# MGT 349/505 Data Analytics for Managers – Boot Camp‡

*"There is nothing so useless as doing efficiently that, which should not be done at all. [...] Efficiency is doing things right; effectiveness is <u>doing the right things.</u>"*
Peter F. Drucker

## Executive Summary

Every company seems to be jumping on the **"Business Analytics"** (BA), **"Big Data"** and **prediction** bandwagon. Indeed, success of computational, predictive methods has been spectacular: IBM's supercomputer named **"Watson"** wins the first ever man versus machine Jeopardy! competition, **Google's AlphaGo** (DeepMind) beats Go world champion, and millions entrust **Amazon's Alexa** – a robot – with answers to everything. Yet surprisingly little is understood how to ensure BA success. Many executives still remember the struggle with previous data-centric initiatives. For example, according to Gartner, more than 50% of **customer relationship management** (CRM) projects failed (ZDNet/Gartner '09).

This course is focused on how to benefit from BA opportunities consistently. In order to avoid the fate of CRM, we follow **Peter Drucker's rule of *"<u>doing the right things"</u>* first** before "doing things right". You do not have to be a quantitative person – instead the course is designed **for managers and consultants** who will learn how to successfully design, implement and manage a BA agenda.
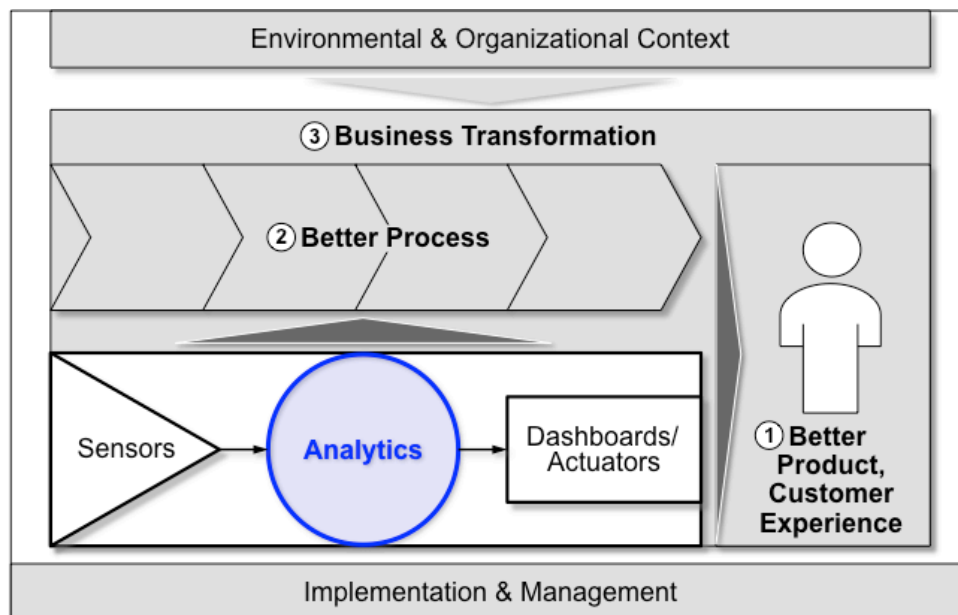


**Figure: Business Analytics & Big Data Framework - Your "Course Map" (Langdon 2013)**

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‡ Aligned with "Essential Practice Skills for High-Impact Analytics Projects" by **INFORMS**, the Institute for Operations Research and the Management Sciences, https://www.informs.org

## Simple, Modular Course Design

The entire course has been mapped out in a single, simple diagram, your "Course Map". It depicts the key building blocks and relationships for a BA success story.

First, the framework illustrates how success with analytics requires a broader perspective in which analytics is only one element or gear in a more complicated clockwork. Second, the "Map" introduces analytics as one link in a 3-link chain of **sensors-analytics-actuators** and how this chain can affect business in 3 ways:
(1) **Better product,** (2) **better process** and (3) **business model transformation**.

There will be sessions for each key element, such as a module on "sensors".

## Your Resume Bullet Points & Learning Objectives

This course teaches you to:

- Delineate **BA impact** on (a) customer experience, (b) business processes, and (c) business model.
- Prepare a C-level **Business Analytics Proposal** complete with
  (a) objectives, (b) a causal model draft as a first step toward the algorithm,
  (c) a data collection strategy, and (d) an implementation schedule.
- Design an exploratory **pre-test**, create a convenience **sample**, and conduct a **hypothesis test** using different data types ("Big Data").

The course is called a Boot Camp, because each meeting is split into a lecture and a lab. And each lab is focused on one piece of your course assignment. So you create your assignment step-by-step or session-by-session with each lecture providing new tools for the next step and lab.

## Schedule 4+1 all Saturdays

4 meetings (10am - 4pm): April 8, 15, 22 and 29
1 "Shark Tank" presentation session/pitch of proposals (10am - Noon):  May 6

## Faculty Bio

Professor Chris S. Langdon is a data scientist and his research is focused on quantifying IT-enabled strategies using next generation analytical tools, such as computational simulation (chris.langdon@cgu.edu).

Chris serves as the President of Pacific Coast Research Inc., an award-winning predictive analytics specialist, and co-founder of the Special Interest Group on Agent-based Information Systems (SIGABIS) of the Association for Information Systems (AIS)/Wirtschaftsinformatik. He started his career as a consultant with Accenture und later joined the faculty of the University of Southern California (USC).

His research on next generation analytics has won grants, such as from Microsoft, and results have appeared in leading publications, including *Communications of the ACM*, *Harvard Business Review*, *Information Systems Research* and Institute of Electrical and Electronics Engineers (IEEE) journals. Over the past two decades, Chris has become known for his success applying analytics research results for *Fortune* Global 100 clients, such as Daimler/Mercedes-Benz, Deutsche Telekom, Nissan and Sony - in the US, Europe and Asia.

Chris was educated at the Darmstadt University of Technology, Germany, and the University of Illinois at Urbana-Champaign and received graduate degrees in engineering and economics, and a Ph.D. in economics, all *summa cum laude*.