

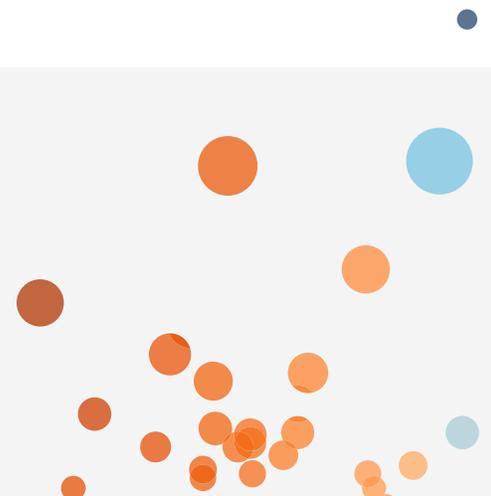
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# The Road Forward.

## A Practical Roadmap For Scaling Your Analytic Culture.

# Table of Contents

- Change Isn't Coming. It's Here.....3
- The New Way.....4
- The Old Way .....4
- The Enabler is New Technology.....5
- The Barrier is Process .....6
- Applying Agile Principles to Analytics.....8
- The Path Forward .....9
  - Fast Prototyping.....10
  - Clear Enablement Role for IT.....10
  - Workflow.....10
  - Skilled Teams.....10
  - Managing Change To Achieve An Analytic Culture.....11
  - Conclusion.....11
- Your Next Step.....12



## Change Isn't Coming. It's Here.

Anyone in the world of data knows the signs. The amount and variety of data makes the concept of one-stop data warehouses obsolete, even as many companies still struggle to build their first data warehouse. Business users, adapted to user-friendly consumer technologies, demand the ability to work directly with their data. Technologies exist that allow interactivity and manipulation of data in ways that were unimaginable just years ago.

At first, this shift seems threatening, even “out of control.” It need not be. In fact, it can reduce the crushing workload of dashboard requests so that IT can focus on large and strategic issues. This elevates IT from the role of dashboard factory to architect and steward of the company’s assets. And it frees business users from the slow, deadening cycle of change request and response. Self-service analytics can yield huge business and employee dividends while protecting data assets and providing the “best” source of truth out to the enterprise.

But even with new technologies that empower business users, companies sometimes fail in their analytics strategies. New approaches demand a new methodology. We look to proven agile development and deployment methods that move as quickly as the changing requirements. We look to a methodology that allows IT and business to work together as partners. We look to a lighter process that allows people to exercise their natural creativity and curiosity. This is Tableau Drive: a methodology that draws from agile methods and is informed by the most analytically-minded companies in the world.

## The New Way

Facebook is a company that has achieved mass adoption of analytics. At Facebook, employees try to inform every decision with data. Business people are responsible for doing analysis. IT is responsible for managing and securing data. Each team respects what the other brings to the table. Both are advancing Facebook's ability to answer questions and, in doing so, adding tremendous business value.

Namit RaiSurana, the Data Product Manager at Facebook, says there is "never a dependency on any of us to answer these questions," he said. "Users can discover for themselves" what their data has to offer. "We are opening up Tableau to the entire company," he said. Business intelligence dashboards are possible "without having to spend weeks programming."

This is all made possible by what business users don't see: the data sources that have been set up and managed by IT. This is a key concept: to make the most of a self-service analytics strategy, you need highly usable, easy to access data. The best analytics implementations are user-created dashboards running on top of IT-managed infrastructure.

## The Old Way

People within organizations have traditionally accessed data via static reports from enterprise applications and business intelligence platforms maintained by IT departments. These systems, predominantly designed and built in the 1990's, are generally heavy, complex, inflexible and expensive. As a result, business users are forced to depend on specialized resources to operate, modify and maintain these systems. This creates a divide between users seeking insight and technical specialists lacking business context. This divide limits the usefulness of these legacy systems. Because most business users lack the time and skills to bridge the divide, they simply didn't use the analytics systems provided by their companies.

As a result, many knowledge workers today rely on spreadsheets as their primary analytical tool. Much of this was a failing of technology and much of it was a failing of process.

## The Enabler is New Technology

A new generation of business intelligence products has emerged to support the inquisitive information worker in real-time. These products have streamlined, direct-interaction interfaces that simplify shifting perspective and provide immediate feedback to the user. Without specialized training, information workers can engage in interactive, iterative cycles of question-and-answer with data.

This technology has several key characteristics:

**Easy to use.** As the first generation of analytical systems proved, tools that are hard to use will simply not be adopted by most knowledge workers. Getting data into the hands of people who make decisions requires a user experience that is not only easy to use, but also fun and engaging.

**Fast.** Google engineers found that visits to a website will decrease if that website loads even 250 ms more slowly than a competitor's. "Speed matters in every context, research shows. Four out of five online users will click away if a video stalls while loading.<sup>1</sup>" The bar has risen.

**Powerful.** Personal productivity software lets people get what they want without going through an intermediary. People have experienced this with word-processing software, web creation software and recently video production software. They want the same level of power when working with data.

**Visual.** People are finding that working with data visually increases the speed and quality of data insights. As data volumes continue to increase visual representations become even more important.

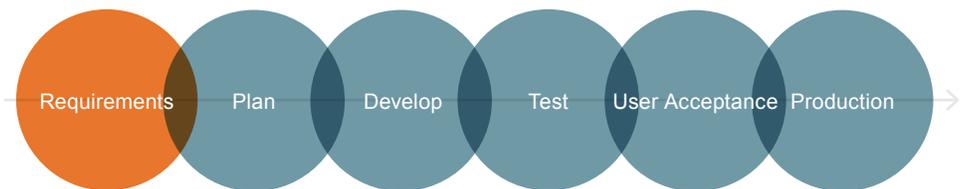
Business users know what questions to ask and how to interpret the results. But business users may not know—or care about—whether the system is scalable or secure. They begin to care when performance slows down or sensitive information is compromised. Self-service analytics works when the business users can answer business questions and IT can ensure performance, security and data integrity.

<sup>1</sup> [http://www.nytimes.com/2012/03/01/technology/impatient-web-users-flee-slow-loading-sites.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2012/03/01/technology/impatient-web-users-flee-slow-loading-sites.html?pagewanted=all&_r=0)

## The Barrier is Process

Enabling people to analyze their own data has gone from a trend to a norm. Most IT departments agree that self-service is a superior approach, and are only too happy to get out of the report-writing business. But IT does want to stay in control of critical aspects of the system such as scalability, security and governance. And it should. But traditional deployment models focused only on the role of IT and assumed a role for the business only at the very beginning, in the requirements phase. This effectively put IT in charge of any changes to the requirements or evolution in the business—and cut the business out.

Most software deployment models, including those for business intelligence, have been based on the “waterfall” or “serial build” method of software development. Let us be clear that with the benefit of time and well-known requirements, traditional serial-build or waterfall software development can work well.



Impeccably executed waterfall methodologies have ensured quality and saved lives on complex civilian and military projects. As an example, for over a decade the “Onboard Shuttle” project operated at Capability Maturity Model Level 5 with 420,000 lines of code<sup>2</sup> and an additional 1.7 million lines of Flight Software Application tools. Software controlled every aspect of flight including liftoff, booster staging, return to launch site (on abort), main engine cutoff, tank separation, on-orbit operations, entry, energy management, approach, and landing. All this was achieved with a waterfall methodology.

However, waterfall doesn’t always work.

<sup>2</sup> Bill Curtis, et al. *The Capability Maturity Model: Guidelines for Improving the Software Process*. 1994.

In 1997, Edward Yourdon wrote a book called “Death March: The Complete Software Developer’s Guide to Surviving Mission Impossible Projects,” which articulated the dread and emotional anguish associated with meeting every fast moving business targets using traditional software methodologies.

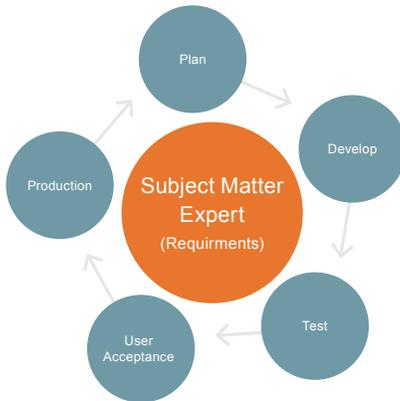
He noted that in the 1970s and 1980s, it was not uncommon for projects to take 3-5 years from initiation to full-scale deployment. By the 1990s, client-server and 4GL technologies allowed compressing substantial projects into the annual budget cycle. By the late 1990s, 7-year projects that had become 7-month projects were now hitting production in 7-weeks. Lighter methodologies that compressed the traditional cycle were created and evangelized.

These so-called agile development approaches had many commonalities. In the old model, developers and business negotiated a work agreements and until code was “complete” and a “build” was released for “user acceptance,” business agreed not to change requirements in exchange for getting everything development agreed to do.

In the new models, large projects were broken down into faster, smaller stages. Requirements were less formal and more flexible; and developers were given discretion to change or improve them. Business, development as well as documentation, testing and release teams were engaged continually and collaboratively. Working builds were be released on an ongoing basis. Faster, shorter cycles allowed faster failures and faster success but not “all-or-nothing” milestones that were often obsolete by the time they were achieved.

## Applying Agile Principles to Analytics

Agile approaches can largely be reduced to the shortening and softening of classic waterfall cycles. These cycles, or sprints, are then wrapped closely around core subject matter expertise. The guiding principles of agile methods are:



- People over processes and tools
- Working software over comprehensive documentation
- Collaboration over requirements gathering
- Responding to change over following a plan

In an agile process, there is almost no benefit to exhaustively documenting requirements. Requirements are much more flexible, and the penalty to changing them is hours or days, not months. This allows more feedback to come into the process earlier, resulting in a much more effective result.

This is the idea behind Tableau Drive. Tableau Drive is a business intelligence methodology that draws from agile methods and is informed by the most analytically-minded companies in the world. With Tableau Drive, business and IT jointly own the analytics platform. There is a division of labor that plays to the interests and strengths of each. And there is the opportunity to continuously evolve and grow, even at the scale of an enterprise deployment.

This is the opposite of the state of business intelligence at many organizations, where reports are returned after many rigid stages of development and often after their period of usefulness.

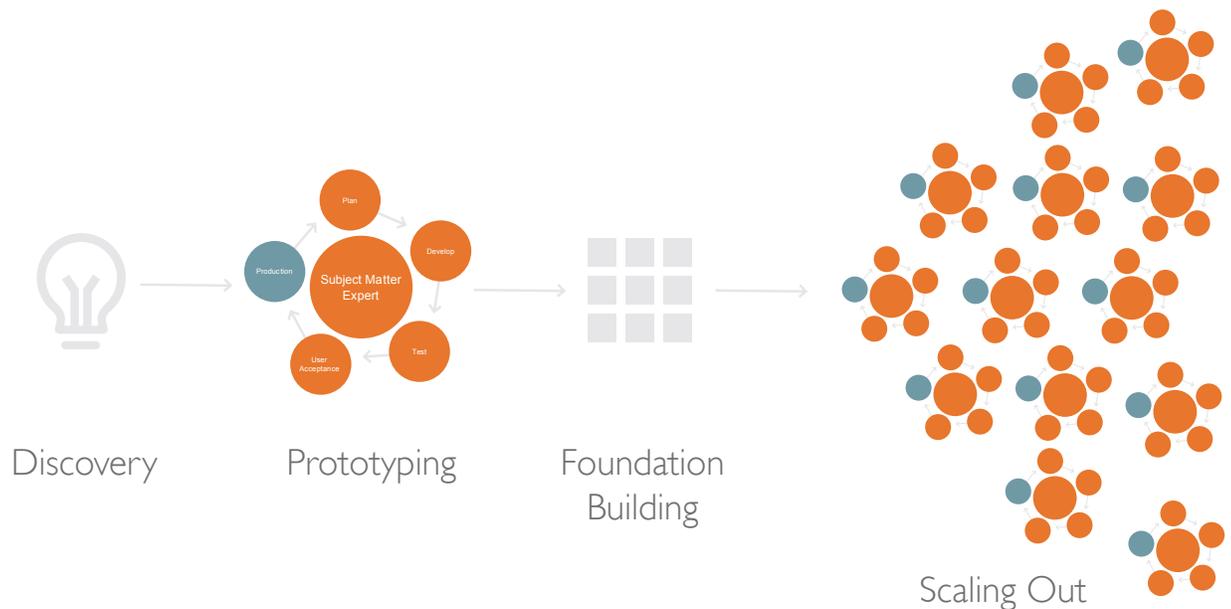
Adopting Tableau Drive brings more than better analytics. It also supports a faster and more flexible business. Think of how relationships changed once written postal mail correspondence was replaced by phone calls. How did business change when email replaced inter-departmental manila envelope mail? Projects moved faster, and inefficiencies—printing, finding envelopes, inter-office delivery—were eliminated, making it faster and easier to iterate on ideas. It reduced a great deal of drudgery for office workers and replaced it with the possibility to collaborate with co-workers in less formal, more engaging, and ultimately more productive ways. This is the promise of Tableau Drive: that a better analytics system can lead to a fundamental change in the culture of an organization.

## The Path Forward

Business users are developing the expectation, and the expertise, to analyze data on their own. The waterfall development model, which relies on hard upfront requirements and works at glacial speed, has often failed: stretched-thin IT departments can't possibly build what the business wants when the business doesn't know all the questions it will want to ask.

The Drive methodology takes the iterative process of creating analytics and puts a structure around that to support an agile enterprise deployment. In the Discovery stage, business and IT come together to describe a vision for their process. Prototyping begins immediately, with whatever data is available on hand, no matter how ugly it is. The learning from prototyping serves as an input into the foundation-building phase, when IT creates enterprise-wide data sources, training programs are developed, and business users evangelize the system—using results from prototyping. If the foundation has been built effectively, the organization is in a position to enable many new groups and users.

Tableau Drive outlines a plan to enable self-service across the enterprise. Its main tenets are:



### **Fast Prototyping**

Business users have the ability to analyze data whenever and however they can, starting immediately with whatever data is on hand. Prototyping is no longer a rogue activity that gets thrown away once the “real” project starts. It provides insight into how to create data sources and how to train new business users. And, importantly, the results of the prototyping are useful analytics products themselves.

### **Clear Enablement Role for IT**

In Tableau Drive, IT owns the infrastructure that enables self-service analytics. Production systems should be controlled by IT, which will manage them to protect data security, integrity, and the dissemination of accurate information. IT will be responsible for defining production data-sources, documenting data dictionaries, and acting as an integral part of the analytics Center of Excellence. It should be part of the discussion as early as possible, ideally in the Discovery phase, and should lead the discussion on topics such as governance.

### **Workflow**

IT should create a “sandbox” that allows business analysts to query and collaborate in small groups on their own and without supervision. IT will supervise the process whereby reports (or workbooks) are “certified” and promoted from “sandbox” to production.

### **Skilled Teams**

IT will work as part of teams with the following skill-sets:

- Understanding of the data
- Understanding of the software
- Understanding of the business

There is no right or wrong size for a team, but the test of its composition will be the ability to analyze and make sense of data in real-time. Sometimes consultants will be required to augment teams while business users are ramping up.

## Managing Change To Achieve An Analytic Culture

Fostering a culture of creativity where users are continually probing for clarity is a mission that extends well beyond the edges of a software product box. Data driven decision-making requires programmatic support throughout the organization. IT, as the ultimate owner of the analytics solution, has an interest in and ability to foster intelligent usage of analytics in a way that drives the business forward.

Ultimately, Tableau Drive puts IT in a strategic design role. IT is building the car, the business is driving it. They must work together to get ahead quickly and safely.

Tableau Drive, at its core, is an exercise in change management. If your organization has serious impediments to change—for example, a war between business departments and IT, or a fundamental aversion to providing business users with data—you should plan to address those issues early in the process.

As part of the Drive process, teams should meet and agree on a mission statement. Getting both business and IT to agree to a common mission statement is an absolute requirement of creating an analytic culture. Here is a suggestion that can be modified to fit the needs of different organizations.

### Drive Mission Statement— Example

*We are committed to running a smarter business. To do this we need to empower people throughout the organization to ask and answer their own questions. This will mean every single person can make better decisions, every day.*

*The Drive Team will start this process of change by building the data structures and reports to answer our pressing questions today. We will be agile in our approach. This may involve changing data structures, building new data structures, or performing new ETL functions to provide clean, usable data.*

*The team also has a mission to enable the organization to answer the pressing questions of tomorrow. We will do this by providing a platform for the business to explore, develop insight, and share insight with others. Using the platform, from finding data sources to publishing and sharing content, will be as self-service as possible.*

Drive provides a vision for what an analytically-enabled organization looks like, and a road to get there. It requires openness and a willingness to change.

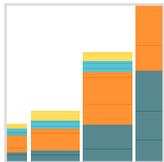
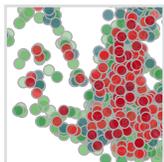
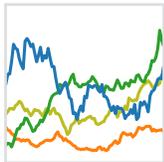
## Your Next Step

This document provides the vision for an analytics-enabled organization.

The **Drive Manual** is a comprehensive how-to document that outlines the necessary steps in an enterprise deployment of analytics. It can act as your guidebook. If your organization is ready to move forward, we recommend that document as a next step.

## About Tableau

Tableau Software helps people see and understand data. Tableau helps anyone quickly analyze, visualize and share information. More than 19,000 customer accounts get rapid results with Tableau in the office and on-the-go. And tens of thousands of people use Tableau Public to share data in their blogs and websites. See how Tableau can help you by downloading the free trial at [www.tableausoftware.com/trial](http://www.tableausoftware.com/trial).



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