

# THE DATA MIRAGE

WHY COMPANIES FAIL  
TO ACTUALLY USE THEIR DATA

RUBEN UGARTE

Ancillaries Available



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## *Why Companies Fail to Actually Use Their Data*

Ruben Ugarte

*The Data Mirage: Why Companies Fail to Actually Use Their Data*

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To my parents, who have supported most of my crazy ideas including running my own business and being an entrepreneur. Thank you and I love you.



## Description

*The Data Mirage: Why Companies Fail to Actually Use Their Data* is a business book for executives and leaders who want to unlock more insights from their data and make better decisions.

The importance of data doesn't need an introduction or a fancy pitch deck. Data plays a critical role in helping companies to better understand their users, beat out their competitors, and breakthrough their growth targets.

However, despite significant investments in their data, most organizations struggle to get much value from it. According to Forrester, only 38% of senior executives and decision-makers "have a high level of confidence in their customer insights and only 33% trust the analytics they generate from their business operations."

This reflects the real world that I have experienced. In this book, I will help readers formulate an analytics strategy that works in the real world, show them how to think about KPIs and help them tackle the problems they are bound to come across as they try to use data to make better decisions.

## Keywords

analytics; marketing strategy; growth hacking; data; KPI; dashboards; data science; SaaS; e-commerce; mobile games; marketing attribution





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# Introduction

The idea to write this book was in the back of my mind for four years. I kept seeing companies face the same challenges over and over again. These companies weren't able to find much information online or in books. Most of the content was focused on technical topics like choosing tools or how to design visually appealing reports.

The human element of data was surprisingly missing. After all, all this data that companies are drowning in is to be used by people. So why wasn't there more on how people use data or the challenges they face? My goal in this book is to help answer these questions.

You might assume that as a Data Strategist, I think data is the answer to every question. It might surprise you to know that I think companies are relying too much on data. I understand the power of it but I also respect its limitations. My work with clients has to be rooted in reality and not in a hypothetical world.

One of the first questions that I share with clients is what game are they playing? I want them to understand that there are different ways of approaching data and no single approach is the "best." Every company has a unique makeup of skills and preferences (what we might call culture) and data needs to be fit into this mold.

The most well-known data game is played by companies like Facebook and Google. They collect vast amounts of data which they then use to build better products. Better in this case means higher engagement from their users (you and me). Their approach to data is sophisticated, complex, and effective.

This is one game you could play. For these companies, data is their product and they monetize it through advertising. Everything else they do is meant to support this. Facebook has a social networking tool, Whatsapp, Instagram, and Messenger, which could be seen as "products" but they are all just ways in which Facebook collects data.

Google is the same. They offer free products like Gmail, Google Maps, Android, and Google Home. However, these products are just a way for them to collect data. If you don't believe me, let's look at recent quarterly



results for these companies. Advertising was 98 percent<sup>1</sup> of Facebook's revenue and 83 percent<sup>2</sup> of Google's revenue in 2019.

Unless you're building a similar business to Google and Facebook, this game might not be a good fit. This means that you don't need to make data the most important thing in your company. You don't need to be "data-driven" and have data guide your every decision. Instead, you could explore other games.

I believe most companies will benefit from a "data-supported culture." This means that data plays an important role in helping you make better decisions but there's also room for opinions and gut feelings. If you don't have the data on a certain question, you can still make a decision. You aren't paralyzed by the lack of evidence.

This last point is important because I have seen companies delay decisions until "all the data is in." I understand prudence but there are also limitations to this approach. Instead, companies should focus on building a data strategy that helps them achieve their goals while balancing the reality of internal capabilities.

In this book, I will take you through the entire lifecycle of a data strategy. We'll define the ideal future, get people onboard, choose the right technology, implement it, provide training, and mine the data for insights. I'll show you best practices along the way that I have learned from working with over 75+ companies across multiple industries and 5 continents. The principles are quite similar regardless of what your company offers.

Finally, I will help you increase the confidence in your data and the decisions that you're making. At the end of the day, I'm here (and clients hire me) to help them grow their businesses.

Let's start our journey.  
 Ruben Ugarte,  
 Vancouver, Canada  
 June 2020

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<sup>1</sup> <https://investor.fb.com/investor-news/press-release-details/2020/Facebook-Reports-First-Quarter-2020-Results/default.aspx>

<sup>2</sup> <https://forbes.com/sites/greatspeculations/2020/05/18/10-billion-googles-lost-advertising-revenues-due-to-the-covid-19-outbreak/#54bf0fba6f46>

## CHAPTER 1

# The Reality of Being Data Driven and Why Your Company Isn't

*The only way to make sense out of change is to plunge into it, move with it, and join the dance.*

—Alan Wilson Watts

There were dashboards everywhere,<sup>1</sup> monitoring activity across the network and showing the latest news from CNN, MSNBC, and Fox News. If anything unusual happened, you would instantly see it on one of the monitors. The company could then respond right away and prevent any serious consequences.

This was the “War Room” that Facebook had set up to monitor the U.S. midterm elections in 2018. The company has built special dashboards to monitor fake news, bots trying to spread misinformation, and nefarious actors.

This might seem over the top for Facebook but the company has been under ever-increasing pressure for its role in the 2016 U.S. presidential election. It had become public that foreign organizations were able to use Facebook to influence the outcome of that election. The “War Room” was a response to all of this but it is unclear if it will be enough.

Facebook is an extreme example of a company that uses data to make decisions. The company uses this data to show you exactly what you care about when you browse your newsfeed and hopes that you stick around for longer than necessary. Their data-driven decisions work. In 2019,

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<sup>1</sup> “Inside Facebook’s Election ‘War Room’.” *Technology News, The New York Times*, <https://nytimes.com/2018/09/19/technology/facebook-election-war-room.html> (accessed September 19, 2018).

1.62 billion people used one of its products on a daily basis<sup>2</sup> including Whatsapp, Instagram, or Messenger.

While most companies will never reach the level Facebook has, it does show the potential impact that data can have on any organization. This book is your guide to getting more value out of your data.

You don't need to go to the same level Facebook has. For them, data is their business. Everything else is mostly there to support the collection of data. For other businesses, data is meant to support your core value which could be products or services.

In this book, we'll look at everything you need to do to get data right. Let's start our journey at the beginning, by providing context.

## Let's Start at the Beginning

Every great story has a beginning and, for companies that are striving to be data driven, the beginning can feel like a failure. Every single one of my clients tells me that that they would like to go from nothing to advanced as quickly as possible. They want to skip the beginning and jump to the end of the story.

They assume (rightly so) that they aren't limited by technology. We have advanced computers that fit into our pants and self-driving cars. I'm sure we can figure out how our customers engage with our products. The latter seems simplistic in comparison to other technologies.

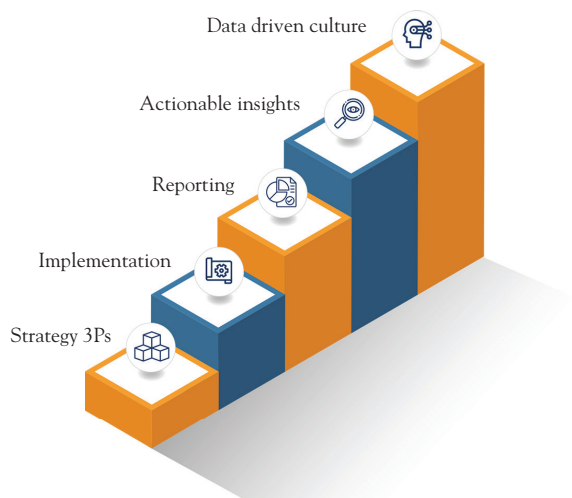
The mistake is to assume that we are talking about technical problems. In this book, we'll talk about tools, machine learning models, and other technical ideas but I don't think they are the main issues that companies need to solve.

Instead, my experience over the past five years tells me that the biggest challenges are related to people and psychology. These issues manifest when your team tells you that they don't trust the data or when they outright reject a number because "it can't be right."

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<sup>2</sup> "We Just Shared our Community Update." *Facebook Post*, Facebook, <https://facebook.com/zuck/posts/10107243286682221> (accessed on April 24, 2019).





**Figure 1.1 Data Adoption Lifecycle (DAL)**

A mentor once told me that we should always look for “cause, not blame.”<sup>3</sup> Blaming people isn’t the solution. Instead, we need to diagnose why this lack of trust exists or why it seems that some teams are unable to actually use the data they have.

This is the journey that we will take in this book. I’ll give you the best tools for your product or industry, show how advanced techniques like machine learning can help your business, and demystify data science into practical applications. This is what companies want when they reach out to me but it isn’t always what they need.

Diagnosing this gap between want and need is sometimes tricky. To help prospects understand it, I use a simple model that I call the “Data Adoption Lifecycle (DAL)” (Figure 1.1).

Everything starts with the strategy which we will cover in Chapter 2. Once we have a plan that makes sense, we can move on to the implementation which we will cover in Chapters 3 and 4. After collecting data, we can go through a reporting phase which we will cover in Chapter 5.

This is where things start to get interesting. Once a company has some reports, we need to work through all the issues to extract actionable insights. We will cover all of these in Chapters 6 to 9.

<sup>3</sup> “Debate Lesson.” Blog Post, Alan Weiss, <https://alanweiss.com/debate-lesson/> (accessed on August 1, 2019).

Finally, we can work on establishing a data-driven culture that isn't just words on a wall. We will cover this in Chapter 10.

The great thing about the DAL model is that it allows companies to be in-between stages. You may have an ok strategy but a great implementation or solid reporting but limited insights. This represents a reality where most companies are doing fine in some areas and could do better in others.

In this book, my goal is to help you get better at every stage while still focusing on driving meaningful changes in your business. That being said, we will need to walk before running and in some cases, we'll have to crawl.

## Walk before You Run (or Crawl)

We live in a culture of instant gratification that has changed how we think about the world. This isn't just something that is happening to teenagers but everyone has had their expectations warped.

Let me give you an example from my life. I live in Vancouver, Canada, where until recently (early 2020), we didn't have Uber or Lyft. To catch a cab, you either had to hail one from the street or call for one. The first option is not something I'm personally familiar with and feels inefficient. The second option could easily take upwards of 30 minutes before a taxi arrived at your house.

Fast forward to today, we now have a third option: book an Uber or Lyft. The first few times were great but when the novelty wore off, I noticed that I would get frustrated if I had to wait more than five minutes for the Uber/Lyft. My expectations on how quickly taxis should arrive changed within days of the arrival of Uber and Lyft.

This is why I understand when executives feel frustrated with their lack of data and lack of progress in this area. Why can't we just solve this problem and move on?

Unfortunately, moving groups of people in a specific direction takes time. Getting people on board, shifting priorities, and making technical changes are all time consuming. Data also suffers from a fourth limitation which is the time it takes to actually collect it.

Most of my clients have tried to get to the future but are making little progress. You may be running fast but if you're doing that on a treadmill, you won't go anywhere. This is where the DAL comes in handy. It gives us a simple map to understand what we need to tackle next and what we can worry about later.

We also need to think about rebuilding the trust in data and its purpose. I find that some of my clients have burned bridges trying to get data strategies implemented. A common example is engineering teams who have been asked repeatedly to implement tools just to see those efforts go to waste. They eventually become skeptical of any data initiatives and this is something that needs to be worked through.

That being said, companies can make great progress in 30 days or less especially if you're organized and tackle things in the right order. Before you ever ask any of your engineers to write code, you'll have a solid plan that has been thought out and tested for weaknesses. That is our goal in this book and one that we can work together on.

## Case Studies of Successful Data-Driven Organizations

To understand where we are going, we need to look at those who are already there. I want to walk you through three case studies of how companies have used to drive growth within their business.

Even though these businesses might have significantly more resources than you, remember that technical limitations are rarely the main issue and instead they have to deal with the human problems at a larger scale than yourself.

One of my favorite companies is Spotify, the music app service. I use their product every day; I'm a paying user and a huge proponent of it. They also happen to have one of the best data programs in the industry.<sup>4</sup> One of the key aspects of the product is their curated playlists which Spo-

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<sup>4</sup> "The Amazing Ways Spotify Uses Big Data, AI And Machine Learning To Drive Business Success." *Technology News, Forbes*, <https://forbes.com/sites/bernard-marr/2017/10/30/the-amazing-ways-spotify-uses-big-data-ai-and-machine-learning-to-drive-business-success/#5a0844994bd2> (accessed on October 30, 2017).

tify generates automatically based on popular songs. You have playlists of the most popular Beatles songs, relevant workout songs, and songs to put you to sleep.

Spotify uses its usage data to show every user relevant new playlists that were built to their tastes. They also release this data to artists so they can see what users are listening to and how they are discovering their music. They also have their own internal framework for how to use data to make better decisions which they call DIBB (Data-Insight-Belief-Bet).<sup>5</sup> We'll be talking more about these kinds of frameworks in Chapter 7.

Another great case study is Airbnb, the marketplace for finding and booking rooms. They have used data extensively to improve the booking process, making it easier for hosts to accept bookings and even in how they built their data science team to be gender balanced.<sup>6</sup>

They have also contributed quite a few projects to the open source world including Apache Superset, Omniduct, and Aersolve. Their data teams share their learnings on a regular basis and they have found practical ways of using machine learning to make the experience better for their users.

Data isn't just something for multibillion dollar companies like Spotify and Airbnb. Companies of all sizes can take advantage of the changes in technology and find the insights they need to grow. One of my clients, Paymark, is an example of how smaller companies can use data as a competitive advantage.

Paymark is a New Zealand-based payments provider. They are able to use data to improve their product suite such as their Insights product which provides metrics and statistics to their merchants. Based on product data, the Paymark launched a redesign of their product which simplified the overall experience for their customers.

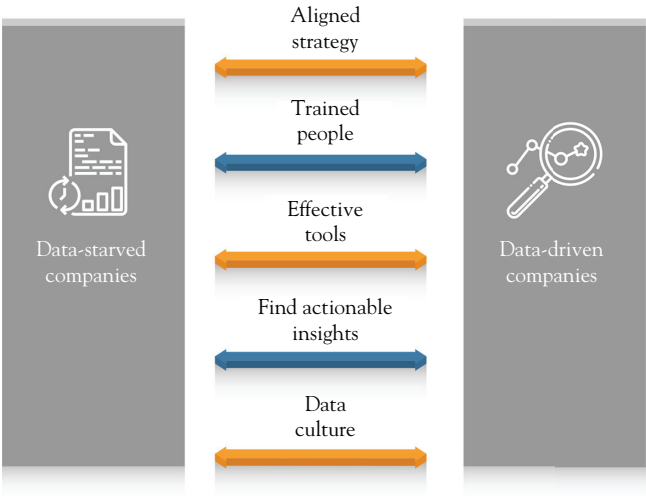
Paymark is also able to use data to provide context to real-world situations. After the Covid-19 virus started spreading to New Zealand, they were able

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<sup>5</sup> "Spotify Rhythm—how we get aligned (slides from my talk at Agile Sverige)." Blog Post, *Crisp*, <https://blog.crisp.se/2016/06/08/henrikkniberg/spotify-rhythm> (accessed on June 8, 2016).

<sup>6</sup> "How Airbnb Uses Data Science to Improve Their Product and Marketing." Blog Post, *Neil Patel*, <https://neilpatel.com/blog/how-airbnb-uses-data-science/> (accessed on January 23, 2020).





**Figure 1.2 Data Proficiency Level (DPL) from Data Starved to Data Driven**

to show how the virus was affecting spending patterns across the country.<sup>7</sup> Download more successful case studies by visiting [datamiragebook.com](http://datamiragebook.com).

Let's now look at where your company ranks when it comes to data. I created a short assessment called DPL (Data Proficiency Level) to help companies understand their strengths and weaknesses. Companies are usually strong in a few areas and could use some help in others. Figure 1.2 shows what DPL looks like.

You want to rank your company (or team) on a scale of 1 to 10 across the following categories:

- **Aligned Strategy:** Is your team and people on the same page when it comes to your strategy?
- **Trained People:** Are the people in your team fully trained on your data, tools, and processes?
- **Effective Tools:** How effective are your current technology choices?

<sup>7</sup> "Virus spreads to spending patterns." *Press Release*, Paymark, [https://img.scoop.co.nz/media/pdfs/2003/Paymark\\_\\_Monthly\\_Release\\_Mar20\\_FINAL\\_1.docx](https://img.scoop.co.nz/media/pdfs/2003/Paymark__Monthly_Release_Mar20_FINAL_1.docx) (accessed on March 3, 2020).

- **Find Actionable Insights:** How long does it take to find insights and build reports with your data?
- **Data Culture:** Does your company use data on a regular basis?

It doesn't matter where your company is right now when it comes to data. I'll help you close the gap and tackle the biggest challenges that you are facing and will come across as your company grows.

## Hiring Unicorn Talent

We can't begin to talk about strategy without understanding the role people will play in that plan. Whether you call them A-players, unicorn talent, or something else, adding the right people to the bus is important and one of the biggest concerns for my clients.

As a side note, I'm fascinated by how the word "unicorn" has become commonplace in our world. Unicorns are supposed to be something that kids think about; instead, I hear it used all the time in boardrooms.

Clients are trying to find and hire the best "unicorn" talent. These are typically people who have a strong grasp of business (marketing, sales, etc.) but are also technically trained so they are able to code or read code.

As you can imagine, these people aren't common. People tend to naturally organize themselves around interests, and business and engineering aren't a natural overlap. The education system also hasn't historically been designed to nurture these two different skill sets. While this is changing rapidly, companies are still stuck trying to operate in an ever-increasing technical world.

For my clients, I help them tackle this in two ways: externally and internally. Externally is what most companies think about when they think about hiring: creating job descriptions, interviewing folks, and onboarding them. This could be an entire book on its own. I'll talk about the roles of people you could hire in the next chapter.

In this chapter, I want to focus on the internal option. I constantly find myself working alongside incredibly smart and driven people but they feel like they can't do certain things with data because they aren't

“technical enough.” What they don’t realize is that they don’t need a CS degree to get more value out of their data.

They simply need to learn a handful of skills that will be immediately relevant to their day-to-day work. The process of teaching these skills will be covered in Chapter 6 but here are the primary skills that every data-driven individual needs.

### ***Basic HTML/CSS/Javascript***

The first skill that every data-driven individual needs is a basic understanding of the technologies that underlie digital products. These would include HTML, CSS, and Javascript at a minimum.

This doesn’t mean that these persons could work as full-time engineer but they understand how products are built at basic level and could write simple lines of code or understand code that is given to them.

This is the biggest skill gap that my clients are seeing within their teams and is a growing concern as most of the work we all do is heavily intertwined by technology. As Andreessen Horowitz, a well-known venture capitalist, said back in 2011, “software is eating the world.”<sup>8</sup>

### ***Human Behavior***

The next skill that individuals should have is a keen understanding of human behavior. Data points can tell you a story but this story will only make sense if you understand how humans typically behave.

Let’s take the chart in Figure 1.3 as an example of predictable user behavior.

We can see consistent drops in the chart which happen to correspond to Saturday and Sunday. Based on this report and an understanding of how humans worked, we could deduct that this product is primarily used during work days. If this is true, that will color any other analysis that we do because we can imagine typical persons and how they spend their work days.

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<sup>8</sup> “Why Software Is Eating the World.” Blog Post, A16Z, <https://a16z.com/2011/08/20/why-software-is-eating-the-world/> (accessed August 20, 2011).

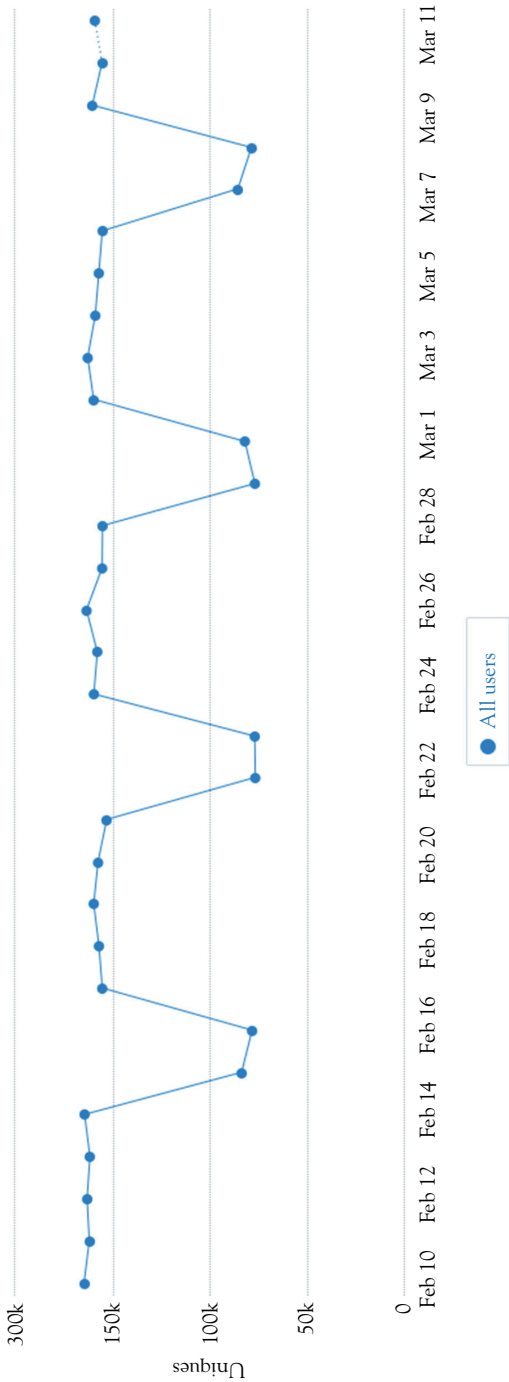


Figure 1.3 Anonymous data from a client using a tool called Amplitude<sup>9</sup>

<sup>9</sup> “Amplitude | Product Analytics for Web and Mobile.” *Homepage*, Amplitude, <https://amplitude.com/> (accessed on May 7, 2020).

## Statistics

Next, we have statistics. This can be a dreaded topic as people get transported back to university where they spent countless hours learning what seemed like useless techniques.

From a business perspective, we don't need complex statistics most of the time. Instead, we need basic skills that will affect nearly any analysis that we do such as:

- How to properly visualize and group data
- How to average, max, and min a data
- Understand statistical significance when running experiments
- Measure the spread of the data and find outliers

If you're a full-time data analyst or data scientist, you will need to go beyond the basics and we will cover more advanced requirements in Chapter 10.

## Probabilities

Another skill that all individuals should understand is the use of probabilities. This skill wasn't on my radar for a few years but it has become more important as time goes on. This skill matters because every day we are making bets on what is likely to work and most people aren't calculating the correct probabilities.

Ray Dalio, founder of Bridgewater Associates, talks about determining the expected value of any decision (or bet in our context) in his book *Principles*.<sup>10</sup> Let's imagine that you're deciding between two potential experiments which require similar efforts. Experiment 1 has a 50 percent probability of succeeding and a potential impact of \$10,000 annually. Experiment 2 has a 20 percent probability of succeeding but a potential impact of \$50,000 annually.

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<sup>10</sup> "Make your decisions as expected value calculations." *Linkedin Post, Ray Dalio*, <https://linkedin.com/pulse/make-your-decisions-expected-value-calculations-ray-dalio/> (accessed on October 31, 2018).



The expected value of experiment 1 is \$5,000 ( $\$10,000 \times 50$  percent) and experiment 2 has an expected value of \$10,000 ( $\$50,000 \times 20$  percent). Based on these numbers, it would make more sense to run experiment 2 as it has a higher expected value even though the probability of success is lower.

The skill of probability involves understanding these kinds of comparisons and also being able to quickly run the numbers on any set of decisions or experiments that your team is considering.

### ***Storytelling***

The final skill that all individuals should learn is the ability to tell stories. Data points and charts on their own tend to be boring. It's the story behind them that makes them interesting. If we go back to the chart under the human behavior section, it was the story of how people are using this product during work days that made it interesting. We could expand on this by explaining how users feel when they use the product or why their usage is so predictable.

Humans are wired for stories, and being able to tell a coherent story with your data is a critical skill. If you have ever been stuck in a boring meeting where someone is sharing numbers and the torture seems to go on forever, it was likely due to the lack of stories. We don't care about numbers despite how "good" they might be. We care about the human story behind them.

As you can imagine, finding individuals that have all these skills will be extremely rare but that's not the point. Instead, you can focus on teaching these skills through training and coaching. This is the approach that my clients have used with great success and without having to go to the end of the earth to find the "perfect" employee.

## **Do Job Titles Matter?**

Since we are talking about hiring people, we also need to briefly touch upon job titles. It seems that job titles are always changing in our industry and I constantly find myself confused as to what someone actually does. We don't just have marketers but we have growth marketers or growth hackers or growth ninjas. As a side note, I have no idea how "ninja" became a potential job title.

That being said, how much do titles matter? Do you need the latest version or should you stick with more traditional values? The answer: it depends.

Based on my experience, having modern titles tends to attract the right candidates especially if you're hiring for something that is relatively new. Marketers with a more technical background and with experience working with digital products will likely know what "growth marketer" or "demand generation specialist" means.

The caveat is that you will need to gauge how your local market thinks about titles. I find that my clients in San Francisco can be quite specific with their titles because everyone is up to date with how roles and departments are changing. My clients in other cities and countries might not be aware of these trends yet and you'll simply end up repelling potential candidates.

## Conclusion

This chapter is the pre-takeoff announcement that you hear on any flight. I need us to calibrate expectations, show you why companies struggle to be data driven, and give you a glimpse into what the best companies are doing.

We also briefly talked about people and the skills that you need to look for in your team. While we won't cover how to hire in this book, we will talk about how to use training and coaching to nurture the internal unicorn talent that your organization already has.

That being said, we can move on and start designing a strategy that can survive contact with the real world. We'll talk about getting the right people onboard, choosing KPIs and much more.

## Chapter Summary

- Technology is rarely the limited factor for companies who want to use data but people and psychology are.
- You can use DAL to determine in what areas your company performs well and what areas need help.
- Trust in data is important and something that needs to be repaired and maintained.
- You can hire externally or internally for "unicorn" talent but focus on the right skills.



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# The Data Mirage

## Why Companies Fail to Actually Use Their Data

**Ruben Ugarte**

*The Data Mirage: Why Companies Fail to Actually Use Their Data* is a business book for executives and leaders who want to unlock more insights from their data and make better decisions.

The importance of data doesn't need an introduction or a fancy pitch deck. Data plays a critical role in helping companies to better understand their users, beat out their competitors, and breakthrough their growth targets.

However, despite significant investments in their data, most organizations struggle to get much value from it. According to Forrester, only 38% of senior executives and decision-makers "have a high level of confidence in their customer insights and only 33% trust the analytics they generate from their business operations."

This reflects the real world that I have experienced. In this book, I will help readers formulate an analytics strategy that works in the real world, show them how to think about KPIs and help them tackle the problems they are bound to come across as they try to use data to make better decisions.

**Ruben Ugarte** is an expert in data and decision making. He has worked with over 75+ companies from 5 continents and all company stages to use data to make higher quality decisions. These decisions helped companies significantly boost performance, increase profitability, dramatically lower costs, and make their teams world-class. He also maintains a popular blog that has been read by over 100,000 readers. He currently resides in Vancouver, Canada.

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