TABLEAU CONFERENCE 2021

SESSION-BY-SESSION RECAP

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Contents

Tableau Conference 2021 Opening Keynote

11/9/2021 12:00pm – 1:15pm

Description: The ability to collect, analyze, and understand data at a new scale has created incredible opportunities as well as new challenges. In our opening keynote, hear from President and CEO, Mark Nelson, Chief Product Officer, Francois Ajenstat, and special guests about the data opportunity ahead and new innovations that are shaping how the world sees, understands, and acts on data.

Presenting:

- Mark Nelson, President and CEO at Tableau
- Francois Ajenstat, CPO at Tableau
- Amy Sprangers, CRO at Seattle Seahawks
- Shena Ashley, VP, Nonprofits and Philanthropy at The Urban Institute
- Kate Wright, Senior VP, Product Development at Tableau
- Richard Tibbetts, VP Product Management at Tableau
- Poornima Farrar, Director, Product Management at Tableau
- Katie Maertens, Senior Manager, Product Management at Tableau

Notes:

- Data analysis used to be a tool for the few; it's now a skill for everyone.
    - Tableau job postings increased by 18% in Q2 2021 alone.
    - Since the start of 2020, 160,000+ attending Tableau User Groups.
    - Tableau Public has 4.5 million vizzes, 4.5 billion total views.

- If you're not data driven, you won't be around in 20 years. The long-term payoff for having a data culture is simply existence. Building and maintaining a data culture is absolutely critical to remain agile and get to the outcomes you want to achieve.

- Customer Stories from Jaguar Land Rover and Seattle Seahawks.

- Tableau Economy built on 3 pillars: Tableau Community, Tableau Partners, and Tableau Platform; Tableau is investing in all 3 pillars:
    - For Tableau Community, they're investing in providing training opportunities, Data Leadership Collaborative; continuing to enhance Tableau Public.
    - For Tableau Partners, they're revamping Tableau Partnership Network, making it easier for customers to find partners and solutions.
    - For Tableau Platform, they're continuing to bring new features.

- The Do No Harm Guide from The Urban Institute is a resource meant to inform and guide companies with regards to equity, inclusion, and empathy for those that are behind the data points. Suggestions:
    - We need to disaggregate as much as possible to avoid hiding or skewing data points.
    - If we can't disaggregate, more fully label to better represent those that are in the aggregation.
    - We also need to avoid overly complicated vizzes that place a bias against those that aren't as data savvy.

- Upcoming innovations:

    - Collaborative and Accessible Analytics: We work in an all-digital world, yet too often people have to leave their people to access tools, leave their tools to return to their people, etc. The answer: make data part of the team. Cue Tableau and Slack:
        - Alerts in Slack: Tableau can proactively come to the user with alerts.
        - "Explain Data" expands alerts with more context.
        - Discover insights directly in the flow by easily searching Tableau within Slack for more data and more vizzes.
        - "Ask Data" for Slack allows the user to ask questions without a specific viz in mind.

    - Business Science: You want to not only understand what happened, but why, and what will happen next. But not everyone has access to AI. It's complex, slow, expensive. Business Science brings data science techniques to people who have the business context. This brings faster decision making and increased transparency. Cue Einstein Discovery in Tableau:
        - Model Builder – easily add predictive analytics without leaving Tableau; you supply the variable that you want to optimize, and Tableau scans data to select variables that may have biggest impact; also allows the user the flexibility to select their own variables. You can then collaborate and communicate on models and deploy them to your environment.
        - Scenario Planning – compare alternatives in a what-if analysis; not only can you suggest scenarios, but you can ask Tableau to provide scenarios and projected outcomes.

    - Trusted Data at Scale: How do you find the data you need to answer the questions you have? How can you trust the data? And how can you clean the data so that everyone can access it? Tableau Prep has helped clean your data, Tableau Prep Conductor has helped scale your approach, and Tableau Catalog has provided the lineage you need. Improvements are coming:
        - Virtual connections within Tableau Catalog– centrally managed access points for data; the one place to define data standards and policies; centralized row level security enabled.

- External meta data from Alation, Informatica, etc. can now be imported into Tableau ecosystem.
- Tableau Prep Extensions – flexibility and reusability of extensions within Tableau Prep to capitalize on work of other users.
- Share Tableau Prep flows within Tableau Public.

- **Analytics Everywhere**: Every process is a data process; every app is an analytics app; how to connect all 3 pillars of Tableau Economy?
  - "Hire me" tag has been built within Tableau Public to help promote portfolio.
  - Tableau Exchange is a place to discover and share; extensions and connectors are already shared in the gallery now; soon to be added are data sets and accelerators.
    - Accelerators are pre-developed dashboards designed with best practices in mind to answer common questions.
  - Improvements to the Tableau Platform:
    - Identity and Access capabilities to use 3rd party tools to manage users
    - Embedded Web Authoring
    - Embedded Ask Data
    - Tableau Actions – custom actions to enable sharing, emailing, escalating, etc.; will make observing data to taking actions even easier

Data for the Win, Episode 1: Allyson Felix and Jessica Long

11/9/2021 1:15pm – 2:00pm

Description: The intersection of data in sports is years in the making. Athletes and coaches use data to prevent injuries, monitor efficiency and recovery, and improve performance. Analyzing patterns over time can provide the insight needed to shift tiny details that make the difference between winning and losing. Get inspired in this two-part series, as Tableau CMO, Jackie Yeaney, talks with Team USA's Allyson Felix and Jessica Long about how they use "Data for the Win".

Presenting:

- Jackie Yeaney, Executive VP, Marketing at Tableau
- Allyson Felix, Most Decorated US Track and Field Olympic Athlete, Advocate at Team USA
- Jessica Long, 16x US Paralympic swimming Gold Medalist at Team USA

Notes:

- Salesforce has partnered with Team USA and Team Great Britain in order to allow fans to get to know the Olympic and Paralympic teams in an all-new way.

- How data has impacted Allyson's and Jessica's sporting lives:
    - Everything comes down to tenths, if not hundredths, of seconds.
    - Data provides them with information on which adjustments have resulted in the best results and helps provide a vision for adjustments needed in the future.
    - They use reaction times, interval times, biomechanical body tracking, nutrition, sleep, mental health, etc. for a wholistic approach to training.

- Importance of reconnecting to your purpose, especially during these trying times.

Data, Ethics, and Leadership in 2021

11/9/2021 2:00pm – 2:30pm

Description: From the Oval Office to the kitchen table, data shapes the policies and systems impacting everyday experiences of people across the country. And the reality is: not all data is perfect. Organizations' approaches to the ethical collection, analysis, and communication of data can have a profound impact on how policies and programs take shape. The Urban Institute's President, Sarah Rosen Wartell joins Tableau CEO, Mark Nelson for a conversation about using data to educate presidents, inform decision-makers, and the need to build an ethical data culture within one of the U.S.'s most influential research institutes.

Presenting:

- Mark Nelson, President and CEO at Tableau
- Sarah Rosen Wartell, President at The Urban Institute

Notes:

- Core mission of The Urban Institute:
  - To bring data and evidence to inform conversation on equity and equality
  - To use data science to gain insight that can lead to better decisions by our policy makers

- Definition of data ethics:
  - A set of principles we use when we gather and protect information
  - Data reflects people in communities, many of whom haven't been asked for permission, or haven't been treated fairly; are they protected from harms caused by the collection of this data?

- Common problems:
  - Data may be collected by a society that has discrimination baked in.
    - If decisions are made off of this biased data, you can actually strengthen the discrimination.
    - Example: high income populations are the ones using the 311 helpline, and that data has been used to drive where resources were being used.
  - Not everyone is reflected in the data.
    - So often, racial information is simplified to white, black, and 'other'.
    - 40+ different countries represented in AAPI
    - Disaggregating this data is a challenge we must undertake.
  - The asset of data collection isn't being returned to those from which it was collected, and is instead solely passed to policy makers

- To combat the problem of not everyone being reflected in the data, what can be done?

  - Example: The IRS doesn't collect information about race, so we don't really understand if policies create benefits or burdens that affect one race more than another. The data isn't disaggregated enough.
  - Additional data collection can be burden, so Urban is looking into imputation, where certain characteristics are used to assume racial information. It's really important to do this carefully in order to ensure the process is as ethical as possible. Synthetic data sets and processes are being developed to test these models.

- Another important key is to interrogate the core drivers and ask those second level questions to get to the why's behind possible biases.

- Privacy also requires more attention. It's important for people to understand that technology has allowed us to use data in important ways that can help us to solve problems, but if we're not careful, it can create problems too. People may be making decisions on products, policies, etc. and leave identities vulnerable to be stolen, and there are certain classifications of people who are more vulnerable.

- Ethical data standards, examples of equity tools, etc. available at The Urban Institute.

AI and Augmented Analytics Make Your Crystal Ball Obsolete

11/9/2021 2:30pm – 3:00pm

Description: Learn how Tableau is bringing AI, augmented analytics, and deeper insight to everyday data practitioners, and see what's on the roadmap for the rest of the year.

Presenting:

- Jaimie Hwang, Product Marketing, AI at Tableau

Notes:

- There's a disconnect between the marketer / business user with business context and no data analysis skills and the data scientist with data analysis skills but no business context.

- 83% of CEOs expect to be working in a data-driven organization, but only 33% of employees are comfortable using data analytics to support their decisions.

- Giving business users the tools to do the job themselves minimizes the number of assumptions, interpretations, etc. and allows for quicker, more direct insight.

- AI is a team sport – the stronger and deeper your bench is with people who are equipped to make data-driven solutions, the more successful you'll find your business. It's all about better and faster decision making across the organization. Tableau views data-driven roles as following into 3 different buckets, with a data-focused solution for each:

    - Augmented Analytics for the business user and analyst
        - Confidently get answers and uncover insights faster with ML, statistics, natural language, and smart data prep.
        - This bucket has the potential to reach the largest number of users.

    - Business Science for the advanced analyst
        - Make smarter decisions faster with guided model building, scenario planning, optimization, and other data science techniques – all with clicks, not code.

    - Data Science for the data scientist
        - Operationalize and scale machine learning and statistical models using R, Python, SageMaker, and more.
        - Highly specialized, this bucket tends to include the fewest users.

- Augmented Analytics means integrated, invisible AI via automated modeling, natural language queries, etc. that empowers a wider business audience to confidently use data, lowers the barrier with relevant insights in context, and delivers where people work.

    - Current product features that accomplish this:
        - Ask Data for Viewers
            - Natural language processing that assists users who are asking questions of the data
        - Explain Data for Viewers
            - Give suggestions as to why certain data points are reading the way they are
            - Same screen experience without navigating away from visualization
        - Ask Data for Salesforce
        - Einstein Discovery for Reports

    - Confident business users make smarter decisions:
        - From reliant on IT / analysts for data insights; surface level analysis and insights; gut-based ad hoc decisions…
        - … To increased data confidence; deeper analysis and discoveries; data-driven, repeatable decisions

- Business Science brings data science to more people. It's simple and fast with clicks not code, it's trusted with transparent and explainable AI, and it's Integrated where you work.

    - It's more than just AutoML. It's also…
        - Decision Engineering
        - Time-series Forecasting
        - Survey Analysis
        - Simulation
        - Split Test Analysis

    - First product under the Business Science suite of tools: Einstein Discovery in Tableau
        - Simple and Intuitive No-Code ML; quickly build predictions on any data
        - Trusted and Transparent AI; real-time model monitoring, bias protections, ability to explain, no black box
        - Leverage Predictions in 3 Ways:
            - Dashboard Extension
            - Analytics Extension
            - Tableau Prep

- Data Science integrations scale bespoke models and analyses that leverage data science investments, include flexible integration and visualization, and are governed and secure via authenticated connections and granular configurations in Tableau.

  - Analytics Integrations include:
    - R integration
    - TabPy
    - SageMaker
    - Analytics Extensions APO

- Delivery and Acceleration of AI and Business Science in Tableau – a timeline

  - In 2021
    - Einstein Discovery in Tableau (2021.1)
    - Ask Data for Viewers (2021.2)
    - Explain Data for Viewers (2021.2)
    - Einstein Discovery for Reports (Summer 2021)
    - Ask Data for Salesforce (Pilot)

  - In 2022
    - Scenario Planning
    - Native Model Authoring
    - Bring Your Own Model
    - Dynamic Dataframe Extensions
    - Data Change Radar

  - In 2023+
    - Constrained Optimization
    - Data Science Notebooks

Yes, You Can Have Data Governance and Self-Service Analytics

11/9/2021 3:00pm – 3:30pm

Description: Good data governance doesn't restrict self-service analytics in the enterprise. Explore the principles of data governance and hear lessons learned from Healthfirst and Vanderbilt University.

Presenting:

- Eric Howard, Manager of Data Analytics at Vanderbilt University Medical Center (VUMC)
- Lisa Ginther Huh, IT Audience Marketing Strategist at Tableau
- Amanda Monzon, Senior App Developer at Healthfirst

Notes:

- Good data governance doesn't have to restrict self-service analytics.

- Strategy to establish data governance framework at Healthfirst:
    - Started with Tableau's Blueprint model and compared to their current systems.
    - Tackled Tableau Server first, setting it up with best practices in mind.
    - Promoted the use of Tableau Server.
    - Showcased best practices with on-demand trainings and in-person user groups.
    - Data modeling focused on minimal data points while also providing minimal data access.

- Data governance at VUMC:
    - All governance dictated by HIPAA.
    - They incorporated role-based security policies.
    - Their analytics team focuses primarily on faculty performance and getting them an accurate picture of everything they're doing with patient care, education, and research.
    - Data is very siloed, but Tableau has helped bridge those divides by blending several different data sources in one shared space.

- Healthfirst migrating to cloud computing via AWS:
    - The first lesson learned was the importance of a governance model in a decentralized environment; it was absolutely critical in order to build sense of trust with the data.
    - It was really important to set up monitoring of systems since management was no longer done on-prem.
    - They placed a large importance on an onboarding plan, so users understand their governance policies.
    - Having the Tableau Catalog component has made it even easier to teach Tableau users about their data.

- Change management at Healthfirst:
    - All centered on getting people access to data SMEs and Tableau SMEs.
    - They've been able to migrate people over from old reporting platforms to the Tableau platform because of these training environments that help transition users.

- VUMC role-based access, security model, and how that helps optimize their practice:
    - Unfortunately, they don't have access to Tableau Catalog, so lineage is not as much of a focus. VUMC's focus is on data on-demand and the time saved compared to using other reporting tools.
    - Reduces clicks to insight from 20 to 3, when combined with subscription feature, has been instrumental in creating a data culture.

- What one thing you would suggest that the audience should do tomorrow?
    - Consider both IT and business users when setting up a governance structure.
    - Provide automated processes that drive excitement and accelerate adoption.
    - Showcase how an agile process can make big impacts.
    - You must be vigilant in validating all levels of data as being accurate is critical; but it's also important to be adventurous and allow users to view their data in new ways; go to Tableau Public for inspiration.

- What advice do you have for someone just starting the process of building a data driven culture?
    - Look at your current landscape of data literacy and define your organizational goals
    - Start small and get some big wins to build momentum.
    - Be easy to find, be easy to use
    - Deliver answers fast, be accurate to build trust, and be adventurous to inspire creativity.

- Good data governance is about knowing your user, knowing your data, and leveraging those to maximize the value you can provide.

- Governance structures can be set up with both speed and security in mind.

The Leadership Lens for Scaling Tableau and Building Data Culture

11/9/2021 3:30pm – 4:00pm

Description: The most successful data cultures have support from leadership. Learn how VMware took a collaborative approach to scaling self-service analytics with Tableau, bringing together leaders from a variety of functions to help everyone in the organization succeed with data.

Presenting:

- Jenn Day, VP, Customer Strategy and Programs at Tableau
- Seema Singhai, Head of Analytics and Insights at VMWare

Notes:

- How did Seema build a data culture at VMWare?
    - First, she decided to focus on business value and think of customer satisfaction as being part of that, instead of being more important.
        - She asked teams to document business priorities and asked them to map current work against those priorities
        - She found a lot of eye-opening information; she found mismatches, work that wasn't tied to a business value at all, business values that were being completely ignored, etc.
        - These findings started changing the way key conversations happened.
    - Second, she started connecting the dots across groups within the organization, arming leaders with a core set of analytical processes; she found the sharing of these solutions across teams tended to garner trust for her and her group.
    - They changed the dynamic and changed the conversation; they began connecting in a different way by focusing on being true business partners instead of simply the provider of individual reports.

- Approaches to make sure adoption is happening.
    - When you're looking at success of what you delivered, the first thing people often do is to look at the adoption number. But this doesn't answer if people are using the data to drive decisions.
    - The expectation has to be set from leadership to communicate and stick to the tool; establish and support your champions.
    - Embed the analytical tool in the business process; if it's not off to the side, it becomes much more natural for them to use what you've created.
    - Ensure what they've created is answering the questions being asked; send out the tool with a set of questions to kickstart conversations.

- Pitfalls or things that she would have done differently?
    - Vision is moving very quickly, and needs are moving quickly; as this is all happening, it's important to balance the following:
        - Invest in the team and where the team's skills need to grow.
        - Keep a continuous eye on strategy and adapt when necessary.
        - Remain engaged in partner relationships.

- Key takeaways:
    - Elevate the conversation about how analytics can be used to provide value that really changes a business.
    - Remember that we're not in the business to create fun facts; if you can't answer why you're creating the tool, what business value is created, etc., it doesn't need built.

Empower IT with AI Innovation

11/9/2021 4:00pm – 4:30pm

Description: Help your IT leaders fuel the growth of your enterprise by empowering them with AI innovation from Tableau. In this episode, Booz Allen Hamilton and SunLife share pragmatic yet powerful analytics solutions.

Presenting:

- Marisa Santisi, Director Analytics Office at Booz Allen Hamilton
- Olivia Nix, Senior Manager, Product Marketing at Tableau
- Anders Stjarne, AVP, Business Analytics at Sun Life

Notes:

- Tableau's Approach to AI
    - Scaling AI across an organization is becoming critical – 84% of C-suite executives believe they must leverage AI to achieve growth objectives; that requires scaling.
        - Drive intentional AI.
        - Invest in data foundation.
        - AI as a team sport – better, faster decision making across the organization
            - Augmented Analytics for the business user and analyst
                - Faster time to insight with integrated AI.
                - Empower a wider business audience to confidently use data.
                - Lower the barrier with relevant insights in context.
                - Delivered where people work.
                - New features: ask data for viewers, explain data for viewers, ask data for Salesforce
            - Data Science for the data scientist
                - Scale bespoke models and analyses.
                - Leverage data science investments.
                - flexible integration and visualization.
                - Governed and secure.
                - Analytics integrations: R integration, TabPy, SageMaker, Analytics Extensions API

- Between the aforementioned two is Business Science for the advanced analyst
    - Bring data science to more people.
    - Simple and fast with clicks not code.
    - Trusted with transparent and explainable AI.
    - Integrated where you work.
    - More than AutoML: decision engineering, time-series simulation, survey analysis

- Bringing it to Life

    - 3 issues currently being experienced by Booz Allen Hamilton:
        - Data and governance
            - AI techniques to look into how they discover and tag data.
        - Move to the cloud
            - Absolute necessity right now.
            - A move from an on-prem data warehouse to the cloud will accelerate their ability to answer questions quickly.
        - Provide an easier platform from which their users can engage with their data.

    - How Sun Life teams prepare data for specific business scenarios:
        - No one-size-fits-all approach, nor do they use highly specific, one-time solutions for each business case.
        - Instead, they utilize a user-centered design approach that allows them to build solutions for similar groups of people asking similar types of questions.
            - Simple, easy, and quick visualization solutions for fast personas.
            - True self-service solutions, using extensions and curated data sources for flexible personas.

    - How to optimize the process of collaboration:
        - Best tool for Booz Allen Hamilton is an analytics hub that they've built, a one-stop shop for all things analytics; it contains a variety of sources, models, etc., all powered through Tableau, all filtered based on the user.

    - Security best practices at Sun Life:
        - 3 main factors that have helped them obtain a well-governed implementation
            - Strong network of people to see through implementation, including architects
            - Well-defined Center of Excellence for Tableau users
            - Well-established collection of best practices for data governance has allowed them to create modular solutions that cater to multiple groups without large amounts of technical debt, enabling them to be able to evolve with changing technologies.

Live Q&A: AI and Augmented Analytics Make Your Crystal Ball Obsolete

11/9/2021 4:30pm – 5:00pm

Description: Would you like more from the AI and Augmented Analytics Make Your Crystal Ball Obsolete What's New and Next session? Join us in this Live Q&A session with subject matter experts on hand to answer your questions and go deeper into the session topics.

Presenting:

- Jaimie Hwang, Product Marketing, AI at Tableau
- Sam Priddy, Senior Audience Marketing Manager at Tableau
- Peter Evans, Distinguished Solution Engineer at Tableau

Notes:

- Difference between automation and augmentation?
    - Automation is all about the capability of the machine to *replace* the human; creates a repeatable process with increased accuracy. Requires a lot of trust as the human is no longer driving.
    - Augmentation is all about taking a human's capability and *enhancing* it or aiding a human that doesn't have the time to complete a task either due to lack of context, lack of statistical skillset, or lack of time.
    - Augmentation also incorporates natural language processing.

- Entity search impacting guided analytics?
    - Guided analytics helps a user to understand the best path to the result they want to get to; entity search is a major contributor to that, because it allows different interpretations of a word, or a portion of a word, that the user types.
    - Example: typing in "Col" could be a search for 'Colorado' or 'Color'.
    - Entity search provides guard rails to keep you from going too far off the path.

- Any example of AI in use in higher education?
    - Modeling what a candidate might be looking for in a university, and vice versa, for screening purposes.
    - Diversity statistics vs quotas can be pulled with AI tools within Tableau.

- Natural language processing used to validate freeform text?
    - Analysis of a second field using the value of a first isn't currently supported in NLP platform, as NLP primarily used now to bring back a visualization given a user's business question.

- What do our Tableau developers need to know to incorporate 'Explain Data' into existing dashboards?
    - With any linear regression model, depending on data size and number of variables, you really need to look at the expected use of 'Explain Data' and restrict the number of fields to only those that will have a direct impact on the mark that will be viewed.
    - For those that don't have a direct impact, you don't need to necessarily remove them from the data set, you'll just need to turn them off in the 'Explain Data' interface.
    - The more data you have, or the more distinct values you have in a given field, the longer the analysis is going to take.

- Can you use Einstein Discovery in Tableau?
    - Business Science launched in 2021, allowing users to extend ML-powered recommendations directly in visualizations.
    - Great information available on Tableau's business science page. For pricing, reach out to a sales rep.

- For users that aren't skilled in stats, what are the risks of using AI features like 'Explain Data'?
    - There are an awful lot of tools out there that will provide an "insight". But these tools have had no real input from the subject area experts of that data. With "Explain Data" and "Ask Data", these tools provide the means for you, the domain expert, to make the guided insight you need.
    - Ethical, transparent AI that puts the human experience and knowledge upfront is critical.

Tableau Conference 2021 Iron Viz

11/10/2021 12:00pm – 1:00pm

Description: Three finalists take the stage to compete for bragging rights (and $10,000 cash) in the world's largest data visualization competition. Watch, learn, cheer with other Data Rockstars around the globe.

Presenting:

- Andy Cotgreave, Technical Evangelist at Tableau
- Keshia Rose, Product Management Senior Manager at Tableau
- Tanushree Rohera, Solution Engineer at Tableau
- Esther Aller, Customer Solutions Senior Analyst at Tableau
- Laura Granek, Solution Engineer at Tableau
- Pradeep Kumar G, Senior Tableau Consultant at Beinex Solutions LLC
- Lisa Trescott, Research Analyst at MiraCosta College
- Samuel Parsons, Senior Analytics Consultant at Biztory
- Christian Felix, Solution Engineer at Tableau
- Jock Mackinlay, Technical Fellow at Tableau
- Taha Ebrahimi, Director, Tableau Public at Tableau
- Larissa Amoroso, Senior Director, Tableau Community at Tableau

Notes:

- "If Data Could Talk" episodes will detail all 3 builds in much more detail.

- Interesting design decisions to stash away for future use:
    - Use logarithmic scales when dealing with ranked data of 1000's of data points.
    - Nested Hide/Show buttons released in 2021.2
    - On dark / black backgrounds, pink and aqua really stand out amongst gray data points
    - Use reference line labels as a hack to make data labels really pop

Next Gen Analytics for Your New Normal

11/10/2021 1:00pm – 1:30pm

Description: Learn how to incorporate Tableau's cutting-edge features into your next dashboard and walk away with best practices on how to replicate a similar model for your organization.

Presenting:

- Anthony Young, Senior Manager, Solution Engineering at Tableau
- Kate Durst, Epidemiologist at Tennessee Department of Health
- Ross Paulson, Principal Solution Engineer at Tableau
- Chantilly Jaggernauth, VP, Data Visualization & Training at Lovelytics
- Miranda Smith, Epidemioloigst at TDH

Notes:

- Chantilly helping organizations improve diversity through analytics; there's far more than just an overall diversity number that can be used in a diversity dashboard:
    - Her demo:
        - She looks at overall diversity, gender, and POC using donut charts using 3 distinct, dominant colors, 3 washed out versions of the same colors to represent remaining population; no need for 6 distinct colors
        - Then drills down to same metric across job levels via bar charts
        - Then introduces 3 additional metrics disaggregated by the same 6 sub-groups (diverse vs. non-diverse, female vs. males, POC vs. non-POC)
            - Satisfaction levels
            - Tenure
            - Performance

- Ross connected Tableau Prep directly to some Google Sheet data for United Airlines Fleet Status data:
    - Uses Fontawesome.com for fonts, and ensures fonts are consistent across dashboards
    - Places KPIs at top for maximum attention
    - Often uses a bar to separate title / KPI bar from rest of dashboard
    - The best analysts give credit to where they get their data, supply versions of tableau desktop, etc.
    - Build your brand by embracing cool repeatable elements, include social media info, etc.

- Tips from Kate and Miranda at Tennessee Department of Health:
    - Keep your designs simple

- Design for everyone in your community; make sure high and low levels of data literacy can understand; add context notes that use plain language to assist
- Use colors that work for all

From Data Driven to Insight Led

11/10/2021 1:30pm – 2:00pm

Description: When the almost impossible becomes commonplace, learn how government leaders are modernizing their data management practices and leveraging business intelligence to better prepare for the future—a future that requires data-driven insights in an expedited time frame.

Presenting:

- Donald Anderson, Assistant Director of Analysis at USAF
- Taka Ariga, Chief Data Scientist and Director of Innovation Lab at Government Accountability Office
- Paul Baltzell, VP, Strategy & Business Development at Salesforce
- Jamie Kovarna, Senior Manager, Customer Success at Tableau

Notes:

- What considerations are most important to GAO as a data leader in helping stakeholders drive policy decisions across government?
    - Evidence-based policy making is certainly very important; at the same time, they're in the middle of their own modernization journey, making sure they have both the capabilities and capacity to tackle new challenges like cyber security, AI, cloud service, block chain, etc.
    - Strategies putting forward:
        - Data governance – making sure data coming in is of quality, is reliable, and they can supply quality checks consistently
        - Data science capabilities – building a state-of-the-art analytics platform to meet their own unique challenges
        - Data literacy – making sure workforce understands discreet data science capabilities but know how to scope them into the different types of engagements, and also able to consume the analytical insights coming from them.

- Innovation Lab at GAO – what is their approach to driving data culture, building a more data literate workforce, what works, what doesn't work, etc.
    - Simultaneous want to be the practitioners of these capabilities but also do the work to understand the kind of oversight challenges they're facing (e.g., societal impacts of an accountable AI solution)
    - Developing a number of ML-driven solution to help their mission team tackle the kind of problems they're facing in a very solution-oriented way
        - Example: they develop their own in-house topic-modeling algorithms and evolve those capabilities to model conversations going on in Capitol Hill

        - Allows them to be responsive to discussions happening across committees, but it also becomes an opportunity to preposition GAO resources towards topics that weren't matched and maybe should be covered more
    - They're driving a problem-centric approach for data-driven solutions.

- Have they run into institutional resistance? How has the workforce responded?
    - Everything they do must be relevant to the work that the mission teams are doing; taking a curated approach to the kind of techniques and capabilities to make sure the tradecraft are compatible with existing standards.
    - Also make sure there's on-demand, hands-on learning

- What advice would you give to a data leader that's just begun their data literacy journey?
    - Adapt the data literacy exercise to the mission of the agency.
    - Take a very specific approach to make sure the content of the training is pertinent to the work being done.
    - Relay not only the "how" to do the work, but also the "why".

Siemens Journey to Advanced Analytics and Self-Service Reporting with Tableau

11/10/2021 2:00pm – 2:30pm

Description: Achieving transparency into your IT costs and consumption is a challenge, especially when you are a global enterprise. Tableau's Natural Language Processing in Ask Data enables Siemens to close the gap between report consumers and data analysts.

Presenting:

- Ilya Kovalenko, Data Analyst and Visualization Team Lead at Siemens AG
- Henrik Jorgensen, Country Manager at Tableau

Notes:

- Siemens is a well-known, industrial, focused technology, innovative manufacturer; Internal service provider, needing to provide customers and colleagues with reliable data about the IT services they consume and the resulting costs.

- In the past, there was a lot of confusion and discrepancies about KPIs, SLAs, costs, etc., no single source of truth.

- Implemented iRAM (Integrated Reporting and Analytics Metrics)
    - Centralized IT reporting
    - Reporting and analytics solution for IT services
    - Reports for different levels of mgmt. within IT as well as for commercial controllers from all Siemens departments
    - Quality proven reports: financial data, service performance consumption, volume, validated data

- Mission:
    - Transparency – full transparency of cost flow as well as performance data
    - Reliability and ownership - based on data validated and approved by the service owners
    - Efficiency
    - Single source of truth
    - Reusability and flexibility
    - Improving and learning

- They've built up a complete service around it:
    - INCM – incidents can be opened via service desk portal

  - Release Management – 3 weeks release cycle
  - CHGM – report design document publicly available
  - Yammer – collaboration and feedback via Yammer community
  - DM – demand management
  - Test MGMT – data and report quality assurance via automated and manual checks
  - Access MGMT
  - Knowledge MGMT

- Has removed a lot of stress and added a lot of agreement that didn't exist before.

- Didn't happen overnight; roadmap started in Oct 2016 with centralized data lake; first IT infrastructure report implementation in 2017; established as reporting platform as 2018; continued with Tableau platform improvements in years since.

- Next steps? They've started implementing "Ask Data" and NLP; looking forward to "Explain Data".

- Team behind all this work:
  - Started as a project with about 4-5 people to deliver early work.
  - Currently have 16 people on the team working to provide Tableau dashboards, access management, reusable data model combining services and master data, data lake, service approved data quality, automatic housekeeping of unused roles, etc.
  - Have produced:
    - > 300 workbooks
    - 2500 active users
    - > 15k report views each month
    - > 250 data sources connected

- One of biggest obstacles?
  - Many people still wanting to download csv and work with data themselves; becomes requests for custom reports, and those take a substantial amount of time to turn around.
  - Solution? Ask Data opens up an opportunity to close the gap between advanced analysts and a broader, general business audience.
    - Standard users and management get access to reports.
    - Service managers and commercial controllers have historically received access to reports with download functionality.
    - With "Ask Data", service managers now get to be a step closer to the iRAM development team.

- Benefits of "Ask Data"?
  - Certified and proven data source
  - Always latest data, refreshed daily
  - Sandbox for self-analysis
  - Fast results even with large data

  - Share results
  - Save results
  - Zero learning curve; no need to understand queries and coding languages

- Future of Tableau at Siemens?
  - Mental switch for the user from trust only yourself to trust published data
  - Hoping to accomplish this via:
    - Prepared data sources
    - Lots of synonyms for columns (e.g., tickets vs incidents)
    - Use case examples and landing page, including a sandbox where people can experiment without fear
    - Webinars
    - Regular trainings

Data Culture: A Catalyst to Improving Care Outcomes

11/10/2021 2:30pm – 3:00pm

Description: Rally your organization to be insights driven and build an analytics practice across the enterprise. In segment one, see how Tableau can be used to manage and scale virtual care business effectively while addressing population health initiatives. Watch a demo featuring Einstein Discovery empowering cutting-edge, augmented analytics to proactively improve care access and the patient experience. In segment two, hear inspiring stories and industry use cases from a healthcare leader rising to the challenge to lead data transformation, cultivate a lasting data culture, and drive outcomes.

Presenting:

- Gule Sheikh, Principal Success Manager at Tableau
- Ashok Chennuru, Chief Data & Insights Officer at Anthem, Inc.

Notes:

- Virtual care dates back to the 1870's, with physicians accepting calls to reduce office visits; since then, virtual care has become the biggest need for in-home and community-based care.

- A lot of attention is paid to high-risk patients, who are often treated with early intervention, but what about medium risk population? They go highly undetected; 2.5% of the population is driving at least 25% of the health care cost burden, and they're going undetected.
    - To address, 42 key metrics have been identified that help segment the population.
    - Through machine learning and advanced predictive algorithms, models can predict risk at the population and patient level.
    - Finally, they want to provide the support patient's needs; patients with support systems have much better outcomes than those in isolated environments.

- Demo
    - Einstein Predictions used to predict readmission risk and identify top predictors and steps to improve outcome
    - Can combine with patient data to trigger changes to care plan (e.g., automatically scheduling a virtual care appointment, automatically dispersing a care package, etc.)

- Approach to build data culture and analytics practice at Anthem:
    - Anthem is digital-first, dedicated health care provider focused on improving and simplifying health care
    - 110 million consumers serviced, including 44 million that are members as part of health plan

- Start with a strong data foundation to effectively address core market trends
  - Bar for experience rises – personalization is fast becoming the standard; knowing the consumer requires comprehensive whole person health data combined with prescriptive analytics to tailor highly effective interactions.
  - Digital is the new normal – automation and connecting across stakeholders will be essential to long term success; necessitating investments in data quality, completeness, and timeliness couples with upgraded analytical skills to drive innovation and disruption.
  - Accurate, robust data is essential to driving breakthrough insights and enabling Anthem's Digital Platform for Health, which requires a modern platform approach built for future growth, and evolving Anthem into an insight-driven organization.

- Value Based Care
  - The program is designed to give value-based providers population and patient-level insights that promote shared decision making, proactive health management, coordinated care delivery, and care planning built around the needs of the individual patient.

- Analytics Platform Architecture
  - Pull data from a variety of source systems (membership, claims, product, provider, etc.) and funnel them all into a cloud data warehouse, specifically, a virtual private snowflake.
  - Curate the data, perform analytics, and prepare the output for ingestion into Tableau, etc.

- Tableau Powering Analytics at Anthem
  - Provider Insights – an interactive monthly Cost and Utilization Trend Report that informs providers with key performance and claims management metrics

Data for the Win, Episode 2: Tom Daley

11/10/2021 3:00pm – 3:30pm

Description: The intersection of data in sports is years in the making. Athletes and coaches use data to prevent injuries, monitor efficiency and recovery, and improve performance. Analyzing patterns over time can provide the insight needed to shift tiny details that make the difference between winning and losing. Get inspired as Tableau CMO, Jackie Yeaney, host part of two of this series, as she talks with Team GB's Tom Daley about how he uses "Data for the Win".

Presenting:

- Jackie Yeaney, Executive Vice President, Marketing at Tableau
- Tom Daley, 2021 GB Olympic Gold Medalist at Team GB

Notes:

- Multi-tiered approach to data collection:
    - Early on, there was little to no data collection that informed training decisions
    - Started with simple stretching measurements to stay ahead of injuries
    - Grew into tracking number of dives, time in pool, etc. to drive planning of future sessions
    - Finally lead to perceived exertion, biometrics, nutrition, etc.

How to Power Self-Service Analytics with Snowflake and Tableau

11/10/2021 3:30pm – 4:00pm

Description: Complex technologies and niche skills are simply not sustainable in a modern analytics platform. Learn how to use a common platform and set of tools that any domain team can tap into at any time to build and serve their data products, without getting bogged down in infrastructure maintenance or resource limitations.

Presenting:

- Rafael Massei, Product Marketing Manager at Snowflake

Notes:

- Self-service analytics provides insights across the business even if they don't have business science expertise
    - To power self-service analytics, you need to consolidate into one technology, but choosing the right technologies isn't straight-forward
    - It needs to be fast for any workload, it needs to be able to replace manual processes reliably, and it needs to be connected to what matters

- Snowflake is the right platform for performant BI
    - It's made up of 3 layers: an elastic performance engine, an intelligent infrastructure, and a cross-cloud snowgrid, all of which allow snowflake to meet requirements
    - It's a one-stop shop for a wide range of skills: data architects, data engineers, DBAs, business analysts, data scientists, developers, executive, partners, and suppliers
    - Elastic Performance Engine
        - One engine for every workload
            - Simplify your architecture. Power complex pipelines, analytics, data science, interactive apps and more.
        - Leading performance and concurrency
            - Fast, reliable performance every time with no tuning or contention. Instantly and cost-efficiently sale to any number of users, jobs, or data.
        - Support any user or skillset
            - Get the accessibility of SQL, with the flexibility to support Java, Scala, and more. Run external tools directly for extended capabilities.

- 5 ways to get started with Snowflake and Tableau
    - Take advantage of intelligent infrastructure

        - Automated and fully managed for you
            - Focus on what matters. Fully managed with automations that encrypt data, control access, and eliminate manual maintenance and troubleshooting
        - High availability, high reliability
            - Automate complex replication and failover cross-clouds and cross-regions.
        - Optimized costs for all data
            - Usage-based model paired with patented compressions and fine-grained controls to right-size costs. Continual improvements for new efficiencies
    - Collaborate across roles
        - Customer Story: Yamaha
            - Problem:
                - Wanted to accelerate development, deployment, and iterations of data visualizations to make more efficient business decisions
                - On-prem data warehouse incapable of scaling with their storage and compute needs
                - Stale insights and delayed decision making
            - Solution:
                - Cloud data platform designed for enterprise BI
                - Multi-cluster shared data architecture and flexible capacity scaling eliminated resource contention, resulting in fresher data imports and expedited Tableau visualizations.
            - Results
                - Total cost of ownership lower with Snowflake
                - Hourly ingestion into Snowflake provided timely sales insights about dealer order volume, customer credit limits, inventory availability, and pipeline performance.
                - Ingested massive data sets (~4M ERP records) in 6 minutes, 5x faster than other DWs.
        - New multi cluster, shared data architecture
        - Live Query
            - Allows you to leverage the scalability and elasticity of Snowflake, instead of being limited by the capacity of your Tableau Server
            - Using a live query model will provide better performance for large volumes of data and reduces the overall latency of data appearing in dashboards
            - Even for moderate volumes, performance can be better with live queries if you factor in the time to generate the extract.
    - Make it scalable and interactive
        - Performance demands of new use cases
            - Lower latency – sub-second queries and more consistency in runtimes

        - More throughput – process more queries without requiring linear scaling in resources
    - 3 dimensions of scaling
        - Up – single query performance; more data, more complex queries; add more servers to the cluster
        - Out – more users, more queries simultaneously, spin up more warehouse copies
        - Across – many competing workloads; resource contention; isolate work to separate clusters
- Add holistic data
    - Snowflake Governance
        - Know Your Data – understand, classify, and track data and its usage
        - Protect Your Data – secure sensitive data with policy-based access controls
        - Unlock Your Data – securely collaborate and share data across teams
    - Snowflake governance capabilities
- Optimize resources
    - Consumption based
        - Only data platform to offer unlimited scale and flexible resources exactly matched to business requirements.
        - Managed service with automated resource optimization reduces administrative overhead.
        - Powerful monitoring and management tools provide transparency into usage.
    - Resource monitoring and management
        - Auto suspend policies
        - Resource monitors
        - Admin and usage dashboards
        - Warehouse load charts
    - Tableau performance templates
        - Compute cost overview, performance monitoring, user adoption

- Business impact of Snowflake
    - 612% ROI over 3 years
    - 50% faster time to roll out the business product
    - 75% reduction in effort for the IT support team

Bland to Bold: Dashboarding Tips from Professional Graphic Designers

11/10/2021 4:30pm – 5:00pm

Description: Coming from strong design backgrounds, Chelsea Morgan shares best practices to help you flip dashboards like HGTV stars flip houses.

Presenting:

- Chelsea Morgan, User Experience Designer at InterWorks

Notes:

- What makes a dashboard great?
    - "The shortest distance between two people is great design"
        - Just because the data is complex, it doesn't mean the user's journey through it has to be
        - If you set out trying to give all the information, the cognitive overload you force on others causes them to learn nothing.

- How to begin?
    - Building a dashboard is like building a house.
        - Helps you break it down piece by piece and supplies a starting point to jump in at
        - Design parallels:
            - You are the architect
                - You're the one that's in control and you can make the decisions methodically and strategically.
                - Process of design thinking:
                    - Empathize
                        - Interview
                        - Understand
                        - Plan
                    - Ideate
                        - Sketch and Experiment
                        - Give Options
                    - Prototype
                    - Test
                        - Watch Users Interact with your Prototype
                        - Collect Feedback and Iterate
                    - Implement
                        - Handoff to Developers

        - Ensure Success
    - It starts with a blueprint.
        - Every structure needs a plan.
        - Design Principles:
            - Hierarchy – relationship between elements
                - First floor – KPIs and most important information
                - Second floor – Secondary information
                - Third Floor – Tertiary information
                - Attic – details that need to be represented but don't need to be seen upfront/first
            - Consistency – helping people navigate these elements
                - People will assign meaning to anything you don't, so be consistent with your designs so that your users aren't trying to fill in the gaps with false assumptions
            - Scale – size of elements
                - Not always just about size alone, more about all-around visual weight
            - White Space – space around elements
                - Helps define the relationship between different elements; are they related? Are they not?
    - Considering your guests is crucial; create a solution with your end users in mind.
        - Includes design decisions like color, outlines, subtitles, tooltips, etc.
    - It takes collaboration; bring different skills and expertise together.
        - Data architects, data analysts, consultants, designers, etc.

- Where do we go from here?
    - Interworks.com/blog
    - Curator.interworks.com

Sharing is Caring: Overcoming Barriers to Analytics Adoption

11/10/2021 5:00pm – 5:30pm

Description: Learn what it takes to act on your analytics. Reach a broader user population and help drive change throughout your organization.

Presenting:

- Collin Gelfer, SVP of Customer Engagement at Atrium

Notes:

- Enterprise Systems are evolving
    - 80's and 90's were focused on systems of record (ERP, HCM, CRM)
    - 2000's were focused on systems of engagement (mobile, social, chat, web)
    - Today is focused on systems of intelligence (recommendations, automation, notification, analytics)

- The question isn't if you should take an analytics approach to your business, it's how.

- If you ask many companies what determine success, many say:
    - More accurate models
    - Clean data
    - Prettier dashboards

- But the most successful leaders are focused on the last mile, where insights are being consumed by the end user; 87% of the companies that are having the greatest success are spending more than half of their AI and Analytics budgets on landing the last mile.
    - How to own the last mile:
        - amplify behaviors - exposing your audience to well-crafted analytics and behaviors you want amplified
        - extend the process to other networks – example: supply chain issues often reveal themselves in call center and customer satisfaction processes; how do you connect those?
        - audit the last mile with feedback loops to determine who is acting on these insights and who isn't; leads to coaching moments
    - Sharing is caring; don't keep great insights bottled up

- Where does Tableau and Slack fit in?
    - Put data at the center of your conversations

  - Quickly extend your action framework
  - Scale intelligence across the org
  - Accelerate business outcomes

- Demo

Make it Better: Tips for Better Dashboard Design

11/10/2021 5:30pm – 6:00pm

Description: Inspired by Makeover Monday, the Flerlage "Make Better Team" will dive into charts and dashboards with the singular goal of making them better with lots of tips along the way.

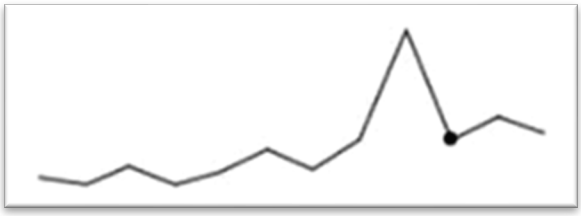
Presenting:

- Ken Flerlage, Associate Director, Data Analytics at Bucknell University
- Kevin Flerlage, Manager, Business Intelligence at Unifund

Notes:

- Check out Make Over Monday who does this "Make Better" work on a weekly basis
- www.flerlagetwins.com\make-better for more information on this session

- Tips:
    - Create a transparent shape in PowerPoint and save to repository; assign as a shape to data points that you don't want displayed.

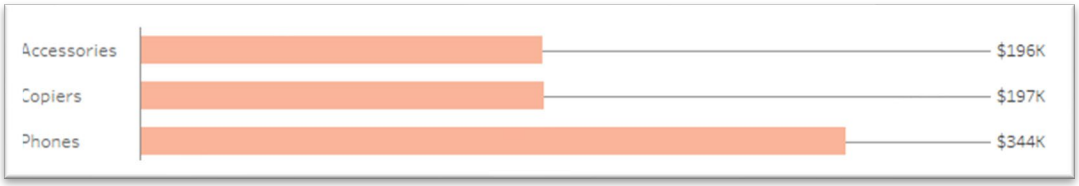


    - Tableau family of fonts have been designed to be as easily read as possible; they suggest sticking with these fonts in almost all cases.

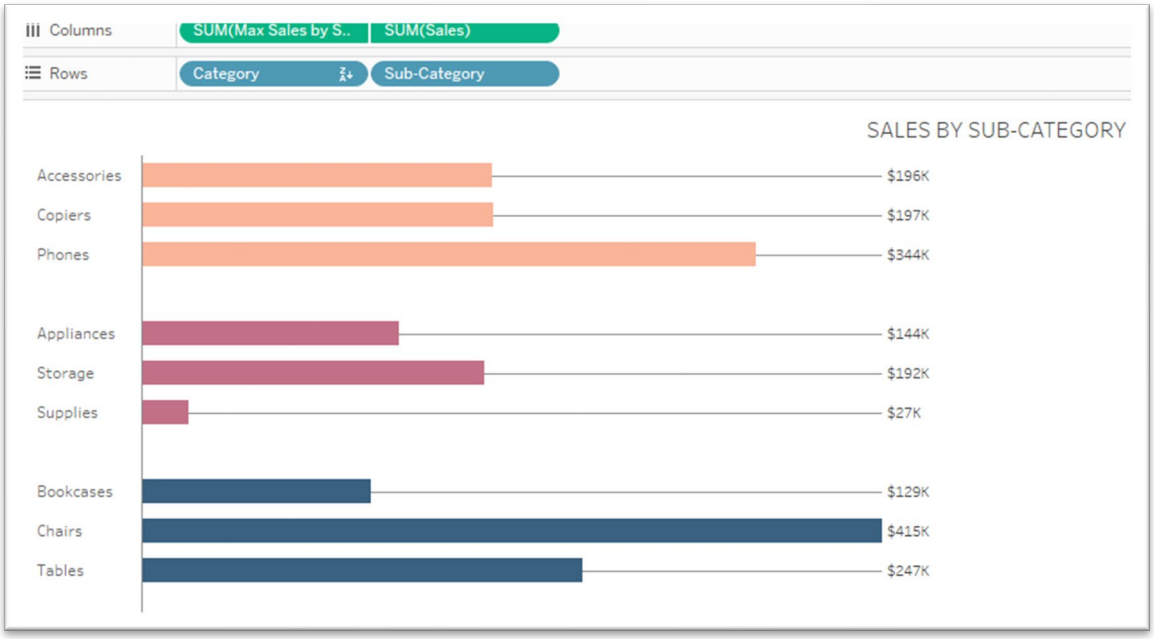
    - When clicking on marks, by default Tableau highlights these with a blue background; if you want to avoid this, change chart type to shape, change shape to use the same transparent shape we added to our repository earlier; if you lose color on text, simply make label font color match mark color

- If you want thin bars even thinner, add borders with the same color as the chart background.

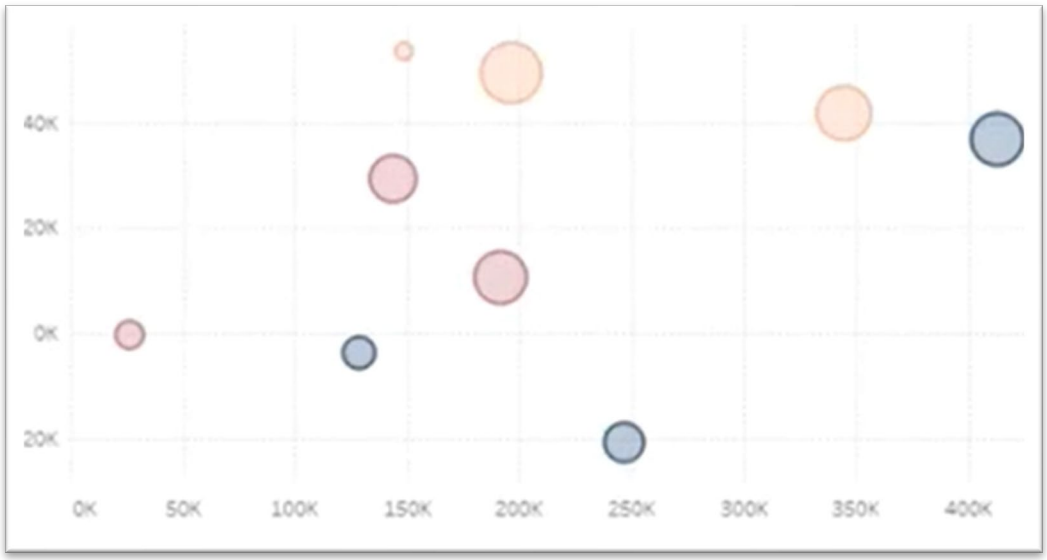
- Use window_max to create bars that run the entire length of your chart; add as dual axis.



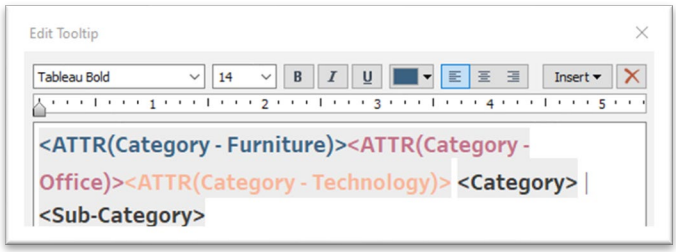
- To provide some spacing between categories within a horizontal bar chart, consider adding subtotals and changing the label to be blank.

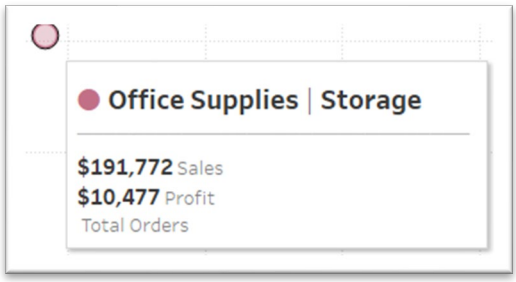


- Custom borders: In scatterplots, duplicate an axis, create dual axis, make one mark a closed circle and the second an open circle to create a little bit of depth via custom borders.



- To add color indicator to tooltip, create individual fields that only populate a Unicode circle if the category that's on color matches; add all of these fields to the tooltip and color them accordingly.

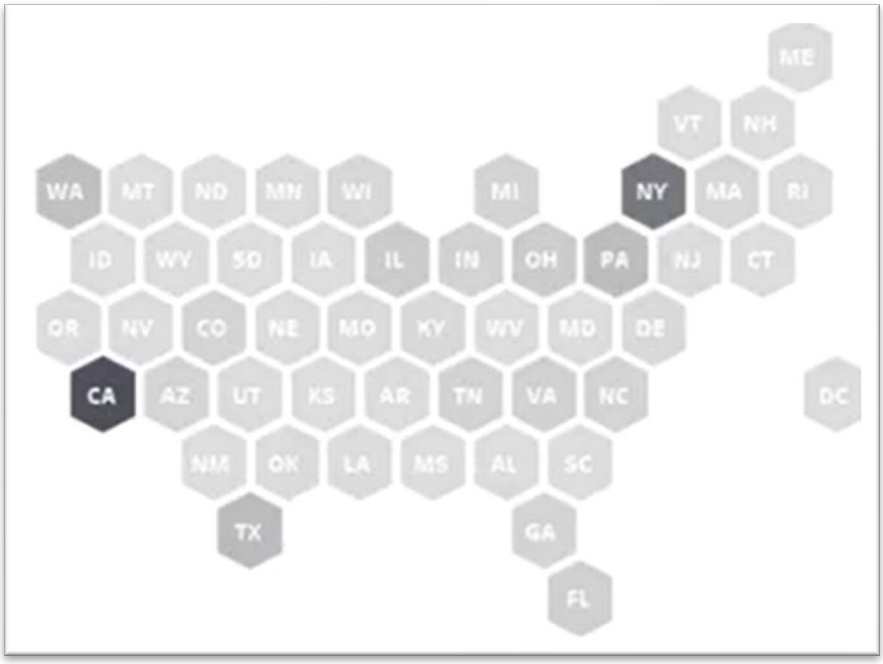




- In stacked bar charts, to give the user the ability to sort by different category values, create a parameter that contains values for each category value, and create a sorting field by associating the chosen parameter value with 0's, the unchosen parameter value with 1's. Use this value to sort, and whichever the user selects, will be moved to the base of the bars.

- Diverging color palettes are great when you have a clear center point, e.g., $0 for profit; otherwise, go with continuous.

- Hex maps can cause issues if spacing of one axis is greater than another. Change this by updating your padding



- Filters taking up too much space? Select the container that the filters are in, change to floating, add a border to the container, add show/hide button, add custom images to make it clearer what clicking the button does. May not be available in 2019.1.

- Don't be afraid of white space; use padding feature to create a bit of separation.

- Add a header and footer for additional information; great to build brand by including your tag, your sources, logos, dashboard titles, etc.

Tableau Conference 2021 Devs on Stage

11/11/2021 12:00pm – 12:45pm

Description: Devs are back on stage! Tune in to see Tableau's developer team demo the latest-and-greatest, as well as up-and-coming-features you've been asking for. Don't miss the energy and excitement that our developers bring to this fun keynote.

Presenting:

- Andrew Beers, Chief Technology Officer at Tableau
- Alexzandra Caldwell-Wenman, Director of Product at Tableau
- Nathan Mannheimer, PM at Tableau
- Rachel Kalmar, Product Management Director at Tableau
- Issa Beekun, Software Engineering SMTS at Tableau
- Jamar Fraction, Product Manager at Tableau

Notes:

- **New Features in Tableau's Core Analytics Experience**
    - Visualization Extensions (H2 2022)
        - Making difficult chart types drag-and-drop easy
        - Custom mark types now include Flower, Donut, Sunburst
        - Use Viz Designer to get under the hood and fine-tune these complex chart types
        - Share templates through the gallery
    - Dynamic Dashboard Layouts (H1 2022)
        - Use a parameter to hide certain containers away; can also tie to dashboard actions
    - Multi data source spatial layers (2021.4)
        - No longer do you need a single unified data source for spatial layers
    - Spatial Area Calculation (2021.2)
        - Pass in a spatial geometry, easily compute how large each spatial unit in the file is
    - View Data Redesign (H1 2022)
        - Allowing you to now control exactly what you see
            - Change / reorder columns
            - Sorting
            - Add additional fields

        - Pull down the data as a csv to respect these changes

    - Workbook Optimizer (2021.4)
        - When publishing, new option to select to run optimizer; tableau will automatically scan through workbook and suggest performance improvements

- Augmented Analytics

    - Data Change Radar (H1 2022)
        - Constantly monitoring dashboard behind the scenes and will alert you when meaningful changes are made
        - Not only will share what changed but why it changed with "Explain the Change"

    - "Explain Data" Side Pane (2021.2)
        - Gives every user the experience of having an analyst at their fingertips.
        - On a separate pane, right next to workbook, always within your flow
        - Can pull from other fields even if they aren't in the visualization in an attempt to explain data

    - Explain the Viz (H2 2022)
        - Gives suggestions on what you might want to focus on first.

    - Share Ask Data to Slack (2021.4)
        - Share vizzes directly from your dashboard to Slack, Tableau notification, or email

    - Contact Lens Author (2021.4)
        - New feedback button

    - Manage Lineage in Catalog (H1 2022)

    - Personal Pinning (H1 2022)
        - A new kind of favorites

    - Phrase Builder (H1 2022)
        - Will make queries even easier within Ask Data

    - Embed Ask Data from Desktop (H1 2022)

- Tableau Prep

    - Virtual Connections (2021.4)
        - Where you can centrally manage access to groups of data sources and tables using data policies

        - Allows you to preview access by selecting individual users
        - Can handle schema changes in one place instead of having to update connections for every published connection

    - Prep Notifications in Slack (H1 2022)
        - Make it simple to stay on top of most recent changes

    - Linked Tasks (2021.3)
        - Instead of manually running individual tasks one after another, linked tasks allow you to orchestrate all your tasks automatically, even incorporating rules for if tasks fail

    - Parameters in Tableau Prep (2021.4)
        - Anyone running flow will be asked to select parameter values that matter to them
        - Speed up workflows by making them more flexible than before
        - Can also be applied to output steps, changing the name of the result step based on the parameter value

- Tableau Server / Online

    - Show View Load Requests (H1 2022)
        - Helps you triage system issues by showing what's performing slow or failing entirely.

    - Establish New Baseline (H1 2022)
        - Establish new base line to check performance before and after change

    - Time Stamped Zip Logs (2021.4)
        - If you do have an issue and you need to share your logs, you no longer need to pull an entire day's worth of logs

    - Resource Limits (H2 2022)
        - Allow you to set default limits for various sites
        - Allow you to customize if additional resources are required for certain periods

    - Autoscaling for Backgrounders (H1 2022)
        - It's really hard to balance the need to scale for peak while also preserving your resources; auto-scaling has been added for containerized deployments to assist.

    - Connected Apps (2021.4)
        - Easier to integrate Tableau into your application
        - Also available on Tableau Server

- Tableau Broadcast (H2 2022)
  - Allows your team to collaborate privately until you're ready to share.
  - You'll then be able to broadcast with embeddable code and a link to place in external site
  - Is a part of Tableau Online, so you'll be able to automate workflow via API, perform data governance, and view usage statistics.

- Tableau Public

  - Tableau Public Slack Integration (H1 2022)
    - Search Tableau Public directly from Slack

  - Search (in production)
    - Investments in search to allow you to find more easily what you're looking for
    - New, cleaner viz cards

  - Web authoring for Tableau Public (in production)
    - No more needing to download and open in Desktop

  - Additional Connectors (H1 2022)
    - Will soon connect to Box, Dropbox, and OneDrive

  - Profile Redesign (in production)
    - Reflects your best work more cleanly

  - Discover (in production)
    - The go-to place for the community to find new material, developers, etc.
      .
  - Custom Channels (H1 2022)
    - Tailored sections to showcase all of your interests

10x Journey – Stories of Performance and Democratization

11/11/2021 12:45pm – 1:15pm

Description: Get Tableau to everyone and make it faster? Piedmont Healthcare, T-Mobile, and Equinix reveal how they achieved analytics nirvana with Exasol.

Presenting:

- Cesar Picco, Senior Software Engineer at T-Mobile
- Mark Jackson, Executive Director of Business Intelligence at Piedmont Healthcare
- Nitin Arora, IT Lead at Equinix

Notes:

- Examples of some common Tableau challenges:
    - Slow data loading
    - Sluggish rendering of visualizations
    - Difficulty scaling to more users
    - Inconsistencies in data governance

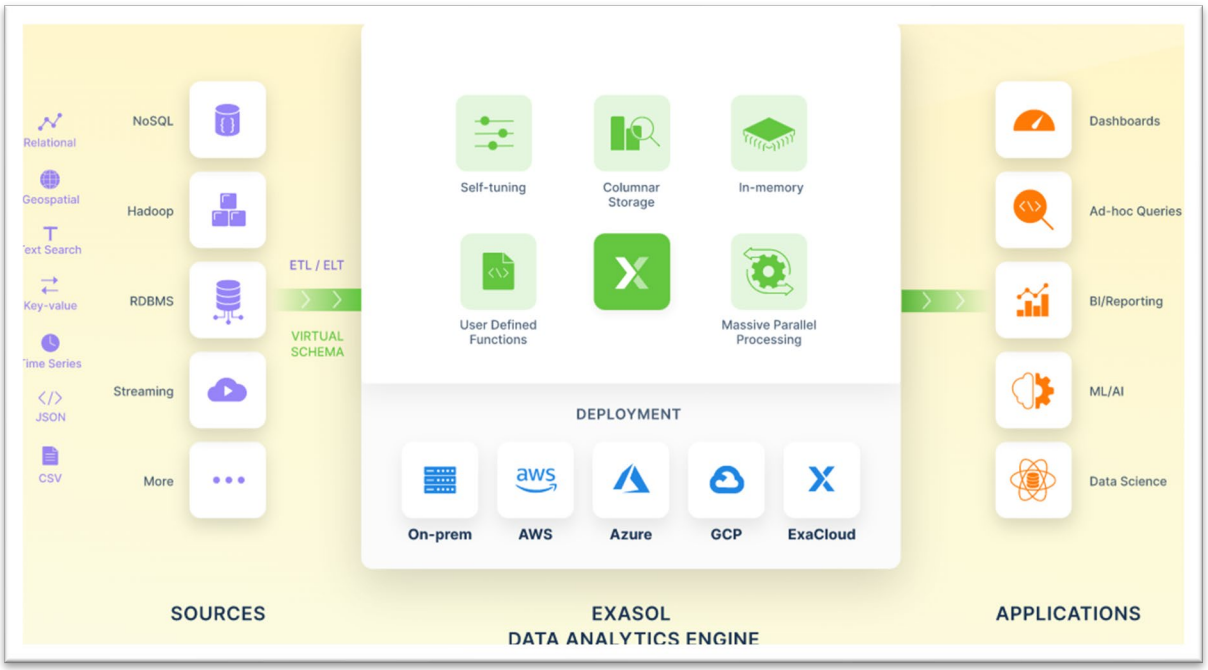
- The problem might not be Tableau; it may be your data warehouse.

- The Exasol solution:
    - Exasol in-memory algorithms process 100s of TBs of data in seconds
    - Massively Parallel Processing (MPP) distributes data across a cluster's nodes
    - Columnar storage reduces the number of I/O operations and amount of data needed for processing in main memory
    - Auto query tuning, maximum extensibility, row and column-level security, and best enterprise support lower your TCO.
    - Use what you have and avoid vendor lock-in
        - You choose the deployment destination
        - Integration with your ecosystem
        - Predictable pricing
        - All languages are welcome, including SQL, R< Python, Java, Lua, etc.

    - Architecture:
        - Data Sources: bring connected, trusts data to your users without increasing IT burden
            - It's your call on deployment
            - Keep the ETL tools that work for you

- Supports all data types and formats (JSON, Geospatial, full-text search, relational, key-value, time series
- Access data anywhere with virtual schemas

- Database: the only database built exclusively for analytics
  - In-memory processing, columnar storage, and MPP based on a shared nothing architecture for faster query response
  - Intelligent query incorporating system statistics and metadata to secure highest performance
  - Add nodes whenever needed while optimized for efficient use of storage and compute resources
  - Custom and open-source connectors allow you to do more with what you have
- Analytics applications
  - Bring real-time insights to your dashboards
  - Deliver on the real-time promise with ad-hoc and real-time queries
  - Democratize data science with models running directly in the database
  - Unify analytics (BI+AI+ML), fostering a data-driven culture



- Piedmont Healthcare
- T-Mobile
- Equinix

Planning & Tableau

11/11/2021 1:45pm – 2:15pm

Description: Learn more about a new AI product from Tableau that will help you make better decisions with data by comparing different outcomes.

Presenting:

- Sarah Wachter, Product Management, Senior Manager at Tableau
- Richard Tibbetts, VP Product Management at Tableau

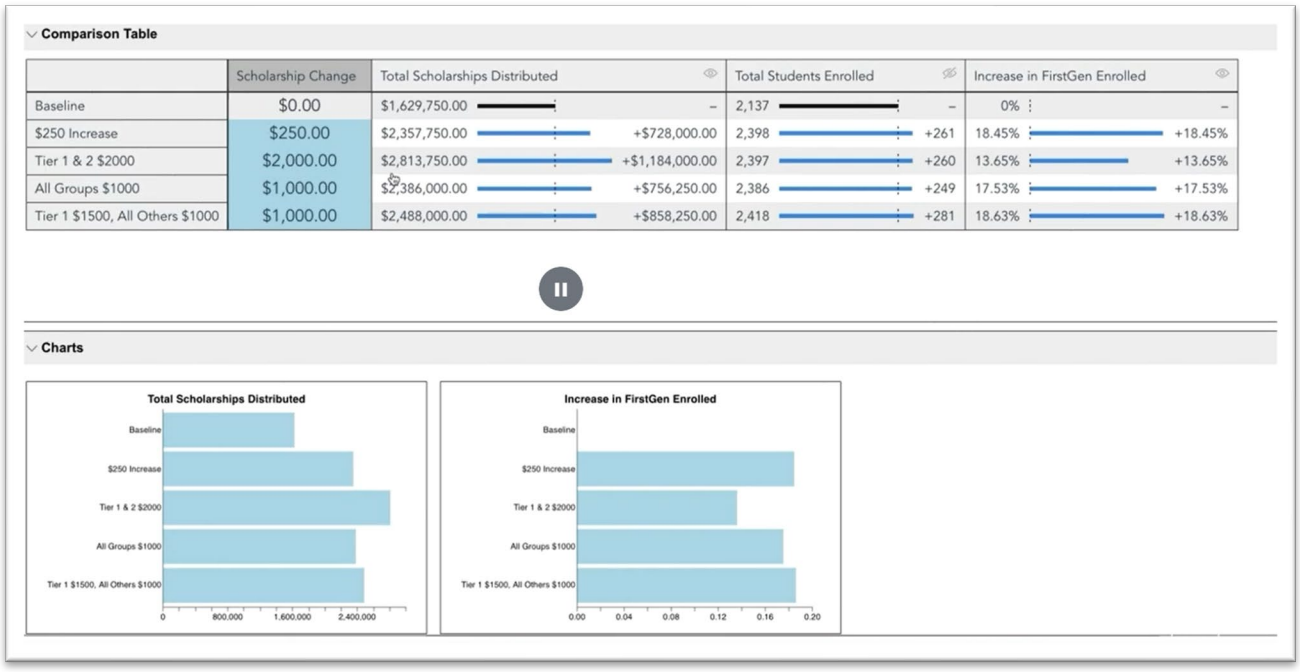
Notes:

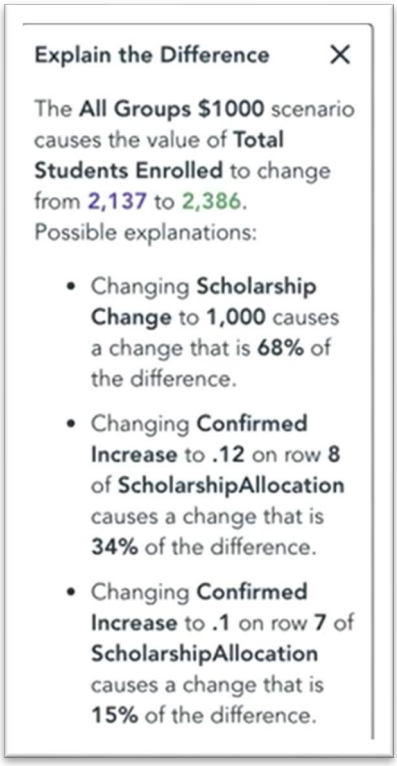
- Planning and Decision Making
    - Traditional BI includes descriptive analytics (what happened?) to diagnostic analytics (why did it happen?)
    - The next stage of growth is often predictive analytics (what will happen?)
        - This is often where you see ML, Einstein Analytics
    - The last step is prescriptive analytics (how can we make it happen?)
        - This is what will be talked about in this section
    - Challenges of decision making:
        - BI tools provide backward-looking visibility into what happened
        - Predictive models provide focused predictions if conditions are stable
        - Many important decisions include changing conditions
        - To choose between potential options, decision makers want to understand the range of expected outcomes
        - Spreadsheets are the most popular tool, but have many problems
            - Fragile models
            - Versioning issues, weak sharing
            - Impossible auditing
            - No support for comparing scenarios
            - Limited goal seeking or AI assistance
    - Qualitative and quantitative decision examples:
        - “How do we staff call centers to balance customer experience and minimize wait times, while also managing labor costs?”
        - “How do we re-allocate office space given pandemic-related changes to demand and requirements?”

- **"How do we distribute scholarship dollars to get the right mix of incoming students and build a diverse class?"** (example for demo in next session)

  - How can all stakeholders understand the assumptions, expected outcomes, and consequences in order to make the best decision?

- Demo
  - By building in variations of enrollment increase per scholarship increase scenarios, you can compare scenarios to view changes in total scholarships distributed, total enrollment, etc. Explain Data can explore the drivers behind the changes and explain in natural language.





- Scenario Comparison - Collaboratively compare and explore the impact of different actions to make better decisions; this is a planning tool for operators who want to make better decisions by comparing scenarios.
    - Scenarios model alternative actions and consequences
    - Visually compare alternatives
    - Integrated collaboration

- Robust Simulations - Share, publish, and re-use simulations without breaking them or creating versioning nightmares; It enables domain experts to model complex systems like a spreadsheet but better.
    - Easily integrate data and calculations
    - Control decision with parameters
    - Safe structures prevent errors
    - Transparent auditable models

- Einstein AI Assistance - Augmented analysis capabilities for sensitivity analysis, optimization, suggestions, forecasting, and auditing

- Slack integration - Collaborate efficiently with all stakeholders on important decisions

- Get notifications when expectations change.
- Run alternative scenarios
- Update data and plans interactively

- Get Involved!
    - Sign up to get involved in alpha and beta testing.

How to Become an Advocate for Data Literacy

11/11/2021 2:15pm – 2:45pm

Description: Working with data is a sought-after skill but many are unsure how or where to start. We sat down with our Academic Community on bringing data literacy to all.

Presenting:

- Yong Long Foo, Business Intelligence Developer at Singapore Management University
- Nellie Marangou, Data Literacy Programme Lead at Multiverse
- Nairanjana Dasgupta, Director of Data Analytics at Washington State University
- Bergen Schmetzer, Academic Marketing Specialist at Tableau Software

Notes:

- What are some misunderstandings about data literacy?
    - Data literacy should be for everyone; it shouldn't only be accessible from a data scientist level. Not everyone should be a data scientist, but everyone needs to have a minimum level of data literacy.
    - People need to recognize that data is everywhere. Every part of your day involves data. Driving, weather, music, and sports all include data, and you don't need years of high-level education to excel in data literacy.

- What can we, as a whole, do to better promote data literacy?
    - We need to explore other options than the traditional education system and provide more professional apprenticeships, where people can learn and apply at the same time ("experiential learning").
    - Data isn't a static field, and we need to provide more training that adapts. Doctors can't practice without continued education of new procedures, new understanding; data analysis should be the same. Everyone needs to stay current with what the industry needs.

- What can instructors do to better promote data literacy?
    - Instructors need to provide more consulting / collaborating opportunities for mentors to teach hands-on application. Even those that come from a strong theoretical background can struggle without having touched and felt the data and nuances therein.
    - Think of the entire data process as a journey. The whole process from planning, collecting, cleaning, joining, analyzing, to storytelling is important and an understanding of it all is important. If hyper-focusing only on analysis, you may be missing key pieces of information from other stages.

Unleash Analytics in Your App!

11/11/2021 2:45pm – 3:15pm

Description: In this episode, we introduce new services that enable software developers to bring Tableau analytics and exploration experiences right inside their own applications. Learn how your application can provide rich analytics capabilities, powered by Tableau.

Presenting:

- Ben Lower, Senior Director, Platform at Tableau
- Lee Graber, Software Engineering Architect at Tableau

Notes:

- Why build an analytics application?
    - Download to CSV is Lame - providing access to data is good, but why limit to simply a large data dump?
    - Analytics plus In-Context is Love
    - Self-Service Analysis – users regularly want to go beyond canned reports, and you can incorporate this directly into the experience

- How the Tableau platform is evolving to enable analytical apps
    - Embed an interactive dashboard with new API, with Ask Data
    - Full Dashboard Authoring
        - New save as option coming
    - Connected Apps and JWT Support (seamless auth)
        - Everyone wants seamless SSO
        - Establishing a trust relationship between your app and Tableau, allowing a generation of a secret that you can share and use to directly assert the identity of the user

- Where to get more information?
    - Join the Tableau Developer Program at https://tableau.com/developer for early access.

Tableau Zen Masters Share Their Best Advice (Part 1)

11/11/2021 4:00pm – 4:30pm

Description: Tableau's Zen Masters share their best tip, piece of advice, or thing you should know about data in this rapid-fire, non-stop, two-part session. The Tableau Zen Masters who present include Abisola Oni, Ann Jackson, Chris DeMartini, Diego Parker, Jim Dehner, Ken Flerlage, Kevin Flerlage, Klaus Schulte, Lindsay Betzendahl, Lorna Brown, Luke Stanke, Marc Reid, Neil Richards, Pahola Diaz, Satoshi Ganeko, Simon Beaumont, Tristan Guillevin, Yupeng Wu, and Zach Bowders. The Tableau Hall of Fame Zen Masters who present include Chris Love, Jeffrey Shaffer, Jonathan Drummey, and Joshua Milligan.

Presenting:

- Andrew Grinaker, Director, Tableau Community at Tableau

Notes:

- Abisola Oni
    - Encourage people to share work and be active on Tableau Public

- Ann Jackson
    - Aim to be t-shaped; broad general knowledge across the board but deep knowledge in one area
    - Or pi-shaped with deep knowledge in two areas
    - Example: deep knowledge in data analysis and data visualization, but general knowledge in dev ops, project management, python, etc.

- Chris DeMartini
    - Continue driving growth of Tableau Public
    - Create accessible experiences for all in Tableau

- Chris Love
    - When you're using Tableau, know what you're doing
        - You may not know what ATTR or some other tips are doing, but they just work; investigate and dig into why Tableau does the things it does
        - Take the time to understand blue vs. green, Tableau's order of operations, aggregate and non-aggregate measures and the error messages surround them

- Diego Parker
    - Join the community forums; key in his data visualization journey
        - A great repository of questions

        - Your question will be answered very quick
        - Good answers and different approaches
    - How to post successful questions?
        - Write a good question with example, drawings, etc.
        - Upload a twbx

- Jeff Shaffer
    - Tips
        - Change line path to linear to move year to size instead of lollipop chart
        - Add summary card to a sheet for statistics; also copy and paste it into a new sheet
        - On item hierarchy, hit * to expand all, - to collapse

- Jim Dehner
    - Tableau Academic Programs for K3-12

- Jonathan Drummey
    - Instead of seeing our work as writing reports, we are building tools for decision making
    - Tool creators engage more curiosity and creativity and develop assets with better, more long-lasting value.

- Joshua Milligan
    - Never stop asking questions
    - Questions about the analysis, the data, the tool, or the people
    - Questions about the data:
        - What data is available?
        - Is the data correct?
        - How is the data structured?
        - Does the data support the analysis that you need to do?
        - Is the data complete? Does it have all the history? All the records?
        - Is the data secure?
        - What if the data changes?

- Ken Flerlage
    - Highlight table using discreet pill to drive color
        - Create a calculation to drop on color card that uses LOD to categorize each value has “Highest”, “Lowest”, “Other”.
        - If square doesn’t fill the spaces allotted appropriately, simply add an empty text string to both columns and rows shelf, hide headers, and change “Other” to white.

- Kevin Flerlage
    - Transparent shape

        - Create transparent shape in PowerPoint, save in repository.
        - Use to hide marks you don't want or to hide blue highlight on BANs
    - Fake highlight
        - Create calculation of empty string, add to detail, add highlight action, select fake highlight field, and now when a mark is selected, the other marks aren't washed out

- Klaus Schulte
    - Cost-plus pricing app (review at a later date)

- Jim Dehner and Klaus Schulte
    - New virtual Newbie users group starting in January for new users wanting to expand skills

Tableau Zen Masters Share Their Best Advice (Part 2)

11/11/2021 4:30pm – 5:00pm

Description: Tableau's Zen Masters share their best tip, piece of advice, or thing you should know about data in this rapid-fire, non-stop, two-part session. The Tableau Zen Masters who present include Abisola Oni, Ann Jackson, Chris DeMartini, Diego Parker, Jim Dehner, Ken Flerlage, Kevin Flerlage, Klaus Schulte, Lindsay Betzendahl, Lorna Brown, Luke Stanke, Marc Reid, Neil Richards, Pahola Diaz, Satoshi Ganeko, Simon Beaumont, Tristan Guillevin, Yupeng Wu, and Zach Bowders. The Tableau Hall of Fame Zen Masters who present include Chris Love, Jeffrey Shaffer, Jonathan Drummey, and Joshua Milligan.

Presenting:

- Andrew Grinaker, Director, Tableau Community at Tableau

Notes:

- Lindsay Betzendahl
    - Inspiration and how to find and acknowledge it
        - Look at external images for ideas
        - Find it on Tableau Public, Dribble, Pinterest, Behance, artwork, nature, etc.
        - Give attribution to those inspired you

- Lorna Brown
    - Advocate for Tableau Public
        - Viz of the day
        - Featured
        - Use as inspiration for your next work
        - Use it for your own personal portfolio

- Luke Stanke
    - Tip for formatting tables
        - Don’t be afraid to add space to rows
        - Use font sizes that everyone can see
        - Row dividers tend to be more useful and less distracting than row banding

- Marc Reid
    - 5 ways to use images in Tableau dashboards
        - Image as a shape in the view
        - Image as a shape in a viz-in-tooltip
        - Web-hosted images in a web object

        - Background images
            - Parameter → Calculation → background image
        - Dashboard image objects

- Neil Richards
    - Design inspiration
        - Tableau Public
        - Look outside the Datafam (designers, art, music, nature)

- Pahola Diaz

- Satoshi Ganeko
    - Tips from Japan User Community
        - Hiding viz in tooltip when you hover over 'total'
            - Make a calculation field: MAX([Category]) = MIN([Category])
            - Place on filter shelf, select false, and 'exclude'

- Simon Beaumont
    - Feedback
        - Actively seek people who you trust to give you honest feedback

- Tristan Guillevin
    - How to keep learning and enjoying your journey
        - Push the limit – we learn most when we design out of the box
        - Blend tools (code, draw, design)
        - Enjoy the process

- Yupeng Wu

- Zach Bowders
    - Importance of data community in your life
        - Will help you get faster, better, more creative, and more passionate
        - It's not safe to go alone; partner with others

Universal Real-Time Data Connectivity for Tableau with CData

11/11/2021 5:00pm – 5:30pm

Description: Explore the CData connectivity solutions, solving data fragmentation and enabling rich, live connectivity to 250+ enterprise data sources for Tableau & Tableau Online.

Presenting:

- Jerod Johnson, Technology Evangelist at CData Software

Notes:

- CData Software, leader in data connectivity software for enterprises, developers, and data scientists

- The Problem: growing data fragmentation

    - Majority of ML and AI in the past were built and designed to work with traditional databases and data warehouses
    - But this has changed; cloud computing is getting cheaper and better and can more easily meet organization's needs
    - Organizations are making decisions based on their needs with CRMs, marketing tools, etc., and every company can pick what works for them; but as a result, every company has its own authentication, APIs, etc.; makes it harder and harder to get data into a single place

- The Solution: standards-based connectivity; in other words: "making everything look like a database"

    - Use a universal interface (SQL) to connect to vizql, NoSQL applications, Big Data, etc.
    - Instead of talking to an account endpoint or an invoice endpoint, you're talking to tables, translated for you to solve that problem

- Customer Stories:

    - Live Sage Intacct Data in Tableau
        - Customer: insurance payment processor
        - Need: live data pulled automatically into Tableau Server reports
        - Why CData: Best option for live reporting on Sage Intacct data

        - End Result: data team can quickly generate dynamic report in Tableau based on the data in their Sage Intacct instance

    - Bullhorn CRM Data in Tableau
        - Customer: Staffing and recruitment firm
        - Need: Scalable analysis and reporting on their Bullhorn CRM data
        - Why CData: Integration work is already finished and maintained
        - End Result: Started small and analyze interesting insights and are now monitoring KPIs and developing custom reports and visualizations

- CData connectivity for Tableau

    - Whether you're working with Tableau Desktop or Tableau Online, live data, or consolidated data, CData has solutions for connecting Tableau to exactly the data you want:

        - Real-time Analytics
            - Live connectivity in Tableau Desktop or Tableau Server to 250+ SaaS, Big Data, and NoSQL data sources

        - Cloud Analytics
            - Pure cloud-to-cloud connectivity to popular cloud services and data stores from Tableau Online

        - 360-Degree Analytics
            - Consolidate all your enterprise data into a single data store for comprehensive analytics

- Live Demos

    - Tableau Connector found directly in 'Connect to a Server' menu: "Salesforce by CData"
        - Provide authentication scheme; several options available
        - Gets data for all Salesforce entities via API

    - Connect to data via Tableau Online
        - Go to CData Connect page to configure settings for specific connection
        - Use Tableau's Microsoft SQL Server connector

- Take the Next Step:
    - Cdata.com/tableau
    - Email: sales@cdata.com

Growing the Extension Gallery with Accelerators, Datasets, and a New Mission

11/11/2021 5:30pm – 6:00pm

Description: Tableau is seriously beefing up our Extension Gallery! Join us to hear about the Tableau Exchange - the next phase of the Extension Gallery. Learn about the new assets available to you: Tableau Accelerators and Datasets. Now you have more ways to go from zero to expert-built analysis fast.

Presenting:

- Alex Novelli, Product Manager at Tableau
- Henning Kollenbroich, Senior Manager, Product Management at Tableau

Notes:

- Where we started
  - Home of all 3rd party developed content
  - Connectors then launched in November 2020
  - First in-product gallery launched in March 2021
  - Launching vendor portal in late 2021
  - Hundreds of thousands of downloads
  - 75+ offerings
  - Connectors and extensions

- Where we are today
  - Rebranding to Tableau Exchange
  - Launching accelerators and datasets
    - Accelerators: speed time to value with pre-made, expert-built content
    - Datasets: access publicly available and premium third-party datasets natively in Tableau

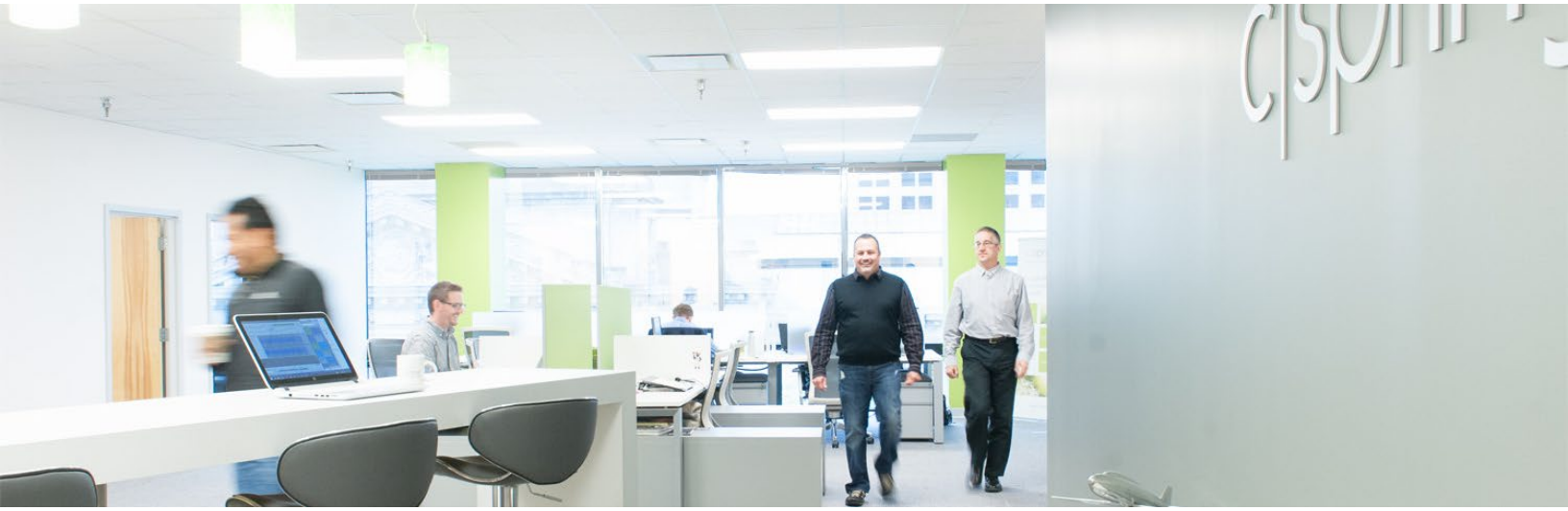
- Accelerators
  - Break past your analysis paralysis with accelerators
  - From zero to Zen Master; how does a new user go from a blank canvas to a beautiful viz?
  - Three types of content:
    - Plug and play content from Salesforce and other applications
    - Industry-specific content
    - All the sample content you know and love
  - Annotations to help guide users with:
    - Interpretations

        - Why it works
        - Data model
    - Introducing accelerators in Tableau Exchange, but also providing new in-product discovery
    - Up Next:
        - Community submissions – open-source content
        - Self-servicing publishing
        - Improved data mapping capabilities

- Datasets
    - Introducing Datasets in the Exchange
        - Easily discover new datasets
        - Add data to your workbook with just one click
        - Immediately understand the value by using accelerators
    - Datasets in the Exchange
        - Data from trusted partners optimized for immediate use in Tableau, tailor to your industry and region

- Tableau Exchange Tomorrow
    - Single source of truth for third party build content
    - More offering types
    - Deeper integration into our different products
    - Self-serve content upload with insights into performance for developers

- Want to Learn More?
    - Jump into the Exchange now, explore what's available and superpower Tableau with our partners' content
    - Join the Tableau Partner Network



About CSpring

CSpring's mission is to deliver solutions that unleash potential. Our team of over 50 full-time professionals deliver solutions that align business goals with technology and make data accessible, reliable, actionable, and engaging. Our commitment and data-centric approach translates to successful customers, great opportunities for our employees, and the ability to make a positive impact on the community. We are committed to paying our success forward and do so by contributing time and financial resources to charitable organizations focused on breaking the cycle of poverty.

We deliver success to our clients by putting their needs first. Since 1996, we have worked hard to exceed the expectations of our clients. CSpring professionals are passionate about taking on challenges faced by clients, getting to the underlying issues, and recommending and implementing efficient solutions. Our promise to our clients is to do whatever it takes to make them raving fans because we know that when our client wins, we win too.

CSpring is an Indiana corporation, a certified woman-owned business enterprise (WBE), and a Tableau Services Partner. We proudly deliver success to both public and private sector clients in central Indiana and across the United States. Throughout our history, CSpring has remained committed to hiring only the best talent and working tirelessly for client success. In 2021, CSpring was recognized by the Indiana Chamber of Commerce as a Best Place to Work in Indiana and by the Indy Star as a Top Workplace in Indianapolis.

For more information about CSpring, visit www.cspring.com.