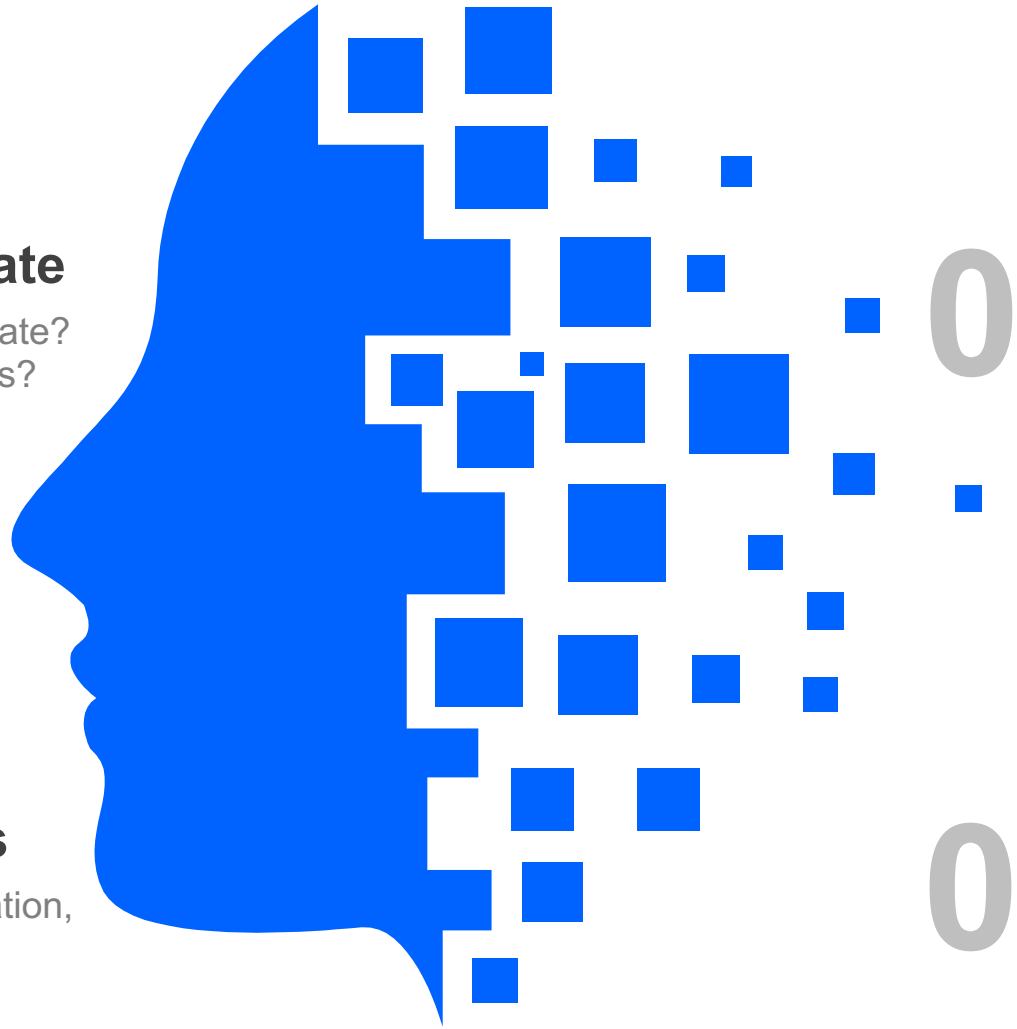
Establishing a Data-Driven Culture for Finance and Audit

Discussion outline



01

Successes to Date

What's working at NC State? What is different about us?

02

People, Process, Tools? What's new?

Why is NC State succeeding relative to its peers?

04

More Resources

If you want more information, where should you go?

03

Tips and Techniques

What should you consider doing differently? Why?

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Tableau

Blueprint

03 **Tips and Techniques**

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04 **More Resources**

If you want more information, where should you go?

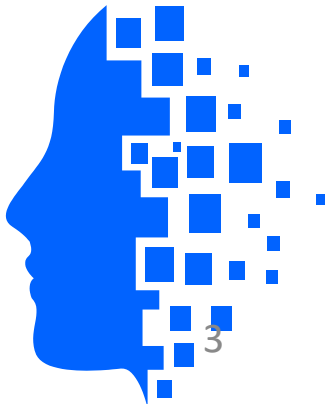
01. Successes to date – good balance of needed skills

01. Body of Knowledge helps frame the requisite skills for data analytics

- Project Management
- Data Acquisition and Manipulation
- Statistical Techniques
- Visual Reporting Techniques
- Communication
- (Finance and Audit) Domain Expertise
- Change Management / Strategic Thinking

apra | INSIGHT PHILANTHROPY RESULTS

While these job domains represent an inventory of skills needed for audit data analytics, a more complete list would also feature interpersonal skills, including: relationship building, curiosity, and a culture of collaboration



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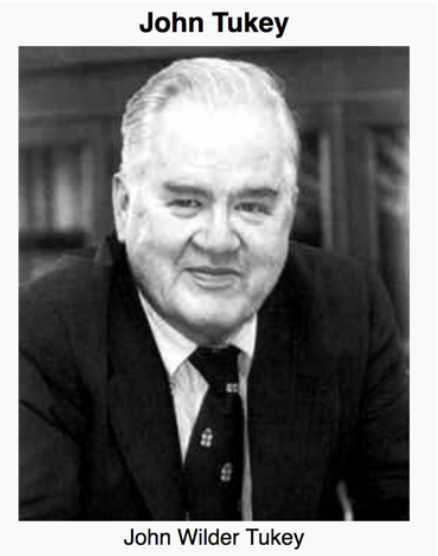
01. New Skills should begin with Exploring the data

01. Biggest difference with Tableau vs. Excel or paper is the use of exploratory analytics

- Consider both Confirmatory and Exploratory analysis
  - What's the difference?
  - What kinds of questions do auditors most often answer with data analytics?

Confirmatory	Exploratory
Evaluating evidence	Gathering Evidence
Testing your hypotheses	Understanding data and patterns
Deviation, correlation charts. Left Join.	Ranking, Part to Whole, Time Series and Distribution charts
Closed-ended questions	Open-ended questions

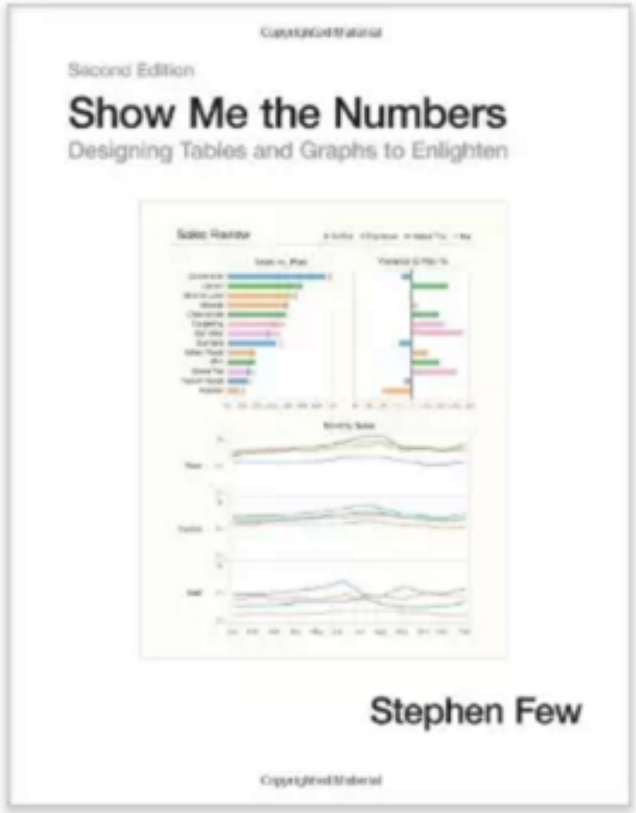


John Wilder Tukey

01. Data Visualization basics

01. These eight different graph types are the building blocks of all visual analytics

- Time Series
- Ranking
- Part to Whole
- Deviation
- Distribution
- Correlation
- Geospatial
- Nominal Comparison (e.g. East, Central, West)



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Using Data Analytics and Visualizations Throughout the Audit

Planning – High level review of all population expenditures

- Gain greater insight into the type of expenditures charged within the population
- Use filters to complete a risk analysis and identify transactions for a risk based sample

Fieldwork – detail testing of risk based sample

- Create a testing spreadsheet with extra fields to be able to gain greater understanding
- Analyze results using field filters to find trends and highest risk areas

Reporting – use the results to tell a story

- Visualizations can be used to show work completed
- Results can be used to show trends and quantify the risks to support your issues

Start with any excel spreadsheet you use on a daily basis and see how easy it is to find greater insights.

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Internal Audit Division - Project Analysis Template

This information(data set) was created for webinar purposes only. Transactions depicting unallowable entries were added for discovery during demonstration.

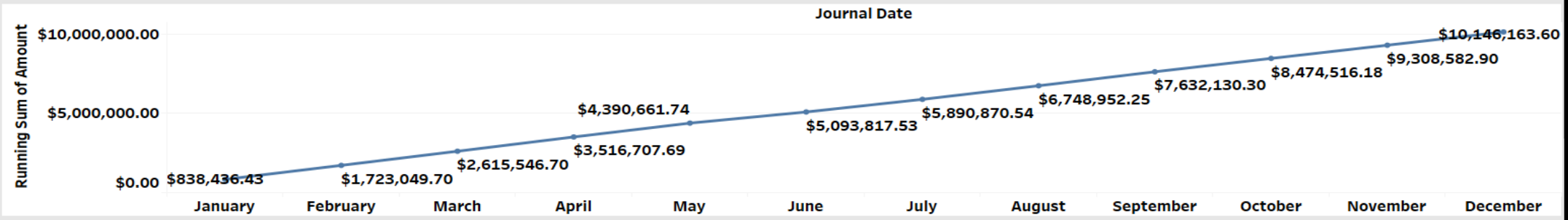
Account Descr
All

Amount
-2K 100K

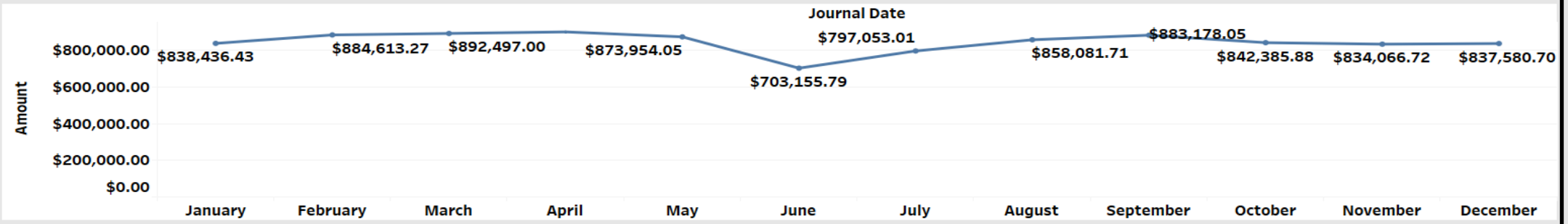
Department
All

Year of Journal D..
- 2007
- 2008
- 2009
- 2010

Accumulated Spending for All Department(s) for All Year(s)



Spend by Month in All Department(s) for All Year(s)



Type of Expenditures - All GL Account

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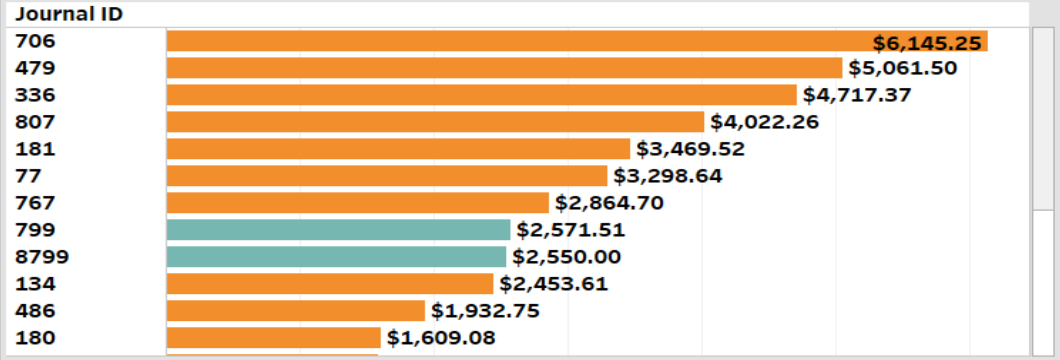
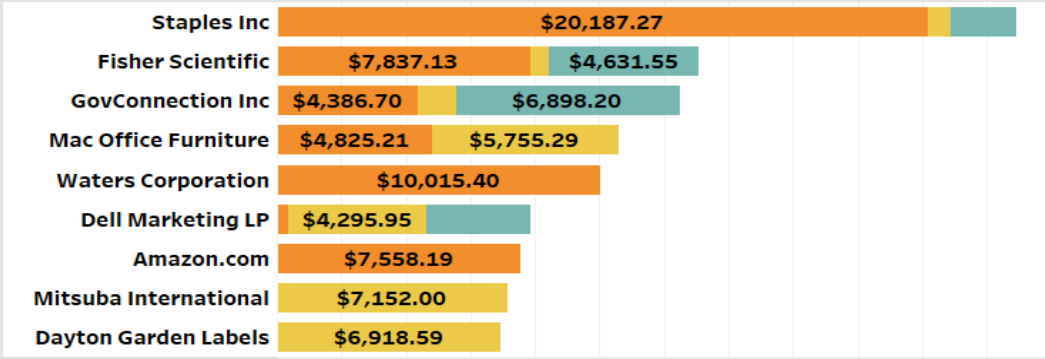
Internal Audit Division - PCard Analysis Template

This information(data set) was created for webinar purposes only. Transactions depicting unallowable entries were added for discovery during demonstration.

PCard over the Limit Review - Expenditures over $5,000 per transaction



Top 10 Vendors for all Expenditures



"Top N"
10

Department
- ✔ Agrostology
- ✔ Anthology
- ✔ Zoology

Department
- Agrostology
- Anthology
- Zoology

PCard Split Transactions for All Department(s)

Risk Example- Cardholder purchases item over $5,000 transaction limit by charging PCard twice

Journal Date	Vendor Name	Line Des..	Count..	Amount	Department
3/22/2010	WAL-MART - Equipment	PCard	2	$5,100.00	Agrostology
6/2/2008	BEST BUY	PCard	2	$3,298.64	Zoology
	PRIEFERT MFG CO INC	PCard	2	$1,360.33	Zoology
4/5/2010	THE HOME DEPOT	PCard	2	$3,953.26	Zoology
12/2/2008	LENOVO	PCard	2	$1,603.72	Zoology
2/27/2008	DELTA AIR	PCard	2	$930.00	Zoology
3/12/2010	BEST BUY	PCard	2	$144.14	Zoology

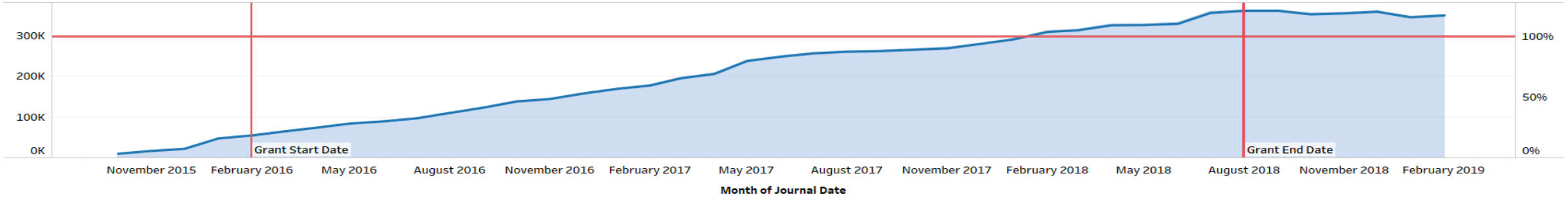
Transaction PCard Details

Journal ID	Journal Date	Vendor Name	Account Descr	Amount	Department
2	09/12/2007	Staples Inc	Departmental Expenses (Office)	($93.99)	Zoology
		BEST BUY	IT Purchases	($4,717.37)	Zoology
4	09/24/2007	Staples Inc	Departmental Expenses (Office)	($2,069.34)	Zoology
5	09/26/2007	Staples Inc	Departmental Expenses (Office)	($381.86)	Zoology
14	10/23/2007	Staples Inc	Departmental Expenses (Office)	($996.96)	Zoology
22	11/29/2007	Office Depot Inc	Departmental Expenses (Office)	($70.12)	Zoology
24	01/07/2008	LENOVO	IT Purchases	$1,151.32	Zoology
26	01/09/2008	University BOOKSTORE	Other Supply	$63.94	Zoology

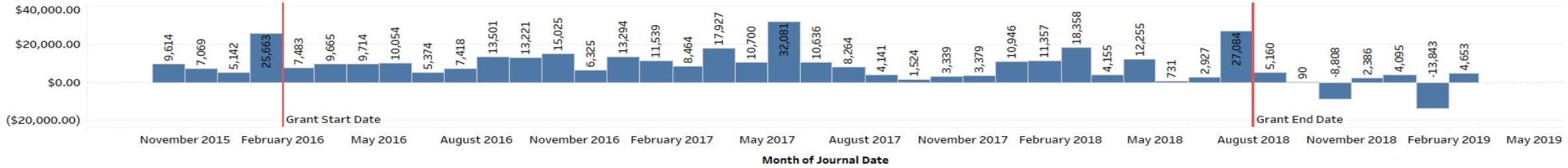
This information was created for this display only and does not represent a real grant

NCSU Internal Audit Division - Grant Analysis Template

Grant start February 1, 2016 - Grant End July 31, 2018
Award Amount $300,000
123.3% of the schedule time has passed.
117.37% of the awarded amount for a total of $352,101 has been expended.
Available budget remaining: ($52,101)
Accumulated Spending



Spend by Month



Type of Expenditures

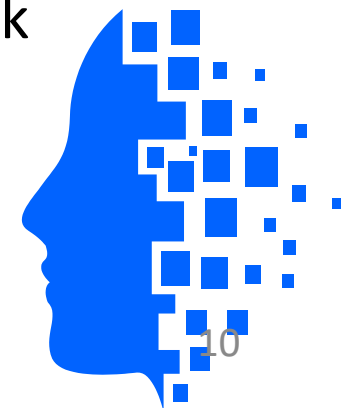
58960 Indirect Ovhd Costs $103,151.45 29% Percent of Total Expenditures	52300 Educational Supply $94,772.06 27% Percent of Total Expenditures	51112 Grad. Res. Asst. $43,107.84 12% Percent of Total Expenditures	53923 Svs Agree-lab Svs $33,984.74 10% Percent of Total Expenditures	55320 Educ	56961 Tuit & Fees (ed Svs Agr) $13,247.42 4% Percent of 51116 EHRA Reg

Grant Details

02. People, Process, Tools? What's new or different?

02. What can others learn from NC State's experience

- Less about tools and more about relationships
- Data analytics is seen as a repeatable process
- Personal curiosity and a strong support network overcomes formal training
- Understanding systems, processes, and people on campus is key
- Vulnerability is an asset. It's Ok to ask for help
- Modest investments to work with an experienced guide has been valuable
- Data analytics as part of "IT audit" is less effective than you might think



02. Tableau Conference 2019 – Tableau Blueprint

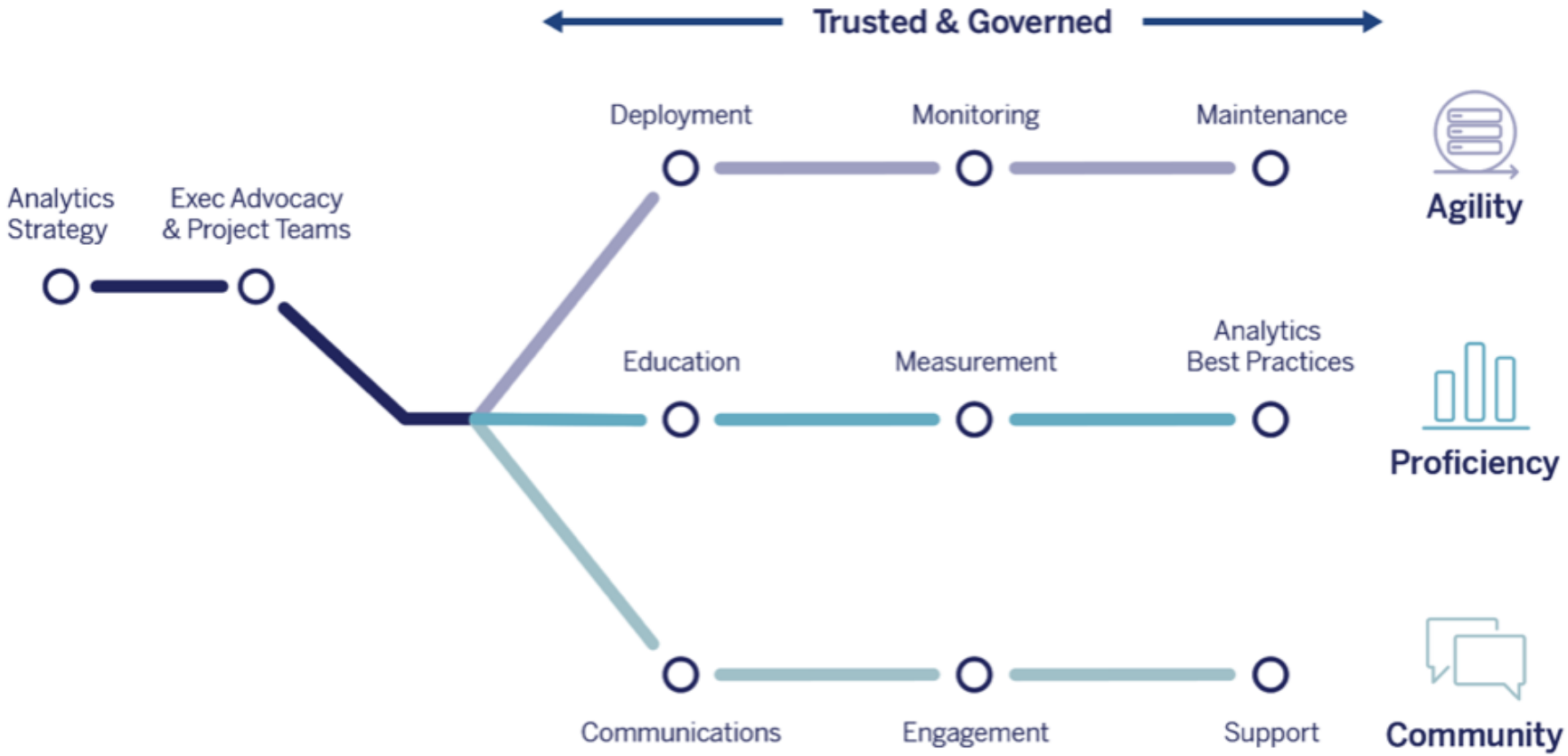
02. Emphasis on Culture as an ESSENTIAL elements for Data Analytics success – we agree

Tableau has a more prescriptive approach for how to build a data analytics culture.

For more info, see: Blueprint

02. Tableau Blueprint

02. Methodology to help with the technical and non-technical elements of analytics deployment



02. Tableau Blueprint – Core Competencies

02.

Agility

Proficiency

Community

02. Tableau Blueprint – Trust matters

02. Emphasis on Culture as an ESSENTIAL elements for Data Analytics success – we agree

- People build high-trust relationships with data

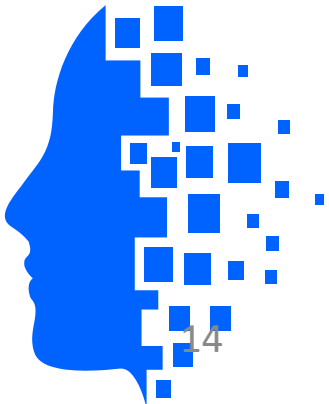
- Teams encourage data access and transparency

- Data governance instills confidence in data

- Organizations set clear expectations for responsible data use

- People who know the business are armed with data to make confident decisions

- Data insights aren’t limited to one single department; instead they are shared across the organization to find impactful solutions.



02. Tableau Blueprint – Show Commitment

02. Commitment means that people consistently treat data as a strategic asset

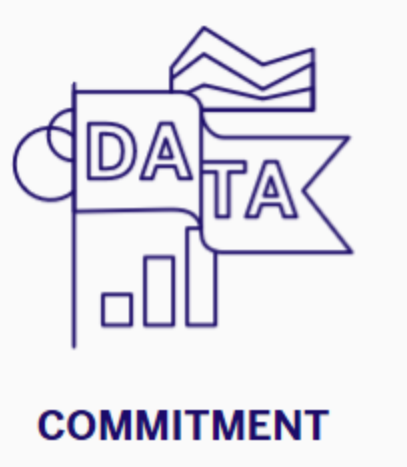
- Executives don't just sponsor data-driven behavior; they model it

- The organizational structure reflects the value of data

- Analytics goals influence data collection and processes

- The commitment is evident in all aspects of the organization – from organizational structure to day-to-day processes

- There is an assigned executive that is accountable for the organization's data use



02. Tableau Blueprint – Talent

02. Organizations prioritize data and analytics skills in recruiting, development and retaining talent

- Job descriptions clearly outline data skills for all roles

- Teams tailor enablement programs to all roles and levels

- Leaders encourage and reward data use

- Executives prioritize data skills as part of talent strategy, including recruitment and training

- Data analytics is NOT (only) an IT competency. It's part of everyone's path to success

02. Tableau Blueprint – Sharing for Success

02. People support each other and develop a sense of belonging

- People actively share best practices across the organization

- Teams share data cross-functionally to support business objectives

- Leaders create time and space for people to participate in communities

- Sharing creates a contagious energy to “pay it forward,” developing a sense of community

- Sharing culture is evidenced by meetups, messaging groups, and portals.

02. Tableau Blueprint – Mindset

02. Data is a catalyst for organization-wide improvement

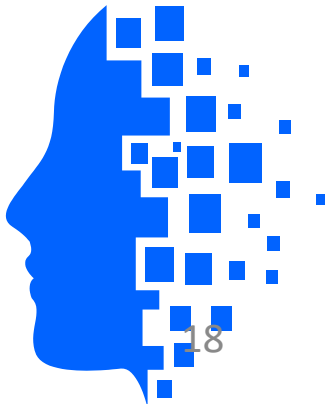
- People encourage experimentation and innovation

- Organizations focus on outcomes, rather than vanity metrics

- People feel comfortable challenging ideas with data

- People are curious and willing to challenge their own assumptions with data – and they're open to being challenged by others.

- As data driven practices become habits, perceptions change and people start to associate data with improvement, success and growth



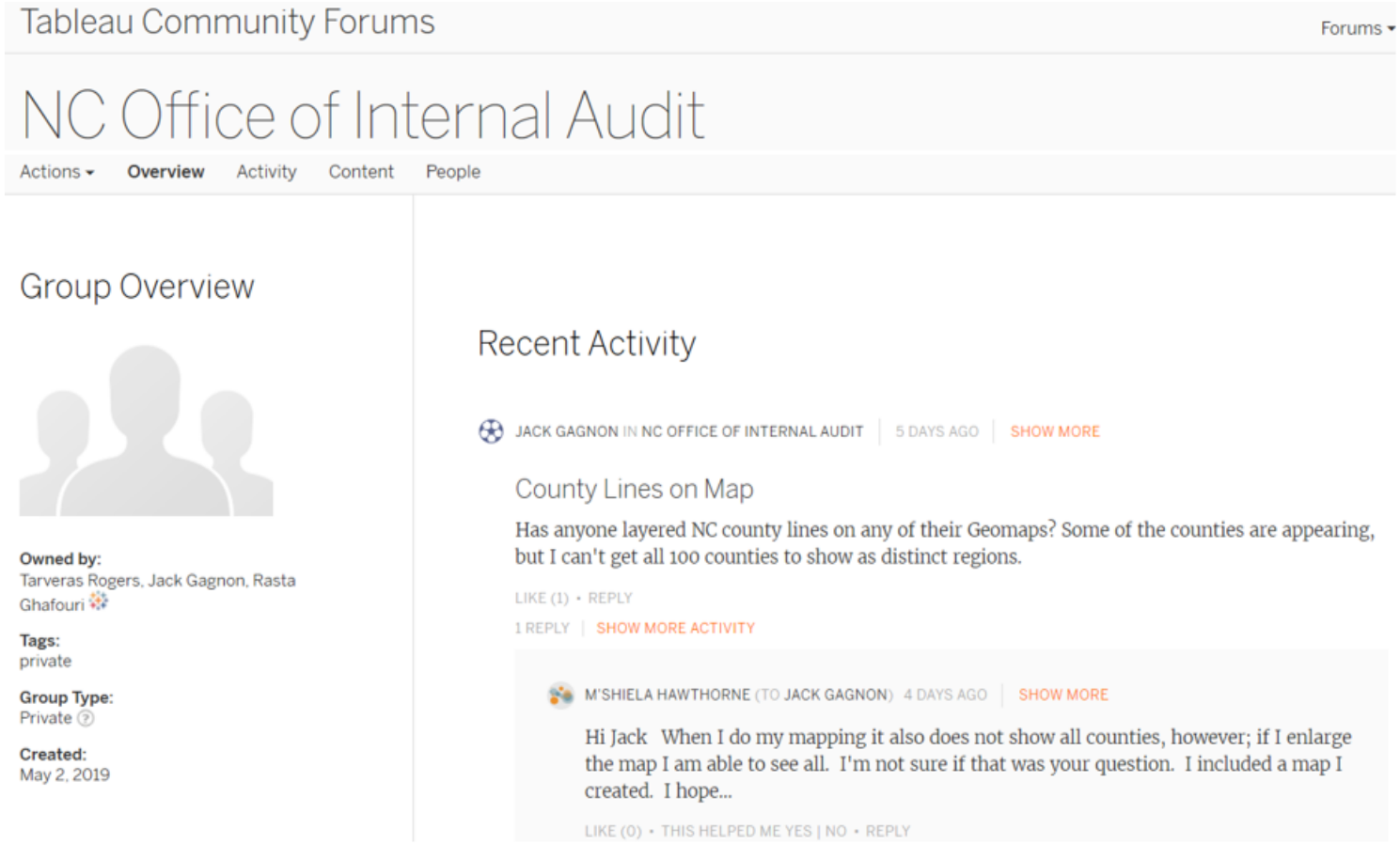
02. North Carolina Data Analytics Community for Audit

02. Specific to Internal Audit across all State Agencies – Higher Ed and other Agencies

- Q&A across organizations

- Improved Community

- Resource for planning future trainings



02. North Carolina Data Analytics Community for Audit

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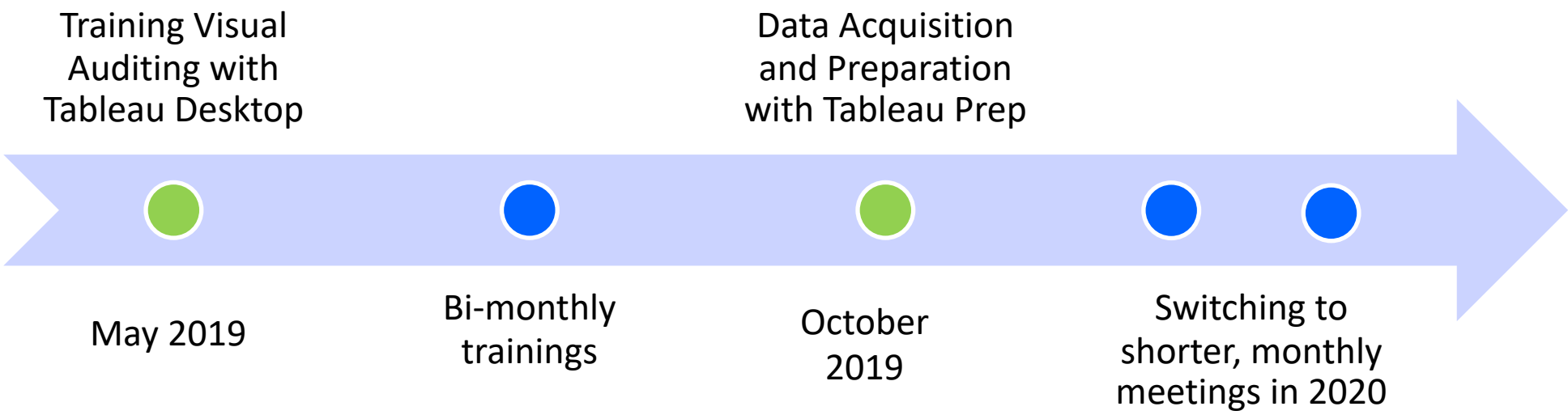

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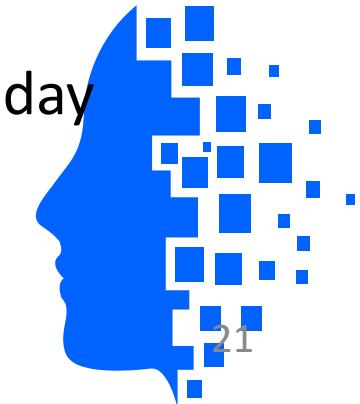
03. Tips and Techniques

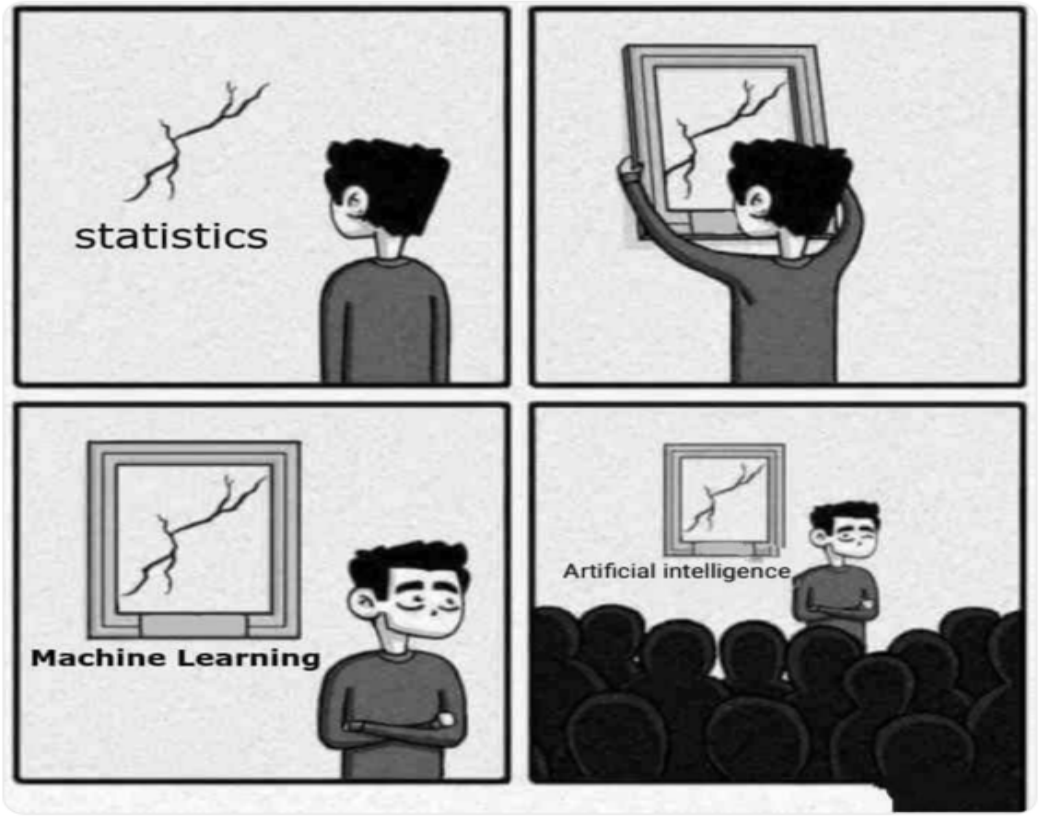
03. What should you do differently when setting up your Data Analytics people and processes?

- Most significant innovation is scheduling
- Think about upcoming audits early – how can analytics add insight?
- Assign more than one audit at a time – two or three is better than one
    - Work on getting your data for the next audit while you're in the midst of fieldwork for your current one.
    - Consider re-running your data analytics as part of follow-up procedures for previously completed audits.
- Allow time for learning by trial and error
- Optimal time allocation for data analytics is 1 to 2 hours per day each day



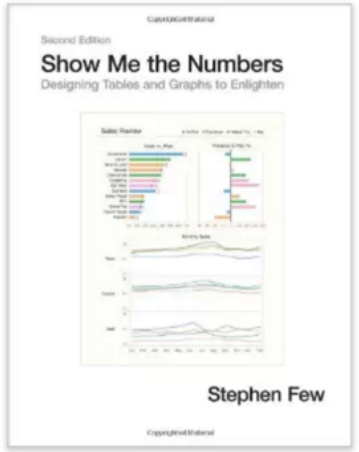
03. Tips and Techniques

03. What's "hot" and coming soon? Have we got a Robotics, AI, Machine Learning project for you!

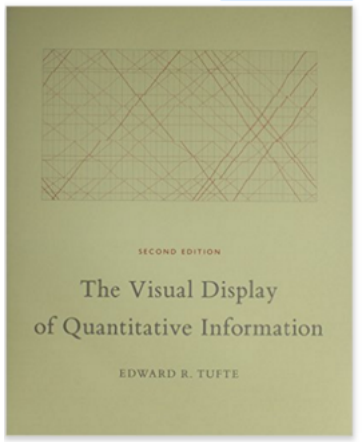


04. For More Information

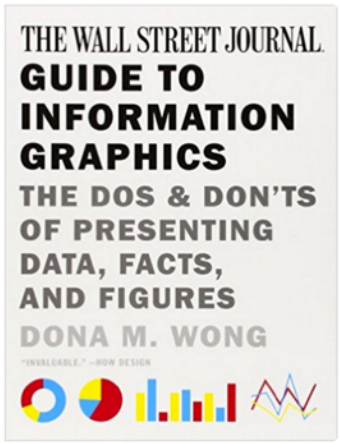
04. Additional resources



[Stephen Few]



[Edward Tufte]



[Dona Wong / WSJ]

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04. For More Information

04. Contact either of us

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