



# THE ANALYST OF THE FUTURE

How to Choose Your Own Adventure for Data  
and Business Analysts



GUIDEBOOK

[www.dataiku.com](http://www.dataiku.com)



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# Introduction

Chances are, if you're reading this, you have a title like "Data Analyst," "Business Intelligence Analyst," or "Business Analyst." You might not have the same responsibilities as someone else with your title – even the person sitting next to you at work – but your basic mission is the same: generate insights for your organization, generally with a big dose of data as a starting point.

For one reason or another, you chose the mission to become an analyst, and you've succeeded. But you're not resting on your laurels. You've read stories about artificial intelligence automating and replacing jobs, and maybe your organization has purchased and rolled out new tools that make your job easier – too much easier, in fact. You may have even felt a bit of anxiety about what the future holds for analysts.

Yes, your role is going to change. It's unavoidable. **The good news is that you're in a great position to steer the evolution of your role in this new era of big and fast data. That is, you're going to be able to choose your own adventure.** With your background, your skills, and your domain expertise, you will be a key part of the future evolution. The only question is which role do you want to play? So, let's start on this adventure. OK?



In this book, we're going to take an adventure. **At the end of each section, you'll be given a choice as to which section to go to next. This way, we hope to help you evolve your analyst role based on your current skills and interests.**

Then, you can take a look at the trends shaping the world of analytics today, and you'll be set to head out on your path!



*If you want to understand the trends that are shaping the analyst role over the next few years, proceed to Page 4.*

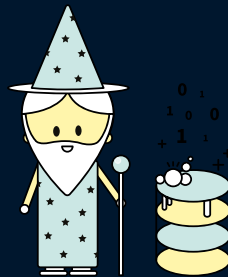




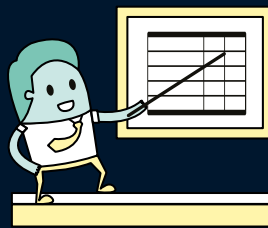
# What Type of Analyst Are You?

As we discussed earlier, analysts come in all shapes and sizes. Still, there are some general groupings we can identify, and based on which group you're in, we'll give you some tips on what your options will be in the next few years, as well as what you can do to prepare yourself for your new adventures.

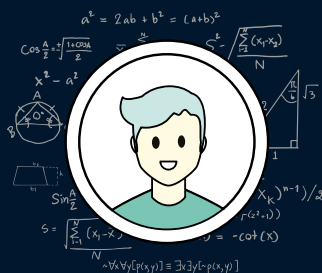
*Let's dive in and learn about the different analysts types now.*



**The Data Wizard**



**The Excel/Data Viz Guru**



**Stats and Algorithms Master**

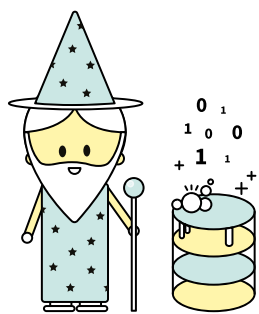


**Analyst Manager**



*Ready to see which of the analyst types best describes you?*

**Go on to Page 5 now!**



## Analyst Type 1: The Data Wizard

If you're a Data Wizard, you're an indispensable part of your organization. A lot – perhaps too much – of your time is spent accessing data for other people. You might code in SQL or SAS or another language, and your coding skills are very much in demand. You're not necessarily an IT expert, but you understand the world of databases and infrastructure better than almost all of your non-analyst colleagues.

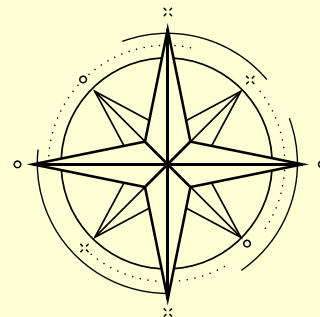
When you do get some time to work on your own projects, you shine. **You know how to connect to databases, wrangle data, clean it and prepare it, and produce reports and dashboards that are used by your team and beyond.** You are an expert at joining different datasets to create brand new insights. You have an obsession with automating as much of your recurring work as possible, so you can spend a bit more time on more interesting projects. You might use Qlikview or Tableau to create dashboards.

This is a great type of analyst to be, and the possibilities for evolution are many. Graphical user interfaces are now allowing even non-coders to create powerful and complex queries. Dashboards are beginning to include predictive analytics. And you can barely keep up with the growing demand that *almost everything* be automated.



*Does this sound like you? If so, let's get going!  
Go to **Page 10** to see if that seems like the right  
adventure for you!*

*If you aren't a Data Wizard – or only partially  
one –, move on to **Page 6** to see if the next  
analyst type better describes you.*



At my company,  
we're creating  
a roadmap to  
establish a process  
**to automate  
as much of our  
analytics as  
possible.**

I have macros in  
Access that run four  
different queries  
and then paste  
them into Excel.  
Our databases are  
huge. The most  
important thing  
is to preserve the  
data integrity."

**Tracy A.**  
**Business Analyst**  
*Philadelphia*





## Analyst Type 2: The Excel /Data Viz Guru

**If there's one place you're at home, it's in a spreadsheet with white cells created by thin horizontal and vertical lines.** You never touch your mouse because you know all the keyboard shortcuts. You're not much of a fan of pivot tables, to which you prefer VLOOKUPS or – far superior – INDEX-MATCH formulas. You make the most of named ranges, you use conditional formatting, and you might even use VBA to write macros and create forms and other advanced features.

You might be a financial analyst, building scenario models and creating reports. Or you might be a consultant, taking extracts of client data and squeezing all the insights possible out of it. Or you're just the numbers guy on a small team. You probably don't bother with Hadoop architecture, and when the data gets too big for Excel, you might even know your way around Access.

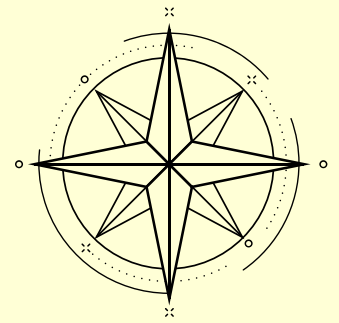
You might also belong to a subset of Excel Gurus: the Data Viz Gurus. If you're a Data Viz Guru, you're a master of Tableau or Qlikview or even just creating dashboards and charts with PowerPoint or another tool.

Excel and Data Viz Gurus play some of the most high-profile roles in the analyst universe. But there's still plenty of room for growth. First of all, today's data just doesn't fit in Excel. Excel can hold over a million rows of data – but try running a VLOOKUP on a dataset just half that large without crashing your computer. There are new tools to master, on both the analysis and visualization fronts. And there are new approaches to data to incorporate into your reports, charts, and graphs.



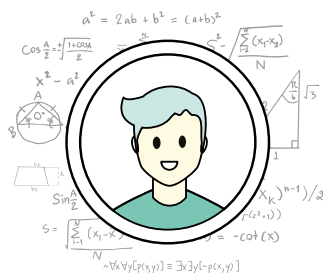
*If the description of Excel Guru fits you to a T, read both **Pages 10 and 12** – your adventure could really go either way!*

*If you aren't an Excel Guru – or only partially one –, move on to **Page 7** to see if the next analyst type better describes you.*



After many years, I'm finally bumping up against what Excel can do. I can still make Excel models look fantastic, but more and more use cases require me to have someone help me with the data before it can be dumped into Excel."

**Dan L.**  
**Consultant**  
Atlanta



## Analyst Type 3: Stats and Algorithms Master

If somebody ever said you weren't good with numbers, it was a long, long time ago. You've studied stats, so linear regression is about as familiar to you as multiplication is to most people. You know your t-stats, your confidence intervals, and your Poisson distribution. You speak in Bayesian priors, you caution people about correlation versus causation, and you know what the word heteroscedasticity means.

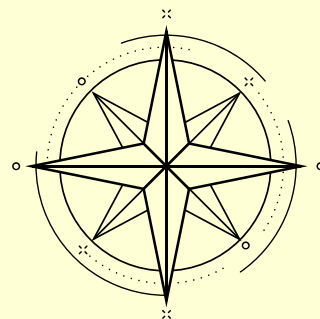
You might work in a laboratory, analyzing data generated from experiments. Or you might work in marketing, using clustering algorithms to better understand your users or customers or the market in general. You might work for a university, or a pharmaceutical company, or in fundraising for a non-profit, or in consulting, or for a consumer packaged goods company. You could work anywhere, as long as your role requires deep mathematical and statistical competence.

**If you are a Stats and Algorithms Master, you're likely to work in an organization where you are highly central to the core mission, so you are widely respected and valued.** Your work can tend towards the process-driven. Trends strongly suggest, however, that increased creativity is exactly what will be required of any Stats and Algorithms Master who wants to keep up with the world of big data. If your current role includes some predictive analytics, your future role will include even more predictive analytics. And as teams grow more collaborative, you'll be challenged to work with profiles (like IT and subject matter experts) and types of data (like social media or weblogs) that you might not be too familiar with.



*If you can see yourself in the description of the Stats and Algorithms Master, then go on to **Page 11**.*

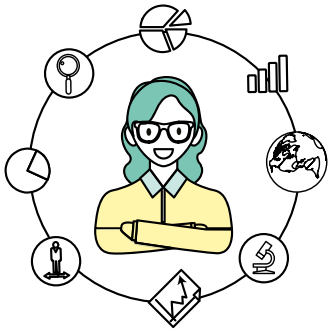
*If you aren't a Stats and Algorithms Master – or only partially one –, move on to **Page 8** to see if the last analyst type better describes you.*



I work in a highly regulated environment, so most of my statistical analysis is quite straightforward and prescribed. However, in recent years there have been more requests to apply my skills in other areas across the business -- even if it's just one-off projects."

**Ankita S.**  
**Statistician**  
London





## Analyst Type 4: Analyst Manager

You aren't brand new to analytics. You been there, and you've done that. In fact, you've done it so well that you're now leading a team of other analysts. You might be working and leading some projects on your own, but **a good portion of your week is spent doling out direction and coaching and guidance. You know not only which methodology to use to solve a problem, but also how to estimate the time and resources that will be required to get it done.** And you're never satisfied with simply solving the problem – you need to make sure that the solution is accepted, adopted, and applied by the right people so that your work has a concrete effect on your organization.

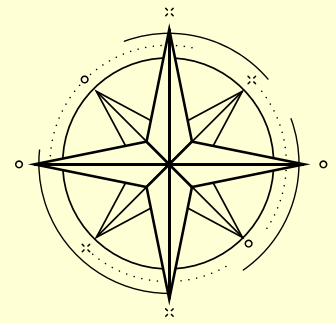
Your team might be large, or it might just be you and a colleague. You might not be an expert on every tool used by everyone on your team, but you have a knack for understanding what you need to understand in a hurry. You spend a bit more time in PowerPoint than you ever wanted to. You're constantly revising your Gantt charts. You probably started working as an analyst, but you also might be a subject matter expert who's good with numbers and taking up the challenge of leading a team of analysts.

If you're an Analyst Manager, you know it. You're a manager. You have a team. And a manager skill set will always be in demand. But the forthcoming trends present some very clear challenges to you. First of all, big data and new tools mean that it's increasingly difficult to keep up with what everyone is doing. You might have mastered common machine learning algorithms, but deep learning is a whole new level of difficulty. Secondly, the style of collaborative teams that are ascendant is decentralized – we're moving away from large teams of analysts and towards analytics teams embedded in business teams.



*If you're an Analyst Manager, then skip ahead to **Page 12**.*

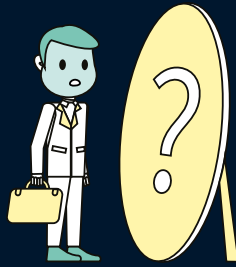
*If you aren't an Analyst Manager – or only partially one –, move on to **Page 9** to discover all of the Future Roles.*



I was the first analyst at my company, and the first people we hired for my team all knew more about analytics and coding and data science than I did. At first I was intimidated, but they really appreciated the fact that **I provided them guidance and served as a sort of buffer between them and the rest of the business.**"

**Aaron K.**  
**Director of Analytics**  
*Atlanta*





## Future Analyst Roles: Introduction

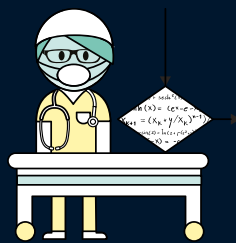
The most advanced data-driven companies are home to some of the most mythical creatures in the world: the "full-stack data scientists." These data scientists not only know how to connect to and join various data sources, clean data, build production-ready data pipelines, but they're also experts in building, evaluating, and deploying machine learning models – and they're well-versed in subject matter expertise and user experience as well!

Most of us don't have the time and the desire to become a full-stack data scientist. Given the reality that the vast majority of data specialists will be strong in some areas and not in others, **most organizations will build their analytics capabilities by combining the skills of various types of analysts and data scientists** – and the true adventure is figuring out which of these types you would like to become.

The following descriptions are of new, evolved roles. You probably won't recognize yourself fully in any of them, but you'll be able to see the skills and knowledge you'll need to require in order to grow into them.



The Data Explorer



The Data Modeler



The Data & Analytics  
Product Owner



Read on to **Page 10** to learn about the first Future Analyst role: the Data Explorer.





## Future Role 1: Data Explorer

Well, it looks like your future role might be a Data Explorer: way to go! You probably come from a background where you used some combination of Excel, Access, SQL, SAS, or Alteryx. You might code, but you might not – new graphical tools are allowing you to accomplish many tasks that once required coding.

Your new role probably requires a lot more creativity than your current role. **You need to be able to identify and connect to new data sources, merge and prepare the data, and build production-ready data pipelines.** The purpose of the products you'll be helping to build is for them to run in production, and so you'll be obsessed with automation and reproducibility. You'll be the local expert on the details of the data – when a new data source is added, you'll know what fields it contains and which new features you might be able to engineer from it. You will also have your eyes open to new open data sources that you might be able to use to enrich your internal data. And although a good portion of feature engineering will be done by the Data Modeler, you will be in charge engineering features like KPIs, which require your deep familiarity with the business implications of the data.

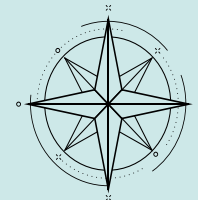
You'll still need to be familiar with machine learning algorithms, and you'll probably need to have a firm grasp on data architecture concepts, such as distributed computation.



*If Data Explorer sounds like the role for you, congratulations! You now have the map to continue your adventure!*

*Continue to **Page 13** for some final words of advice and encouragement.*

*If not, proceed to **Page 11** to learn about another role: Data Modeler.*

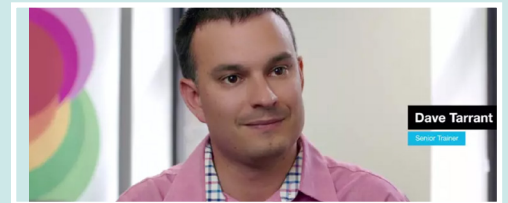


## Resources for a Data Explorer

*(focused on building pipelines, cleaning, engineering features):*

id	Full Name	Age	Salary	City	Country	Height	Weight	Eye Color
1	Robert Rodriguez	34	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
2	Michael Rodriguez	35	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
3	Michael Rodriguez	35	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
4	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
5	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
6	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
7	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
8	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
9	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
10	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
11	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
12	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
13	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
14	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
15	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
16	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
17	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
18	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
19	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown
20	Christopher Rodriguez	36	\$1,200.00	San Francisco	USA	1.80	75.00	Brown

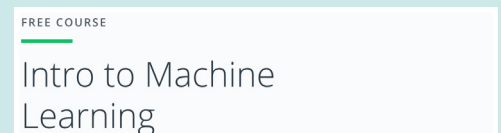
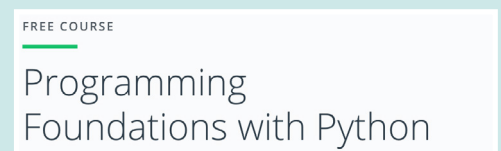
- You'll still be doing a lot of work in Excel, so why not do it a lot better after watching Trello founder Joel Spolsky's excellent and entertaining video, ["You Suck at Excel"](#).



- This [online course from the European Data Portal](#) will introduce you to the basics of data cleaning.



- This [series of blog posts](#) on data science basics we wrote here at Dataiku is really helpful on explaining Hadoop



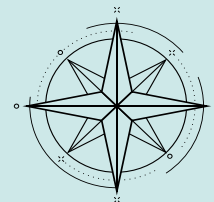
- Should you learn to code? It's not the worst idea. If you do, Python and R are the most useful for data analysts (and we slightly recommend Python to R, but both are "first class citizens", as we like to say). Try this [Udacity course on Python](#) and this other one [on machine learning](#).



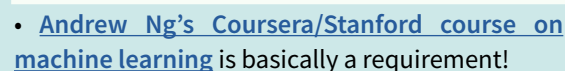


In short, you will be the go-to person on your team for all thing math, stats, and algorithms – and also for knowing how to use different types of data in the many models available to you at your fingertips.

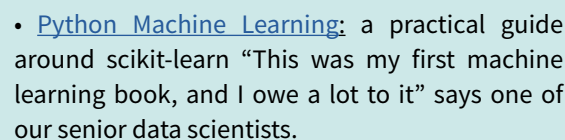
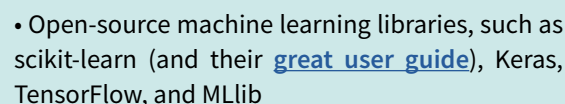
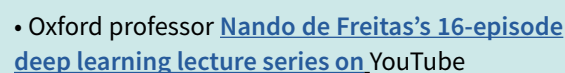
*If not, proceed to **Page 12** to learn about another role: Data Product Owner.*



(focused on machine learning models,  
putting into production):



- A more theoretical, but clear and comprehensive, textbook: [An Introduction to Statistical Learning](#) by Hastie, Tibshirani, and Friedman



- Try your first [Kaggle data science challenge!](#)



## Future Role 3: Data & Analytics Product Owner

You've had a long journey, but you just may have found what you've been looking for: the Data & Analytics Product Owner role! There are many paths that lead to this role. You might already have been a Data Explorer or a Data Modeler; you might lead an analytics team, or you might come from outside the analytics team altogether. **No matter what your background, you've established a good, well-rounded expertise in the world of data and machine learning, and coupled with your skills in management and communication, you're poised to thrive in your new role.**

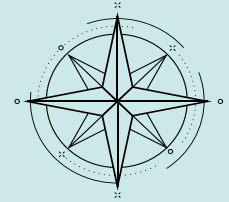
That said, you won't necessarily be managing anyone directly as a Data & Analytics Product Owner. The Data Explorer and the Data Modeler on your team will be your colleagues, and you will be supporting them by gathering requirements, prioritizing tasks, and making sure the products and services being built are working for the end users within and beyond your organization. You will have to be able to explain your data and analytics products and have deep knowledge of your user profiles. You will be the bridge between the data team and those who rely on the data team.

You will need to understand the challenges and tools available to both the Data Explorer and Data Modeler well enough to get into the weeds with them, so brush up on your architecture, stats, and machine learning algorithms. Having experience working in an Agile environment will also help you as you manage multiple projects in a fast-moving environment. You will need to apply user experience (UX) and design thinking concepts to data products and services that will no longer be used only by technical users but instead by the broader organization and even users and customers outside the organization.

You will be the person the organization relies on to ensure value comes out of all the data and analysis. It's a big job... but it's challenging and rewarding. An adventure, you might say!

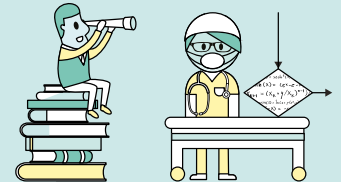


*Now you have the map to where you're going. Just one last step: some words of encouragement in **Page 13!***



### Resources for a Data Product Manager

*(focused on users, prioritization,  
business needs)*



- **First of all, you should probably familiarize yourself with all of the recommendations for the Data Explorer and the Data Modeler**

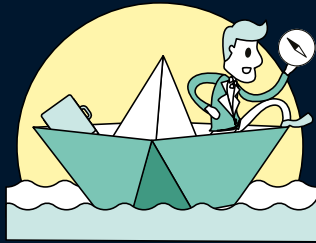


- **Specifically, if you're not already familiar with it, [Andrew Ng's Coursera/Stanford course on machine learning](#) is essential for Data Product Managers to achieve the necessarily technical knowledge base**

### THE ELEMENTS OF SCRUM



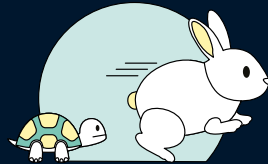
- **If you're new to management, we recommend the [Agile Manifesto](#), as well as [The Elements of Scrum](#) by Chris Sims and Hillary Louise Johnson**



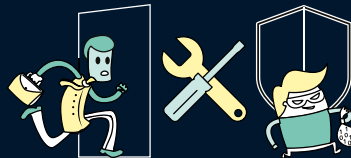
## The 4 Trends that Are Upending the Analyst World

You don't need us to tell you that the data world – and everything it touches, which is, like, everything – is changing rapidly. These trends are driving the opportunities that will fuel your career adventure over these next few years. At the heart of these trends is a massive wave of data being generated and collected by organizations worldwide.

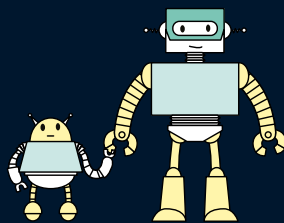
With this data we can shift our focus as analysts from explaining the past to predicting the future. And in order to do this, we need to spend less time doing the same things over and over and more time doing brand new things. And accomplishing all these changes will require us to work together differently than we do now.



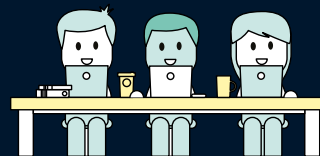
**Bigger Larger  
Faster Data**



**Predictive  
Analytics**



**Automation  
of Tasks**

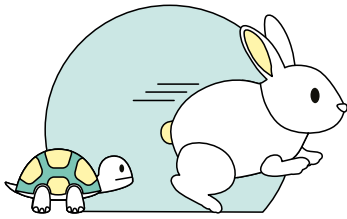


**Collaborative Teams**



*Ready to dive into the trends?  
Proceed to **Page 14!***





## Trend 1: Bigger Larger Faster Data

You've probably already heard the fact that **every two years we, as humans, are doubling the amount of data in the world**. This literally exponential growth of data is impacting analysis in some big ways:

- Big data means new infrastructure: distributed computing like Hadoop.
- Large datasets mean new tools. Excel can no longer do the work it once did. We've seen analysts using Access to cut datasets down into Excel-digestible pieces. Note: this is not a sustainable strategy! If you haven't already, expect to start working with some new tools very soon.
- We are on the cusp of the real-time data revolution. Services like Kafka will enable organizations to apply their data products in real time, which will revolutionize everything from operations to customer service. The urgency of top-notch analytics will be paramount!

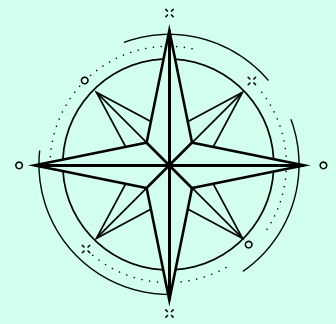
"Traditionally, business decision makers have been accustomed to waiting days, weeks or even months to have ample information before they can make a high-quality decision based on past business performance. For fast-paced organizations like Amazon, the traditional approach to decision-making is far too slow."

**Brent Dykes**

Director, Data Strategy at Domo



*Have you seen evidence of this trend in your organization or elsewhere? Either way, check out the next trend in **Page 15**.*



## Resources for Further Reading

### Big Data: Forget Volume and Variety, Focus On Velocity

#### Big Data: Forget Volume and Variety, Focus On Velocity



**Brent Dykes**, CONTRIBUTOR

[FULL BIO](#)

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##### TWEET THIS

Many types of data have a limited shelf-life where their value can erode with time—in some cases, very quickly.

For fast-paced organizations like Amazon, the traditional approach to decision-making is far too slow.

When you think of Big Data, you may imagine the billions of rows and petabytes of data many companies are struggling to manage and process on a regular basis. You may also think about the challenges of handling diverse unstructured data such as audio, video, image and text-based files coming from an ever-increasing number of sources. In terms of the [three V's of Big Data](#), the *volume* and *variety* aspects of Big Data receive the lion's share of attention. However, you should consider taking a closer look at the *velocity* dimension of Big Data—it may have a bigger impact on your business than you think.

In terms of velocity and Big Data, it's easy to fixate on the increased speed in which data is pouring into most

### 6 Best Practices for Real-Time Analytics

Smarter With **Gartner**

IT MARI

#### 1 Make Slow Operational Decisions Real-Time

Operational decisions are mostly, or entirely, structured, and are typically repeated many times. Operational decisions that go from slow to near-real-time may require new software tools, new kinds of data, new business process designs, and other changes to the business. The point of real-time analytics is to respond to conditions as they are at the moment, not to process yesterday's data or data from last month.

#### 2 Track the Results of Real-Time Decisions and Modify Rules and Analytics Frequently

Most real-time operational decisions are repeatable. For example, a scoring model used to approve credit card transactions may be developed once on historical data, and then used for evaluating real-time credit card transactions for days or weeks. It's important to track the results to make sure the models are working correctly and if necessary, modify rules and analytics frequently to get the right results for quick decision-making.

#### 3 Use System "Guard Rails" and Human Oversight to Prevent Real-Time Mistakes

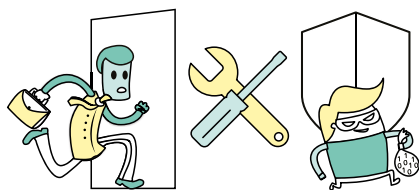
"Computers have no common sense, so they will make mistakes — sometimes dramatic and consequential mistakes," said Mr. Schulte. "System logic should be used to check other systems, and people should monitor systems periodically." A "stop" button should be incorporated, so people can do something quickly when a problem is detected. A system guard rails should be in place, sometimes in the form of "circuit breakers" that stop processing when a problem arises.

#### 4 Use Continuous Intelligence for Situation Awareness

Continuous intelligence (monitoring) systems run all day, listening to events as they occur, until they detect a threat or opportunity that requires a response by a person or system. The system proactively "pushes" an alert or other notification to a person via email, screen pop or other mechanism or it triggers an automated response.







## Trend 2: Predictive Analytics

The vast majority of time spent by the vast majority of today's analysts is on understanding data collected in the past, often in the form of reports and dashboards. Those days are coming to an end. The data and tools now available are allowing analysts to go beyond just convincing someone to do something and instead to often just do it themselves. For example:

- Using customer data to identify which customers are most likely to churn (stop being subscribers/customers) – offer them special deals automatically in order to keep them.
- Using Internet of Things (IoT) data to identify which machines in a factory are most likely to break down, and fix them before they cause a disruption to production. This is called “predictive maintenance”, and not only does it reduce downtime, it can also substantially lower insurance rates.
- Using customer behavior data to narrow down potential fraud cases for insurance companies. As the predictive model gathers more data, it becomes even better at figuring out which cases the company should focus their investigative resources on.

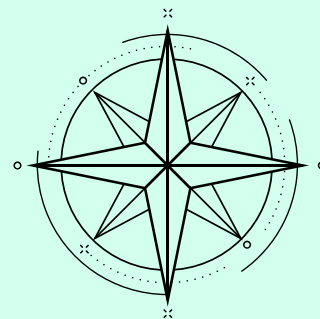
"It's key to recognize that analytics is about probabilities, not absolutes. Unlike traditional analytics, when applying predictive analytics, one doesn't know in advance what data is important. Predictive analytics determine what data is predictive of the outcome you wish to predict."

**Allison Snow**

Senior Analyst of B2B Marketing, Forrester

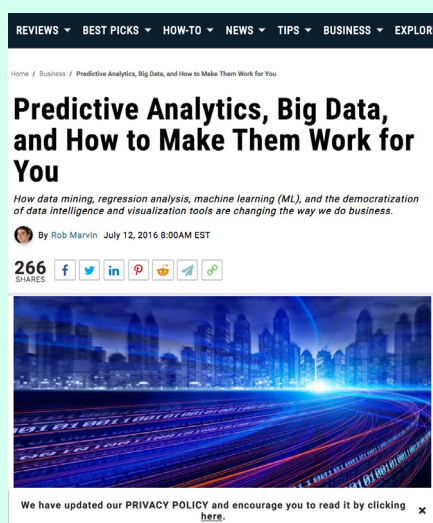


*Have you seen evidence of this trend in your organization or elsewhere? Either way, check out the next trend in **Page 16**.*

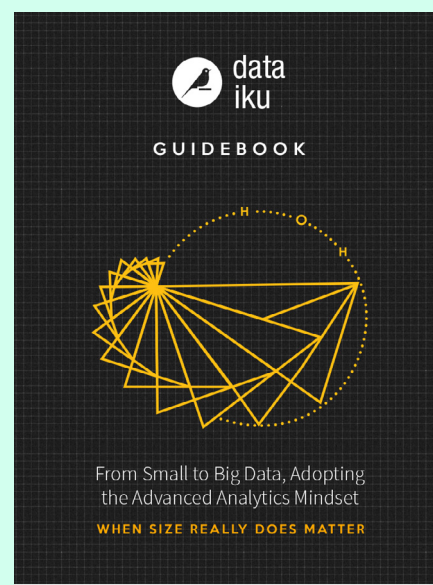


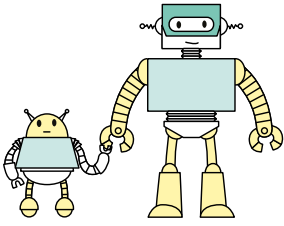
## Resources for Further Reading

### [Predictive Analytics, Big Data, and How to Make Them Work for You](#)



### [From Small To Big Data, Adopting The Advanced Analytics Mindset](#)





## Trend 3: Automation of Tasks

Once upon a time, analysts built a model in Excel, and once a month or so, they exported the model to PowerPoint and send it to (or even printed it out for) the managers who relied on regular reports. Soon, there were too many reports, so maybe they used macros in Excel to automate the creation of reports. Or maybe they were lucky enough to have a dashboard program that had some automation functionalities built in. The future promises even more than this:

- Replicable data preparation flows/recipes that can be applied and customized easily and quickly to brand new sources of data and for brand new applications.
- Models scheduled to re-run regularly and produce a set of metrics that will determine whether or not they are performing as needed.
- Meta-reports: regular reports on the state of the many models deployed in production, so that analysts can feel comfortable and in control.

“Data analysts who don't organize their transformation pipelines often end up not being able to repeat their analyses, so the advice I would give to myself is the same advice often given to traditional scientists: make your experiments repeatable!”

Mike Driscoll  
Founder & CEO at Metamarkets



*Have you seen evidence of this trend in your organization or elsewhere? Either way, check out the next trend in Page 17.*

## Resources for Further Reading

### 5 Minutes with an Analyst: Mike Driscoll of Metamarkets



#### 5 Minutes with an Analyst: Mike Driscoll of Metamarkets

By James E. Powell  
December 14, 2016

Mike Driscoll is the CEO of Metamarkets, a San Francisco-based company providing interactive analytics for programmatic marketing. Driscoll founded Metamarkets in 2010 after spending more than a decade developing data analytics solutions for online retail, life sciences, digital media, insurance, and banking. He spoke to Upside about the role of an analyst.

**Where is data analytics/data science headed in the next few years?**

In the next few years I see three key themes: real-time streaming, vertical actuation.

First, we're seeing this shift in the classes of data that data analysts work with, moving from static data sets to real-time data streams. [5 Minutes with an Analyst: Mike Driscoll of Metamarkets](#)

### Gartner Says More Than 40 Percent of Data Science Tasks Will Be Automated by 2020

**Gartner.**  
WHY GARTNER ANALYSTS RESEARCH EVENTS CONSULTING ABOUT

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**Gartner Says More Than 40 Percent of Data Science Tasks Will Be Automated by 2020**

*Analysts to Explore Trends in Data Science at Gartner Data & Analytics Summit*

More than 40 percent of data science tasks will be automated by 2020, resulting in increased productivity and broader usage of data and analytics by citizen data scientists, according to Gartner, Inc.

Gartner defines a citizen data scientist as a person who creates or generates models that use advanced analytics or predictive and prescriptive capabilities, but whose primary job function is in the field of statistics and analytics.

According to Gartner, citizen data scientists can bridge the gap between mainstream self-service analytics by business users and the advanced analytics techniques of data scientists. They are now able to perform sophisticated analysis that would previously have required more expertise, enabling them to deliver advanced analytics without having the skills that characterize data scientists.

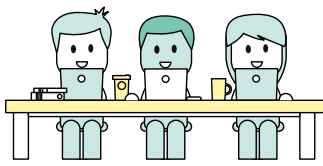
With data science continuing to emerge as a powerful differentiator across industries, almost every enterprise and analytics software platform vendor is now focused on making simplification a top goal through automation of various tasks, such as data integration and model building.

"Making data science products easier for citizen data scientists to use will increase vendors' reach into the enterprise as well as help overcome the skills gap," said Alexander Linden, research vice president at Gartner. "The key to simplification is the automation of tasks that are repetitive, manual intensive and require deep data science expertise."

Mr. Linden said the increase in automation will also lead to significant productivity improvements for data scientists. Fewer data scientists will be needed to do the same amount of work, but every advanced data science project will still require at least one or two data scientists.







## Trend 4: Collaborative teams

Many organizations have been growing their analytics capabilities by building centralized analytics teams made up of analysts, data scientists, and subject matter experts. Perhaps you're a part of one of these teams. This structure is effective because it allows members of the team to share knowledge and expertise quickly, and because it gives the team greater visibility within the organization so that the insights it generates can be propagated and used. However, as these organizations mature, they're finding that **the best practice is to embed analytics team members within individual business units**, where they face some new challenges with respect to collaboration:

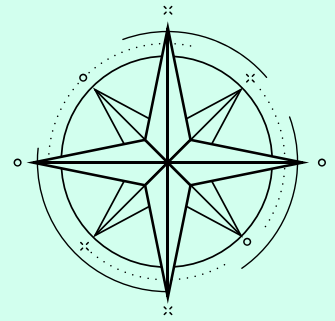
- The value of collaboration is migrating from collaboration among analytics team members (horizontal collaboration) to that among business unit team members (vertical collaboration)
- More non-technical team members are engaging with data and models, so being able to involve them in the analytics process via graphical interfaces and dashboards is essential.
- Both synchronous collaboration – when multiple people work on the same project at the same time – and asynchronous collaboration – when different people can work on and refer to the same project but at various points in time – are key to a data-driven organization.

"Most data scientists, and data science teams, have terrible practices for collaboration. The current default workflows have grown organically and are bad. You need to be really intentional to do a lot better, and this yields large gains in productivity and reducing painful frictions."

**Ben Hamner**  
Co-founder and CTO of Kaggle

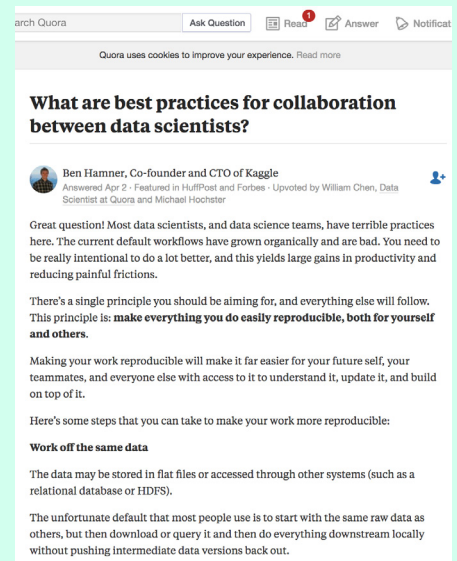


*Have you seen evidence of this trend in your organization or elsewhere? Either way, let's move on to **Page 18** to begin understanding which type of analyst you are.*

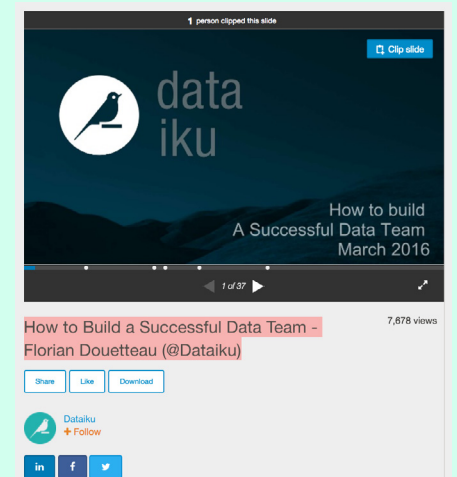


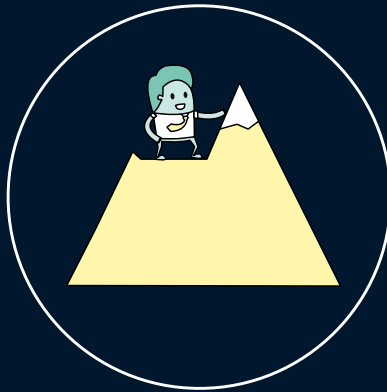
## Resources for Further Reading

### [What are best practices for collaboration between data scientists?](#)



### [How to Build a Successful Data Team - Florian Douetteau \(@Dataiku\)](#)





# Conclusion

Now you have a good idea of where you're going and how to get there. Congratulations!

Yes, the data world is changing rapidly, and chances are that in a few years you won't be doing your current job anymore.

***That's a good thing!***

Following the advice in this guidebook should help you in getting the role you want, and, along with it, a higher salary and a fancier title.

**As an analyst, you're in an enviable position.  
So let's go, onward to your next adventure!**