

Judah Phillips

Foreword by Dr. Thomas Davenport

# ECOMMERCE ANALYTICS



Analyze and Improve the Impact  
of Your Digital Strategy

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## Praise for *Ecommerce Analytics*

“Leveraging analytics to improve business results requires first knowing the questions that need to be answered. *Ecommerce Analytics* is the book to read if you are looking to use data to improve your online performance.”

—**Josh James**, Founder and CEO, Domo; Cofounder and Former CEO, Omniture

“With U.S. ecommerce sales set to cross \$450 billion in 2017, the opportunity in front of you is immense. Yet, it is likely your conversion rates are stuck at 2%. I’m excited about Judah’s comprehensive tome because it is just what the doc prescribed to help unstick your ecommerce strategies. From cart abandonment to multichannel attribution to lifetime value... You’ll get precise guidance to win big!”

—**Avinash Kaushik**, Digital Marketing Evangelist, Google;  
author, *Web Analytics 2.0*, *Web Analytics: An Hour a Day*

“Are you a digital analyst working for an ecommerce company? Or are you an ecommerce marketer and your boss just asked you to provide more data about your digital efforts? If you are, then you should check out *Ecommerce Analytics*!

“Judah does a great job of making digital analytics for ecommerce logical and easy to understand. If you’re a digital analyst familiar with topics like attribution modeling, you’ll love how Judah discusses the specifics for an ecommerce business.

“If you’re new to digital analytics you’ll find the content easy to approach and very actionable. But that doesn’t mean that he cuts corners! Judah is really, really thorough! He takes the time to dive into all the different metrics and analysis techniques that you can perform on your ecommerce business.

“I put *Ecommerce Analytics* on my bookshelf and plan to use it whenever I work with an ecommerce company—you should, too!”

—**Justin Cutroni**, Analytics Evangelist, Google;  
author of *Google Analytics* and *Performance Marketing with Google Analytics*

“This important book is required reading for anyone who wants to understand how to deliver successful ecommerce analysis and data science. It’s instructive and helpful, unifying the subject matter in way that is actionable for leadership, managers, technologists, and analysts.”

—**Raj Aggarwal**, Cofounder and CEO, Localytics

“Judah has created a must-read book for all digital analysts. It’s clearly framed and combines a comprehensive understanding of the topic with a practical flavor only the author can bring through decades of experience. This should be a hit in any college analytics class and will be on my graduate analytic course reading list in the future.”

—**Rand Schulman**, Managing Partner, Effectv Digital;  
Cofounder, DealSignal; Cofounder, Digital Analytics Association

“In *Ecommerce Analytics*, Judah has delivered a comprehensive survey of the field, covering a broad array of topics important to implementers, analysts, and executives. This book contains a wealth of information that will be valuable in successfully executing an ecommerce strategy.”

—**Bob Page**, Director Emeritus, Digital Analytics Association; Internet entrepreneur

“Judah has done the impossible. In just a few chapters, he helps you understand the opportunity ecommerce retailers have in front of them, the monumental impact ecommerce analysis can have, the challenges you’ll face from a management and socialization perspective, and most importantly, how to navigate all of it and get stuff done.

“This book is a must-read for those who want to elevate their ecommerce stores to the next level, for the data teams who are tired of shouting into the wind, and for the managers who want to make a more meaningful impact on the organization. It is well researched, carefully thought out, and covers all of the bases. Stop reading this and buy the book already; your company will thank you.”

—**Tommy Walker**, Editor-in-Chief, Shopify

“Judah has delivered something critical in this remarkable information age—a broad, comprehensive summary of the essential elements of digital commerce. *Ecommerce Analytics* starts by showing what’s possible, in stark terms: the size and growth of the market, along with metrics of the leaders. From there, it elaborates on the entire taxonomy—defining the end-to-end process, what data to collect—how to analyze it—and then most importantly how to interpret it and optimize from there. He even digs into some of the trickiest bits: attribution, governance, and how to organize the company around digital success. Finally, his consistent emphasis on asking business questions and defining the outcomes and measurements before starting to crunch the numbers makes the subject truly accessible—and actionable.”

—**Sid Probstein**, Founder and CEO, RightWhen; Cofounder and former CTO, Attivio

“*Ecommerce Analytics* helps you understand each of the critical components needed to collect data, personalize interactions, and move customers through the funnel. It’s the backbone of marketing automation and personalization. This is the best book for anyone who works in ecommerce or who wants a job in that field where they will have to use data to understand and drive the business.”

—**Jonathan Corbin**, Director, Marketo

“Ecommerce: In 2016, everyone’s doing it; few do it well; even fewer share what they’ve learned, and only one makes the top of that list. Judah Phillips is that person, and this is that book. I’ve learned a ton from Judah, and you will, too.”

—**Cesar Brea**, Founder, Force Five Partners;  
author of *Marketing and Sales Analytics* and *Pragmatics*

“No one understands analytics more than my man Judah. This is a crucial read for anyone trying to step up their analytics game and who wants the tangible results that mastering data brings!”

—**Greg Selkoe**, Founder and CEO, Curateurs.com;  
Founder and former CEO, Karmaloop

“*Ecommerce Analytics* is a must-read for anyone involved in ecommerce. Not only will you learn how to do different types of analysis, it also covers the hard topics like data modeling, data integration, attribution, and building data-driven teams. You’ll even get some conversion optimization knowledge, too. You should read it before your competition does.”

—**Bryan Eisenberg**, Cofounder and CMO, IdealSpot; coauthor of the *Wall Street Journal* and *New York Times* bestselling books *Call to Action*, *Waiting for Your Cat to Bark?*, *Always Be Testing*, and *Buyer Legends: The Executive Storytellers Guide*

“This book is a must-read for anyone interested in making the most of their ecommerce-related data. The author does an excellent job making complex concepts accessible as well as teaching the reader how to get to actionable insights.”

—**Jesse Harriott**, CAO, Constant Contact

# Ecommerce Analytics

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of Your Digital Strategy

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*To Lilah and Elizabeth and my mom and dad,  
who all shop online and wonder what I do at work.*

# Contents at a Glance

	Foreword . . . . .	xii
Chapter 1	Ecommerce Analytics Creates Business Value and Drives Business Growth . . . . .	1
Chapter 2	The Ecommerce Analytics Value Chain . . . . .	9
Chapter 3	Methods and Techniques for Ecommerce Analysis. . . . .	27
Chapter 4	Visualizing, Dashboarding, and Reporting Ecommerce Data and Analysis . . . . .	71
Chapter 5	Ecommerce Analytics Data Model and Technology . . . . .	91
Chapter 6	Marketing and Advertising Analytics in Ecommerce . . . . .	103
Chapter 7	Analyzing Behavioral Data . . . . .	119
Chapter 8	Optimizing for Ecommerce Conversion and User Experience . . . . .	133
Chapter 9	Analyzing Ecommerce Customers . . . . .	155
Chapter 10	Analyzing Products and Orders in Ecommerce . . . . .	179
Chapter 11	Attribution in Ecommerce Analytics . . . . .	213
Chapter 12	What Is an Ecommerce Platform? . . . . .	229
Chapter 13	Integrating Data and Analysis to Drive Your Ecommerce Strategy . . . . .	241
Chapter 14	Governing Data and Ensuring Privacy and Security . . . . .	263
Chapter 15	Building Analytics Organizations and Socializing Successful Analytics . . . . .	279
Chapter 16	The Future of Ecommerce Analytics . . . . .	307
	Bibliography . . . . .	319
	Index . . . . .	329

# Contents

<b>Chapter 1</b>	<b>Ecommerce Analytics Creates Business Value and Drives Business Growth . . . . .</b>	<b>1</b>
<b>Chapter 2</b>	<b>The Ecommerce Analytics Value Chain . . . . .</b>	<b>9</b>
	Identifying and Prioritizing Demand . . . . .	11
	Developing an Analytical Plan. . . . .	14
	Activating the Ecommerce Analytics Environment . . . . .	16
	Preparing and Wrangling Data . . . . .	20
	Analyzing, Predicting, Optimizing, and Automating with Data . . . . .	22
	Socializing Analytics. . . . .	23
	Communicating the Economic Impact of Analytics. . . . .	24
<b>Chapter 3</b>	<b>Methods and Techniques for Ecommerce Analysis. . . . .</b>	<b>27</b>
	Understanding the Calendar for Ecommerce Analysis . . . . .	28
	Storytelling Is Important for Ecommerce Analysis . . . . .	29
	Tukey’s Exploratory Data Analysis Is an Important Concept in Ecommerce Analytics. . . . .	31
	Types of Data: Simplified . . . . .	34
	Looking at Data: Shapes of Data. . . . .	36
	Analyzing Ecommerce Data Using Statistics and Machine Learning . . . . .	47
	Using Key Performance Indicators for Ecommerce . . . . .	58
<b>Chapter 4</b>	<b>Visualizing, Dashboarding, and Reporting Ecommerce Data and Analysis . . . . .</b>	<b>71</b>
	Understanding Reporting . . . . .	75
	Explaining the RASTA Approach to Reporting . . . . .	77
	Understanding Dashboarding. . . . .	77
	Explaining the LIVEN Approach to Dashboarding. . . . .	80
	What Data Should I Start With in an Ecommerce Dashboard? . . . . .	81
	Understanding Data Visualization. . . . .	81
<b>Chapter 5</b>	<b>Ecommerce Analytics Data Model and Technology . . . . .</b>	<b>91</b>
	Understanding the Ecommerce Analytics Data Model: Facts and Dimensions . . . . .	93
	Explaining a Sample Ecommerce Data Model . . . . .	96

	Understanding the Inventory Fact . . . . .	97
	Understanding the Product Fact . . . . .	98
	Understanding the Order Fact . . . . .	98
	Understanding the Order Item Fact . . . . .	99
	Understanding the Customers Fact . . . . .	99
	Understanding the Customer Order Fact . . . . .	100
	Reviewing Common Dimensions and Measures in Ecommerce . . . . .	100
<b>Chapter 6</b>	<b>Marketing and Advertising Analytics in Ecommerce.</b> . . . .	<b>103</b>
	Understanding the Shared Goals of Marketing and Advertising Analysis . . . . .	105
	Reviewing the Marketing Lifecycle . . . . .	108
	Understanding Types of Ecommerce Marketing . . . . .	111
	Analyzing Marketing and Advertising for Ecommerce . . . .	112
	What Marketing Data Could You Begin to Analyze? . . . . .	116
<b>Chapter 7</b>	<b>Analyzing Behavioral Data . . . . .</b>	<b>119</b>
	Answering Business Questions with Behavioral Analytics . . .	123
	Understanding Metrics and Key Performance Indicators for Behavioral Analysis . . . . .	124
	Reviewing Types of Ecommerce Behavioral Analysis . . . . .	126
<b>Chapter 8</b>	<b>Optimizing for Ecommerce Conversion and User Experience . . . . .</b>	<b>133</b>
	The Importance of the Value Proposition in Conversion Optimization . . . . .	137
	The Basics of Conversion Optimization: Persuasion, Psychology, Information Architecture, and Copywriting . . .	138
	The Conversion Optimization Process: Ideation to Hypothesis to Post-Optimization Analysis . . . . .	141
	The Data for Conversion Optimization: Analytics, Visualization, Research, Usability, Customer, and Technical Data . . . . .	145
	The Science Behind Conversion Optimization . . . . .	147
	Succeeding with Conversion Optimization . . . . .	151
<b>Chapter 9</b>	<b>Analyzing Ecommerce Customers . . . . .</b>	<b>155</b>
	What Does a Customer Record Look Like in Ecommerce? . . . . .	156
	What Customer Data Could I Start to Analyze? . . . . .	157

	Questioning Customer Data with Analytical Thought . . . . .	158
	Understanding the Ecommerce Customer Analytics Lifecycle . . . . .	159
	Defining the Types of Customers . . . . .	161
	Reviewing Types of Customer Analytics . . . . .	162
	Segmenting Customers . . . . .	163
	Performing Cohort Analysis . . . . .	165
	Calculating Customer Lifetime Value . . . . .	166
	Determining the Cost of Customer Acquisition . . . . .	168
	Analyzing Customer Churn . . . . .	169
	Understanding Voice-of-the-Customer Analytics . . . . .	170
	Doing Recency, Frequency, and Monetary Analysis . . . . .	171
	Determining Share of Wallet . . . . .	172
	Scoring Customers . . . . .	173
	Predicting Customer Behavior . . . . .	174
	Clustering Customers . . . . .	175
	Predicting Customer Propensities . . . . .	176
	Personalizing Customer Experiences . . . . .	178
<b>Chapter 10</b>	<b>Analyzing Products and Orders in Ecommerce . . . . .</b>	<b>179</b>
	What Are Ecommerce Orders? . . . . .	181
	What Order Data Should I Begin to Analyze? . . . . .	183
	What Metrics and Key Performance Indicators Are Relevant for Ecommerce Orders? . . . . .	184
	Approaches to Analyzing Orders and Products . . . . .	186
	Analyzing Products in Ecommerce . . . . .	193
	Analyzing Merchandising in Ecommerce . . . . .	198
	What Merchandising Data Should I Start Analyzing First? . . . . .	210
<b>Chapter 11</b>	<b>Attribution in Ecommerce Analytics . . . . .</b>	<b>213</b>
	Attributing Sources of Buyers, Conversion, Revenue, and Profit . . . . .	217
	Understanding Engagement Mapping and the Types of Attribution . . . . .	220
	The Difference between Top-Down and Bottom-Up Approaches to Attribution . . . . .	224
	A Framework for Assessing Attribution Software . . . . .	225

- Chapter 12 What Is an Ecommerce Platform? . . . . . 229**
  - Understanding the Core Components of an Ecommerce Platform . . . . . 232
  - Understanding the Business Functions Supported by an Ecommerce Platform . . . . . 235
  - Determining an Analytical Approach to Analyzing the Ecommerce Platform. . . . . 239
  
- Chapter 13 Integrating Data and Analysis to Drive Your Ecommerce Strategy . . . . . 241**
  - Defining the Types of Data, Single-Channel to Omnichannel . . . . . 243
  - Integrating Data from a Technical Perspective . . . . . 246
  - Integrating Analytics Applications. . . . . 259
  - Integrating Data from a Business Perspective . . . . . 261
  
- Chapter 14 Governing Data and Ensuring Privacy and Security . . 263**
  - Applying Data Governance in Ecommerce . . . . . 268
  - Applying Data Privacy and Security in Ecommerce . . . . . 272
  - Governance, Privacy, and Security Are Part of the Analyst’s Job . . . . . 276
  
- Chapter 15 Building Analytics Organizations and Socializing Successful Analytics . . . . . 279**
  - Suggesting a Universal Approach for Building Successful Analytics Organizations . . . . . 280
  - Determine and Justify the Need for an Analytics Team . . . 283
  - Gain Support for Hiring or Appointing a Leader for Analytics . . . . . 285
  - Hire the Analytics Leader . . . . . 287
  - Gather Business Requirements. . . . . 288
  - Create the Mission and Vision for the Analytics Team . . . 289
  - Create an Organizational Model. . . . . 289
  - Hire Staff . . . . . 291
  - Assess the Current State Capabilities and Determine the Future State Capabilities. . . . . 291
  - Assess the Current State Technology Architecture and Determine the Future State Architecture . . . . . 292
  - Begin Building an Analytics Road Map . . . . . 294
  - Train Staff. . . . . 294
  - Map Current Processes, Interactions, and Workflows. . . . 295

Build Templates and Artifacts to Support the Analytics Process . . . . .	296
Create a Supply-and-Demand Management Model . . . . .	296
Create an Operating Model for Working with Stakeholders . . . . .	297
Use, Deploy, or Upgrade Existing or New Technology . . . . .	298
Collect or Acquire New Data . . . . .	298
Implement a Data Catalog, Master Data Management, and Data Governance . . . . .	299
Meet with Stakeholders and Participate in Business Processes, and Then Socialize Analysis on a Regular Cadence and Periodicity . . . . .	300
Do Analysis and Data Science and Deliver It . . . . .	300
Lead or Assist with New Work Resulting from Analytical Processes . . . . .	302
Document and Socialize the Financial Impact and Business Outcomes Resulting from Analysis . . . . .	303
Continue to Do Analysis, Socialize It, and Manage Technology While Emphasizing the Business Impact Ad Infinitum . . . . .	303
Manage Change and Support Stakeholders . . . . .	304
<b>Chapter 16 The Future of Ecommerce Analytics . . . . .</b>	<b>307</b>
The Future of Data Collection and Preparation . . . . .	311
The Future Is Data Experiences . . . . .	313
Future Analytics and Technology Capabilities . . . . .	314
<b>Bibliography . . . . .</b>	<b>319</b>
<b>Index . . . . .</b>	<b>329</b>

## Foreword

Let's say that you fit into one (or perhaps more) of the following categories:

- You work at a sophisticated ecommerce company—say you are a new employee at Amazon.com—and you know your employer is very analytical, but you aren't.
- You are a manager at a company with some ecommerce capabilities, and you have a nagging feeling that your firm could be better at analytics, but you don't know how to go about it.
- You have an analytics-oriented job, but you need to learn more about ecommerce analytics.
- You work at a brick-and-mortar retailer that has dabbled in ecommerce, but you and your colleagues know you need to get more serious about it.
- You want to start a new ecommerce company.
- You are a student and want a job in ecommerce.

If you resemble any of these people, this book is the answer to your prayers. It is the one-stop shopping destination for everything you need to know about ecommerce analytics. It will provide a short refresher course on statistics. (Perhaps you did not fully engage with your statistics class in college.) It will give you enough content on retail and selling stuff online to get you by in most meetings. It will help you through difficult and esoteric topics like customer behavioral flow analysis, customer lifetime value, abandoned shopping carts, and virtually anything else you will encounter in this field.

As I read this book, I was surprised at how thorough it was and how clearly Phillips presents the key concepts. I was a bit amazed at the breadth of topics represented and that a young guy like Phillips has accumulated the analytical wisdom of the ages in topics like exploratory data analysis and communicating effectively about analytics. But I was truly shocked to read early in the first chapter that this is the only book on ecommerce analytics. Given the importance of ecommerce to the economy and the importance of analytics to ecommerce, I couldn't believe that there are no other books on the topic. But I skeptically undertook a cursory search on "ecommerce analytics books" and found nothing in the category. There are books

on digital analytics (Phillips himself has written a couple of good ones), specific topics like conversion, and tools that are related to digital and ecommerce analytics (Google Analytics, for example), but literally nothing directly targeted at ecommerce analytics.

So if you have an interest in ecommerce analytics, it's a no-brainer to buy and read the book. If you are reading this foreword in Amazon's "Look inside" preview mode, go directly to the shopping cart and buy it. If you have actually found this book in a physical bookstore (though they should probably refuse to carry it since it threatens their business), take it up to the cash register and get out your wallet. I don't know how much they will sell this thing for, but do you value your career? Do you want a promotion? You should not only buy the book but also send Judah Phillips 10% of your total compensation as a tribute.

You should also stop reading this foreword and get to the real content. But first, one more request. If you're like many people, your primary interest in this book is in the "hard" advice on ecommerce analytics—statistical methods, techniques for getting data, specific key performance indicators to employ, and so forth. These are certainly important and valuable, and attending to them here makes perfect sense.

However, the book is also replete with "softer" advice that will make you a much better ecommerce analyst. There is, for example, the general philosophy of "getting close to your data" by observing distributions and outliers. There is the focus on telling a good story about your data. Phillips also maintains a strong focus on understanding what your organization wants from analytics and on making analytical results as digestible as possible. These types of wise perspectives and suggestions are just as valuable as any method or tool prescription.

So buy and read this book—every page of it. Take its recommendations to heart. If you want to be successful at ecommerce, you need a heavy dose of analytics. And if you want to be successful at ecommerce analytics, you need a heavy dose of this fine book.

—**Thomas H. Davenport**, President's Distinguished Professor of Information Technology at Babson College; Research Fellow, MIT Center for Digital Business; Cofounder, International Institute for Analytics; Senior Advisor to Deloitte Analytics

# Acknowledgments

This book is the first text written that is solely dedicated to explaining and exploring the subject of ecommerce analytics. The content is an unprecedented synthesis of experience and ideas, bringing together hard-learned knowledge about the business, technical, organizational, managerial, mathematical, scientific, artistic, and analytical aspects of delivering successful ecommerce analytics (and data science) in companies of all sizes. I wrote this book for analytics practitioners, managers, and leaders, as well as people who work with, who are studying, or who simply want to learn more about ecommerce and how to analyze it. It's a multidisciplinary text that crosses a range of topics and contextualizes them under the idea of "ecommerce analytics" and thus unifies the content into a cohesive whole. I cover analytical concepts and theory, to applied mathematical and statistical methods, to analytical processes and organizations, to specific types of ecommerce analysis, to data modeling, integration, collection, storage, security, and privacy. I tried to be as ambitious and innovative in writing this text as the ecommerce industry, its leaders, and its workers are daily in their jobs. Thank you for reading my book.

First I'd like to thank Jeanne Glasser-Levine, Betsy Gratner, Cheri Clark, Amy Neidlinger, and the staff at Pearson who helped me produce this book. I'd also like to thank the following people (in random order): Thomas Davenport, Jonathan Corbin, Jeff Bezos, Brian Massey, Sid Probst, Julio Gomez, Sergio Maldonado, Sean Hickey, Sarabjot Kaur, Peep Laja, Harpreet Singh, Shail Jain, Nick Kramer, Ants Anupold, Dave Weineke, Peter Gibson, Deepak Sahi, Jeff Evernham, Gary Rush, Vishal Kumar, Eric Valyocsik, Mike Taubleb, Dennis Mortensen, Gillian Ahouanvoheke, Kevin Rowe, Patrick McGinley, Ali Benham, Feras Alhou, Eric Fettman, Sergei Dvynos, Amit Shah, Dave Munn, Jesse Harriott, Bart Schutz, Ton Wesseling, Raj Aggarwal, Jim Levinger, Tommy Walker, Justin Cutroni, Avinash Kaushik, Brian Clifton, Eric Dumain, Cesar Brea, Brett House, Olivier Titeca-Baeuport, Bala Iyer, Eric Colsen, Julien Coquet, Bob Mould, Jeff Checko, Bob Page, Jascha-Kaykas Wolff, Gary Angel, Kim Ann King, Eric Hansen, Gary Angel, Rand Schulman, Andrew and Luchy Edwards, Jim Sterne, Mark Zuckerberg, Bryan and Jeffrey Eisenberg, Josh James, and you.

# About the Author

**Judah Phillips** helps companies create value with analytics and data science by improving business performance. Judah has led analytics and data science teams for Fortune 500 companies and has improved their financial performance through the applied analysis of data, the management of analytical and technical resources, and the alignment and optimization of analytics strategy against short-term roadmaps and long-term strategic visions. Judah strongly believes that cutting-edge technology is critical and necessary but often becomes technical overhead unless strategy is aligned with excellence in organizational development, operational management, and delivery execution that is solidly tied to impacting material financial goals. Judah has worked for or been hired as a consultant by Internet companies, media companies, consumer product companies, financial services firms, and various types of agencies.

- He is the sole author of three books on analytics, including *Ecommerce Analytics*, *Building a Digital Analytics Organization*, and *Digital Analytics Primer*. Judah has also authored chapters, edited, or contributed to the development of other books: *Measuring the Digital World*, *Advanced Business Analytics*, *Sales and Marketing Analytics*, *Digital Is Changing Everything*, *The Complete Guide to B2B Marketing*, and *Multi-channel Marketing Metrics*.
- He served on various boards of or advised established and start-up technology companies, including global leaders in digital analytics, mobile analytics, ecommerce, mobile apps, and advertising technology.
- He is an Adjunct Professor at Babson College and has guest lectured on analytics and data science at the business schools for New York University, Boston College, Northeastern University, and others.
- He is the former V.I.P. at Harvard Innovation Lab, where he advised Harvard start-ups about analytics and data science.

- He has spoken at more than 70 technology and industry conferences since 2006.

Judah holds a master of science in finance and a master of business administration from Northeastern University and a B.A. from the University of Massachusetts Amherst.

# 1

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## Ecommerce Analytics Creates Business Value and Drives Business Growth

The global ecommerce market is expected to grow at a compounded annual growth rate of 17% from \$1.3 trillion in 2014 to \$2.5 trillion by the end of 2018. In the United States in the third quarter of 2015, ecommerce generated \$87.5 billion and accounted for 7.4% of all retail sales (Rogers 2015). Ecommerce has been growing annually on average between 14% and 15% quarterly since 2014, while retail growth has remained less than 3%. comScore estimated that U.S. consumers spent more than \$57 billion online from November 1 through December 31, 2015, up 6% from 2014. On Cyber Monday, U.S. consumers spent more than \$2 billion online (comScore 2016). Alibaba, in China, reported more than \$14.92 billion in “goods transacted” on one popular shopping day (Denale 2015). Amazon’s Q3 2015 ecommerce revenue grew 23% from 2014 to more than \$25 billion (SEC 2015). Frost and Sullivan predict that by 2020, the business to consumer (B2C) ecommerce market will be \$3.2 trillion and the business to business (B2B) ecommerce market nearly twice as large at \$6.7 trillion. Nearly \$10 trillion in ecommerce revenue will occur by 2020. Globally, the United State and China are the largest ecommerce markets, accounting for more than 55% of ecommerce sales in 2015. eMarketer estimates that by 2018, China’s ecommerce marketing annually will be more than \$1 trillion, with the U.S. likely reaching \$500 billion, followed by the U.K. at \$124 billion and Japan at \$106 billion (Rogers 2015). Clearly, huge amounts of goods and services are being transacted between businesses to consumers and between businesses and other businesses globally.

Ecommerce analysis will continue to be an important activity for generating such growth and new levels of revenue. Puma generated a 7% conversion lift using analytics. PBS increased conversions and visits by 30% using analytics to track customer events in the funnel. WBC cited a 12% boost in conversion rate through customer segmentation. Watchfinder claimed a 1,300x increase in ROI remarketing based on analytics. Marketo claims a 10x higher conversion rate for personalized campaigns using analytics. BT used conversion testing to increase form completions by more than 60%. Amari Hotels increased online bookings and sales by 44% by using analytics to optimize online advertising (Google 2015). Companies that do ecommerce analysis increase their business performance.

Ecommerce is transacted on pure-play B2C ecommerce sites that have no physical storefront, such as Zulily, eBags, and Wayfair, and by omnichannel B2C retailers, such as Walmart and Staples, that have physical stores. Even pure-play ecommerce sites, like Amazon and Warby Parker, are opening stores. As a result, existing companies that already sell goods and services are now selling online and vice-versa. New companies are almost required by the market to have an online presence. Although some companies that sell physical products use an online presence only for branding to drive offline sales, that's increasingly rare. Even luxury brands are selling their goods directly to consumers on retail sites. B2B ecommerce is even larger than B2C ecommerce. Major global companies execute ecommerce, such as Ford, GM, Coca-Cola, Chevron, IBM, General Mills, Kraft Heinz, ExxonMobil, General Electric, and Microsoft. The largest 300 B2B ecommerce companies were projected by eMarketer to grow 13.3% this year to \$547 billion (from \$483 billion in 2014)—figures that easily eclipse the U.S. B2C ecommerce market.

Ecommerce isn't just about the site anymore. The most popular ecommerce sites have a mobile experience, whether mobile web or mobile app. 30% of U.S. ecommerce sales in 2015 were generated on a mobile device (Brohan 2015). Many ecommerce sites also have physical stores. And in the future, ecommerce will be embedded into "things" and pervasive in Internet-connected devices—with mobile payments just a touch away both online and in-store. *Internet Retailer* predicts that in 2015 the U.S. *mobile* commerce sales will total \$104.05 billion, which is up 38.7% from \$75.03 billion in 2014.

They estimate that mobile commerce in 2015 will grow 2.58 times faster than desktop ecommerce sales, which they predict will grow 15% this year to an estimated \$350.64 billion globally. Note that 30% of mobile customers leave an ecommerce site when it is not optimized for mobile (Dorian 2015).

Ecommerce is an extremely competitive space. It takes huge amounts of capital to even try to compete with the major ecommerce players. This competition can create razor-thin margins or revenue that can be driven primarily through discounting. Ecommerce can be considered a zero-sum game. Thus companies are competing by creating digital experiences that enable a person to quickly and easily find and buy. Whether on a desktop, tablet, or mobile device, the companies that are winning in ecommerce make it easy and frictionless to find the product or service desired, understand how it fits the need, and buy it. Then these sites can compel their customers to come back again and again to buy more online and in-store. To do so, ecommerce companies use marketing and advertising that is tightly coupled with a user experience that ladders up to a prospect or customer's notion of the brand and works to meet their intent. People come to ecommerce experiences with certain goals in mind: to learn more about a product by reading product information and social reviews, to compare prices and promotions, and to purchase products. Ecommerce sites that win at this zero-sum game can match that intent to a product and create commerce.

Leading ecommerce companies use data and analytics to compete—and they use a lot of different data to do so. Data is collected and analyzed about who visits an ecommerce site, when they visit, what pages they view, and what site or source they came from (the referrer or marketing channel). Other information is also collected about user behavior, such as user interactions and events on the site, data related to products viewed, promotions used, pages visited, time spent, the different paths and clickstreams on the site, the queries entered in search, and many other data points, such as the order value, the price of products, the shipping method used, and the payment information. Customer data may be captured or inferred, such as who the customers are or could be, where they live, what they like and their preferences or propensities, what they've bought, and other demographic and psychographic information.

The idea of “conversion”—where a prospect transitions to a paying customer—is embedded into the analytical DNA of the world’s leading ecommerce companies. They staff entire teams and run comprehensive programs for conversion testing and optimization. Marketing channels and sources of traffic, such as organic and paid search and various types of online advertising, are measured and tracked. Higher-order consumer research around brand awareness, favorability, and consideration is performed. Customer data is analyzed, segmented, grouped into cohorts, modeled, and understood using financial measures, like the cost of customer acquisition and customer lifetime value. Customer loyalty, retention, satisfaction, and churn are known and optimized. Merchandise, products, orders, and transactions are analyzed from the site to the warehouse through to shipping and fulfillment.

All this different quantitative and qualitative data about the entire ecommerce experience and operations can be captured, measured, and analyzed to improve business performance and make better decisions. Although tracking, measuring, and analyzing all of this data may sound challenging—and it is—it is possible to do. Of course, doing so isn’t easy. It requires investment in people, first and foremost, who understand business, technology, and the process of doing analytics. It also requires investment into different types of analytical tools and technologies, including ecommerce platforms, business intelligence tools, analytical platforms, and data science sandboxes. It might even require the collection of new first-party data, the usage of second-party data, or the purchase of third-party data.

All of this data, the people and teams who work with and analyze it, and the technology supporting it represent powerful assets for ecommerce companies to use to help run their business. But the data must be collected and analyzed effectively and accurately for companies to use it to create better experiences, make better decisions, drive conversion, satisfy and retain customers, and thus increase revenue, growth, profitability, and value. The effective use of ecommerce data and related data requires investing in the analytics value chain—from the technology to the people to the processes, governance, and change management necessary. Doing so can provide a material return on investment from analytics by converting more users

to customers and providing insights that can be used to improve the customer experience. The return from analytical investment can also come from improving marketing operations and tracking the cost and return of marketing and advertising. The impact of merchandising programs can be attributed to sales and other financial metrics. The details of transactions, the metrics around products, and the key performance indicators related to the shopping cart can be understood, benchmarked, and targeted with goals. These methods for competing with ecommerce data are entirely possible if you know how to succeed with ecommerce analytics.

*Ecommerce analytics* is the phrase used to describe business and technical activities for systematically analyzing data in order to improve business outcomes of companies that sell online. This broad definition incorporates business activities such as the gathering of business requirements, the execution of analytical programs and projects, the delivery and socialization of business analysis, and the ongoing management of the demand and supply of analysis. The range of business stakeholders demanding service in ecommerce companies will run the gamut from the C-suite to the leaders of merchandising, buying, planning, marketing, finance, user experience, design, customer service, inventory, warehousing, fulfillment, and more.

Ecommerce analytics also involves working with IT and engineering teams in the appropriate software and Internet development lifecycle. It requires the analytical team to participate and possibly lead technical activities that are required to deliver or support analysis, such as data collection, extraction, loading, transformation, governance, security, and privacy. Ecommerce analytics can include understanding and doing dimensional data modeling, working with databases, handling data processing, creating and executing querying, determining data lineage, participating in data governance committees, acting as a data steward, working with and defining metadata, and using tools to analyze data, create data visualizations, and do data science and advanced analytics. All of this work occurs within a corporate organization with its own culture and ways of working, into which the analytics team must integrate and learn to support and guide to drive data-informed business outcomes. Successful analytics often requires rethinking and reorganizing the way a company is structured,

including new roles in the C-suite, such as chief analytics officers, chief data officers, and chief data scientists.

Companies that are successful and effective with ecommerce analytics ask business questions that can be answered with data, and then they employ analytical teams that can collect and acquire data, govern and operate analytical systems, manage analytical teams, and generate analysis and data science that inform stakeholders. These companies create value by asking questions, answering them with data, and changing the way they take action as a result. Business questions for ecommerce can include the following:

- **Customers:** What are the characteristics of my most loyal customers? Least loyal?
- **Marketing:** How do customers perceive our company and products?
- **Categories and products:** Which products drive the most sales or highest gross margin? Which products are frequently purchased together?
- **Price and promotions:** What impact do discounts and promotions have on overall sales?
- **Omnichannel sales:** How are my channels performing and how do they complement each other on the path to purchase? How does this differ from attribution?
- **Prospects and customers:** Which prospects should I target to convert into loyal customers? What products or offers would be most effective?
- **Optimization and prediction:** What parts of my site should I test? What products should I order now to match sales forecasts?

Many other questions can be asked to help guide and drive business performance; ecommerce analytics leads to asking a lot of questions. The analysis of ecommerce is complex not only because it crosses both business and technology, but also because it is on the forefront of digital experience and innovation. The site, mobile, and connected ecommerce experiences online in 2016 are innovative, fast, personalized, contextual, and powerful for guiding us to the right

product, at an appealing price, and then leading us through a purchasing process that is easy and frictionless. But in certain cases, the opposite is true. Ecommerce sites and experiences have many opportunities to improve. They may be hard to navigate or may make it difficult to find product information. The trustworthiness of the site may be in question. The experience of selecting products, adding them to the cart, and stepping through the shipping and payment pages may be problematic, confusing, or in the worst case dysfunctional for the device or browser the person is using. In addition, the people working at ecommerce companies may largely be unaware of these problems because they aren't getting timely, complete, and relevant data and analysis to help improve the experience and increase conversion. Or ecommerce stakeholders might be suspicious of experiential or customer issues but can't prove them using data. Or there's the worst case, where no set of unified resources, technologies, or analytics team exists to help stakeholders. What's missing at these companies that aren't taking full advantage of the information and insights in their data is solid, focused ecommerce analysis that helps business stakeholders do their jobs better. Whether that job is to merchandise the site, improve the user experience, drive customer acquisition, increase conversion, manage orders and fulfillment, or maximize customer profitability and shareholder value, ecommerce analytics can be a successful competitive advantage.

This book was written to help both new and experienced analysts succeed with ecommerce analytics. It was also written with the understanding that people who work at ecommerce companies in non-analytical roles, or who are simply interested in the topic, may read this book. Thus it is structured to guide the reader into the topic by first reviewing ways to think about doing ecommerce analytics as part of what I call a "value chain." Methods and techniques for doing analysis are discussed in detail for both the new reader and experienced analyst. Reporting, dashboarding, and data visualization for ecommerce are explored. Data modeling is reviewed, including a discussion about dimensions, facts, and metrics. Several chapters are dedicated to detailing the what, why, and how of useful types of ecommerce analysis executed for marketing, advertising, behavior, customers, merchandising, orders, and products. The sciences of conversion optimization and attribution are discussed. Guidance on

building effective and high-performing teams is provided. Data governance, security, and privacy of ecommerce data and what the future holds for ecommerce analytics are deliberated. The comprehensive scope of this book offers an experienced practitioner's perspective and viewpoint into ecommerce analytics across multiple dimensions: business, management, technology, analytics, data science, and the ecommerce domain. Although more content and detail can always be added in future volumes, the broad and ambitious subject matter discussed is unprecedented. This book offers a view into ecommerce analytics that hasn't before been consolidated nor unified into one source. Whether you read this book as a standalone text or in combination with my other books, *Building a Digital Analytics Organization* and *Digital Analytics Primer*, you will develop and enhance your understanding of ecommerce analytics, the business and competitive opportunities it enables, and how to use analytics to take advantage of them.

# INDEX

## Numbers

4-5-4 retail calendar, 28

## A

abandon cart rates (KPI), 63-64

abandonment rates (behavioral analytics), 125

ACID (Atomicity, Consistency, Isolation, Durability), 179

acquisition costs (customer analytics), 168-169

acquisition marketing, 112

action logs, 24

activation marketing, 111

ad hoc reporting, 76

administrating data in analytical environment, 19

advertising

advertising analytics, 103-105, 112-113

*affiliate analysis*, 114

*attribution*, 115

*audience analysis*, 115-116

*campaign analysis*, 113

*conversion optimization*, 134

*customer journey analysis*, 116

*Customer Origin reports*, 116-117

*ecommerce and user experience*, 3

*email analysis*, 114-115

*focus groups*, 107

*goals of*, 105-108

*interviews*, 107-108

*marketing goals*, 105-108

*marketing mix-modeling*, 115

*necessary data in*, 116-117

*online display ad unit analysis*, 116

*panels*, 108

*projective techniques (stimuli)*, 108

*qualitative analytics*, 107-108

SEM, 113

SEO, 113-114

*social media analysis*, 114

*surveys*, 108

display advertising and attribution, 218

affiliates

analysis of, 114

marketing and attribution, 218

orders and, 182

Agile environments (software solutions), 248, 250

dashboards, 251

data models, 250

data stewardship, 251

data visualization, 251

reports, 251

scrums, 247-250

AI (artificial intelligence), 317

Aksoy, Lerzan, 172-173

algorithmic (mechanistic) analytics, 302

analytical dashboards, 79

analytics, 4-8

analysis techniques

*action logs*, 24

*capital budgeting models*, 25

*confirmatory analysis*, 22

*descriptive analysis*, 22-23

*explanatory analysis*, 22

*exploratory analysis*, 22, 31-33

*predictive analysis*, 22

*prescriptive analysis*, 22-23

*revenue/cost tracking*, 24-25

*socializing analysis*, 23-24

- stakeholders and financial impact assessments, 24*
- analytical environment
  - activating, 16-20*
  - data administration, 19*
  - data analysis tools, 19-20*
  - data collection, 19-20*
  - data processing, 19*
  - data querying, 19*
  - data sources, 19*
  - data storage, 19*
  - data virtualization, 19*
  - elements of, 18-20*
  - presentation tools, 20*
  - tools versus technology, 16-18*
  - visualization tools, 20*
- analytical plans, developing, 14-16
- asking questions, 6-7
- Bayesian statistical analysis and
  - EDA, 33
- binomial distributions, 52-53
- conversion optimization, 141-143, 145
- correlating data, 47-49
- data integration, 259-261
- data preparation tools, 20-22
- defining, 5-6
- economic impact of, 24-25
- EDA, 31-33
- experimenting with data, 53-56
- future of, 307-310, 314-315, 318
  - AI, 317
  - cataloging data, 311-312*
  - collaboration, 316*
  - conversational speech technology, 316*
  - data collection, 310, 311-313*
  - data experiences, 310, 313-314*
  - data flows, 315*
  - data lakes, 311*
  - data pipelines, 315*
  - data preparation, 312*
  - encryption, 315-316*
  - machine learning, 317*
  - natural language searches, 316*
  - new data sources, 312-313*
  - predictive analysis, 317*
  - profiling data, 311-312*
  - self-service automation, 316*
- hypothesis testing, 52-53
- maps, 294
- platforms, 293
- road maps, 294
- sampling data, 54-56
- socializing, 23-24
- storytelling and, 29-31
- teams, 279-280, 300-301
  - algorithmic (mechanistic) analytics, 302*
  - analytics platforms, 293*
  - analytics road maps, 294*
  - architectures, 292*
  - artifacts, 296*
  - build templates, 296*
  - building (universal process), 280-283*
  - business outcomes from, 303*
  - business processes analysis, 300*
  - causal analytics, 301*
  - cataloging data, 299*
  - change management processes, 304-306*
  - checkpoints, 302*
  - communication, 292*
  - current state assessments, 291-293*
  - data governance, 292-293, 299-300*
  - data models, 293*
  - data ranges, 292*
  - data storage, 293*
  - data visualization, 293*
  - delivery systems, 292*
  - descriptive analysis, 301*
  - education, 304*
  - exploratory analysis, 301*
  - financial analysis, 303*
  - funding, 291*
  - future capabilities, 291-292*
  - future state architectures, 292-293*
  - gathering business requirements, 288-289*
  - hiring leadership, 285-288*
  - hiring staff, 291*
  - inferential analytics, 301*
  - interaction maps, 295-296*
  - leadership, 285-288*
  - need for, 283-285*
  - new data collection/acquisition, 298-299*
  - new work, 302-303*

- newsletters*, 304
- non-team meetings*, 302
- office hours*, 302-303
- organizational models*, 289-291
- planning committees*, 305
- postmortems (projects)*, 305
- predictive analysis*, 301
- prescriptive analysis*, 301
- process maps*, 295
- quarterly reviews*, 305
- results*, 292
- scope*, 291
- scrums*, 305
- self-service automation*, 293, 304
- SLA, 298
- social analysis*, 300
- sponsorship*, 291
- staff*, 291, 294-295
- stakeholder operational models*, 297-298
- stakeholder support*, 304-306
- supply/demand management models*, 296-297
- team analysis*, 303-304
- technology architecture assessments*, 292-293
- ticketing systems*, 302
- use/deploy/upgrade strategies*, 298
- value of*, 291-292
- vision of*, 289
- workflow maps*, 296
- training staff, 294-295
- value chain, 9-20, 23
- analytics layer (ecommerce platforms), 230
- Analytics Tier (ecommerce), 20
- Angel, Gary, 305
- anonymous customer data and data governance, 266
- ANOVA (Analysis of Variance) tests, 39, 49-50
- Applied Regression: An Introduction (Quantitative Applications in the Social Sciences), 50
- architectures
  - analytics teams, 292
  - future state architectures, 292-293
  - technology architecture assessments, 292-293
- area charts, 44
- artifacts (analytics teams), 296
- Ash, Tim, 149-150
- assessments
  - analytics teams
    - current state assessments*, 291-292
    - technology architecture assessments*, 292-293
  - financial impact assessments, 24
  - use/deploy/upgrade strategies, 298
- attribution, 213, 217
  - affiliate marketing, 218
  - blogs and, 219
  - bottom-up, 224
  - budgets and, 214
  - buyers, determining, 217-220
  - conversion rates, determining, 217-220
  - custom-weighted attribution, 222
  - defining, 213
  - direct traffic and, 220
  - display advertising and, 218
  - earned media and, 219-220
  - email, 219
  - engagement mapping, 220-221
  - first interaction attributes, 221, 223
  - importance of, 213-214
  - “last click” modeling, 215-217
  - last interaction attributes, 221, 223
  - last nondirect interaction attributes, 221, 223
  - latency scoring, 222, 224
  - linear attribution, 221, 223
  - logistic regression, 222, 224
  - marketing mix-modeling versus, 214-215
  - marketing/advertising analytics, 115
  - media mix-marketing versus, 214-215
  - owned media and, 219
  - paid media and, 218-219
  - paid searches, 218
  - pathing, 222
  - position-based attribution, 221, 223-224
  - profits, determining, 217-220
  - proportional hazard modeling, 222-223
  - referral traffic and, 219
  - retargeting and, 219

- revenue, determining, 217-220
- SEO, 219
- social media, 219
- software, assessing, 225-227
- stacking, 222, 224
- starter-player-closer attribution, 221-222, 224
- time decay attribution, 221, 223
- top-down versus bottom-up approaches, 224-225
- types of, 221-224
- audiences**
  - audience analysis, 115-116
  - audience data and data integration, 245
- automation (self-service), 293, 304, 316**
- averages (KPI)**
  - Average Revenue Per Order, 184
  - examples of, 64
  - order value, 64
- awareness/exposure marketing, 111**

## B

- B2B (business to business) data and data integration, 245**
- B2C ecommerce, 2**
- Bain and Company, 164**
- bar charts, 88**
- batch processing and data integration, 261**
- Bayesian statistical analysis, 33, 39, 147**
- behavioral analytics, 119-120**
  - abandonment rates, 125
  - answering questions via, 123-124
  - behavioral flow analysis, 127-130
  - checkout abandonment rates, 125-126
  - content analysis, 131
  - conversion rates, 125
  - correlating data, 126
  - framework of, 120-122
  - frequency (time between visits), 124
  - KPI, 124-126
  - metrics, 124-126
  - ordered behavioral analytics, 122
  - in-page (on-screen) behavior analysis, 132

- recency (time since last visit/loyalty), 124
  - shopping behavior analysis, 130-131
  - types of, 126-132
  - unordered behavioral analytics, 122
  - visits (sessions), 124, 125
- behavioral data and data governance, 267**
- behavioral triggers, predicting by (customer analytics), 174-175**
- binomial distributions, 52-53**
- bivariate data, 34**
- block plots, 39**
- blogs and attribution, 219**
- bounce rate (KPI), 64-65**
- brands**
  - brand analysis, 186, 188-189
  - order data models, 183
  - product brand analysis, 194-195
- brokers (intermediaries), 74**
- budgets and attribution, 214**
- build templates, 296**
- Building a Digital Analytics Organization, 280***
- bullet charts, 46**
- Buoye, Alexander, 172-173**
- business intelligence data and conversion optimization, 145**
- business processes analysis, 300**
- buyers, determining (attribution), 217-220**

## C

- cable/television data and data integration, 245**
- cadence (social analysis), stakeholders and analytics teams, 300**
- calendar (retail), 28**
- campaign analysis, 113**
- capital budgeting models, 25**
- catalog (ecommerce platforms), 231**
- cataloging data, 299, 311-312**
- categories**
  - categorical data, 35
  - category analysis, 186, 188-189, 195-196
  - order data models, 183
- causal analytics, 301**

- center of excellence organizational model (analytics teams), 290
- centralized organizational model (analytics teams), 289-290
- channels (marketing), 182
- charts
  - area charts, 44
  - bar charts, 88
  - bullet charts, 46
  - flow charts and conversion optimization, 146
  - funnel charts, 46, 146
  - Harvey Balls, 43-44
  - line charts, 44-45, 88
  - network charts, 89
  - pie charts, 43-44, 88-89
  - radar charts, 88
  - sparkline charts, 44-45
  - streamgraph charts, 45
  - tree charts, 89
  - tumbler charts, 46-47
  - waterfall charts, 89
- checkout
  - abandonment rates, 125-126
  - checkout path analysis, 186, 189-190
- choice modeling and conversion optimization, 148
- churn rates (customer analytics), 169-170
- classical statistical analysis, 33, 36-38
- clouds and data integration, 255-256
- CLTV (Customer Lifetime Value), 166-167, 170
- clusters
  - cluster analysis, 186, 191-192
  - clustered histograms, 42-43
  - clustering (customer analytics), 174, 175-176
- cohort analysis, 165-166
- collaboration
  - collaborative filtering, predicting by (customer analytics), 175
  - future of ecommerce analytics, 316
- collecting data
  - analytical environment, 19, 20
  - analytics teams, 298-299
  - data governance, 273
  - ecommerce and, 3-5
  - future of ecommerce analytics, 310, 311-313
- communication and analytics teams, 292
- comparisons
  - data over time (systemic sampling), 56
  - data presentations, 72
- competition and ecommerce, 3
- competitive intelligence and merchandising analysis, 207
- compositions (data) and data presentations, 72
- conclusive analysis (marketing analytics), 107
- conditional probability, 52
- confidence intervals (systemic sampling), 55
- confirmatory analysis, 22
- consideration marketing, 111-112
- consultative organizational model (analytics teams), 290
- consumer layer (ecommerce platforms), 230
- content
  - content analysis, 131, 135
  - content management (ecommerce platforms), 231, 238
- contextualizing data (data governance), 269
- continuous data, 35
- controlled data experiments, 53-56
- conversational speech technology, 316
- conversion
  - conversion optimization, 133-134, 138, 150
    - analytics, 141-143*
    - Bayesian statistical analysis, 147*
    - best practices, 151-153*
    - business intelligence data, 145*
    - choice modeling, 148*
    - content, 135*
    - copywriting, 140*
    - customer research, 145-146*
    - data visualization, 145-146*
    - digital analytics, 145*
    - email, 134*
    - eye tracking, 146*
    - factorial testing, 149-150*
    - finger tracking, 146*
    - flow charts, 146*
    - flows, 135*

- Frequentist methodologies*, 147
- funnel charts*, 146
- heatmapping*, 146
- information architectures*, 140
- measuring*, 140-141
- mobile experience*, 134
- mouse tracking*, 146
- multivariate testing*, 148
- network data*, 146
- neuromarketing*, 146
- online advertising*, 134-135
- optimal design*, 150
- persuasion*, 138-139
- process of*, 141-145
- promotions*, 135
- psychology*, 139-140, 146
- social media*, 135
- successful optimization*, 151-153
- surveys*, 145-146
- Taguchi method*, 147-148
- technical data*, 146
- tools*, 135-137
- types of data used*, 145-146
- univariate testing*, 148
- user experience*, 134, 139
- value propositions*, 137-138
- conversion rates, 62, 125, 217-220
- e-commerce and, 3-4
- marketing, 112
- testing tools, 24-25
- Coil, Bruce**, 172-173
- copywriting and conversion optimization**, 140
- correlating data**, 47-49, 126
- costs**
  - acquisition costs (customer analytics), 168-169
  - cost/revenue tracking, 24-25, 68-69
  - estimating (pricing analysis), 207
- creative testing/optimization (merchandising analysis)**, 200
- cross-sell analysis**, 186, 192
- CSL (Customer Service Level) KPI (merchandising analysis)**, 202-203
- current state assessments (analytics teams)**, 291-293
- customers**
  - anonymous customer data and data governance, 266
  - attribution, 217
  - affiliate marketing, 218
  - blogs and, 219
  - budgets and, 214
  - buyers, 217-220
  - conversion rates, 217-220
  - custom-weighted attribution, 222
  - defining, 213
  - direct traffic and, 220
  - display advertising and, 218
  - earned media and, 219-220
  - email, 219
  - engagement mapping, 220-221
  - first interaction attributes, 221, 223
  - importance of, 213-214
  - "last click" modeling, 215-217
  - last interaction attributes, 221, 223
  - last nondirect interaction
    - attributes, 221, 223
  - latency scoring, 222, 224
  - linear attribution, 221, 223
  - logistic regression, 222, 224
  - marketing mix-modeling versus, 214-215
  - media mix-marketing versus, 214-215
  - owned media and, 219
  - paid media and, 218-219
  - paid searches, 218
  - pathing, 222
  - position-based attribution, 221, 223-224
  - profits, 217-220
  - proportional hazard modeling, 222-223
  - referral traffic and, 219
  - retargeting and, 219
  - revenue, 217-220
  - SEO, 219
  - social media, 219
  - software, 225-227
  - stacking, 222, 224
  - starter-player-closer
    - attribution, 221-222, 224
  - time decay attribution, 221, 223
  - top-down versus bottom-up approaches, 224-225
  - types of, 221-224

audience data and data integration, 245

cohort analysis, 165-166

conversion, 3-4, 134, 145-146

CSL KPI (merchandising analysis), 202-203

customer analytics, 155-156
 

- acquisition costs*, 168-169
- calculating CLTV*, 166-167
- churn rates*, 169-170
- clustering customers*, 174, 175-176
- cohort analysis*, 165-166
- customer records*, 156-157
- personalizing customer experiences*, 178
- predicting customer behavior*, 174-175, 176-178
- questioning customer data*, 158-159
- RFM analysis*, 171-172
- scoring customers*, 173-174
- segmenting customers*, 163-164
- SOW analysis*, 172-173
- Tumbler lifecycle*, 159-161
- types of analytics*, 162-163
- types of customers*, 157-158, 161-162
- VoC analytics*, 170-171

Customer facts, 96-97, 99-100

customer ID, 182

customer journey analysis, 116

customer management (ecommerce platforms), 231

Customer Order facts, 97, 100

Customer Origin reports, 116-117

customer service, 196-197, 232

ecommerce platforms, 234

geography and orders, 182

Orders Per Customer KPI, 184-185

percentage of new customers KPI, 67-68
 

- personalizing experiences, 178, 313-314
- PII and data governance, 266-267
- predicting customer behavior, 174-175

repeat customers KPI, 61
 

- VoC analytics, 170-171

customized research data and data integration, 245

custom-weighted attribution, 222

## D

### dashboards, 77-78

- Agile environments (software solutions), 251
- analytical dashboards, 79
- data governance, 271-272
- data visualization and, 78-79
- KPI, 78-79
- LIVEN method of dashboarding, 80
- necessary data in, 81
- need for, 71-72
- operational dashboards, 79
- purpose of, 72-74
- strategic dashboards, 78-79
- team roles in, 74

### data

- administration and analytical environments, 19
- analysis. *See* analytics
- anonymous customer data and data governance, 266
- area charts, 44
- audience data, 245
- B2B data, 245
- bar charts, 88
- behavioral data and data governance, 267
- binomial distributions, 52-53
- bivariate data, 34
- block plots, 39
- cataloging, 299, 311-312
- categorical data, 35
- clouds and data integration, 255-256
- collection
  - analytical environment*, 19-20
  - analytics teams*, 298-299
  - data governance*, 273
  - ecommerce and*, 3-5
  - future of ecommerce analytics*, 310, 311-313
- comparisons, 56, 72
- compositions and presentations, 72
- contextualizing data (data governance), 269
- continuous data, 35
- conversion optimization, 145-146
- correlating, 47-49

- customer analytics, 157-159
- dashboards, 77-81
- data analysis tools and ecommerce platforms, 232
- data integration, 261-262
- data layer (ecommerce platforms), 230**
- Data Tier (ecommerce), 20**
  - digital analytics data, 244
  - discrete data, 35
  - distributions and presentations, 72
  - EDW, 254-257
  - encryption, 275-276, 315-316
  - experiences, 310, 313-314
  - experimenting with data, 53-56
  - external/internal data components (ecommerce platforms), 234-235
  - federations and data integration, 258
  - financial data, 245, 267-268
  - flow visualizations, 45-47, 315
  - four plots, 42
  - governance, 263-264, 268-269
    - analytics teams*, 292, 299-300
    - anonymous customer data*, 266
    - behavioral data*, 267
    - collecting data*, 273
    - contextualizing data*, 269
    - dashboards*, 271-272
    - data lineage*, 274
    - data privacy*, 264-268, 272-278
    - data security*, 265-268, 272-278
    - discipline for violations*, 275
    - encryption*, 275-276
    - financial data*, 267-268
    - guidelines*, 266-268, 276-278
    - monitoring data*, 270-271, 275
    - ownership of data*, 269-270
    - permissions*, 274-275
    - PII*, 266-267, 275-276
    - quality of data*, 270
    - stewards*, 267-268, 270-271
    - storing data*, 273
    - teams*, 293
    - technology and*, 271-272
    - tools*, 271-272
    - transactional data*, 267
    - UIA data*, 277
- Harvey Balls, 43-44
- heatmapping, 89, 146
- histograms, 42-43
- hypothesis testing, 52-53
- integration
  - Agile environments (software solutions)*, 247-251
  - analytics applications and*, 259-261
  - audience data*, 245
  - B2B data*, 245
  - cable/television data and data integration*, 245
  - clouds*, 255-256
  - customized research data*, 245
  - data virtualization*, 259
  - defining*, 241
  - digital analytics data*, 244
  - EDW*, 254-256
  - federations*, 258
  - financial data*, 245
  - framework of*, 246-247
  - internal data*, 244
  - lakes*, 256-258
  - lead times*, 241-242
  - ODS*, 253-254
  - social data*, 244-245
  - specialized research data*, 245
  - support for*, 241-242
  - syndicated research data*, 245
  - systems integration and*, 242-243
  - types of data*, 243-245
  - Waterfall environments (software solutions)*, 248-249, 251-253
- internal data, 244
- internal/external data components (ecommerce platforms), 234-235
- interval data, 35
- KPI, 58-61, 64-67
  - abandon cart rates*, 63-64
  - average examples*, 64
  - average order value*, 64
  - bounce rate*, 64-65
  - conversion rates*, 62
  - cost/revenue tracking*, 68-69
  - creating*, 58
  - gross margin*, 60-61
  - inventory turnover*, 65
  - lifetime value*, 61
  - loyalty/time since last visit (recency)*, 66
  - page (screen) views*, 59
  - “per” examples*, 68-69

- percentage examples*, 67-68
- percentage of new customers*, 67-68
- percentage of orders with discounts/promotions*, 65
- rate examples*, 62-64
- repeat visitors (users/customers)*, 61
- returns*, 59-60
- revenue*, 60
- ROI*, 65-66
- step completion rates*, 63
- time between visits (frequency)*, 66-67
- visits (sessions)*, 59
- kurtosis, 36
- lag plots, 40
- lakes, 256-258, 311
- line charts, 44-45, 88
- lineage, 274
- loaders, analytics applications and data integration, 260-261
- mean, 36-37, 53
- median, 37
- mode, 37
- modeling, 91-96
  - Agile environments (software solutions)*, 250
  - analytics teams*, 293
  - Customer facts*, 96-97, 99-100
  - Customer Order facts*, 97, 100
  - dimensions*, 94-95, 100-102
  - facts*, 94
  - Inventory facts*, 96-97
  - measures*, 94, 100-102
  - Order facts*, 96, 98-99
  - Order Item facts*, 96, 99
  - primary keys*, 95
  - probability analysis*, 52
  - Product facts*, 96, 98
  - sample data model*, 96-97
  - supply/demand management models*, 296-297
  - techniques for building models*, 56-57
- monitoring (data governance), 270-271, 275
- multivariate data, 34
- network charts, 89
- neuromarketing data and conversion optimization, 146
- nominal data, 35
- ODS and data integration, 253-254
- ordinal data, 35
- outliers, 36, 37-38, 56
- ownership of (data governance), 269-270
- permissions and data governance, 274-275
- pie charts, 43-44, 88-89
- PII and data governance, 266-267, 275-276
- pipelines, 315
- plotting, 38-39
  - area charts*, 44
  - bar charts*, 88
  - block plots*, 39
  - four plots*, 42
  - geovisualizations*, 89
  - Harvey Balls*, 43-44
  - heatmapping*, 89, 146
  - histograms*, 42-43
  - lag plots*, 40
  - line charts*, 44-45, 88
  - network charts*, 89
  - pie charts*, 43-44, 88-89
  - probability plots*, 41
  - radar charts*, 88
  - radar plots*, 40
  - run sequence plots*, 41-42
  - scatter plots*, 41, 89
  - six plots*, 42
  - sparkline charts*, 44-45
  - spider plots*, 40
  - star plots*, 40
  - streamgraph charts*, 45
  - tree charts*, 89
  - waterfall charts*, 89
- preparation tools, 20-22
- preparing, 20-22, 312
- presentations, 71-72, 75-89
- privacy, 264-265, 272-273
  - data collection*, 273
  - data lineage*, 274
  - discipline for violations*, 275
  - encryption*, 275-276
  - guidelines*, 266-268, 274, 276-278
  - monitoring data*, 275
  - permissions*, 274-275
  - policies/procedures*, 273
- probability analysis, 51-52

- probability plots, 41
- processing in analytical environments, 19
- profiling, 311-312
- qualitative data, 34-35
- quality of (data governance), 270
- quantitative data, 34-35
- querying in analytical environments, 19
- radar charts, 88
- radar plots, 40
- random variables, 52
- range, 37, 292
- regression analysis, 49-51
- relationships and presentations, 72
- reports, 71-77
- run sequence plots, 41-42
- sampling, 54
- sampling (systemic), 54-56
- scatter plots, 41, 89
- security, 265-266, 272-273
  - data collection*, 273
  - data lineage*, 274
  - discipline for violations*, 275
  - encryption*, 275-276
  - guidelines*, 266-268, 274, 276-278
  - monitoring data*, 275
  - permissions*, 274-275
  - policies/procedures*, 273
- shapes of, 36-47
- six plots, 42
- social data, 244-245
- sources, 19, 312-313
- sparkline charts, 44-45
- spider plots, 40
- standard deviation, 37
- star plots, 40
- stewardship of, 74, 251, 267-268, 270-271
- storage, 19, 273, 293
- streamgraph charts, 45
- syndicated research data, 245
- transactional data and data governance, 267
- tree charts, 89
- types of, 34-36
- UIA data and data governance, 277
- univariate data, 34
- virtualization, 19, 259
- visualization, 81-82
  - Agile environments (software solutions)*, 251
  - analytics teams*, 293
  - conversion optimization*, 145-146
  - dashboards and*, 78-79
  - data shape and*, 36-47
  - flow visualizations*, 45-47
  - need for*, 71-72
  - plotting data*, 38-47
  - process of*, 82-84
  - purpose of*, 73-74, 82
  - SCREEN method of visualizing data*, 84-86
  - team roles in*, 74
  - tools*, 20
  - types of*, 88-89
  - uses of*, 86-87
  - waterfall charts, 89
- Days to Order KPI, 185
- decentralized organizational model (analytics teams), 290
- delivery systems (analytics teams), 292
- demand
  - estimating (pricing analysis), 205-206
  - identifying, 11-13
  - prioritizing, 11-13
- dependent variables (systemic sampling), 55
- deploy/use/upgrade strategies (analytics teams), 298
- derivatives (KPI), 64-67
- descriptive analysis, 22-23, 106, 301
- deviation (standard), data shapes, 37
- devices (orders), 182
- digital analytics, 145, 244
- dimensions (data models), 94-95, 100-102
- direct traffic and attribution, 220
- discipline for data privacy/security violations, 275
- discounts
  - merchandising analysis, 209-210
  - percentage of orders with discounts/promotions (KPI), 65
- discrete data, 35
- display advertising and attribution, 218
- distributions
  - binomial distributions, 52-53

data distributions and presentations,  
72  
Du, R. Y., 172

## E

earned media and attribution, 219-220  
ecommerce

- Analytics Tier, 20
- B2C ecommerce, 2
- competition, 3
- conversion, 3-4
- data collection, 3-5
- Data Tier, 20
- growth of, 1-2
- improvement, need for, 7
- Integration Tier, 20
- mobile experience, 2-3
- platforms (software), 232, 235-236
  - analytics layer*, 230
  - catalog*, 231
  - consumer layer*, 230
  - content management*, 231
  - content management tools*, 238
  - customer components*, 234
  - customer management*, 231
  - customer service*, 232
  - data analysis tools*, 232
  - data components*, 234-235
  - data layer*, 230
  - defining*, 229
  - determining analytical approach*, 239-240
  - fraud awareness tools*, 238-239
  - fulfillment*, 232
  - integration layer*, 230
  - inventory management*, 231-232, 237
  - marketing components*, 232-233
  - marketing tools*, 238
  - merchandising management*, 231-232
  - merchandising planning tools*, 236-237
  - mobile experience*, 239
  - operations and monitoring layer*, 230-231
  - ordering functionality*, 231
  - payment processing*, 231
  - product management tools*, 236

- promotional tools*, 237
- search tools*, 238
- searches*, 231
- security tools*, 238-239
- shopping functionality*, 231
- sizes of*, 229-230
- social media tools*, 239
- transactions*, 233-234
- user experience*, 233
- user interface*, 233

user experience and, 3  
as zero-sum game, 3

economic impact of analytics, 24-25

EDA (Exploratory Data Analysis),  
31-32

- Bayesian statistical analysis and, 33
- classical statistical analysis and, 33
- flow visualizations, 45-47
- modeling data, 57
- philosophy of, 32-33
- plotting data, 38-39
  - area charts*, 44
  - block plots*, 39
  - four plots*, 42
  - Harvey Balls*, 43-44
  - histograms*, 42-43
  - lag plots*, 40
  - line charts*, 44-45
  - pie charts*, 43-44
  - probability plots*, 41
  - radar plots*, 40
  - run sequence plots*, 41-42
  - scatter plots*, 41
  - six plots*, 42
  - sparkline charts*, 44-45
  - spider plots*, 40
  - star plots*, 40
  - streamgraph charts*, 45

education and analytics teams, 304

EDW (Enterprise Data Warehouses),  
254, 256-257

email

- attribution and, 219
- conversion optimization, 134
- email analysis, 114-115

encryption, 275-276, 315-316

engagement mapping and attribution,  
220-221

engagement scoring (customer  
analytics), 173

errors (expected) in systemic sampling, 55

events
 

- event analysis, 186, 189
- Events/Pages/Steps Per Order KPI, 185

expected errors (systemic sampling), 55

experiences (data), 310, 313-314

explanatory analysis, 22

exploratory analysis, 22, 31-33, 106, 301

*Exploratory Data Analysis*, 31-33

exposure/awareness marketing, 111

external/internal data components (ecommerce platforms), 234-235

eye tracking and conversion optimization, 146

## F

factorial testing and conversion optimization, 149-150

facts (data models), 94
 

- Customer facts, 96-97, 99-100
- Customer Order facts, 97, 100
- Inventory facts, 96, 97
- Order facts, 96, 98-99
- Order Item facts, 96, 99
- Product facts, 96, 98

federations (data) and data integration, 258

Few, Stephen, 79, 81, 86-87

final price, setting via merchandising analysis, 207-208

finance
 

- financial analysis, 186-187, 267-268, 303
- financial data and data integration, 245
- financial impact assessments, 24

finger tracking and conversion optimization, 146

first interaction attributes, 221, 223

flows
 

- conversion optimization, 135
- flow charts and conversion optimization, 146
- future of analytics, 315
- visualizations, 45-47

focus groups and marketing/advertising analytics, 107

four plots, 42

fraud awareness tools (ecommerce platform), 238-239

frequency (time between visits)
 

- behavioral analytics, 124
- KPI, 66-67
- RFM analysis, 171-172

Frequentist methodologies (conversion optimization), 147

Friedman, Vitaly, 82

fulfillment (ecommerce platforms), 232

functional organizational model (analytics teams), 290

funding analytics teams, 291

funnel analysis, 186, 190-191

funnel charts, 46, 146

future capabilities (analytics teams), 291-292

future of ecommerce analytics, 307-310, 314-315, 318
 

- AI, 317
- collaboration, 316
- conversational speech technology, 316
- data collection, 310, 311-313
- data experiences, 310, 313-314
- data flows, 315
- data pipelines, 315
- encryption, 315-316
- machine learning, 317
- natural language searches, 316
- predictive analysis, 317
- self-service automation, 316

future state architectures, 292-293

## G

game scoring (customer analytics), 174

geography and orders, 182

geovisualizations, 89

goal analysis and orders, 186, 189

governance (data), 263-264, 268-269
 

- analytics teams, 292, 299-300
- anonymous customer data, 266
- behavioral data, 267
- contextualizing data, 269

dashboards, 271-272  
 data privacy, 264-265, 272-273  
   *data collection*, 273  
   *data lineage*, 274  
   *discipline for violations*, 275  
   *encryption*, 275-276  
   *guidelines*, 266-268, 274, 276-278  
   *monitoring data*, 275  
   *permissions*, 274-275  
   *policies/procedures*, 273  
 data security, 265-266, 272-273  
   *data collection*, 273  
   *data lineage*, 274  
   *discipline for violations*, 275  
   *encryption*, 275-276  
   *guidelines*, 266-268, 274, 276-278  
   *monitoring data*, 275  
   *permissions*, 274-275  
   *policies/procedures*, 273  
 financial data, 267-268  
 guidelines, 266-268  
 monitoring data, 270-271  
 ownership of data, 269-270  
 PII, 266-267, 275-276  
 quality of data, 270  
 stewards, 267-268, 270-271  
 storing data, 273  
 technology and, 271-272, 293  
 tools, 271-272  
 transactional data, 267  
 UIA data, 277  
 gross margin (KPI metrics), 60-61  
 growth of ecommerce, 1-2

## H

Harvey Balls, 43-44  
 heatmapting, 89, 146  
 heuristic analytics and conversion optimization, 142  
 hiring (analytics teams)  
   leadership, 285-288  
   staff, 291  
 histograms, 42-43  
 hub and spoke organizational model (analytics teams), 290-291  
 hypothesis testing, 52-53, 143

## I

improvement, ecommerce's need for, 7  
 inactivity scoring (customer analytics), 174  
 independent variables (systemic sampling), 55  
 inferences (systemic sampling), 56  
 inferential analytics, 301  
 information architectures and conversion optimization, 140  
 in-page (on-screen) behavior analysis, 132  
 integration  
   data integration  
   *Agile environments (software solutions)*, 247-251  
   *analytics applications and*, 259-261  
   *audience data*, 245  
   *B2B data*, 245  
   *cable/television data and data integration*, 245  
   *clouds*, 255-256  
   *customized research data*, 245  
   *data virtualization*, 259  
   *defining*, 241  
   *digital analytics data*, 244  
   *EDW*, 254-256  
   *federations*, 258  
   *financial data*, 245  
   *framework of*, 246-247  
   *internal data*, 244  
   *lakes*, 256-258  
   *lead times*, 241-242  
   *ODS*, 253-254  
   *process of*, 261-262  
   *social data*, 244-245  
   *specialized research data*, 245  
   *support for*, 241-242  
   *syndicated research data*, 245  
   *systems integration and*, 242-243  
   *types of data*, 243-245  
   *Waterfall environments (software solutions)*, 248-249, 251-253  
   integration layer (ecommerce platforms), 230  
   Integration Tier (ecommerce), 20  
   systems integration, 242-243

interaction maps, 295-296  
 intermediaries (brokers), 74  
 internal data and data integration, 244  
 internal/external data components  
 (ecommerce platforms), 234-235  
 interval data, 35  
 interviews and marketing/advertising  
 analytics, 107-108  
 inventories  
 analysis, 200-203  
 Inventory facts, 96, 97  
 inventory management (ecommerce  
 platforms), 231-232  
 management tools, 237  
 turnover (KPI), 65  
 investigators, 74  
 investment (ROI), 65-66, 210  
 IRR (Internal Rate of Return), 25  
 item analysis and orders, 186, 187

## J-K

*Journal of Interactive Marketing*, 167  
 Kamakura, W. A., 172  
 Keiningham, Timothy L., 172-173  
 KPI (Key Performance Indicators), 58  
 abandon cart rates, 63-64  
 average examples, 64  
 average order value, 64  
 behavioral analytics, 124-126  
 bounce rate, 64-65  
 conversion rates, 62  
 cost/revenue tracking, 68-69  
 creating, 58  
 CSL (merchandising analysis),  
 202-203  
 customers  
*cost/revenue tracking*, 68-69  
*percentage of new customers*,  
 67-68  
*repeat customers*, 61  
 dashboards, 78, 79  
 derivative examples, 64-67  
 gross margin, 60-61  
 inventory turnover, 65  
 lifetime value, 61  
 metric examples, 59-61  
 Number of Stock Outs  
 (merchandising analysis), 202

orders and, 184-186  
 page (screen) views, 59  
 “per” examples, 68-69  
 percentage examples, 67-68  
 percentage of orders with discounts/  
 promotions, 65  
 rate examples, 62-64  
 repeat visitors (users/customers), 61  
 returns, 59-60  
 revenue, 60, 68-69  
 ROI, 65-66  
 shopping behavior analysis, 130-131  
 step completion rates, 63  
 visits (sessions), 59  
*loyalty/time since last visit*  
*(recency)*, 66  
*time between visits (frequency)*,  
 66-67  
 kurtosis (data shapes), 36

## L

lag plots, 40  
 Laja, Peep, 142  
 lakes (data), 256-258, 311  
*Landing Page Optimization*, 149  
 languages  
 conversational speech technology,  
 316  
 natural language searches, 316  
 “last click” modeling and attribution,  
 215-217  
 last interaction attributes, 221, 223  
 last nondirect interaction attributes,  
 221, 223  
 latency scoring and attribution, 222,  
 224  
 Leek, Dr. Jeffrey, 301  
 leptokurtic kurtosis (data shapes), 36  
 Lewis-Beck, Michael S., 50-51  
 lifetime value, 61, 166  
 line charts, 44-45, 88  
 lineage of data, 274  
 linear attribution, 221, 223  
 LIVEN method of dashboarding, 80  
 loaders (data) and data integration,  
 260-261  
 logistic regression, 51, 222, 224

**loyalty**

- retention marketing, 112
- scoring (customer analytics), 173
- time since last visit (recency) KPI, 66

**M**

machine learning, 317

MANOVA tests, 49-50

**maps**

- analytics road maps, 294
- interaction maps, 295-296
- process maps, 295
- workflow maps, 296

margins (KPI metrics), 60-61, 184

markdowns, determining via

merchandising analysis, 209-210

**marketing**

- ecommerce platforms, 232-233, 238
- marketing analytics, 103-105, 112-113

- acquisition marketing*, 112
- activation marketing*, 111
- advertising goals and*, 105-108
- affiliate analysis*, 114
- attribution*, 115
- audience analysis*, 115-116
- campaign analysis*, 113
- channels*, 182
- conclusive analysis*, 107
- consideration marketing*, 111-112
- conversion marketing*, 112
- conversion optimization*, 143
- customer journey analysis*, 116
- Customer Origin reports*, 116-117
- descriptive analysis*, 106
- ecommerce and user experience*, 3
- email analysis*, 114-115
- exploratory analysis*, 106
- exposure/awareness marketing*, 111
- focus groups*, 107
- goals of*, 105-108
- interviews*, 108
- lifecycle of*, 108-111
- marketing mix-modeling*, 115, 214-215

*media mix-marketing*, 214-215

*necessary data in*, 116-117

*online display ad unit analysis*, 116

*panels*, 108

*predictive analysis*, 106-107

*prescriptive analysis*, 107

*projective techniques (stimuli)*, 108

*qualitative analytics*, 107-108

*retention/loyalty marketing*, 112

SEM, 113

SEO, 113-114

*social media analysis*, 114

*surveys*, 108

*types of*, 111-112

**mean**

data shapes, 36-37

sample mean, learning from, 53

measures (data models), 94, 100-102

*Measuring the Digital World*, 305

mechanistic (algorithmic) analytics, 302

MECLABS, 155-156

**media**

attribution and

*earned media*, 219-220

*media mix-marketing*, 214-215

*owned media*, 219

*paid media*, 218-219

social media, 219, 239

median (data shapes), 37

Median KPI, 184

Mela, C. F., 172

**merchandising**

merchandising analysis, 198-200

*creative testing/optimization*, 200

*determining types of data for analysis*, 210-211

*discounts*, 209-210

*inventory analysis*, 200-203

*markdowns*, 209-210

*offer analysis*, 203-204

*pricing analysis*, 204-208

*promotions*, 209-210

ROI, 210

*sales impact of merchandising*, 208-209

merchandising management  
 (ecommerce platforms), 231-232  
 planning tools, 236-237

mesokurtic kurtosis (data shapes), 36

metadata collection, 20

metrics  
 behavioral analytics, 124-126  
 KPI metric examples, 59-61  
 orders and, 184-186  
 shopping behavior analysis, 130-131

mobile experience  
 conversion optimization, 134  
 ecommerce and, 2-3  
 ecommerce platforms, 239

mode (data shapes), 37

modeling data, 91-96  
 Agile environments (software solutions), 250  
 analytics teams, 293  
 choice modeling and conversion optimization, 148  
 dimensions, 94-95, 100-102  
 facts, 94  
*Customer facts*, 96-97, 99-100  
*Customer Order facts*, 97, 100  
*Inventory facts*, 96, 97  
*Order facts*, 96, 98-99  
*Order Item facts*, 96, 99  
*Product facts*, 96, 98  
 measures, 94, 100-102  
 primary keys, 95  
 probability analysis, 52  
 sample data model, 96-97  
 supply/demand management models, 296-297  
 techniques for building models, 56-57

monetary analysis, 171-172

monitoring data (data governance), 270-271, 275

mouse tracking and conversion optimization, 146

multiple linear regression, 50-51

multivariate data, 34, 148

## N

natural language searches, 316

network charts, 89

neuromarketing and conversion optimization, 146

new customers, percentage of (KPI), 66-67

newsletters (analytics teams), 304

next-best product analysis, 186-187, 193

nominal data, 35

nonlinear dependent correlation, 48-49

NPV (Net Present Value), 25

NRF (National Retail Federation) and 4-5-4 calendar, 28

Number of Stock Outs KPI (merchandising analysis), 202

## O

ODS (Operational Data Stores) and data integration, 253-254

offer analysis (products), 203-204

office hours (analytics teams), 302-303

online advertising and conversion optimization, 134

online display ad unit analysis, 116

on-screen (in-page) behavior analysis, 132

operational dashboards, 79

operational data store, 253

operations and monitoring layer (ecommerce platforms), 230-231

optimal design and conversion optimization, 150

optimal pricing, determining via pricing analysis, 204-208

optimization/creative testing, 200

Order facts, 96, 98-99

Order Item facts, 96, 99

ordered behavioral analytics, 122

orders  
 ACID, 179  
 affiliates, 182  
 analysis  
*approaches to*, 186-193  
*brand analysis*, 186, 188-189  
*category analysis*, 186, 188-189  
*checkout path analysis*, 186, 189-190  
*cluster analysis*, 186, 191-192  
*cross-sell analysis*, 186, 192

- determining data for analysis, 183-184*
  - event analysis, 186, 189*
  - financial analysis, 186, 187*
  - funnel analysis, 186, 190-191*
  - goal analysis, 186, 189*
  - importance of, 180-181*
  - item analysis, 186, 187*
  - next-best product analysis, 186-187, 193*
  - promotional analysis, 186, 188*
  - scope of, 180-181*
  - up-sell analysis, 186, 192*
  - brands, 183
  - categories, 183
  - channels (marketing), 182
  - customer ID, 182
  - data model, 180-183
  - defining, 179, 181-183
  - devices, 182
  - geography (customer), 182
  - KPI, 184
    - Average Revenue Per Order KPI, 184*
    - Days to Order KPI, 185*
    - Events/Pages/Steps Per Order KPI, 185*
    - Margin KPI, 184*
    - Orders and Products Bought by Marketing Channel KPI, 185*
    - Orders Per Customer KPI, 185*
    - Revenue By Category KPI, 185*
    - Top Products KPI, 186*
    - Top Promotions KPI, 185*
    - Top Shipping Methods KPI, 185*
    - Total Revenue Versus Total Profit KPI, 184*
    - Visits to Order KPI, 185*
  - merchandising, 198-200
    - creative testing/optimization, 200*
    - determining types of data for analysis, 210-211*
    - discounts, 209-210*
    - inventory analysis, 200-203*
    - markdowns, 209-210*
    - offer analysis, 203-204*
    - pricing analysis, 204-208*
    - promotions, 209-210*
    - ROI, 210*
    - sales impact of merchandising, 208-209*
  - metrics, 184-186
  - order ID, 181
  - ordering functionality (ecommerce platforms), 231
  - orders with discounts/promotions (KPI), 65
  - price, 183
  - product ID, 182
  - product names, 182
  - promotions, 182
  - quantity, 183
  - revenue, 181-182
  - seasons, 183
  - shipping, 182
  - size, 183
  - SKU, 183
  - style, 183
  - taxes, 182
  - technical information, 182
  - time, 182
  - transaction ID, 182
  - ordinal data, 35
  - organic searches, 113-114, 219
  - organizations. *See* teams (analytics)
  - outliers
    - data shapes, 36, 37-38
    - modeling data, 56
  - owned media and attribution, 219
  - ownership of data (data governance), 269-270
- ## P
- page (screen) views (KPI metrics), 59
  - paid media and attribution, 218-219
  - paid searches and attribution, 218
  - panels and marketing/advertising analytics, 108
  - pathing and attribution, 222
  - path-to-purchase analysis, 186, 189-190
  - payment processing (ecommerce platforms), 231
  - Pearson's correlation, 48
  - "per" examples (KPI), 68-69
  - percentages (KPI examples), 66-68

- periodicity (social analysis), stakeholders and analytics teams, 300
- permissions and data governance, 274-275
- personalizing customer experiences, 178, 313-314
- persuasion (conversion optimization), 138-139
- pie charts, 43-44, 88-89
- PII (Personally Identifiable Information) and data governance, 266-267, 275-276
- pipelines (data), 315
- planning committees, 305
- platforms (ecommerce), 232, 235-236
  - analytical approach, determining, 239-240
  - analytics layer, 230
  - catalog, 231
  - consumer layer, 230
  - content management, 231
  - content management tools, 238
  - customer components, 234
  - customer management, 231
  - customer service, 232
  - data analysis tools, 232
  - data components, 234-235
  - data layer, 230
  - defining, 229
  - fraud awareness tools, 238-239
  - fulfillment, 232
  - integration layer, 230
  - inventory management, 231-232
  - inventory management tools, 237
  - marketing components, 232-233
  - marketing tools, 238
  - merchandising management, 231-232
  - merchandising planning tools, 236-237
  - mobile experience, 239
  - operations and monitoring layer, 231
  - ordering functionality, 231
  - payment processing, 231
  - product management tools, 236
  - promotional tools, 237
  - search tools, 238
  - searches, 231
  - security tools, 238-239
  - shopping functionality, 231
  - sizes of, 229-230
  - social media tools, 239
  - transactions, 233-234
  - user experience, 233
  - user interface, 233
- platykurtic kurtosis (data shapes), 36
- plotting data, 38-39
  - area charts, 44
  - bar charts, 88
  - block plots, 39
  - four plots, 42
  - geovisualizations, 89
  - Harvey Balls, 43-44
  - heatmapping, 89, 146
  - histograms, 42-43
  - lag plots, 40
  - line charts, 44-45, 88
  - network charts, 89
  - pie charts, 43-44, 88-89
  - probability plots, 41
  - radar charts, 88
  - radar plots, 40
  - run sequence plots, 41-42
  - scatter plots, 41, 89
  - six plots, 42
  - sparkline charts, 44-45
  - spider plots, 40
  - star plots, 40
  - streamgraph charts, 45
  - tree charts, 89
  - waterfall charts, 89
- policies/procedures and data governance, 273
- population (controlled data experiments), 54
- position-based attribution, 221, 223-224
- postmortems (projects), 305
- predicting customer behavior, 174-175
- predictive analysis, 22, 106-107, 174-178, 301, 317
- preparing data, 20-22, 312
- prescriptive analysis, 22-23, 107, 301
- presentations
  - analytical environment, 20
  - dashboards, 77-81
  - data visualization, 78-79, 81-89
  - need for, 71-72
  - purpose of, 72

- reports, 75-77
- team roles in, 74
- prices**
  - discounts, 209-210
  - markdowns, 209-210
  - merchandising analysis, 209-210
  - order data models, 183
  - pricing analysis, 204-208
  - ROI, 210
- primary keys (data models), 95**
- privacy (data), 263-265, 272-273**
  - data collection, 273
  - data lineage, 274
  - discipline for violations, 275
  - encryption, 275-276
  - guidelines, 266-268, 274, 276-278
  - monitoring data, 275
  - permissions, 274-275
  - policies/procedures, 273
- probability analysis, 51-52**
- probability plots, 41**
- procedures/policies and data governance, 273**
- processes**
  - business processes analysis, 300
  - change management processes, 304-306
  - data processes in analytical environments, 19
  - maps, 295
- products**
  - analysis, 193
    - approaches to analysis, 186-193*
    - brand analysis, 186, 188-189*
    - category analysis, 186, 188-189*
    - checkout path analysis, 186, 189-190*
    - cluster analysis, 186, 191-192*
    - cross-sell analysis, 186, 192*
    - customer service analysis, 196-197*
    - event analysis, 186, 189*
    - financial analysis, 186, 187*
    - funnel analysis, 186, 190-191*
    - goal analysis, 186, 189*
    - importance of analysis, 180-181*
    - item analysis, 186, 187*
    - next-best product analysis, 186-187, 193*
    - product brand analysis, 194-195*
    - product category analysis, 195-196*
    - product returns analysis, 197*
    - promotional analysis, 186, 188*
    - scope of analytics, 180-181*
    - social media product analysis, 197-198*
    - types of, 193-194*
    - up-sell analysis, 186, 192*
- defining, 179
- merchandising, 198-200
  - creative testing/optimization, 200*
  - determining types of data for analysis, 210-211*
  - discounts, 209-210*
  - inventory analysis, 200-203*
  - markdowns, 209-210*
  - offer analysis, 203-204*
  - pricing analysis, 204-208*
  - promotions, 209-210*
  - ROI, 210
  - sales impact of merchandising, 208-209*
- naming, 182
- Orders and Products Bought by Marketing Channel KPI, 185
- Product facts, 96
- Product facts, 98**
  - product ID, 182
  - product management tools, 236
  - Top Products KPI, 185-186
- profile completeness scoring (customer analytics), 173-174**
- profiling data, 311-312**
- profits**
  - attribution and, 217-220
  - Total Revenue Versus Total Profit KPI, 184
- projective techniques (stimuli) and marketing/advertising analytics, 108**
- promotions, 182**
  - conversion optimization, 135
  - merchandising analysis, 209-210
  - percentage of orders with discounts/promotions (KPI), 65
  - promotional analysis, 186, 188
  - promotional tools, 237
  - Top Promotions KPI, 185

propensities, predicting behavior by (customer analytics), 174-175, 176-178  
 proportional hazard modeling and attribution, 222-223  
 psychology (conversion optimization), 139-140, 146

## Q

QA (quality assurance), Waterfall environments (software solutions), 253  
 qualitative analytics, 34-35, 107-108, 143  
 quality of data (data governance), 270  
 quantitative data, 34-35  
 quantity (order data models), 183  
 quarterly reviews (analytics teams), 305  
 querying data in analytical environments, 19  
 questions, asking in analytics, 6-7

## R

radar charts, 88  
 radar plots, 40  
 random variables, 52  
 range  
   analytics teams, 292  
   data shapes, 37  
 rank correlation, 48  
 RASTA method of reporting, 77  
 rates, KPI rate examples, 62-64  
 recency (time since last visit/loyalty), 66, 124, 171-172  
 records (customer) and customer analytics, 156-157  
 referral traffic and attribution, 219  
 regression analysis, 49-51  
 regular histograms, 42  
 relationships (data) and presentations, 72  
 repeat visitors (users/customers), KPI metrics, 61  
 reports, 75-77  
   ad hoc reporting, 76  
   Agile environments (software solutions), 251

Customer Origin reports, 116-117  
   need for, 71-72  
   purpose of, 72-74  
   RASTA method of reporting, 77  
   sustaining reporting, 76  
   team roles in, 74  
 research data and data integration, 245  
 results (analytics teams), determining, 292  
 retail calendar, 28  
 retargeting and attribution, 219  
 retention/loyalty marketing, 112  
 returns  
   KPI metrics, 59-60  
   product returns analysis, 197  
 revenue, 181-182  
   attribution and, 217-220  
   Average Revenue Per Order KPI, 184  
   cost tracking and, 24-25, 68-69  
   Revenue By Category KPI, 185  
   revenue by N (KPI metrics), 60  
   Total Revenue Versus Total Profit KPI, 184  
 RFM (Recency, Frequency, and Monetary) analysis, 171-172  
 road maps (analytics), 294  
 ROI (return on investment), 65-66, 210  
 Rosling, Hans, 86  
 run sequence plots, 41-42

## S

sales  
   cross-sell analysis, 186, 192  
   up-sell analysis, 186, 192  
 sampling data (systemic), 53-55  
   comparisons of data over time, 56  
   confidence intervals, 55  
   dependent variables, 55  
   expected errors, 55  
   independent variables, 55  
   inferences, 56  
   significance testing, 55  
 scatter plots, 41, 89  
 scope (analytics teams), 291  
 scoring customers (customer analytics), 173-174

- screen (page) views (KPI metrics), 59
- SCREEN method of visualizing data, 84-86
- scrums, 249-250, 253, 305
- searches
  - ecommerce platforms, 231, 238
  - paid searches and attribution, 218
  - search engines, 113-114, 219
- seasons (order data models), 183
- security
  - data security, 263-266, 272-273
    - data collection*, 273
    - data lineage*, 274
    - discipline for violations*, 275
    - encryption*, 275-276
    - guidelines*, 266-268, 274, 276-278
    - monitoring data*, 275
    - permissions*, 274-275
    - policies/procedures*, 273
  - ecommerce platforms, 238-239
  - encryption, 275-276, 315-316
- Seeking phase (Tumblr lifecycle), 159-160
- segmentation (customer analytics), 163-164
- self-service automation, 293, 304, 316
- SEM (search engine marketing), 113
- SEO (search engine optimization), 113-114, 219
- servers, analytics applications and data integration, 260
- sessions. *See* visits
- SFE (secure function evaluation), 315-316
- SFTP (SSH file transfer protocol), batch processing and data integration, 261
- Sharing phase (Tumblr lifecycle), 160
- shipping, 182, 185
- shopping
  - shopping behavior analysis, 130-131
  - shopping functionality (ecommerce platforms), 231
  - Shopping phase (Tumblr lifecycle), 160
- significance testing (systemic sampling), 55
- single linear regression, 50-51
- six plots, 42
- SKU (stock keeping units), 182-183
- SLA (service-level agreements), 298
- social analysis, 23-24, 300
- social data and data integration, 244-245
- social media
  - attribution and, 219
  - ecommerce platforms, 239
  - social media analysis, 114, 135, 197-198
- software
  - Agile environments, 247-251
  - attribution software, assessing, 225-227
  - ecommerce platforms, 232, 235-236
    - analytics layer*, 230
    - catalog*, 231
    - consumer layer*, 230
    - content management*, 231
    - content management tools*, 238
    - customer components*, 234
    - customer management*, 231
    - customer service*, 232
    - data analysis tools*, 232
    - data components*, 235-236
    - data layer*, 230
    - defining*, 229
    - determining analytical approach*, 239-240
    - fraud awareness tools*, 238-239
    - fulfillment*, 232
    - integration layer*, 230
    - inventory management*, 231-232, 237
    - marketing components*, 232-233
    - marketing tools*, 238
    - merchandising management*, 231-232
    - merchandising planning tools*, 236-237
    - mobile experience*, 239
    - operations and monitoring layer*, 230-231
    - ordering functionality*, 231
    - payment processing*, 231
    - product management tools*, 236
    - promotional tools*, 237
    - search tools*, 238
    - searches*, 231
    - security tools*, 238-239
    - shopping functionality*, 231

- sizes of*, 229-230
- social media tools*, 239
- transactions*, 233-234
- user experience*, 233
- user interface*, 233
- Waterfall environments, 248-249, 251-253
- SOW (share of wallet) analysis, 167, 172-173
- sparkline charts, 44-45
- specialized research data and data integration, 245
- spider plots, 40
- sponsorship (analytics teams), 291
- SSL (secure sockets layer), 315-316
- stacked histograms, 43
- stacking and attribution, 222, 224
- staff (analytics teams)
  - hiring, 291
  - training, 294-295
- stakeholders
  - analytics teams, 297-298, 304-306
  - financial impact assessments, 24
- standard deviation (data shapes), 37
- star plots, 40
- starter-player-closer attribution, 221-222, 224
- step completion rates (KPI), 63
- stewards, 74, 251, 267-268, 270-271
- stimuli (projective techniques) and marketing/advertising analytics, 108
- storing data, 19, 273, 293
- storytelling and analytics, 29-31
- strategic dashboards, 78-79
- streamgraph charts, 45
- supply/demand management models, 296-297
- surveys, 108, 145-146
- sustaining reporting, 76
- syndicated research data and data integration, 245
- systemic sampling, 54-55
  - comparisons of data over time, 56
  - confidence intervals, 55
  - dependent variables, 55
  - expected errors, 55
  - independent variables, 55
  - inferences, 56
  - significance testing, 55
- systems integration and data integration, 242-243

## T

- Taguchi, Genichi, 147-148
- taxes, 182
- teams (analytics), 279-280, 300-301
  - algorithmic (mechanistic) analytics, 302
  - analytics platforms, 293
  - architectures, 292
  - artifacts, 296
  - attending non-team meetings, 302
  - build templates, 296
  - building (universal process), 280-283
  - business outcomes from, 303
  - business processes analysis, 300
  - business requirements, gathering, 288-289
  - cataloging data, 299
  - causal analytics, 301
  - change management processes, 304-306
  - checkpoints, 302
  - communication, 292
  - current state assessments, 291-293
  - data governance, 292-293, 299-300
  - data models, 293
  - data ranges, 292
  - data storage, 293
  - data visualization, 293
  - delivery systems, 292
  - descriptive analysis, 301
  - education, 304
  - exploratory analysis, 301
  - financial analysis, 303
  - funding, 291
  - future capabilities, 291-292
  - future state architectures, 292-293
  - hiring
    - leadership*, 285-288
    - staff*, 291
  - inferential analytics, 301
  - leadership, 285-288
  - maps, 294, 295-296
  - need for, 283-285
  - new data collection/acquisition, 298-299
  - new work, leading/assisting with, 302-303
  - newsletters, 304
  - office hours, 302-303

- organizational models, 289-291
  - planning committees, 305
  - postmortems (projects), 305
  - predictive analysis, 301
  - prescriptive analysis, 301
  - quarterly reviews, 305
  - results, determining, 292
  - scope, 291
  - serums, 305
  - self-service automation, 293, 304
  - SLA, 298
  - sponsorship, 291
  - staff, 291, 294-295
  - stakeholders, 297-298, 300, 304-306
  - supply/demand management
    - models, 296-297
  - team analysis, 303-304
  - technology architecture assessments, 292-293
  - ticketing systems, 302
    - use/deploy/upgrade strategies, 298
    - value, determining, 291-292
    - vision of, shaping, 289
  - technology architecture assessments, 292-293
  - television/cable data and data
    - integration, 245
  - templates (build), 296
  - tendencies, predicting behavior by (customer analytics), 174-175
  - tests
    - ANOVA tests, 39, 49-50
    - conversion optimization, 143-145
    - creative testing/optimization (merchandising analysis), 200
    - factorial testing and conversion optimization, 149-150
    - hypothesis testing, 52-53
    - MANOVA tests, 49-50
    - multivariate testing and conversion optimization, 148
    - significance testing (systemic sampling), 55
    - UAT, 251, 253
    - univariate testing and conversion optimization, 148
  - ticketing systems (analytics teams), 302
  - time
    - comparisons of data over time (systemic sampling), 56
    - orders, 182
    - time between visits (frequency), KPI, 66-67
    - time decay attribution, 221, 223
    - time since last visit/loyalty (recency), KPI, 66
    - time stamps, 182
  - Top Products KPI, 185-186
  - Top Promotions KPI, 185
  - Top Shipping Methods KPI, 185
  - total revenue (KPI metrics), 60
  - Total Revenue Versus Total Profit KPI, 184
  - tracking revenue/cost, 24-25, 68-69
  - transactions
    - data governance, 267
    - ecommerce platforms, 233-234
    - transaction ID, 182
  - tree charts, 89
  - Tufte, Edmund, 86
  - Tukey, John, 31-33, 57
  - tumbler charts, 46-47
  - Tumbler lifecycle (customer analytics), 159-161
- ## U
- UAT (User Acceptance Testing), 251, 253
  - UIA (Useful, Insightful, Actionable)
    - data and data governance, 277
  - univariate data, 34, 148
  - unordered behavioral analytics, 122
  - upgrade/use/deploy strategies (analytics teams), 298
  - up-sell analysis, 186, 192
  - use/deploy/upgrade strategies (analytics teams), 298
  - users
    - repeat users (KPI metrics), 61
    - user experience
      - conversion optimization, 134, 139
      - ecommerce and, 3, 7
      - ecommerce platforms, 233
    - user interface (ecommerce platforms), 233

## V

validators, 74

value

analytics teams, determining, 291-292

average order value KPI, 64

lifetime value KPI, 61

value chain (analytics), 9

analysis techniques, 23-25, 31-33

analytical environment, 16-20

analytical plans, developing, 14-16

data preparation tools, 20-22

demand, 11-13

economic impact of analytics, 24-25

overview of, 9-11

phases of, 9

value propositions and conversion

optimization, 137-138

variables (random), 52

variance

ANOVA tests, 39, 49-50

MANOVA tests, 49-50

violations of data privacy/security, 275

virtualizing data, 19, 259

visitors (repeat), KPI metrics, 61

visits (sessions), 59

behavioral analytics, 66-67, 124, 125

Visits to Order KPI, 185

visualizing data, 81-82

Agile environments (software solutions), 251

analytics teams, 293

conversion optimization, 145-146

dashboards and, 78-79

data shape, 36-47

flow visualizations, 45-47

need for, 71-72

plotting data, 38-39

*area charts*, 44

*bar charts*, 88

*block plots*, 39

*four plots*, 42

*geovisualizations*, 89

*Harvey Balls*, 43-44

*heatmaping*, 89, 146

*histograms*, 42-43

*lag plots*, 40

*line charts*, 44-45, 88

*network charts*, 89

*pie charts*, 43-44, 88-89

*probability plots*, 41

*radar charts*, 88

*radar plots*, 40

*run sequence plots*, 41-42

*scatter plots*, 41, 89

*six plots*, 42

*sparkline charts*, 44-45

*spider plots*, 40

*star plots*, 40

*streamgraph charts*, 45

*tree charts*, 89

*waterfall charts*, 89

process of, 82-84

purpose of, 73-74, 82

SCREEN method of visualizing data, 84-86

team roles in, 74

tools, analytical environment, 20

types of, 88-89

uses of, 86-87

VoC (Voice-of-the-Customer)

analytics, 170-171

## W-X-Y-Z

wallet allocation rule, 172-173

waterfall charts, 89

Waterfall environments (software solutions), 248-249, 251-253

workflow maps, 296

zero-sum game, ecommerce as, 3