Revising Business Statistics to Accommodate the Emergence of Business Analytics

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ABSTRACT

This session will discuss analysis skills necessary to function successfully in a business analytics focused enterprise. Those attending will be asked to assess how well current statistics and analysis classes prepare students with these skills. Discussion will then turn to suggestions for revising the business statistics class. What role should business statistics play in providing students with a breadth of analytical, quantitative and communication skills that are fundamental to business analytics? What needs to be added or given increased emphasis and what can be removed or deemphasized?

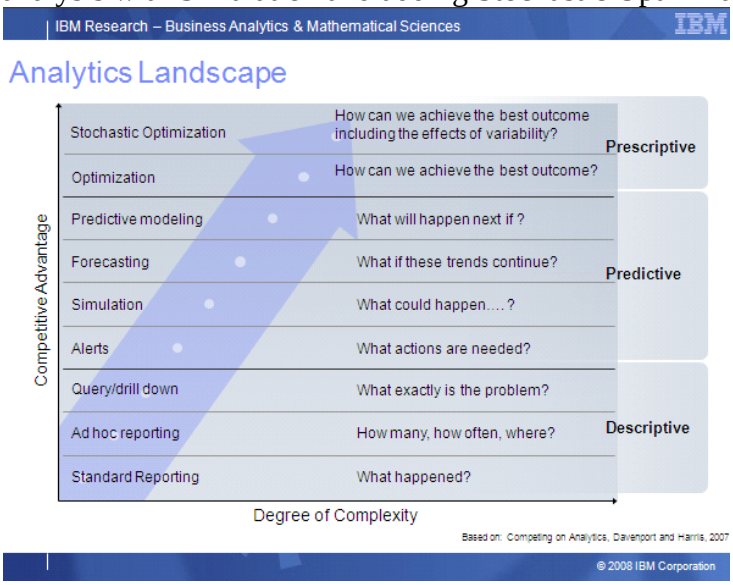
INTRODUCTION AND SESSION OVERVIEW

Since the publication of *Competing on Analytics* by Davenport and Harris in 2007 [1], business analytics has received increased focus and use in the business world. In March 2010 IBM published *The New Value Integrator: Insights from the Global Chief Financial Officer Study* [2] which found that more than 80 percent of the CFOs ranked business intelligence and analytics as their top initiative to enhance company competitiveness. As a result the CFOs expressed a need for employees with business and analytical knowledge to interpret findings and develop relevant advice along with strong interpersonal skills to convincingly communicate recommendations and effectively influence business decisions. They also felt that a significant gap exists between skills required for today's business environment and the skills currently available in the workforce.

In response to a belief that there should be more focus on making decisions based on data in business, health and government areas, IBM has developed a Smarter Planet initiative. In their overview, IBM states, "Data is [*sic*] being captured today as never before. It reveals everything from large and systemic patterns—of global markets, workflows, national infrastructures and natural systems—to the location, temperature, security and condition of every item in a global supply chain. And then there's the growing torrent of information from billions of individuals using social media." [3] These trends of having more relevant data and more reliance on these data for decision making should cause us to examine what we teach in our related business disciplines.

Liberatore and Luo examined the implications of the analytics movement on operations research discipline. They state that "The most profound implication of the analytics movement is its potential impact on education. This impact is not limited to OR; it is applicable to other quant-oriented disciplines, such as **statistics**, ... and to subject-area disciplines, such as accounting and finance, supply chain management, and marketing." These trends indicate that our current educational process needs to be revised to assure that skills that are being taught match the skills that are needed for those working a business analytics oriented organization.

Figure 1-2 [1, pg. 8] in *Competing on Analytics* provides a set of skills for business intelligence and analytics. In the Analytics Landscape figure below, IBM has altered this diagram slightly replacing Statistical analysis with Simulation and adding Stochastic Optimization at the top.



Last year the decision sciences faculty at Virginia Commonwealth University tried to identify a set of necessary skills for business analytics. After a series of discussions with analytics professionals, including representatives from IBM and Capital One, the following set of skills was developed:

- Work in a collaborative environment.
- Translate a specific business question into a problem that can be solved using appropriate data.
- Acquire and organize appropriate data so that it can be used for analysis.
- Know general principles and common tools and be able to apply them to analyze specific business problems.
- Develop and effectively communicate an actionable solution for the specific business question.

After examining the skills deemed necessary for business analytics, the audience will be invited to enter into a moderated discussion about what should be in the business statistics class. What role should business statistics play in providing students with a breadth of analytical and quantitative skills along with experience in analyzing and communicating solutions to problems arising in a business environment? Should the name be changed from business statistics to fundamentals for business analytics or something similar? What are the things that should be added or given greater emphasis? What are the things that should be eliminated or

deemphasized? How should we treat practical significance? Do we need to shift some of the typical focus on the statistical testing of hypotheses to decision analysis topics?

REFERENCES

[1] Davenport, Thomas H. and Harris, Jeanne G., Competing on Analytics: The Science of Winning, Harvard Business School Press, Boston, MA, 2007

[2] IBM Institute for Business Value, The New Value Integrator: Insights from the Global Chief Financial Officer Study , IBM Global Business Services, Somers, NY, March 2010

[3] IBM, website for A Smarter Planet Overview, August 26, 2010, http://www.ibm.com/smarterplanet/us/en/overview/ideas/index.html?ca=v_now?re=ussph2.2

[4] Liberatore, Matthew J. and Luo,Wenhong, "The Analytics Movement: Implication for Operations Research," Interfaces, Vol. 40, No. 4 (July-August, 2010), pp. 313-324.