

Google Analytics

Breakthrough

From Zero to
Business
Impact

FERAS ALHLOU · SHIRAZ ASIF
ERIC FETTMAN

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From Zero to Business Impact

Feras Alhlou,
Shiraz Asif, and Eric Fettman

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In Memory of Shiraz Asif

When we embarked on *Google Analytics Breakthrough*, we could never have imagined that Shiraz would no longer be with us for the book's publication. He became ill with the flu and later pneumonia in February 2016, and after battling for several weeks in the ICU, he passed away on the morning of Friday, March 18th. Shiraz is survived by his parents, siblings, in-laws, loving wife and four young children.

Those who knew Shiraz personally and professionally understand that he was among the hardest-working colleagues, most generous mentors, and most thoughtful friends. He was always a catalyst for development and change, and his thirst for knowledge benefitted everyone around him.

Shiraz, we miss you and will always remember you. May your honorable character, kindheartedness, and open spirit inspire us all to embrace each day in gratitude for the gift of life.

Feras Alhlou, Eric Fettman, and the entire E-Nor family



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Foreword

It seems a little crazy that I'm about to recommend that you pay serious attention to data and the power of analytics by buying this book. Simply because what has been hyped more over the last decade than data? Nothing.

We had the promise of being able to collect all the data about everyone. Web servers were practically switched on with data spewing out. Then we went into the hype cycle of data warehouses and then analytics tools and then the Earth was hypnotized by the mesmerizing power of Big Data. Nothing was safe; everything was going to be cured!

And yet precious little has changed.

It is ironic that we live in the most data-rich environment in mankind's evolution, yet we are barely any smarter than we were when none of this existed 20 years ago.

So what's the problem? And why hype this book?

A part of it is a generational divide in how executives made decisions (experience first, data second—ideally optional). This is changing with time (sadly, the Earth moves, we all get old, we retire, move to a golden retirement home in Florida!).

A part of it was our initial approach of taking all the data we could get our hands on and then puking it like crazy (as if the shower of reports and metrics by themselves could make people smarter). Having failed at changing anything beyond local maxima, I feel that people are ready to stop all the data puking.

A part of it was a lack of a holistic understanding of what's possible, and the ability to create a winning strategy where the objective was not to nuclear bomb the world into changing overnight, but rather have a step-by-step approach customized to your amazing and unique business.

These last two reasons are why I'm so excited about Feras, Shiraz, and Eric's book. They take a soup-to-nuts approach to helping you understand the entire landscape of possibilities (from implementation to data collection to data processing to data analysis to deliver insights). They hold your hand and lead you step-by-baby-step in helping you understand each amazing element of a successful analytics strategy (covering tag management, audience segmentation, dashboards, and experimentation). In each chapter

there is a simple way to figure out exactly where you are today, and then create the next few steps required to go from good to great.

There is almost nothing that's missing from the book that you'll need to create an effective analytics and optimization strategy that drives online and offline business profit. The only ingredient that you'll have to bring, is a deeper understanding of your business strategy (be BFFs with your boss's boss's boss) and a hunger to get better every day.

Data awaits. Carpe diem!

Avinash Kaushik

Author: *Web Analytics 2.0*, *Web Analytics: An Hour a Day*

Digital Marketing Evangelist: Google

Acknowledgments

The journey of writing *Google Analytics Breakthrough* started long before we signed the agreement with the publisher. The idea had been brewing in our minds for years.

For more than 12 years in our analytics consulting work at E-Nor, we've had the good fortune of working with some incredibly smart people—marketers, analysts, and executives from some of the most recognized brands in the world. It's very fulfilling when, during our discussions, we see that spark in their eyes when they “get” analytics and have the “aha!” moment. To “get” analytics involves asking great, sometimes difficult questions and then challenging yourself to find the answers. We are sincerely grateful to our clients and training participants for encouraging, nudging, and requiring us (sometimes in that order!) to push the envelope—both for the Google Analytics product and for ourselves—to positively impact their organizations.

We also owe a debt of gratitude to industry veterans and “founders” who helped foster a family atmosphere and shape a cooperative and collaborative analytics community. We especially want to recognize Avinash Kaushik for evangelizing analytics to the non-converted, Jim Sterne for being the one and only analytics godfather, Eric Peterson for writing one of the very first books on demystifying analytics, and Brian Clifton, whose books provided much of the technical foundation that we still leverage many years later. We'd also like to recognize the high-cardinality list (data-geek joke) of acquaintances and friends within the industry for being giants whose shoulders we're able to stand on. You have and will continue to inspire us.

A special thank you to the Digital Analytics Association (DAA) community, volunteers, and dedicated staff for all of your countless hours dedicated toward advancing our industry. Of course, we also want to thank our competitors and “frenemies.” You all know who you are, and we still read your blogs and learn from you!

We wanted this book to include tips and advice from the trenches, so we sought out thought leaders and top practitioners to add more color and a diversity of perspective and experience to the book. Thank you to all the guest contributors for their invaluable input.

We also thank the team at our partner Google, namely the Google Analytics and Google Tag Manager teams. From the technical and marketing leadership to product managers,

to Analytics 360 partner managers, sales, and support, to every Googler who has contributed to making GA the amazing product it is today. Few products benefit companies on such a large scale and in such an irreplaceable way. Keep on innovating!

Special thanks go to the Wiley team: Sheck Cho, who helped us refine our vision for the book, Pete Gaughan and Connor O'Brien for their expert guidance and editorial insight, Michael Henton for easing so much detail into the cover design, and Vincent Nordhaus for getting us to the finish line.

We also want to humbly thank our families, loved ones, and friends who have supported us at every step. Ghaidaa and Amina, your sacrifices and support have been invaluable to us as a company, and especially as individuals. We love you and thank you all.

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- **Pat** - Everything is super-sized in Texas, and so is your support and help.
- **Tina** - Too many things to include in one line. You are a rock.
- **Sri** - Content is king, but you'll rule it in 2016 and beyond.
- **John A.** - Our very own Ferrari. How's the beach, buddy? :)
- **Farid** - You can sing and dance, and you have nice hair. You are awesome—no joke.

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With gratitude,

Feras, Shiraz, and Eric

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Eric Fettman Drawing upon a wide range of development and marketing experience, Eric positions analytics within a real-world business and technical framework as Director of Training at E-Nor.

At googleanalyticstest.com, which Eric developed, participants have completed more than 100,000 tests. The site has been widely recognized as a leading resource for Google Analytics Individual Qualification (GAIQ) preparation and practical Google Analytics skills training.

Eric has earned certification as a Java Programmer, as well ISO 9000 quality management internal auditor qualification, which strengthened his commitment to customer focus and continuous business performance improvement. He holds a BA with High Honors from Harvard University.

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Mike Telem is VP of product marketing, real-time personalization at Marketo, the leader in digital marketing software and solutions. Mike has extensive experience in digital marketing, especially in the areas of Web personalization and account-based marketing. Previously the co-founder of Insightera (acquired by Marketo in 2014), he drove marketing and sales operations as well as global business initiatives. Before co-founding Insightera, Mike served as a business development manager in the RAD-Bynet group.

Holger Tempel is founder of the German company webalytics GmbH. He has acted as a consultant and trainer since 1991 in the business fields of IT and Web analytics. In 2005 he became one of the first 14 worldwide Google Partners and therefore is one of the leading knowledge carriers for Google Analytics and digital analytics in general. He is also the co-founder and member of the board of the Digital Analytics Association Germany e.V. and the person in charge of developing the certification track to becoming a future digital analyst. Due to data privacy issues in the European area he gained high-level expertise on how to make Google Analytics in European Countries data privacy compliant.

Introduction

WHY THIS BOOK?

Many very useful Google Analytics (GA) resources are readily accessible online: Google Analytics Academy, the Google Analytics and Google Tag Manager Solutions Guides, and a broad range of GA-focused blogs, e-books, and tutorials—including those that we produce ourselves—that steadily enrich the conversation and provide real value for learning. Why, then, did we go the extra step and take on the significant task to write a Google Analytics book? Much more importantly, why should you invest your time and energy to read it?

Consolidated Resource for Learning Effectiveness With millions of GA installations worldwide, the fact remains that only a small percentage of organizations are using GA to anywhere near its full power.

We've worked with hundreds of clients, from start-ups to the Fortune 25, and we've seen the ongoing struggle of marketers to achieve a complete GA implementation for their websites and mobile apps, master the specialized reporting capabilities, optimize their channel attribution, integrate GA data with other data sources, and move from data to insight to performance improvement. The objective of this book is to provide a consolidated and focused learning experience that guides you from potential confusion and frustration to solid understanding and confident action, starting with the core nuts-and-bolts competencies and building to more advanced and future-facing strategies and techniques.

Not the Encyclopedia of Google Analytics While comprehensive in scope, this book is not designed as a full reference of every GA feature—the Google help articles are there to serve this purpose. Furthermore, much of the GA reporting functionality becomes intuitive as soon as you begin navigating through the reports, so it would not be the best use of space or time to explain what’s easy and obvious.

A Focus on What’s Difficult and Most Important To contrast with the previous point, the book does thoroughly cover the fundamentals of measurement strategy, implementation, and reporting, and goes on to focus on the topics that normally present the most challenges and/or typically generate the greatest insight and actionability. We have also endeavored to call out potential sticking points, gotchas, and pitfalls along the way, and especially to warn you where real danger lurks.

Framework for Conversion Optimization, Marketing ROI, and Competitive Advantage The book is conceived, above all, to help you improve your own key performance indicators (KPIs), such as Ecommerce transactions, lead submissions, or content engagement. With detailed discussions about conversion tracking, including goal and Enhanced Ecommerce funnels, you’ll learn how to identify the website or mobile app elements that are helping or hurting your conversion success.

It’s not enough, however, to track conversion rates. You must have clean traffic attribution to understand where your success and return on investment (ROI) are coming from, so we devote in-depth discussions to attribution reporting—campaign tracking in particular—and go beyond last-click attribution to identify which traffic sources are providing conversion support prior to the session in which the goal completion or Ecommerce transaction occurs.

When you begin to understand what really is and is not working, analytics has become your long-term competitive advantage. And the time to gain that understanding is in periods of stability; emergency analytics ramp-ups do not usually solve mysteries or relieve crises.

Contributions from Industry Luminaries and Leading Analytics and Optimization Practitioners We sought out input from world-recognized experts, members of the GA team itself, and practitioners who are doing amazing things in analytics and optimization each day. Their contributions add immeasurably to the learning experience and provide a range and depth of insight and technique that are rarely found within a single resource.

Graphical Format Since the book is not an encyclopedia, it’s not written or designed like one. The many annotated screen shots, color diagrams, and special callouts are included to make the discussions more approachable and, overall, to provide a more interesting and impactful learning experience.

Technical Deep Dives The previous paragraph notwithstanding, we do not shy away from the technical details where they are needed. Following the advice of Albert Einstein,

we've aimed to make everything as simple as possible, but no simpler. Whether for the event tracking through the Google Tag Manager data layer, the formula for Google page value calculation, or the coding required for Enhanced Ecommerce, we go deep into the concepts and procedures that you need for successful implementation and advanced skill in reporting and analysis.

User Focus, Qualitative Inputs, and Testing Taking a broader perspective on optimization, we learn techniques for designing and evaluating for user experience, including survey tools, A/B testing, and their integrations into GA.

Specialized Techniques and Advanced Integrations As the chapters progress, the book discusses many specialized techniques, such as remarketing audience configuration and phone tracking setup, and introduces advanced integrations with CRM, data extraction and visualization tools, and marketing automation.

Your Role as Communicator and Change Agent Analysis tends to have little organizational impact without clear and effective communication. Throughout the book, we offer insights on streamlined presentation of Google Analytics reporting to clients and internal stakeholders as well as communication and collaboration between the marketing and IT departments for implementation initiatives.

Key Takeaways and Actions Each chapter concludes with “Key Takeaways” and “Actions and Exercises,” so you can review the main points of the chapter and immediately try out the techniques and begin planning broader, longer-term objectives.

Foundation for Ongoing Learning and Achievement Google is on a fast-paced innovation path. With no doubt, Google Analytics will introduce new capabilities between the time we finished writing and publication date, but the concepts, techniques, and best practices will still be very applicable and will empower you to continue exploring, learning, and taking advantage of the tool's new capabilities. Additionally, the implementation and reporting checklists available and the resource recommendations maintained at <http://www.e-nor.com/gabook> will help keep you up to date.

Even very experienced GA users constantly refine their existing techniques and learn new approaches. This book is designed to build the foundation from which your own analytics skills can evolve and deepen with each measurement challenge and each feature update.

The Benefits of Analytics and Optimization We've seen first-hand the remarkable improvements that Google Analytics can generate, but these are possible only with a sound implementation, the right reporting know-how, and a long-term commitment to optimization of user experience, marketing ROI, and conversion performance. The book is designed to provide the technical building blocks and inspire the initiative and dedication necessary for ongoing improvement.

WHO SHOULD READ THIS BOOK?

This book is written with the premise that within an organization, Google Analytics should be “owned” by Marketing or a dedicated Analytics/Business Intelligence team rather than by IT. That said, IT support is critical, as many of the Google Analytics implementation steps require close developer involvement.

Thus, while many of the discussions are intended primarily for a marketer or analyst, many others are geared more toward the technical team, or toward the marketer or analyst who needs to understand how data gets into GA and articulate code-level implementation requirements to the technical team. To facilitate this communication, even the more technical discussions are broken down into manageable, understandable steps and concepts.

Product managers, designers, user experience (UX) specialists, content writers, and individuals in various roles at advertising and design agencies can also use this book to learn how GA and the optimization mind-set can help them gain data-driven insights and improve their results.

If you’re approaching GA from a data science or broader business intelligence role, the later chapters on data integration and visualization should be particularly relevant.

The book can also serve as an introduction to GA capabilities for managers and executives. With the callouts, guest contributions, illustrations, and key takeaways throughout, the book can provide a good overview of GA, even if the more detailed and technical discussions are skipped.

Regardless of your role, if you’re new to GA or have been using GA for some time but have yet to attain the level of proficiency that you want and need, the book can, in fact, provide the blueprint for your own GA breakthrough, taking you beyond the default gaps and usage toward mastery and real effectiveness. If you’re already fairly adept with GA, the book will provide a solid review of best practices and surely many new tips and perspectives.

As a related note, the book was not written with the Google Analytics Individual Qualification (GAIQ) in mind, but if you read the book and apply the learning, you should be well equipped to take and pass the exam.

CHAPTER SUMMARY

Chapter 2: Google Analytics Reporting Overview Before our discussion of measurement strategy and GA implementation in the following chapters, this chapter provides an overview of the Audience and Behavior reports as well as a thorough walk-through of the functionalities that will enable you to take full advantage of the GA reporting interface.

Chapter 3: Measurement Strategy This chapter discusses measurement strategy as the foundation for your analytics program. We assess your current analytics implementations and evaluate the need for more specialized tracking and reporting. Also reviewed are process and communication challenges, analytics ownership within the enterprise, and a sample measurement plan.

Chapter 4: Account Creation and Tracking Code Installation Here, we go back to the first steps in GA account creation and map the account/property/view hierarchy. We access the GA tracking code and demonstrate the range of data that is recorded with each pageview hit. We also consider tracking for templated websites and standalone pages.

Chapter 5: Google Tag Manager After installing the native tracking code in the previous chapter, we switch (for the rest of the book) to a better way for deploying the GA tracking code: Google Tag Manager (GTM). This chapter reviews the advantages of GTM over native deployment and emphasizes three main GTM concepts: container, tags, and triggers.

Chapter 6: Events, Virtual Pageviews, Social Actions, and Errors As perhaps the biggest gap in a default GA website implementation, user actions that do not cause a page load are not recorded. We address this gap with events and virtual pageview tracking to capture video plays, page scrolls, and multiscreen AJAX processes. We also learn about social tracking and error tracking and take advantage of the GTM data layer.

Chapter 7: Acquisition Reports Google Analytics does the best job it can in determining where your website traffic comes from, but it needs a great deal of help from you, in the form of campaign parameters, to correctly attribute traffic from email, social, and banner campaigns. We also discuss paid and organic search engine traffic and review Google Search Console as an important complement to GA.

Chapter 8: Goal and Ecommerce Tracking To populate the Conversions reports, you must tell GA what constitutes a successful session. In this chapter, we walk through goal and funnel setup, clarify the Conversion Rate and Abandonment Rate metrics, and configure Ecommerce and Enhanced Ecommerce tracking to record transactions with product category, tax, and funnels from impression through conversion.

Chapter 9: View Settings, View Filters, and Access Rights In this chapter, we apply view settings and filters to the raw GA data to remove internal traffic, consolidate URL variations, configure site search tracking, and create specific data subsets based on sub-directory, device, traffic source, or geography. We also review the four types of user permissions and consider governance principles.

Chapter 10: Segments For much of the analysis we need to perform, aggregation can hide significant data points and hinder insight. In this chapter, we break down our data with segments that map to different audience constituencies and amplify trends, and we define behavioral segments that correlate behaviors such as a page or video view to conversion outcomes.

Chapter 11: Dashboards, Custom Reports, and Intelligence Alerts Here, we review the easy and flexible dashboard functionality in GA and also cover the automated emailing option for dashboards and reports. We also configure custom reports for more focused analysis and communication, and we set up intelligence alerts to send out proactive notifications for metric fluctuations.

Chapter 12: Implementation Customizations In this chapter, we configure custom dimensions, custom metrics, and content groupings that allow GA reporting to more closely reflect our own organizations, taxonomies, and end-user experiences. We also set up cross-domain tracking and roll-up for management and executive reporting, and we learn how to track logged-in users across devices.

Chapter 13: Mobile App Measurement This chapter focuses specifically on app tracking through the Android and iOS software development kits (SDKs) and through Google Tag Manager. We also review campaign tracking for clickthroughs to Google Play and the App Store, and measure app open rate after download. Best practices for GA mobile app account structure are also outlined.

Chapter 14: Google Analytics Integrations—The Power of Together This chapter reviews the rich AdWords reporting available to you in GA as an advertiser and also discusses AdSense metrics for you as a publisher. We also examine the powerful capability of GA remarketing audiences and consider GA integrations with email and social media platforms.

Chapter 15: Integrating Google Analytics with CRM Data Here, we step through two approaches to get website source data into customer relationship management (CRM) systems: directly through hidden fields on the lead form, or through importing GA data into the CRM against a common key. This integration will allow us to calculate cost per qualified lead and long-term value for different marketing channels.

Chapter 16: Advanced Reporting and Visualization with Third-Party Tools Furthering our data integration discussions, this chapter discusses the integration of GA data with other data sources and interactive visualizations in Tableau. We also explore automated export from Google Analytics 360 to BigQuery storage and the role of Analytics Canvas and ShufflePoint as middleware for data extraction and transformation.

Chapter 17: Data Import and Measurement Protocol This chapter discusses two additional ways to record data into GA: import of content, campaign, and marketing cost data through the admin panel or the GA Management API, and the Measurement Protocol, which allows you send hits to GA from any programmed and networked environment.

Chapter 18: Analytics 360 To address the needs of enterprise installations, Analytics 360 (formerly called GA Premium) offers greatly increased data limits, data freshness, and custom dimensions. This chapter discusses these features as well as unsampled data export, custom funnels, DoubleClick integration, and also service-level agreements and support.

GET STARTED

Now that we have charted the learning objectives and outlined the chapter content, it's time to get started. Take the necessary time, stay focused, try everything out yourself, don't forget to enjoy the learning process, and always keep the end in mind: understanding, mastery, real-world results, and a foundation for ongoing learning and success.

If you need access to a test account, or if you have questions or feedback along the way, don't hesitate to reach out to us at GAbook@e-nor.com.

GUEST SPOT The Three Masters of Analytics



Jim Sterne

Jim Sterne is the founding president and current board chair of the Digital Analytics Association.

You can't please everybody, but there are three masters whom you need to serve if you are to succeed at analytics:

- Whoever Pays the Bills
- The Customer
- Your Intellectual Curiosity

Validating the Raw Material

For each of these masters, trustworthy data is the cornerstone. *Blindly consuming any analytics tool without a deep understanding of the provenance of the underlying data—or of the inherent gaps in a default implementation—is a surefire way to run right into a brick wall.*

All data is collected in a certain way, cleaned in a certain way, sampled in a certain way, and munged together just so before you ever see the output. It is your underlying responsibility to know where the data comes from and how it's been manipulated before you can get comfortable with others seeing "results." Others in your organization will assume you have this well in hand, and the first time it's discovered that the reports are bad because the data was not validated will be the last time the Three Masters of Analytics will trust you with its interpretation—most importantly, the person with their hands on the purse strings.

Whoever Pays the Bills Your boss, the VP, the board, the client, the committee; whoever is responsible for funding your technology and human resources must feel they are getting their money's worth.

If they want reports about "hits," then, by golly, you will give them Hits Reports. If they want to know how many uniques there are every month, that's your job. Like it or not. If they have a strong opinion about a specific attribution model, then for good or ill, that will be your top priority.

Make very sure that you have very clear definitions that everybody understands. What do *they* mean by hits, uniques, and attribution? After that, then you can bring in more and more information about things that will actually move the business forward.

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Eventually, you will find colleagues who understand what you are trying to accomplish, and they will become more interested in getting information that will actually be useful to making business decisions.

The Customer In order to sell more stuff, get more readers, grow your fan base, or convert public opinion, your message must reach those people and persuade them to take appropriate action. Whatever your boss wants or the company prizes, “the customer” is your target audience or user.

Customer satisfaction and usability come into the picture here. Testing, optimizing conversion, and monitoring social interaction are all on your plate. While the reporting goes on apace, your analysis must serve those who are connecting with your customer base and give them the immediate information they need to do their jobs.

Your Intellectual Curiosity Last, but far from least, is your own innate curiosity. Call it data mining, data diving, or data interrogation, your highest purpose is to derive insights previously hidden. “Gee, that’s funny ... I wonder,” says Isaac Asimov, is more important than knowledge.

Yes, you must put your back into validating the raw material. Yes, you must crank out those reports whether you believe in them or not. Yes, you must support the ongoing A/B split testing teams and landing page optimizers. But if you don’t come up with the occasional bright idea or bring some obscure yet actionable observation to the attention of the powers that be, you can be replaced.

Finding tasty tidbits in the data stream is also the only way you can maintain your own interest in the whole process. It’s the fun part. It’s also what makes the difference between a data plumber and an analyst. The plumber spends an entire career collecting, managing, and reporting on data. The analyst makes it a point to understand the goals of the organization well enough to go fathoming the depths of the data for relevant nuggets. Knowing which goals are the most valuable makes the process exciting. The analyst wonders what other treasures might be hidden in the stream, awaiting discovery.

Whoever pays the bills will keep you supplied with technology and human resources. Happy customers give the budget controller the means to do so. Only you can maintain your interest and draw valuable insights from the data.

I saw the angel in the marble and carved until I set him free.

–Michelangelo

Google Analytics Reporting Overview: User Characteristics and Behavior

Before we begin strategizing in Chapter 3, “Measurement Strategy,” and dive into implementation in Chapter 4, “Account Creation and Tracking Code Installation,” and Chapter 5, “Google Tag Manager,” this chapter will review the wide range of reports and reporting functionality provided in the Google Analytics UI (user interface).

In this chapter and throughout the book, some of the discussions become quite detailed and technical. If there are any specific points that are not immediately clear, we recommend that you make a note (mentally, digitally, or in ink) and then continue with your reading and exploration in the Google Analytics (GA) UI. Many of the concepts and functionalities that may be challenging at first will become clearer and easier as you proceed with your learning and your work in GA each day.

If you’re just starting out with GA, it might also be useful to review an online GA glossary (such as E-Nor’s “Google Analytics Visual Glossary” at <https://www.e-nor.com/blog/google-analytics/google-analytics-visual-glossary>).