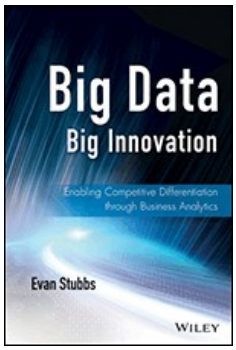

Big Data, Big Innovation: Enabling Competitive Differentiation through Business Analytics

by Evan Stubbs

Preface

Overview

Writing is an interesting pursuit; where you start is rarely where you end up. This is my third book and while not originally intended to be a trilogy, things seemed to have panned out that way.

My first book, *The Value of Business Analytics*, was written for the "doers," the people responsible for making things happen. It tried to answer the fundamental question people kept asking me: "Why don't people *get* this?"

My second book, *Delivering Business Analytics*, was written for the "designers," the people responsible for working out how things should happen. It opened the kimono, provided solutions to 24 common organizational problems, and laid the framework to identify and replicate best practices. It tried to answer the next question people kept asking me: "I know what I need to do, but *how* do I do it?"

This book is written for the "decision makers" and aims to answer the final question: "How do I innovate?"

There are countless models out there. Many are useful, including the ones presented in this book. Most try to make everyone follow the same approach. However, business analytics works best when it's unique to the organization that leverages it. Differentiation means being different, something that's all too often overlooked. Rather than just trying to copy, I hope you use the models in this book to create your own source of innovation.

I hope you find as much enjoyment reading this book as I had writing it.

Things move quickly. There's always more case studies, more disruption, and more examples of how business analytics is fueling innovation. For the latest, keep the conversation going at http://evanstubbs.com/go/blog.

How To Read This Book

This book introduces eight models:

1. The **Cultural Imperative**: Covered in Chapter 3, this outlines the five perspectives that support a high-functioning culture.
2. The **Intelligent Enterprise**: Covered in Chapter 4, this explains how organizations build the capability they need to innovate.
3. The **Value of Business Analytics**: Covered in Chapter 6, this explains the value that business analytics creates.
4. The **Wheel of Value**: Covered in Chapter 6, this explains how to get organizations to create value from big data.
5. The **Path to Profitability**: Covered in Chapter 7, this explains how to blend data science with value creation.
6. The **SMART Model**: Covered in Chapter 7, this explains how to hire and develop the right people.
7. The **Value Architect**: Covered in Chapter 7, this explains how to make sure data scientists create value.
8. The **Innovation Engine**: Covered in Chapter 8, this explains how to support innovation through dynamic value.

Everything else in this book outlines, justifies, and explains the steps necessary to make innovation from big data real. Chapter 8 is written for leaders interested in enabling ability and innovation and is arguably the most important chapter to read.

Due to the nature of the subject matter, this book covers a great deal of ground. To keep the content digestible, much of the detail has been summarized; for those interested in more, I'd strongly recommend reading my prior books, *The Value of Business Analytics* and *Delivering Business Analytics*. Where relevant, specific references are provided within the text. Endnotes to further reading are also provided throughout. Rather than a definitive list of reading material, readers should view these as a launching pad from which they can further explore whatever they're interested in.

This book is divided into four parts. The first highlights a number of current and emerging trends that will continue to dramatically change the face of business. It's true that things always change; in the famous words of Benjamin Franklin (among others), "In this world nothing can be said to be certain, except death and taxes." It's also true, however, that we become so accustomed to change that we run the risk of underestimating the enormous disruption caused by continuous

gradual change. If big data is the question, business analytics is the solution. Unfortunately for some, the answer it implies will eventually see entire industries disrupted.

The second part provides a framework through which leaders can understand the challenges they're likely to face in changing their organization's culture. It outlines the different perspectives organizations exhibit in moving from unstructured chaos to becoming an intelligent enterprise.

The third part focuses on how to leverage big data to support innovation. This isn't easy. Innovation is amorphous. Business analytics is complex. Big data is daunting. Together, they can seem insurmountable. Within this part, we review the fundamentals behind success. It spans culture, human capital, organizational structure, technology design, and operating models.

Finally, the fourth part links them all into an integrated operating model that covers ideation, innovation, and commercialization; it gives a starting framework to develop a plan. It highlights the major considerations that need to be made and provides some recommendations to ensure that you "stay the course."

As with my other books, this one relies heavily on practical examples throughout. Theory is good but where practice and theory contradict, practice grabs theory by the ears and smashes its head into the canvas. While anyone interested in the topic will hopefully find value in the entire book, readers interested in specific topics will benefit from going to specific sections.

Readers interested in understanding the broader impacts of big data along with how organizations tend to cope with disruption are encouraged to read Parts One and Two.

Readers responsible for restructuring organizations to take advantage of business analytics along with hiring and developing the right people are encouraged to read Parts Two and Three.

Finally, readers interested in integrating these building blocks into an operating model that supports innovation will find Part Four especially valuable.

Core Concepts

This section presents the core vocabulary for everything discussed in this book. It is provided to ensure consistency with my prior two books as well as to provide a quick primer to newcomers. Readers comfortable with the field are encouraged to skip this section.

This book refers repeatedly to a variety of concepts. While the terms and concepts defined in this chapter serve as a useful taxonomy, they should not be read as a comprehensive list of strict definitions. Depending on context and industry, they may go by other names. One of the challenges of a relatively young discipline such as business analytics is that while there's tremendous potential for innovation, it has yet to develop a standard vocabulary.

Their intent is simply to provide consistency. Terms vary from person to person and while readers may not always agree with the semantics presented here given their own background and context, it's essential that they understand what is meant within this book by a particular word. Key terms are italicized to try to aid readability.

Business analytics is the use of data-driven insight to generate value. It does so by requiring business relevancy, the use of actionable insight, and performance measurement and value measurement.

This can be contrasted against *analytics*, the process of generating insight from data. Analytics without business analytics creates no return—it simply answers questions. Within this book, analytics represents a wide spectrum that covers all forms of data-driven insight, including:

- Data manipulation
- Reporting and business intelligence
- Advanced analytics (including data mining, optimization, and forecasting)

Broadly speaking, analytics divides relatively neatly into techniques that help understand *what happened* and those that help understand:

- What will happen

- Why it happened
- What is the best one could possibly do

Forms of analytics that help provide this greater level of insight are often referred to as *advanced analytics*.

The final output of business analytics is *value* of some form, either *internal* or *external*. Additionally, this book introduces the concept of *dynamic value*, the potential of multiple competing points of view to fuel innovation. Internal value is value as seen from the perspective of a team within the organization. Among other things, returns are usually associated with cost reductions, resource efficiencies, or other internally related financial aspects. External value is value as seen from outside the organization. Returns are usually associated with revenue growth, positive outcomes, or other market- and client-related measures.

This value is created through leveraging *people*, *process*, *data*, and *technology*. Encompassing all of these is *culture*, the shared values and priorities of an organization. *People* are the individuals and their skills involved in applying business analytics. *Processes* are a series of *activities* linked to achieve an outcome and can be either *strongly defined* or *weakly defined*. A strongly defined process has a series of specific steps that is repeatable and can be automated. A weakly defined process, by contrast, is undefined and relies on the ingenuity and skill of the person executing the process to complete it successfully.

Data are quantifiable measures stored and available for analysis. They often include transactional records, customer records, and free-text information such as case notes or reports. *Assets* are produced as an intermediary step to achieving value. Assets are a general class of items that can be defined, are measurable, and have implicit tangible or intangible value. Among other things, they include documented processes, reports, models, and datamarts. Critically, they are only an asset within this book if they can be automated and can be repeatedly used by individuals other than those who created it.

Assets are developed through having a team apply various *competencies*. A competency is a particular set of skills that can be applied to solve a variety of different business problems. Examples include the ability to develop predictive models, the ability to create insightful reports, and the ability to operationalize insight through effective use of technology.

Competencies are applied using various *tools* (often referred to as *technology*) to generate new assets. Often, tools are consolidated into a common *analytical platform*, a technology environment that ranges from being spread across multiple desktop PCs right through to a truly enterprise platform.

Analytical platforms, when properly implemented, make a distinction between a *discovery environment* and an *operational environment*. The role of the discovery environment is to generate insight. The role of the operational environment, by contrast, is to allow this insight to be applied automatically with strict requirements around reliability, performance, availability, and scalability.

The core concepts of people, process, data, technology, and culture feature heavily in this book; while they are a heavily used and abused framework, they represent the core of systems design. Business analytics is primarily about facilitating change; business analytics is nothing without driving towards better outcomes. And, when it comes to driving change, every roadmap involves having an impact across these four dimensions. While this book isn't explicitly written to fit with this framework, it relies heavily on it.

Readers interested in knowing more are heavily encouraged to read *The Value of Business Analytics* and *Delivering Business Analytics*.