## Orientation Program on Statistics - IV Rising Opportunities in Business Analytics

Kamakshaiah Musunuru

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What are Analytics

Few facts!

What people say about business analytics?

Types of Analytics

**Domains** 

Jobs Situation!

Business analytics software market

Rising importance of business analyst

What changed the classical senario?

Who are all offering this program?

How to get jobs!



## What are Analytics

#### Peter Drucker:

"If you can't measure it, you can't manage it."

Dr. Tracy Dunbar; Director of Analytics, BITanium

"Collecting data from multiple sources and interpret them in ways that deliver business value."

#### Beller, et al at Wikipedia:

Business analytics (BA) refers to the skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning."

▶ 90 percent of the world's data today has been generated in the last two years, and we can't keep up with demand. According to a recent McKinsey and Company big data report, by 2018, the United States alone could face a shortage of 140,000 to 190,000 professionals with deep analytical skills, as well as 1.5 million managers and analysts with the know-how to use the analysis of big data to make effective decisions.



## Amy Hillman

Dean, Arizona State University's W. P. Carey School of Business

▶ You don't have to be a computer-science major to feel surrounded by terms like big data, cloud computing and algorithms. "The cloud" is a common topic of conversation, and without even trying, you regularly participate in the giving and receiving of big data. For example, each time you visit Facebook, download a game on your iPhone, or send a request to a LinkedIn contact, you are participating in the big data machine.

- So, who are the people who analyze all of this data? They are business analysts, one of the fastest-growing jobs of 2013. You can find them at a variety of organizations, including Fortune 100 companies, small businesses, universities, nonprofits and government organizations.
- ► The Harvard Business Review calls the position of business analyst or data scientist the "sexiest job of the 21st century." Business-analyst jobs are predicted to increase 22 percent by 2020, according to the U.S. Bureau of Labor Statistics.

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  - In contrast, business intelligence traditionally focuses on using a consistent set of metrics to both measure past performance and guide business planning, which is also based on data and statistical methods.
- Business analytics makes extensive use of data, statistical and quantitative analysis, explanatory and predictive modeling, and fact-based management to drive decision making.

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- Business analytics makes extensive use of data, statistical and quantitative analysis, explanatory and predictive modeling, and fact-based management to drive decision making. It is therefore closely related to management science.
- Analytics may be used as input for human decisions or may drive fully automated decisions, whereas Business intelligence is querying, reporting, OLAP, and "alerts."

## Types of analytics

The following are the types of business analytics:

- Descriptive Analytics: Gain insight from historical data with reporting, clustering etc.
- Predictive analytics (predictive modeling using <u>statistical</u> and machine learning techniques).
- Prescriptive analytics recommend decisions using optimization, simulation (numerical mthods) etc.
- Decisive analytics: supports human decisions with visual analytics the user models to reflect reasoning.

#### **Domains**

- Retail sales analytics
- Financial services analytics
- Risk Credit analytics
- Talent analytics
- Marketing analytics
- Behavioral analytics
- Cohort Analysis
- Collections analytics
- Fraud analytics
- Pricing analytics
- Telecommunications
- Supply Chain analytics
- ► Transportation analytics
- Contextual data modeling supports the human reasoning that occurs after viewing "executive dashboards" or any other visual analytics

## Rising importance of BA in academics

- ▶ To keep up with the demand and fill the talent void, colleges and universities are developing innovative master's degrees in business analytics that are ideal for recent undergraduates with a quantitative background (i.e. science, technology, engineering, math and business degrees). Having a master's degree has been shown to improve students' chances of securing a job, with the benefits higher for those who secure a master's degree over a bachelor's degree alone.
- Recently, higher-education consulting firm Eduvantis reported that in the past three years there have been more than 15 new master's-level degree programs centered on data analytics launched in North America.
- Many of the programs offer a focus on experiential learning, and students work on actual companies' business problems to gain real-world experience. Further, the curriculum is often designed around skills companies specifically need in this area. Students in these programs typically require zero to two years of work experience.

### Business analytics software



#### A staff writer at CBR mentions as follows:

- ► The worldwide business analytics software market is expected to rise at compound annual growth rate (CAGR) of 9.7 percent through 2017, a report from International Data Corporation (IDC) has discovered.
- IDC Business Analytics programme VP, Dan Vesset, said that there is growing quantifiable evidence that data-driven decision making enabled by business analytics applications offers a competitive difference.
- Among the three primary segments of the business analytics software market, the data warehousing platform software segment registered the fastest growth of 10percent in 2012 compared to the previous year.
- ▶ During 2012, the business intelligence and analytic tools segment and the performance management and analytic applications segments each went up by 7.7 percent year on year in 2012.

# COMPUTERWORLD

#### Michael Fitzgerald at computer world mentions that:

- ▶ 23 of the IT executive respondents to Computerworld's Forecast 2012 survey said they planned to hire for business analytics skills in the next 12 months, up from 13 in the previous year's survey.
- ► "IT business analyst" was also rated one of the country's top 12 jobs to pursue last year by Money Magazine, which listed median pay for that position at USD 83,100. Computerworld's Salary Survey 2012 listed an average total compensation for IT technology/business system analysts at USD 84,376, up 1.4 percent from 2011.



Allen Hackman, senior director of information technology at Tyco International's Fire and Security unit affirms rising role of business analyst as he mentions:

- the popularity of software as a service, and the commoditization of technology in general, has made business analysts more important.
  - "You don't need IT to implement Salesforce.com," he notes. "But how do I apply it, how do I meet my business need, how do I get people to use it? That's the role the business analyst fulfills."
- "The make-or-break part of a corporate IT department is really the business analyst. It starts with them and ends with them," he says.
- Figure of the says, CIOs and other IT managers have to shift their mindset about business analysts. "The old view of the analyst was someone junior, who would take notes and take a detailed order of the business, build a bill of materials for a project to bill out," says Mark P. McDonald, an analyst at Gartner. Now, the business analyst has "been transformed into a senior problem-solver," he says.

## The change

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## The change

- Organizations face more complex issues
- IT is becoming more commoditized and more outsourced
- business analysts are directly assigned to business units

#### Who offers what?



The program is offered in four terms, the curriculum is

Term-1	Sales analysis: estimation and curving
	Data mangement - 1
	Operations simulation
	Data management - 2
Term -2	Predictive analysis
	Data mining - 2
	Forecasting analytics Contemporary analytics
	Contemporary analytics
Term - 3	Optimization
	Advanced statistical modeling
	Data mining - 2
	Contemporary analytics - 2
Term - 4	Data collection Data visualization
	Data visualization



20 days programme with residential and online sessions. The curriculum

Module-1	Introduction to business analytics
Module-2	Data mining and predictive analytics
Module-3	Simulation and Optimization for Business Analytics
Module-4	Developing Value through business analytics applications



#### 25 days programme. The curriculum

Module-1	Business Statistics
Module-2	Business Statistics Predictive Analytics
Module-3	Optimization Analytics
Module-4	Stochastic Models
Module-5	Advanced analytics-1
Module-5	Advanced analytics-2



One year programme, classes are offered only Thursdays and Saturdays. The pedagogy is:

Theory and practical inputs			
Case study approach			
Alignments, e-learing and business simulation			







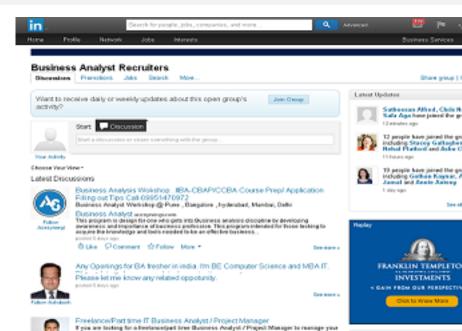


At last! but not the least; Dhruva introduced business analytics, as one of the specialzations in PDGM. The courses spanning across the curriculum.



Year - 1; III trimester	Business Analytics - 1
Year - 2; I trimester	Business Analytics - 2
Year-2; II trimester	Business Analytics - 3

## How to get a job? (become a member of LinkedIn)



## How to get a job?

The other place for jobs! (Click on the figure)



### Thank You!