

Driver's Ed



Tableau Drive:
A practical roadmap for
scaling your analytic culture



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INTRODUCTION

“Drive” is a practical roadmap for scaling your analytic culture by using Tableau as a transformational vehicle. Tableau is a disruptive technology that enables people to tap into their innate Visual Analysis process to help them see and understand their data.

Naturally, as a product company we expected Tableau’s self-service capabilities to be easily deployed and consistently implemented. We quickly came to understand that not all organizations were realizing the full benefits from driving an analytic culture with Tableau. We took a step back to understand what made some companies wildly successful and others only marginally so.

Not surprisingly, success varies largely based on an organizations implementation approach and readiness to change. We developed this “Driver’s Ed” manual by looking at the organizations that were most successful in building an analytics culture and documented the most effective and repeatable techniques.

For some organizations, the framework laid out in this Driver’s manual might be enough to move forward toward building an analytics-driven culture. However, guidance from a seasoned driver might get you to your final destination more quickly and efficiently. For navigational assistance, please contact your Tableau Sales Representative to identify a suitable consulting partner.

A TALE OF TWO ORGANIZATIONS

Historically, adoption of Tableau has been a “bottom-up” phenomenon. As this example illustrates, however, there are limits to what can be accomplished without “top-down” support.

An accomplished Tableau “Jedi”-caliber champion worked at a large packaged goods company where business intelligence was fully managed by IT and all reports were developed by IT. His own work was individually remarkable. However, at the time he lacked the executive sponsorship necessary to evangelize analysis in the organization more broadly.

The same individual moved to a software company that was committed to making data analysis ubiquitous. There, he leads a team that continually



innovates new ways to upgrade skills, evangelize, and make more data accessible. They run weekly trainings, “Viz of the week” competitions, and work closely with the IT organization.

Consider how Namit RaiSurana, the Data Product Manager at Facebook, describes their analytic culture:

There is never a dependency on any of us to answer these questions... Users can discover for themselves [what their data has to offer.] We are opening up Tableau to the entire company. [Dashboards will be possible] without having to spend weeks programming.

It’s hardly surprising that an organization full of technically savvy youngsters would decide to democratize data analysis. Nevertheless, any company can reach this goal with determination and a plan. Drive is that plan.

That packaged goods company? They’re driving now.

SUPPORTING THE CYCLE OF VISUAL ANALYSIS

Before driving too much further, let’s understand clearly that at its core, Drive is about enabling individual or team-based visual analysis.

Visual analysis – and really any analysis -- is an iterative and non-linear cycle of data acquisition, analysis, hypothesis building and re-examination. It *cannot* be short-cut or solved simply with better algorithms.

Our version of this process is called the “Cycle of Visual Analysis.”¹ Since our founding, we’ve built Tableau Software to make this process faster and easier.

¹ Please see: <http://www.tableausoftware.com/videos/zen> and <http://www.tableausoftware.com/blog/jock-mackinlay-CACM-visual-analysis-finding-telling-stories>

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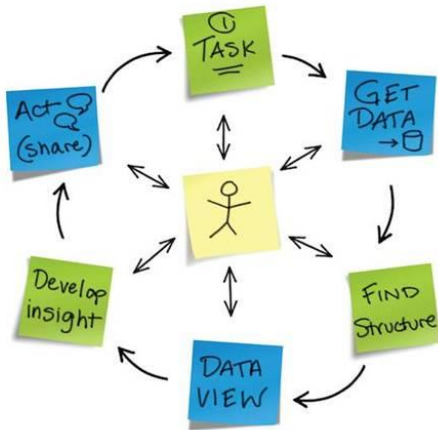


FIGURE 1: CYCLE OF VISUAL ANALYSIS

When the word “process” is used in relation to software development, one naturally thinks of “Agile.”

What is Agile? Agile is a collection of development principles that were proposed in the 1990s as a more flexible alternative to “waterfall” development, which made less sense in an era of quickly changing requirements.

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

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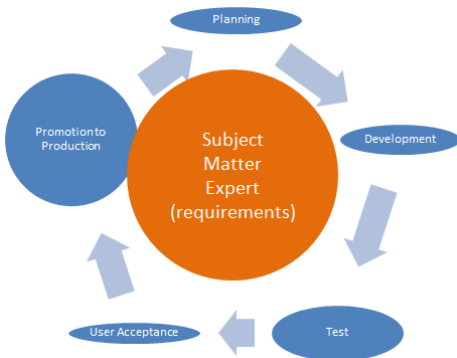


FIGURE 2: IMPROVING AGILE

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.

The “Cycle of Visual Analysis” is itself an agile process. In fact, some say that “Agile” is more suitable to what we do

with Tableau than it is to writing software.

However, the Cycle of Visual Analysis *improves* upon Agile by changing the division of labor between IT and business -- business users themselves are the “developers.” They control creative execution.

As shown in Figure 2, when business users control execution themselves, the requirements gathering, planning, development, and user-acceptance phases compress dramatically. With practice, business users can perform these activities in real-time, at the speed of thought – which not only makes report-writing much faster and more rewarding, but enables multi-person analytic collaboration.



IT AND BUSINESS ROLES AND RESPONSIBILITIES

Drive cannot succeed without full support from both IT and business leadership. Although responsibilities cross-over, we have created a primary home for each group.

IT will own the “Center of Operations,” whose focus will include:

1. Data acquisition, preparation, security, governance, and provisioning
2. Intranet wiki and community software and services
3. Tableau Server deployment, configuration, and maintenance
4. Tableau Desktop provisioning

Business will own the “Center of Evangelism,” whose focus will include:

1. Development and promotion of best practices
2. Training and support
3. A continuous campaign to promote analysis development and culture

As described previously, Drive promotes shifting ownership of creative work from IT to business. Whereas IT may continue to develop specialized workbooks for special circumstances (e.g., CEO KPI dashboard), business users will be enabled and expected to do their own analysis – either by themselves or in teams which include an experienced Tableau user.

DRIVE TEAMS

Not everyone is able to work alone and the best work typically happens in small teams. Performing real-time analysis within cross-functional teams – what we call “Drive Teams” – is one of the most efficient, effective, and culturally transformational things an organization can do. With homage to Agile software development, we call working through problems like this collaboratively, a Drive Sprint.

It is important to keep in mind that the cycle breaks down when competencies are missing. On any Drive Team you need the following skills - some people may fill two (or more) roles:



- **Business Expert:** They are deeply familiar with the questions the analytics are designed to answer and can explain the impact of acting on data insights.
- **IT & Data Steward:** Ensures systems are available and integrate with Tableau. Provisions, publishes, manages data sources to ensure data governance and manages security.
- **Experienced Tableau User (aka Expert):** They have had enough “time-on-mouse” with Tableau that they can actually build and rework visualizations *in real time*. They will also be a resource for others ramping up their Tableau skills.
- **System liaison:** If there is another critical system in play, such as Salesforce, Teradata, or an internal system, involve a person familiar with that system.

These teams will be built internally or consultants will be hired for some of the roles.

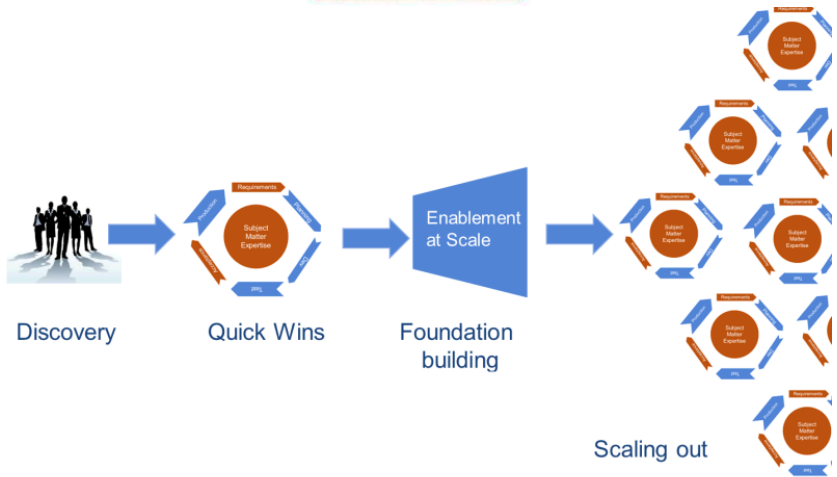
Later, we will discuss Drive Sprints more deeply. But as a rule of thumb, if you are seeing a continual cadence of Drive Teams solving business problems together – you are driving very well.

THE FOUR PHASES OF DRIVE

After covering these foundational concepts, we are ready to discuss the four phases of the Drive methodology itself: Discovery, Quick-wins, Foundation Building, and Scaling Out.

1. **Discovery:** A discovery exercise to evaluate a company’s readiness to promote analytic culture and identify a plan to close the gaps.
2. **Quick-wins:** A period where power users get the support and training necessary to become confident analytic champions and to develop “Quick-wins” that prove the value of business-led analytics and can be copied and expanded over time
3. **Foundation Building:** Putting in place the processes, organizational structures, and technical infrastructure to support broad adoption.
4. **Scale Out:** Measured roll-out to the enterprise of empowered analytics capability.

BETA



The diagram above depicts these four phases. The hexagonal spirals represent cycles of visual analysis.



PHASE I: DISCOVERY

The first stage in Drive is a classic discovery and qualification process. The key question is simply: “Can we be successful?” and if so, what is the roadmap to achieve that success. Just like embarking on a roadtrip, you want to review all of the critical elements to make sure you will arrive safely at your destination.

“AS-IS” ASSESSMENT

In order to arrive at a destination, you need to know your starting point. Institutional memory is precious and in some cases, scarce. It is quite common that a consultant will arrive on-site and have to conduct extensive interviews just to determine the history and current state of organization, current or historical strategies, software, and hardware environment. Clear documentation allows new team members and troubleshooters to begin contributing much sooner. It also makes it easier to reference a “future state” vision.

All too often we focus the current state only on the current reports, but people, strategy, and processes are equally important in driving change. Here is a checklist to help guide the current state or “as-is” assessment:

- People:
 - Organizational chart.
 - IT / Business Analytics Roles and Responsibilities
 - Skills assessment
 - Tableau capabilities
 - Data visualization best practices
 - Data source expertise.
 - Business domain expertise
- Strategy:
 - Past and current executive sponsor priorities and concerns.
 - Business Intelligence (BI) usage, history, and concerns about BI software in the organization.
 - Related and complementary initiatives.
- Technology
 - Tableau and database environments:



- Hardware and software
- Machine names and IPs
- Firewall, proxy, network boundaries
- Current state technical architecture including
 - Data warehouse
 - Extraction, Transformation and Load (ETL) Tools
 - Data quality
 - Data enrichment
 - Metadata management
- Data:
 - Entity-relationship diagrams
 - Table and field descriptions including data dictionary and lineage
 - “Meta models” from other BI tools including Cognos, Business Objects, and Microstrategy
- Reports:
 - Current Reports and Dashboards
 - Refresh frequency
 - Distribution lists
- Process
 - Current lifecycle management
 - Training modes and preferences
 - Current “center of excellence” model
 - Data governance:
 - Current group-, role-, or user-level security rules
 - Current process and approach for managing data quality
 - Storage of current, historical, summary and transactional data

FUTURE STATE VISION

The future state vision will outline the desired state at the end of the journey and at key milestones along the way. This will be a holistic plan that provides a vision for elements discussed in the “as-is” assessment around people, strategy, technology, and process. While the specifics will be unique in each organization, thematically the most successful organizations focus their vision around building a pervasive analytics culture underpinned by



business empowerment and self-reliance. The vision will balance empowerment and flexibility with data governance and quality. In the Foundation and Scaling Phases we will explore techniques that help make that vision a reality.

PHASE II: QUICK-WINS

As we looked at the most successful deployment of Tableau they had one common theme: A passionate user community that could realize value quickly by implementing Tableau even against an imperfect data set.

QUICK-WINS CANDIDATE PROJECTS

At the outset, identify power users from the lines of business who are likely to want to participate and business units that have the greatest need for analytic clarity. Existing Tableau users are prime candidates but others who are technically capable and open minded should also be considered. In some organizations there might be multiple candidate projects to choose from and in others there may be only a single candidate project opportunity. If there is no obvious candidate Quick-wins project your organization may not be ready to begin the journey.

DEFINING PROJECT SUCCESS

With more traditional BI implementations, project success is typically defined by some key deployment milestone. When the objective is to empower a culture of decision making there isn't necessarily a traditional "go-live" milestone. Success is defined by users finding important and valuable insights and packaging and disseminating those findings beautifully.

Sometimes, the output from the Quick-wins phase is a set of reports that in the past we would have considered "complete" or "done." However, in dynamic organizations with analytic cultures, the end is always another beginning from which actions and new questions may be based.

The Quick-wins phase should focus on building analytical muscle and not necessarily replicating a particular dashboard or report. Let the journey of discovery be the guiding principal for this Quick-wins phase. Take a time-boxed approach measured in days and weeks not months. Don't let the



quest for perfect data slow you down. At its core the Quick-wins phase focuses on the two foundational elements discussed at the beginning of this whitepaper – The Cycle of Visual Analysis and the Drive Team.

DRIVE SPRINT

We discussed Drive Teams earlier. We call collaborative Drive Team development activities “sprints.” During a Drive Sprint, the Drive Team will meet face-to-face to create a set of reports and dashboards in quick order.

Each Team member should:

- Have Tableau Desktop installed
- Have watched many (if not all) of the free training videos on the Tableau website
- Bring a burning business question
- Be ready to work with whatever data is readily available
- Provide input on the final (production) state of that data.

Some principles to follow are:

Work in Real Time: Tackle those initial burning business questions with Tableau in real-time and change approaches if your initial attempt stalls. Create placeholders where data is missing and take notes on the workbooks themselves for follow ups.

Favor Face-to-Face: A Drive Team works faster and more efficiently when face-to-face. During meetings, prioritize modifying and creating content rather than taking actions to do later. Collaborating over a web conferencing system is nearly as good. Avoid working in isolation, except to resolve technical challenges.

Seek Clarity: Is the current business question clear? Is the analysis effective at answering it? Do the drill-down views reach the root cause of the problem? Is more data necessary to answer the question?



Meet Frequently: A weekly cadence of producing new reports, revising reports and iterating on the data architecture is reasonable and sustainable for many teams.

Leverage Interactivity: The goal with static reports was often to put as much information on the page as possible. This leads to poor visual design, a low information communication rate, and serious performance optimization problems. Instead, put the most essential items on a page and let the rest come through in drill-down and interactive exploration. Create separate reports to answer different questions. Follow best practices for information design to help people understand more about the data.

EXPERT ASSISTANCE

It is important to have one experienced and knowledgeable Tableau expert available to help launch and sustain the initiative -- either on-staff or in a consulting capacity.

Even if novice users are able to inventively power through problems, they will not know when it is prudent to change gears or to give up on a dead-end approach. Moreover, the uncertainty and second-guessing that will occur without proper oversight will hurt project momentum and executive confidence.

WORK WITH THE DATA YOU HAVE

In the early stages, business user champions may have their own spreadsheets and “unofficial” data sources. Start analysis right away with the data that exists. Waiting for “certified” data sources will hinder momentum.

Sometimes, the data is unwieldy. In that case, Tableau provides a file-based, proprietary “fast data engine” database that is fully provisioned by simply creating an “extract.” Simply extracting and summarizing data in this way may make a large dataset useful for real-time analysis. After creating a rough workbook, be sure to consider summarizing extracts and hiding unused fields in order to improve query performance.



In addition, a new class of personal ETL tools can allow champions to overcome data pivoting, cleansing, blending, and enrichment challenges. If required, consider tools from trusted Tableau partners including Alteryx, Lavastorm, and Informatica.

DELIVER V0.6 IMMEDIATELY

In this phase, the first series of reports may be throw-away. Don't let imperfections cause paralysis! You can always swap data sources and rework workbooks at a later time using Tableau's seamless data source replacement functionality.

Be sure to leverage and learn from workbooks pre-dating the Drive initiative. What worked? What didn't work? What questions were not fully explored? Deliver v0.6 immediately - v1.0 will come later.

QUICK-WINS MILESTONE CHECKLIST

The Quick-wins phase is an important phase that allows your organization to build analytical muscle while simultaneously delivering analytical value. You will sacrifice some of the process and governance niceties in this Quick-win phase but don't fret, those will come next in the Foundation Building and Scale out phases. It is important to show incremental successes to keep the excitement and drive organizational change.

- Is there at least one person on staff who is a Tableau "expert" and feels comfortable working side-by-side with others in real-time?
- Have you produced reports for one or more business unit that are widely considered compelling and useful?
- Is there a sense that the work you have done is adding value and can be replicated?
- Have you identified initial Drive Teams in the organization?
- Is there a shared sense of excitement about visual analysis?
- Are rumors spreading about the amazing work your team is doing?

If the answer to these questions is "YES," perhaps you're ready to lay down the enablement bricks which will be the foundation for scaling out.



PHASE III: FOUNDATION BUILDING

During the Foundation Building phase, we will build the organizational and process muscle to enable and prepare for scaling out agility without sacrificing data quality and governance. Many of these techniques will be tested during the Quick-wins phase, but now is time to lay down the pavement.

CENTER OF OPERATIONS

The heart of the Tableau deployment will be a Center of Operations (CO) within the IT organization. The CO will be responsible for setting up Tableau servers as well as the intranet applications. During the Foundation Building stage, the CO will Drive the process including setting up Tableau servers, creating and documenting data sources, and the rest of the steps discussed here.

To start, the CO will setup two projects or sites on the first Tableau server. A “project” in Tableau is a collection of related workbooks, whereas a “site” is an entry point for different organizations or groups on a single server which gives the appearance of having separate servers. One will be the sandbox or “playground.” The sandbox environment was likely setup during the Quick-wins phase. The other will be the “certified” or production system. Publishing rights to the “certified” environment will be locked down. Business users will publish reports to the playground and IT or a Tableau content steward will promote them to production.

There are trade-offs to using sites versus projects. If using projects only, search results within a site may include content across projects, which may cause confusion. Sites provide content isolation at the cost of a separate publishing step. To “move” content from one site to another you would need to import and republish from the desktop client, command-line scripting, or using a 3rd party tool like Interworks *Enterprise Deployment* for Tableau. Most larger organizations prefer this step anyway for quality assurance and validation.

Analysts or other business users can begin creating reports in the sandbox immediately—before “official” data, published sources are finalized. If the reports are satisfactory, they will be promoted to the certified project.



If external user communities are envisioned, we firmly recommend setting up separate sites: internal and external. Although users may have access to multiple sites, artifacts are not shared at all between them. This makes it much less likely that internal content is accidentally shared with external audiences.

DATA SOURCES

Configuring and documenting shared Tableau data sources is on the critical path for success with Drive. Tableau data sources are conceptually similar to Business Objects universes or Cognos Framework Manager models. Although they are created in the report authoring tool (Tableau Desktop), they can be published to the server separately and shared by multiple workbooks.

When users are connecting to published data sources from Desktop or Server, credentials may be embedded in the data source, or users may be prompted for credentials (once or every time).

When building data sources it is important to understand and implement best practices. Keep these principles in mind.

Simplicity: Use the simplest and most direct data structure possible. Resist adding complexity. Err on the side of leveraging many simple models instead of one enormous semantic layer.

Security: Configure data source filters to implement group, role, and user specific security.

Speed & Governance: Users expect results quickly. If you anticipate long-running queries, consider creating well-indexed summary tables or off-loading processing to the Tableau Data Engine.

Flexibility: Pay attention to analysis that business users are doing. Their work will inform how you configure data sources. Welcome new requirements; they represent deeper understanding and unsolved problems.

Data Quality: It should be obvious from initial queries whether data quality is sufficient for widespread consumption. Be mindful of null fields, unmatched rows (in the case of non-star schemas), duplicates, and non-conformed dimensions.



End-user Data Dictionary: After creating data sources, write a short document that will help future users understand where the data came from, what information particular data fields contain, and how they might start using it. One or more simple sample reports can be helpful. In-model tool-tips are particularly useful.

EFFECTIVE USE OF EXTRACTS

For many organizations, extracts served by the Tableau Data Engine will be the primary analytics database. The benefits of using extracts are that they require no indexing or DBA resources. In large customers like eBay, new data requirements are satisfied using extracts first. If after 90 days, the extract is heavily used, DBAs consider recreating an indexed or materialized view in the primary database. For some organizations, summary data is always served from extracts while row-level detail remains in the read-write data warehouse.

OFFICE HOURS

During the Quick-wins stage we were building business unit champions and helping them find critical insights. During the foundation stage we are expanding that community to a broader group of business unit champions.

One proven technique for scheduling collaboration is to setup regular “Office Hours” in a conference room. For example, at regularly scheduled times, a Tableau expert could be available to train and assist with workbook creation. Office Hours can also be implemented virtually using personal video conferencing.

The server should already be setup so that work-product can be published quickly and celebrated with business unit leadership and executive sponsors.

Office Hours itself is a prototype for the kinds of technical-business collaborations that we hope to scale out. While office hours may be a technique used during the Quick-win phase, we also consider it a foundational practice to growing and scaling out capabilities.

BEST PRACTICES/TEMPLATES/STYLE GUIDE

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Tableau is a free-form environment that invites user creativity. That creativity flows more freely when compelling examples and clear guidelines are provided. It is no surprise that tidiness and appearance inspire confidence not only from brand managers and executives, but everyone.

Work with Tableau experts and your marketing team to create compelling and functional workbooks that will be used as templates for subsequent work. Consider including:

- Jump page (Title Page) with navigation links
- Two or more dashboards with 3-4 views per dashboard.
- Built-in instructions for the user through your titles and sub-titles.
- Icon library saved in “My Shapes” which includes common buttons like Help, Home, Back, Forward, etc.
- Use of Help and Home buttons (separate sheets with shapes) with instructional tool-tips.
- Drill through links to other pages.
- An attractive, branded look and feel.



Remember these key points:

Simplicity: Put the most essential items on a page and let the rest come through in drill-down. Do not build monolithic dashboards. Guide users through multiple click-paths with thoughtful contextual cues and logical drill-downs. This strategy not only generates much better performance but also makes the analysis more usable.

Perfect is never perfect: Preferences and aesthetics change over time. Create a high quality sample but do not over-deliberate. Think, but don't become paralyzed.

Beauty: By copying and pasting worksheets into a template workbook, inexperienced end-users should be on their way to creating beautiful work. Give them a leg up!



Teamwork: The most durable model is one that is appreciated widely. You may want to create several template “looks” and vote on which will be the final one.



CENTER OF EVANGELISM

Whereas the Center of Operations (CO) will build the IT infrastructure for success, the Center of Evangelism (CE) will build the human infrastructure for success.

The Center of Evangelism may start as an individual effort but will grow to include key stakeholders both from IT and the business units.

Take time during Foundation Building to develop and test creative ideas to engage business users. Also prepare Tableau champions for spending more time ramping up others.

ENABLEMENT PLATFORM

While early champions continue to work on report development, IT should finalize the resources that business users will need to work effectively and comfortably with the new technology.

These materials will grow to include:

- Resource directory
- Data platform
- Data Server data sources documentation
- Data dictionary documentation
- The provisioning process for getting users up and running on Tableau
- Training collateral and calendar
- Establishing key governance processes and “How-to” documents or videos on:
 - Getting a Tableau license
 - Finding Tableau enablement and training materials
 - Publishing to the “playground” environment
 - Requesting workbook promotion to the “certified” environment
 - Starting a new report using the style guide as a template
 - Common formatting and layout techniques
 - Tips and tricks from internal users
 - Personal data source promotion to centralized data assets
- Links to Tableau training collateral



- Prototype workbooks with narratives around usage and effectiveness
- Well-documented templates and style guides
- Analysis discussion forums
- Internal data analysis blog

These materials will be made available on the corporate intranet.

A good first step is to setup an internal email alias for personal support and troubleshooting. This would be supported by Center of Evangelism staff and/or outside consultants.

RAMP UP CENTER OF EVANGELISM

During this phase the Center of Evangelism will launch a variety of programs to celebrate the work of Drive Team members. Many of these techniques are piloted in the Quick-wins phase.

The recognition of activity and achievement cannot be over emphasized.

Internal Show and Tell: The best content comes out of sharing and the feedback from sharing.

Competition: Recognition, no matter how small, is motivating. Give out prizes for simplicity, for Guided Analytics, for creativity, and even for obscure insight.

Games: Make analysis fun by turning it into a treasure hunt for insight. Draw in new people who may complement or replace those currently in the Drive Team.

Tableau Days: Try to schedule a “Tableau Day” every month. Use it as an opportunity to introduce new features in the software or in your program. Invite speakers from inside the company as well as from Tableau.

External Stimulus: Participate in Tableau User Groups in your area, act as a reference for another organization, submit answers in forums, do a Case Study for Tableau’s web site and/or be a guest presenter at a Tableau conference.



FOUNDATION BUILDING MILESTONE CHECKLIST

The systems you setup during the Foundation Building phase need to be rock-solid and usable before “launching” scale out.

- Are roles and responsibilities clearly defined for Center of Evangelism, Center of Operations, and Drive team members generally?
- Have you assigned someone to maintain and update the intranet wiki, training calendar, and all other documentation/resources?
- Have you identified who will be responsible for staffing the internal troubleshooting email account and do you have a process for escalating issues?
- Do you have a process for collecting, reviewing, and implementing suggestions for improvement?
- Have you publicized the existence of enablement resources to the user community, either through your company intranet or an email distribution list?
- Have you clearly defined end-user and IT workflows for promoting content from the playground to certified environment?
- How are you going to measure/monitor usage of the resources you have provided?
- Do you have a process for governing data quality and data definitions?
- Do users understand how to get their content promoted to the certified server for company-wide visibility?
- Finally and most importantly, sit side-by-side with a business user and login to the project intranet the way they would. Is the experience smooth? Are their questions answered?

During this phase you are launching a collection of services that will make business users feel comfortable with new technology. At places like Facebook, the threshold for meeting achieving this goal may be quite low. It’s probably quite high at your organization. The perceived risk will be inverse to the breadth and depth of the foundation you have laid.



PHASE IV: SCALE OUT

Once you get the processes and organizational structure in place, it is time to start rolling out to a broader community. With the right processes, organizational support, key activities – you have paved the way for broader adoption. Scale Out is the main event- the time when all of that preparation and planning pays off.

Before beginning Scale Out, click through your Drive intranet and ask yourself whether a new end-user would find the information and support they need to be successful.

Once you're satisfied, nominate a "test" user and sit with them while they do the same. Ask them to watch some introductory training videos and then help build a report using the style guide. See how long it takes before they become discouraged or get stuck. Email the support alias you have setup. See who replies and how long it takes.

During Quick-wins and Foundation Building, everything you do will be appreciated. In the Scale Out phase, a lack of readiness will come at high cost. Ordinary users are easily discouraged, fearful of new tools, and impatient for results.

Prepare for the worst before hoping for the best.

BUSINESS UNIT KICK OFF MEETINGS

We do not advise scaling out across the organization all at once. Instead, start with the business units with the most enthusiastic Tableau champions and strongest prototypes.

Hold a kickoff meeting to introduce the Tableau champions and present the intranet resources built up in the prior phase.

Start with a "Wow!" demo created during prototyping. Introduce the author and let he or she discuss the need, inspiration and process for creating the workbook. Talk about how that workbook is used today and the impact it is having on the business.

Take the time to articulate the company's vision for democratizing visual analysis. Discuss the history of BI in your organization and the huge investment IT has made to allow self-service.



Talk about the benefits of self-service from a personal as well as corporate perspective. Be inclusive of *all* who can contribute to analysis. Set high expectations for broad-based participation, teamwork, and opportunities for individual recognition.

Before wrapping up the kickoff meeting we suggest including a one-hour, hands-on-the-keyboard follow-along training using company data. While somebody leads the training, stronger Tableau users should circulate and help the beginners.

Wrap up by announcing formal training options and a calendar of events which includes Drive Team activities. We'll discuss what that means next.

Business users should leave the kickoff meeting with a strong conviction that *they can do this*.

SCALE OUT MILESTONE CHECKLIST

- Do you have the right business units to scale out?
- Do key business unit stake-holders see the value of improving their analytic culture?
- Have you created qualitative and quantitative metrics for measuring the success of the Drive initiative?
- Have they accepted their mission and are they clear on what that is?
- How will you determine when it's time to add other business units to the scale out?
- Is the Center of Evangelism meeting its mission?

Your "scale out" strategy will be continually improving. Benchmark and measure adoption. Learn from work with the first business unit and fix problems before moving on to the second.



CONCLUSION

Drive is a top-down and bottom-up deployment methodology that should be quite familiar for IT organizations accustomed to rolling out enterprise software. Perhaps it is a bit “counter-cultural” in the BI world where “self-service” software was also assumed to “self-adopt” which is only partly true.

In this guide we discussed critical, foundational concepts to the Drive methodology:

- Cycle of Visual Analysis
- Drive Teams

We then discussed the four phases of Drive: Discovery, Quick-wins, Foundation Building, and Scaling Out.

1. **Discovery:** A qualification exercise to ascertain whether sufficient technical, business, and political resources can be marshalled. The number one reason why change initiatives fail is because important people aren’t enthusiastically on-board.
2. **Quick-wins:** A period where power users get the support and training necessary to become confident analytic champions and to develop “quick wins” that prove the value of business-led analytics and can be copied and expanded over time.
3. **Foundation Building:** Putting in place the processes, organizational structures, and technical infrastructure to support broad adoption.
4. **Scale Out:** Measured roll-out to the enterprise of empowered analytics capability .

As you can imagine, Drive is a never-ending journey. There will always be more problems to analyze, more employees to teach, more subject areas to master. In so doing, you will most certainly strengthen your analytic culture and make a healthier, more engaging workplace for all.



GLOSSARY

Agile – A software development philosophy characterized by shorter development cycles, cross-functional teams, continuous testing, and frequent, shippable builds.

Analytical Culture – Practices, programs, and capabilities that encourage and empower smart people to think critically, work collaboratively, understand the business and make informed decisions.

Business User – Non-IT personnel who seeks insight from their data.

Center of Evangelism – A working group of enthusiasts who provide encouragement, quality assurance, and support for software usage and adoption.

Center of Operations – An IT working group that sets up, maintains, and documents Tableau servers and data sources.

Cycle of Visual Analysis – An iterative analytics development process that describes Tableau workbook development. The cycle includes: task, get data, find structure, data view, develop insight, and act/share.

Data Expert – Person who deeply understands how to use and query shared data.

Drive Sprint – A continuous Drive Team development session. Adapted from Agile time-boxed development periods.

Drive Team – A collection of people representing three competencies -- data, Tableau skills, and business -- who comfortably work together in real-time. Adapted from Agile cross-functional teams.

Experimenting – Completely ad hoc workbook development.

Jedi – Highly skilled and experienced Tableau user.

Office Hours – Recurring, on premise or remote analysis facilitation by a Tableau Jedi.

Prototyping – High quality visual analysis work performed by subject matter experts and Tableau evangelists with guidance from experienced Tableau users.



Stakeholders – People that sponsor, develop, or are impacted by self-service reporting.

Subject Matter Expert – Specialist within a particular area of business

Tableau Drive – A deployment *meta*-process for enabling and encouraging non-technical users to more fully participate in analytic culture.

Waterfall – A sequential software development process used for highly complex systems with static requirements and clear roles separation.

WE WANT TO HEAR FROM YOU!

Drive is a living and breathing methodology hewn from our own and our customers' implementation experiences. Perhaps you have found something we didn't consider before. Please send us your ideas and suggestions at: drivefeedback@tableausoftware.com

Additional videos, white-papers, manuals, and case studies can be found on the Tableau website at: <http://www.tableausoftware.com/Drive>



APPENDICES

APPENDIX I: ADDITIONAL TRAINING TOPICS

Tableau is committed to your success. We offer classes and can recommend partners who can help with training and consulting. In addition, there are many resources online that you can use.

Visual Analysis

- Tableau Desktop
- Visual Analysis Concepts
- Database Concepts
- Data Preparation using ETL (Specify tool of choice)
- Advanced Tableau
- Drive Facilitation
- Managing Center of Tableau Excellence

Data Preparation

- Building Tableau Data Sources
 - Create understandable logical models
 - Define and implement row-level security
 - Cleansing
 - Advanced analytics
 - Warehouse design
 - Enrichment

IT & Operations

- Managing Center of Tableau Operations
- Tableau Configuration & Administration
 - Security integration
 - Application integration
 - High availability
 - Auditing
 - Sizing and scaling
- Co-existence with other BI tools
- Lifecycle Management for Tableau Reports



APPENDIX II: THE JOURNEY TO MASTERY

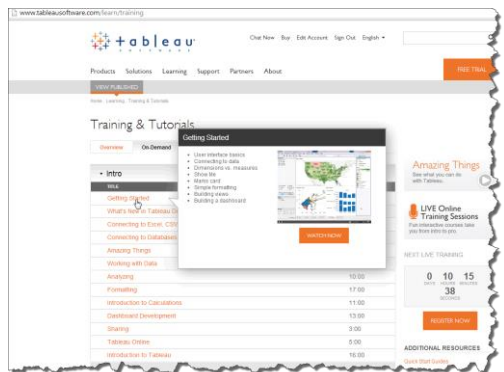
Some users pickup Tableau for the first time with substantive academic and practical experience with data analysis and infographics development. Others are starting completely from scratch. The highest level of proficiency comes with mastery of three disciplines:

- *Tool usage*: how to use Tableau
- *Data*: general numeracy and knowledge of databases, SQL, and statistics.
- *Visualization*: the art of communicating visual information effectively

Within each discipline and across them, there are communities, courses, and a lifetime of exciting learning opportunities. You will find the pathway toward mastery in one or all of these areas extremely rewarding. Best of all, the learning journey can be completely free.

ONLINE TABLEAU TRAINING

Tableau would not be a fast-growing software company without the incredibly high quality training offered for free on its website. The “core” curriculum includes over 10 hours wisdom served up in bite-sized, 3-30 minute pearls.



<http://www.tableausoftware.com/learn/training>

Tableau updates this incredible resource with every major release and it should be your first stop on the journey to Tableau mastery.

MIND-BENDING WEBINARS



For deeper, more involved talks on visual design, consider these recorded webinars at: <http://www.tableausoftware.com/learn/webinars>

There are more than 100 talks. Here are some to get help you work smarter and more thoughtfully, immediately:

The Zen of Visual Analysis

By Chris Stolte, *Founder and CTO, Tableau Software*

Excellent primer on what Tableau was designed to do:

<http://www.tableausoftware.com/videos/zen>

Making Flow Happen: Dashboards that Persuade, Inform, and Engage

By Jeff Pettiross, *User Experience Designer, Tableau Software*

Great discussion on effective dashboards from Tableau's head of UX, and a very interesting Q&A:

<http://www.tableausoftware.com/learn/webinars/making-flow-happen-dashboards-persuade-inform-and-engage>

Visual Story Telling in the Age of Data

By Robert Kosara, *Research Scientist, Visual Analysis*

Shows examples and techniques for allowing the audience to work *less hard* to understand what you're trying to communicate. It leverages the (then prototype) story points feature released in 8.2.

<http://www.tableausoftware.com/learn/webinars/visual-storytelling-age-data>

7 Lessons from the Pioneers of Data Visualization

By Ben Jones, *Tableau Public Product Marketing Manager*

Draws key insights from pioneering visualizations from the pre-computing era.

<http://www.tableausoftware.com/learn/webinars/7-lessons-pioneers-data-visualization>

Executive Dashboards: How to Measure Marketing's Performance – and Impact



By Elissa Fink, *Tableau Chief Marketing Officer*

Quick presentation that shows the thought process behind and executive dashboard.

<http://www.tableausoftware.com/learn/webinars/executive-dashboards-how-to-measure-marketings-performance-and-impact>

There are also a myriad of fascinating courses now offered online for low or no cost. Searching with keywords such as “data analysis,” “statistics,” “databases,” “statistics,” “communication,” and “visualization” turned up more than 20 free courses at Coursera and EdX alone.

In the history of humanity, this is a fantastic time to have an itch to learn something new. As Mihaly Csíkszentmihályi, originator of “flow” has found, knowledge workers who are no longer foraging for the next meal, simply *need* to learn new things and to challenge themselves.

TABLEAU-CENTRIC BLOGS

Tableau software has had a powerful impact on the lives of many elite data analysts. Many of them “give back” through data analysis blogs -- personal or organizational. In these blogs you will find creative solutions to hard problems, examples of work you may wish to adapt, and brilliant insights from diverse experiences.

The following blogs are listed in no alphabetical order:²

- <http://bensullins.com/category/technology/tableau-technology/>
- <http://blog.instantcognition.com/>
- <http://dotlinking.blogspot.com/>
- <http://drawingwithnumbers.artisart.org/>
- <http://frenchflairdata.blogspot.co.uk/>
- <http://interworks.co.uk/blog/> (data studio blog)
- <http://pharma-bi.com/>
- <http://ryrobes.com/>
- <http://tableaulove.tumblr.com/>
- <http://tabpub.blogspot.com/>

² We apologize in advance if we’ve left your data blog off the list! Please recommend it to us!



- <http://vizcandy.blogspot.com/>
- <http://vizwiz.blogspot.com>
- <http://www.alansmitheepresents.org/>
- http://www.clearlyandsimply.com/clearly_and_simply/
- <http://www.datadrivenconsulting.com/blog/>
- <http://www.datarevelations.com/category/blog>
- <https://www.interworks.com/blog>

TABLEAU PUBLIC

Finally, do not forget Tableau Public (<http://public.tableausoftware.com>). Tableau Public is a free viz hosting service that is today the world's largest repository of online analytics. The online Gallery is a great starting point and anything you find on "public" can be downloaded and reverse engineered as a learning exercise.



+ab|eau