

IBM Academic Initiative

building skills for a smarter planet

Students Brief: Business Analytics



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Information is at the Center Of a New Wave of Opportunity...

44x

as much Data and Content
Over Coming Decade

2020

35 zettabytes



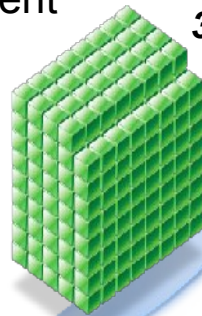
2009

800,000 petabytes

Velocity

Variety

Volume



80%

Of world's data
is unstructured



... And Organizations Need Deeper Insights

1 in 3

Business leaders frequently
make decisions based on
information they don't trust, or
don't have

1 in 2

Business leaders say they don't
have access to the information
they need to do their jobs

83%

of CIOs cited "Business
intelligence and analytics"
as part of their visionary plans
to enhance competitiveness

60%

of CEOs need to do a better job
capturing and understanding
information rapidly in order to
make swift business decisions

Analytics is expanding from enterprise data to big data

Volume

12 terabytes

of Tweets create daily

Analyze product sentiment

350 billion

meter readings per annum

Predict power consumption

Velocity

5 million

trade events per second

Identify potential fraud

500 million

call detail records per day

Prevent customer churn

Variety

100's video feeds

from surveillance cameras

Monitor events of interest

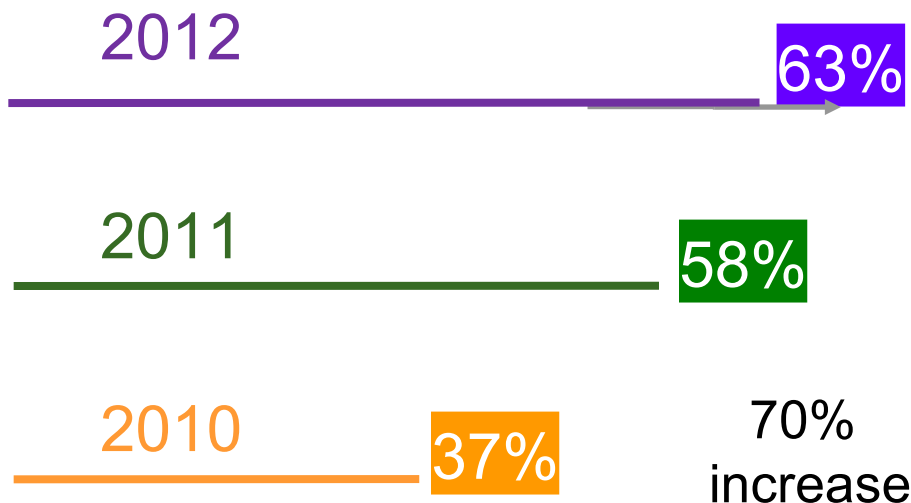
80% data growth

are images, video, documents...

Improve customer satisfaction

Analytics has evolved from business initiative to business imperative

Percentage of respondents who cited a competitive advantage from the use of information and analytics^{1,2}

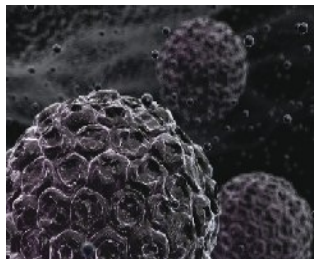


Likelihood of organizations competing on analytics to outperform their peers²



Innovations

- Networking, computing and storage
- Massive Parallel Databases
- Distributed computing framework
- Real-time analytic on data in motion
- Context accumulation, sensemaking algorithms
- Advanced analytics, machine learning, text analysis, natural language
- Visualization



Disease prevention



Reducing customer churn



Reduce Fraud
Real-time promotions



Reduce traffic & pollution



Streamline supply chain



Smarter law enforcement

The Challenge: Bring together a large volume and variety of data to find new insights



-  **Multi-channel customer sentiment and experience analysis**
-  **Detect life-threatening conditions at hospitals in time to intervene**
-  **Predict weather patterns to plan optimal wind turbine usage, and optimize capital expenditure on asset placement**
-  **Make risk decisions based on real-time transactional data**
-  **Identify criminals and threats from disparate video, audio, and data feeds**

IBM Watson Demonstrated the Power of Big Data Analytics



Can we design a computing system that rivals a human's ability to answer questions posed in natural language, interpreting meaning and context and retrieving, analyzing and understanding vast amounts of information in real-time?

An acute shortage of skills threatens our ability to address emerging opportunities and risks

Among organizations worldwide today...

1 in 10

has **all the skills it needs** to be successful applying advanced technology* for business benefit

1/4

have **major skill gaps** in mobile, business analytics, and security

40%

report a **skills shortage** in the ability to manage information

* Includes business analytics, mobile computing, social business, and cloud computing

Universities are key to solving the skills shortage problem, but are challenged to meet the demand

3 of 4

educators and students say
their institutions **can't**
meet the demand for
skills in key technology
spaces*



Struggling to adapt...

- Slow to change curriculum and methods in response to new models and needs
- Unable to meet employer demand for real-world, experiential learning
- Challenged to prove return on rising cost of education for students

* Respondents indicating “moderate to major gap” addressing needs of workforce in mobile computing (77%), business analytics (73%), cloud computing (78%), and social business (77%)

IBM clients consistently mention four key skills they look to hire

Analytics and Big Data

The Business Analyst

Applies business intelligence, predictive analytics, and other techniques to turn information into business insight

60% of enterprises face a shortage of business analytics skills today

The Data Scientist

Combines the skills needed to collect, store, manage, and understand patterns and trends in data

40% of enterprises report a skills shortage in ability to manage information

Information Security

The Cyber Security Professional

Requires a broad portfolio of security skills and systems thinking applied to business priorities

39% of organizations adding IT staff plan to hire information security professionals

Software Engineering & Mobile Dev

The Next Generation Software Engineer

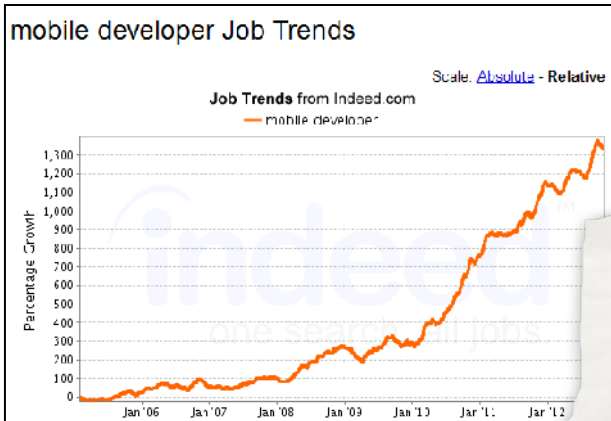
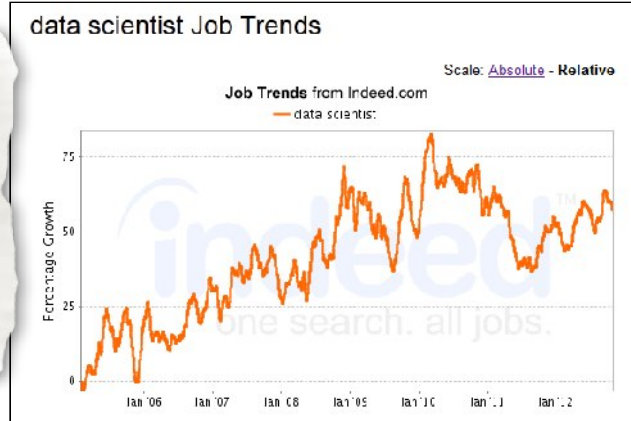
Employs the skills and methodologies needed to keep pace with the rapidly evolving software engineering discipline

65% of enterprises face a shortage of mobile development skills today

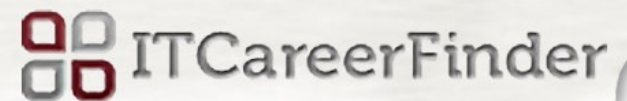
In-demand roles promise great careers for today's qualified graduates

“Data Scientist: The Sexiest Job of the 21st Century”

Thomas H. Davenport and D.J. Patil



Mobile Application Developer Named “Best Computer Job for the Future”



Let's build a smarter planet



Thank you

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