011.)

\$49,970

Source: US News & World Report

(The median indebtedness of students in the top-100 MBA programs for the class in 2011.)

\$49,445

Source: US Census Bureau

(Median U.S. household income in 2010.)

7%

Source: US Census Bureau

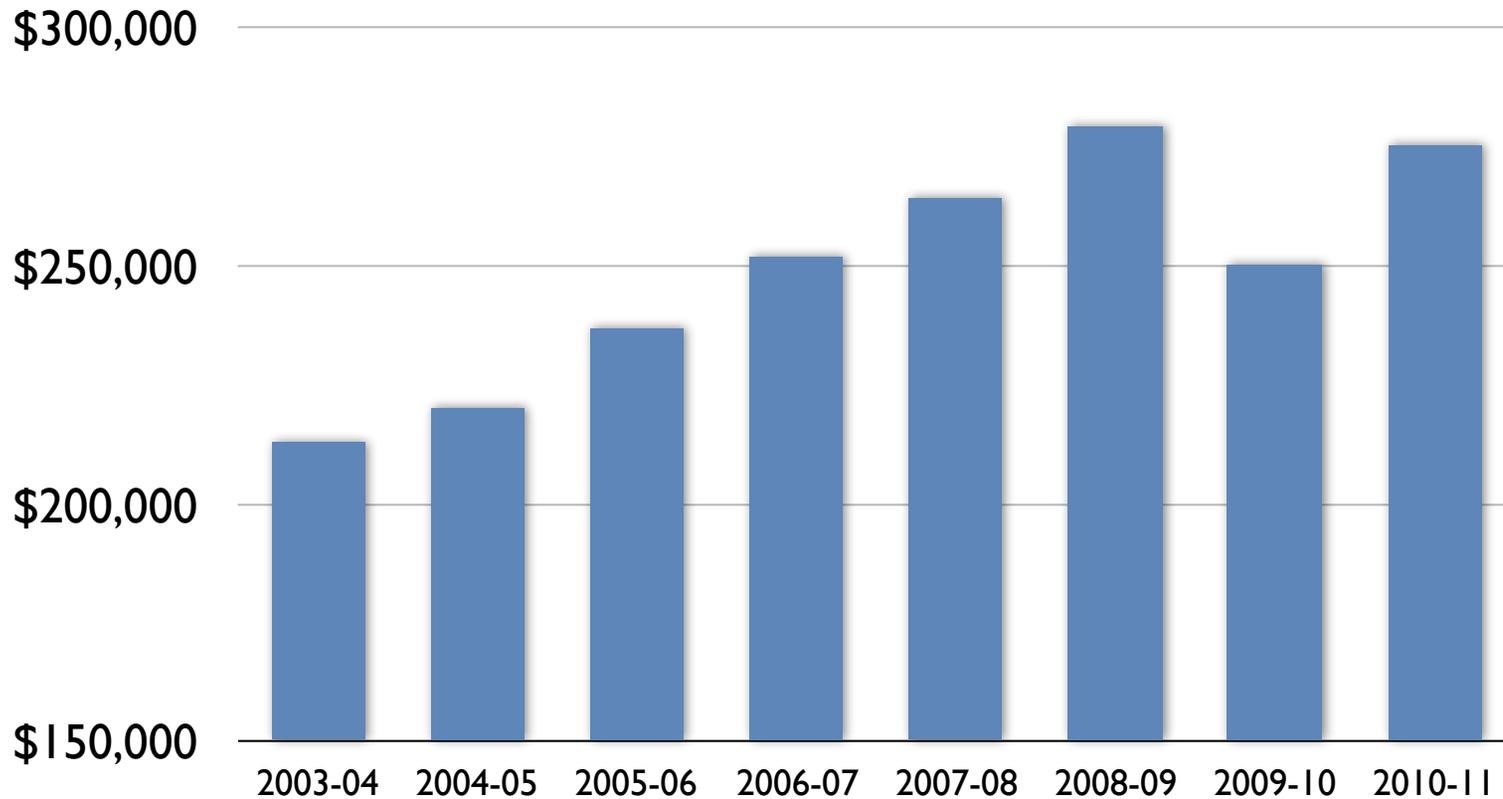
(The amount median U.S. household income has declined since 2000.
Household income hit a 15-year low in 2010.)

7%

Source: US News & World Report

(The amount average tuition increased for the top-100 MBA programs in the past year.)

Average Operating Budget per Full-time Faculty at Accredited U.S. Business Schools



Source: AACSB

(The cost of operating a business school has increased by about one-third since 2003-04.)

What's important is not the cost of MBA education, but the return on investment.

\$82,401

Source: US News & World Report

(Median starting salary for graduates of the top-100 MBA programs in 2011—10% higher than total tuition.)

**But that assumes earning a MBA
will land you a job.**

(How likely is it?)

66%

Source: US News & World Report

(Median placement rate by graduation for top-100 MBA programs in 2011.)

4790

Source: US News & World Report

(Number of students from the top-100 MBA programs not employed by graduation in 2011.)

After 2 years of education at the nation's best universities and tens-of-thousands of dollars spent, one out of every three MBA students are not employed at graduation.

(Shouldn't they be the individuals employers most want to hire?)

One answer might be that we're simply producing thousands more MBA's each year than the economy needs or wants.

Another possibility is that MBA education is out of sync with the skill sets needed to compete in a rapidly changing business world.

0

(The number of required courses in the typical MBA that focus on the skills needed to manage in a data-driven economy.)

2.6%

Source: AACSB

(The portion of full-time faculty at accredited business schools in 2012 who specialize in statistics and quantitative methods.)

“Once your DNA is so tightly focused into a certain type of technology, dominant design, and way of thinking about your business, even if your technology guys come up with something new it becomes very, very difficult to make that switch.... One of the lessons that comes out is that it is really not that easy to adapt and change in a fundamental way when your entire DNA as a company is linked to one way of doing things.”

Management thought-leader Professor Sydney Finkelstein, Tuck School of Business at Dartmouth, on Kodak's bankruptcy, January 6, 2012.

(Could the same be said about the MBA and business schools?)

**If the MBA is a dying industry,
its wounds are largely self-inflicted.**

(The faculty create the rules.)

54%

Source: AACSB

(The amount by which average salaries of U.S. business school professors increased over the past decade.)

Many faculty know there's a problem with MBA education, but feel powerless or lack the incentive to change it. Leading schools will be the last to change because they are too vested in the status quo and see themselves immune from the larger forces at work.

(Sound familiar?)

In sum, MBA education has deep roots in our industrial past. Recent data suggest—for all but the top schools—it's too long, too expensive, and yields surprisingly low returns for too many degree candidates who end up under- or unemployed and burdened in debt.

(Is MBA education ripe for disruption?)

Let's turn now to a prime example of
our digital future.

The Facebook logo, consisting of the word "facebook" in a white, lowercase, sans-serif font, centered within a solid blue rectangular background. A registered trademark symbol (®) is located at the end of the word.

facebook®

(Billions of photos, a different kind of business model.)

2004

(The year Facebook was founded.)

3200

Source: Facebook

(The number of Facebook employees by 2011.)

\$ 100,000,000,000

Source: Forbes, February 6, 2012

(Facebook's projected market value when it goes public later this year.)



(What Facebook employees must think.)

\$0

(The amount Facebook users must pay to use the service.)



(What Facebook users must think.)

How can so few people create so much economic value in so short a period of time?

The immense value of Facebook is a function of what it can do with its data.

(The value of that data in 2011 was \$4.27 billion in revenue.)

430,000,000,000,000

Source: I. Stoica, UC Berkeley, Feb 2011

(The estimated amount of data in bytes Facebook collects from users *everyday*—about 430 terabytes.)

83,000,000

Source: I. Stoica, UC Berkeley, Feb 2011

(The estimated number of photos users upload to Facebook *everyday*, making by far the world's largest single repository of photographs with over 140 billion images.)

“Going to business school helped give me a basic understanding in business. For some people and in some situations this can be helpful. That said, I believe - and at Facebook we believe - that degrees are always secondary to skills. In hiring at Facebook we care what people can build and do. While I got great value from my experience, MBAs are not necessary at Facebook and I don't believe they are important for working in the tech industry.”

Sheryl Sandberg
Chief Operating Officer
Facebook

(Facebook is among the first companies to employ full-time “data scientists” to apply analytics.)

**Analytics is the art and science of
deriving insights from data.**

0.10x

(yesterday)

x

(today)

1000x

(tomorrow)

What if there was a graduate education that could produce future leaders who understood how to extract value from large quantities and varieties of data?

(There is.)

2006

(The year I proposed the Master of Science in Analytics—or “MSA”—aimed at producing a new breed of data scientists.)

\$ 100,000

(The average starting salary for MSA graduates with 2 or more years of experience in 2012.)

> 90%

(Placement rate by graduation for MSA candidates is
each of the last 5 years.)

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(How we started.)

The customer

(Who we focused on.)

Students?

(No, the people who hire them.)

**Design a learning experience,
not a “degree,” from scratch.**

(What we did.)

The Master of Science in Analytics (MSA):
Half the time. Half the cost. A greater
likelihood of employment and higher starting
salaries compared to the average for the
top-100 MBA programs.

(The result.)

Employers don't hire degrees, they hire people who can do things—especially people who can do things with data. This involves not only technical skills, but also teamwork, communication skills, and leadership.

Perhaps MBA education will be as relevant 30 years from now as it was three decades ago in the 1980's... but what if it isn't?

(Are you willing to bet \$100,000 and your future?)

Instead you could earn the Master of Science in Analytics and become a highly sought-after analytics professional who can lead a new generation of companies as they navigate a data-driven future.

(A better bet, in my opinion.)

About the author

Michael Rappa is founding director of the Institute for Advanced Analytics and Distinguished University Professor at North Carolina State University. He is principal architect of the nation's first Master of Science in Analytics, a degree he proposed in 2006 and now in its fifth year. Dr. Rappa has 25-years of experience with graduate professional education, including nine years at the MIT Sloan School of Management.

(Disruptive innovation is his specialty.)

<http://go.ncsu.edu/msa>

(Learn more.)