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ADVANCED DATA: DATA VISUALIZATION

Taking Your Analysis and Reporting To The Next Level

GOTOWEBINAR INTERFACE

If you cannot hear us speaking, go to:

File->Preference->Audio and check your audio settings.

1. Enter all comments/questions into the "Questions" panel. You will not be able to see each other's comments.

2. We share information and links with you in Chat. The chat feature is not available for attendees to use.

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Audience view   100%

Sharing

Webcam

Audio

Dashboard

Attendees: 1 of 501 (max)

Polls (0/0)

Questions

☑ Show Answered Questions

X	Question	Asker

Send Privately   Send to All

Handouts: 0 of 5

Chat

Test

Webinar ID: 204-956-675

🔴 This session is being recorded.

GoToWebinar

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Course Page:

https://offers.techimpact.org/course-page-advanced-data

ALYSSA FORD

Director of Consulting Services

Pronouns: She/Her

As the Director of Consulting Services, I lead a team of individuals committed to helping nonprofits access and leverage technology in a way that is customized to their mission. Our team works with nonprofits to help guide them on the path to impact through services including strategy, implementation of cloud-based solutions, enhancing use of data through visualization, and measuring impact.

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DR. TAJ CARSON

CEO/Founder of Inciter

I work with nonprofits to turn data into valuable and timely information using powerful tools and a flexible framework. I have a Master's degree in Information Visualization from the Maryland Institute College of Art, a certificate in technology entrepreneurship from the University of Maryland-Baltimore County, and a Ph.D. in Sociology from the University of Delaware.
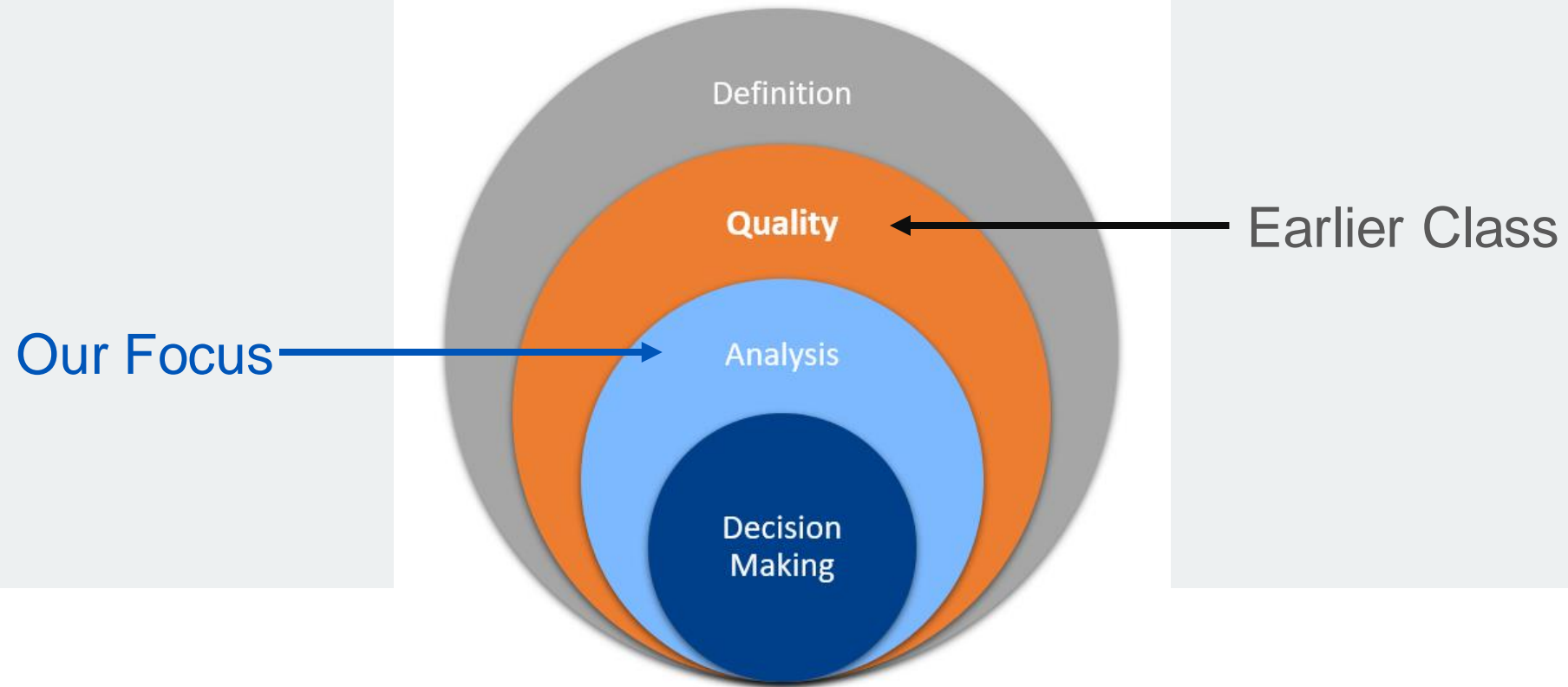
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AGENDA

1. Choosing what data to present

2. Choosing the right reporting format for the situation

3. When to bring in a data scientist, and what they can do

COURSE SESSIONS & GOALS

ADVANCED DATA COURSE SESSIONS

Session 1: Data Quality
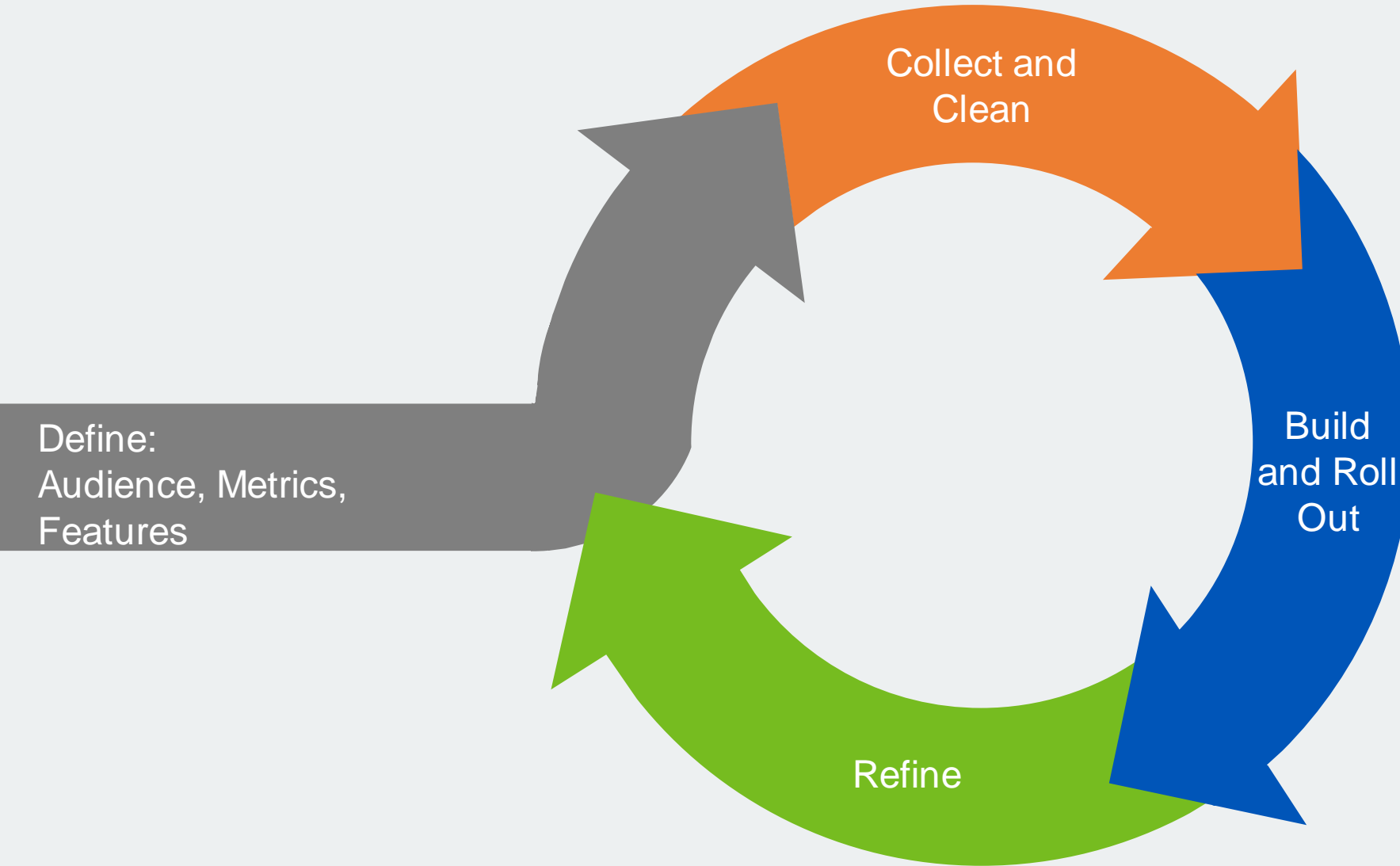
Session 2: Data Analysis/Visualization

Session 3: Data Driven Decision Making

CHOOSING WHAT DATA
TO PRESENT

THE CYCLE OF DATA REPORTING

Collect and Clean

Build and Roll Out

Refine

Define:
Audience, Metrics, Features

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CHOOSING WHAT DATA TO PRESENT

Collect and Clean

Build and Roll Out

Refine

Define:
Audience, Metrics, Features

Who's going to look at your report?
- This can be everyday users or managers that are looking for monthly updates

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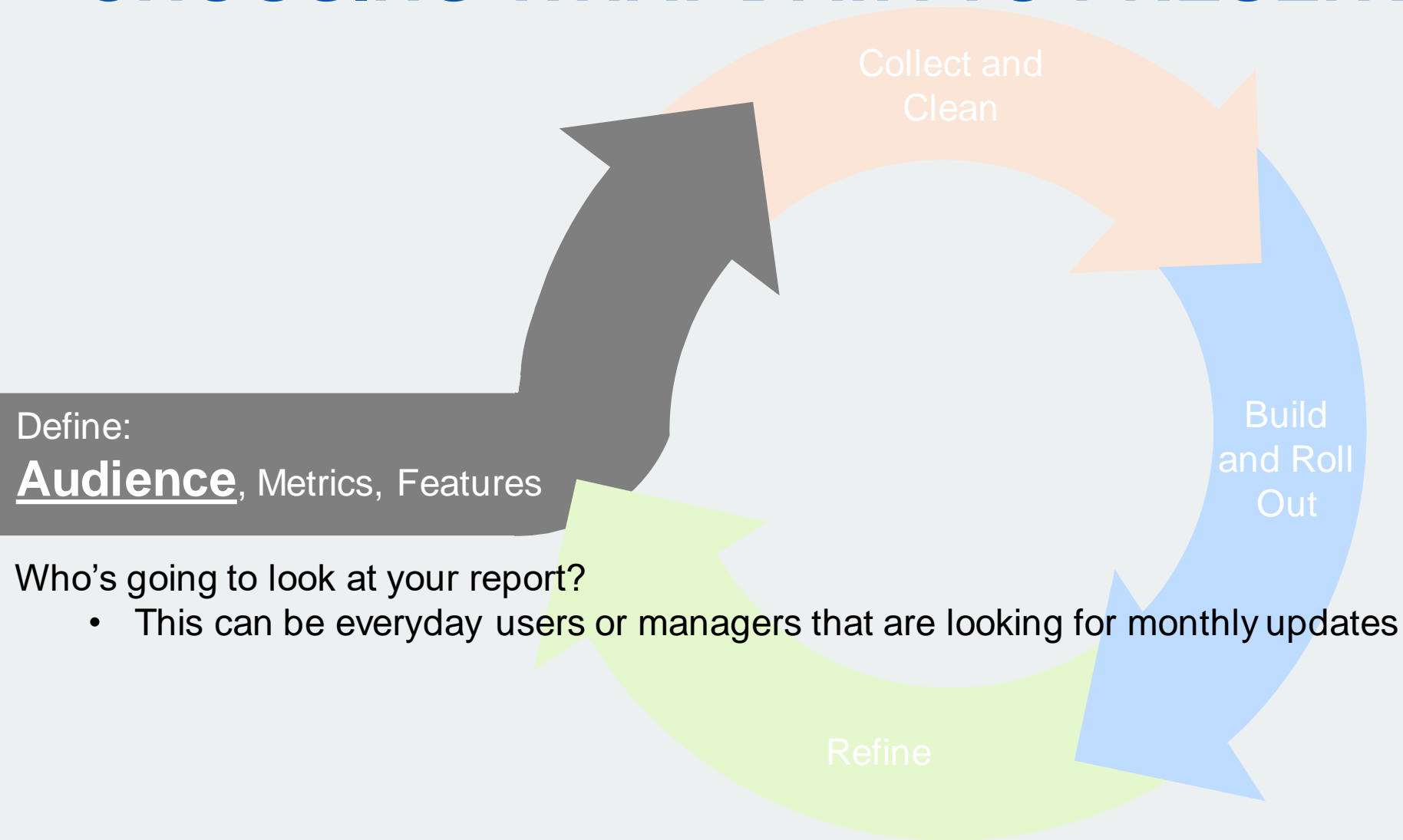
TYPES OF REPORTS – DIFFERENT AUDIENCE

- Operational Staff
- Executive Team

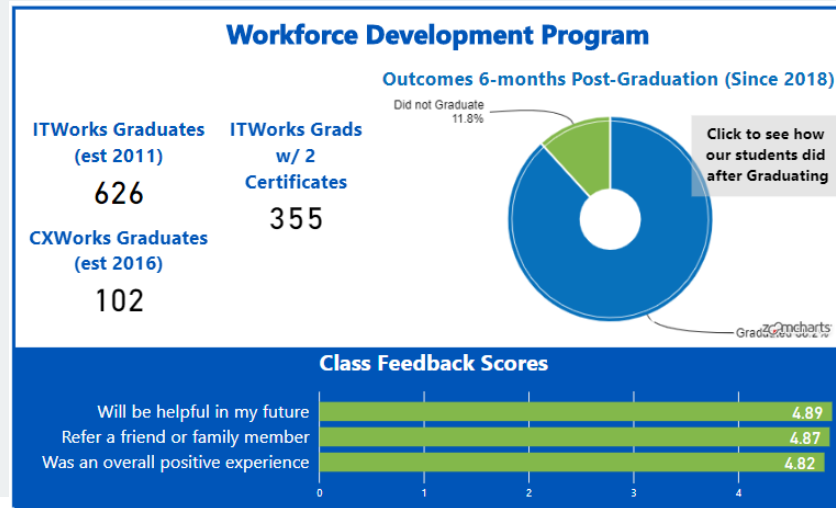→ Programs Management
→ Development
→ Marketing
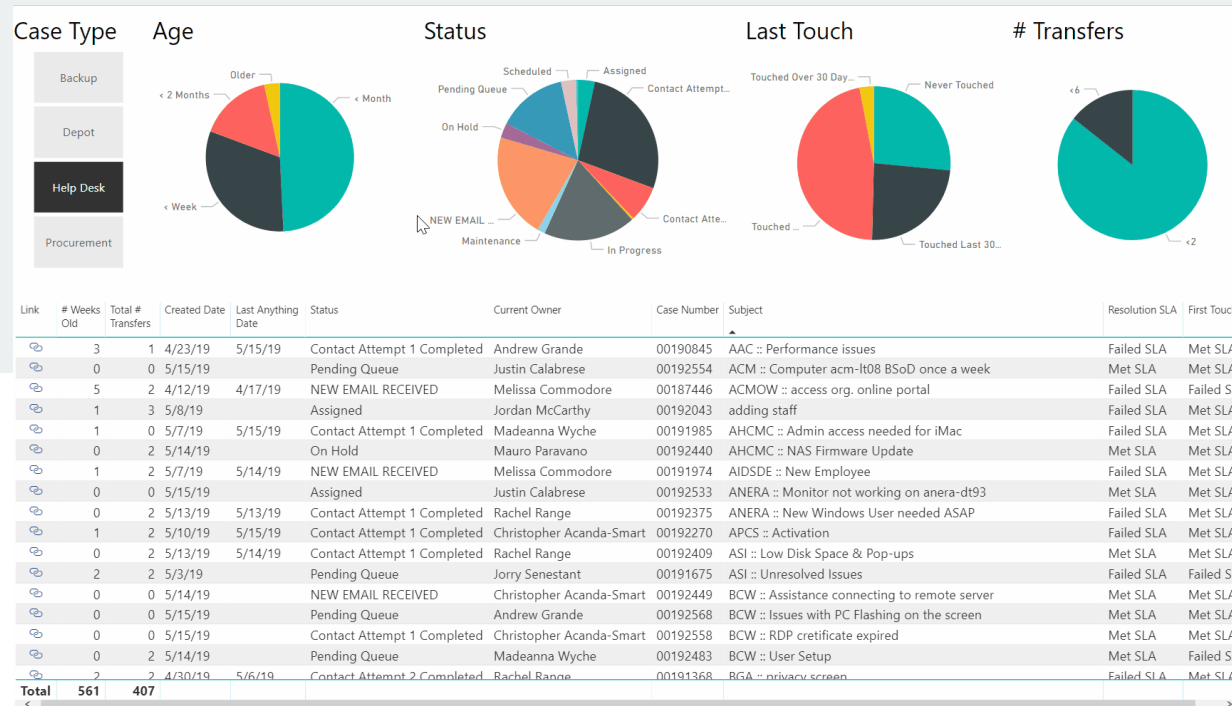
Operational – Provides metrics the audience can impact

TYPES OF REPORTS – DIFFERENT AUDIENCE

Informative – Supports the message or mission of your organization & increases awareness.

- **Board Members**
- **Potential Funders/Donors**
- **Public**

Workforce Development Program

ITWorks Graduates (est 2011) 626

ITWorks Grads w/ 2 Certificates 355

CXWorks Graduates (est 2016) 102

Outcomes 6-months Post-Graduation (Since 2018)

Did not Graduate 11.8%

Click to see how our students did after Graduating

Class Feedback Scores

Will be helpful in my future — 4.89
Refer a friend or family member — 4.87
Was an overall positive experience — 4.82

JANELLE JACKSON
"In only 16 weeks, ITWorks taught me all of the IT fundamentals and knowledge to start a solid foundation for my dreams of an IT career. My internship turned into an employment opportunity. I am now a Cisco IT Essentials, CompTIA A+ certified, service desk support representative for the state of Delaware!"

ARIEL RODRIGUEZ
"ITWorks has given me another perspective at life. I learned to be more confident and to never limit myself. It has also taken me from being that wandering person looking from the outside in - to being on the inside looking up."

Workforce Development Program Outcomes (All Time)

Tech Impact's **ITWorks** and **CXWorks** programs provide technical and soft skills training, certification, and hands-on experience which helps young adults secure entry-level jobs in the technology and call center customer experience industries. All recipients receive training and a guaranteed internship.

This outcomes dashboard demonstrates the impact these program have on our students' lives: our graduates earn certifications and secure jobs with a career path and living wage, ultimately improving their economic mobility and lifting entire communities.

We operate our programs in Philadelphia, PA; Wilmington, DE; and Las Vegas NV.

Total # Hours	Total # Volunteers	Total In-Kind Value
20K	2K	$476K

Activity Type

ITWorks Friday Session | ITWorks Mentor | CX... | C...
IT W...

WHO?

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QUESTIONS TO ASK STAKEHOLDERS DURING YOUR PROCESS

Who are you designing this dashboard for?
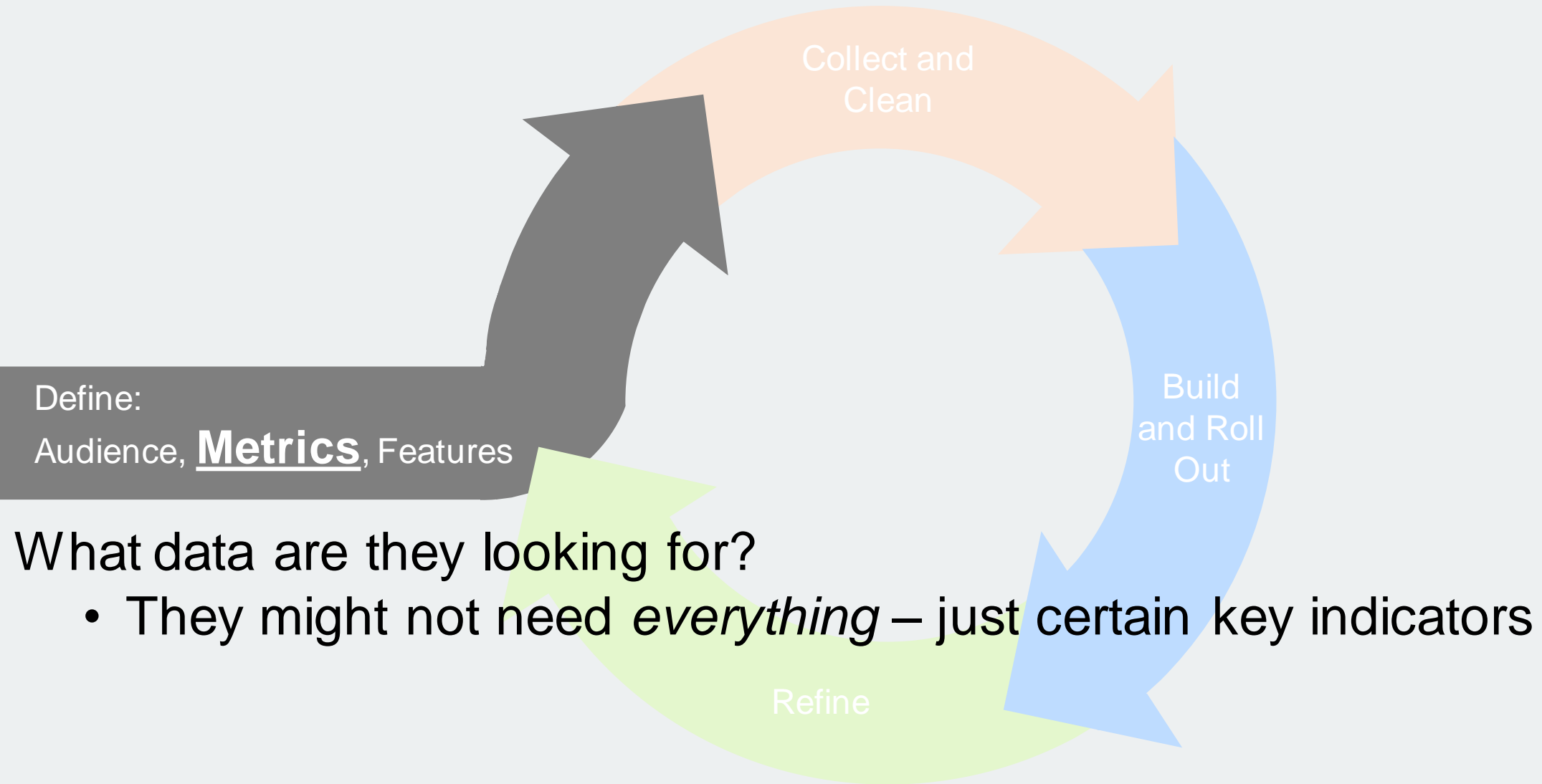
Is this an informative or operational dashboard?

WHO?

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DRAFTING YOUR REPORT

Who

- Draw 4 quadrants plus a bar above

- Identify the audience (and leave room for 3 lines in the block).

Audience: Development - Operational

CHOOSING WHAT DATA TO PRESENT

Collect and Clean

Build and Roll Out

Refine

Define:
Audience, **Metrics**, Features

What data are they looking for?
- They might not need *everything* – just certain key indicators

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KEY PERFORMANCE INDICATORS (KPIs)

KPIs measure the degree of success of an activity or department or organization

OPERATIONAL – WHAT DATA IS MOST USEFUL TO STAFF?

- Convene staff members and talk about their individual needs.
- Is there a specific measurement or value they're interested in?
- Do they already report on this information somewhere else?
- Is it important to filter the data? (by date, program, geography)

Program Management	Development	Marketing
# of Open Cases	# of New Major Donors	Website hits
# of Clients Served	Year to Year Growth in Donations	Newsletter subscribers
% of Follow up Phone calls with a time frame	% of Board Members who give	Advocacy presentations over a period of time

WHAT?

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INFORMATIVE – WHAT DO YOU WANT TO COMMUNICATE?

- Convene key stakeholders and discuss key messages.
- Is there a specific measurement or value that conveys the message?
- Where does this information reside?
- Is it important to filter the data? (by date, program, etc.)

EXAMPLES:
Board Participation & Composition
Volunteer Giving
Volunteer Hours
Program Goals Met
Overhead %
Cash on Hand

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DRAFTING YOUR REPORT

Who

What

Initial layout & plan for report

Audience: Development - Operational
Purpose: Track fundraising efforts
Key Metrics: Donation by month, % of first-time donors, YTD donations, Major gifts by state

WHO?

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CHOOSING WHAT DATA TO PRESENT

Collect and
Clean

Build and
Roll Out

Refine

Define:

Audience, Metrics, **Features**

How does it need to be displayed?
- Some users might need to drill down into the details while other may want to look at aggregate value
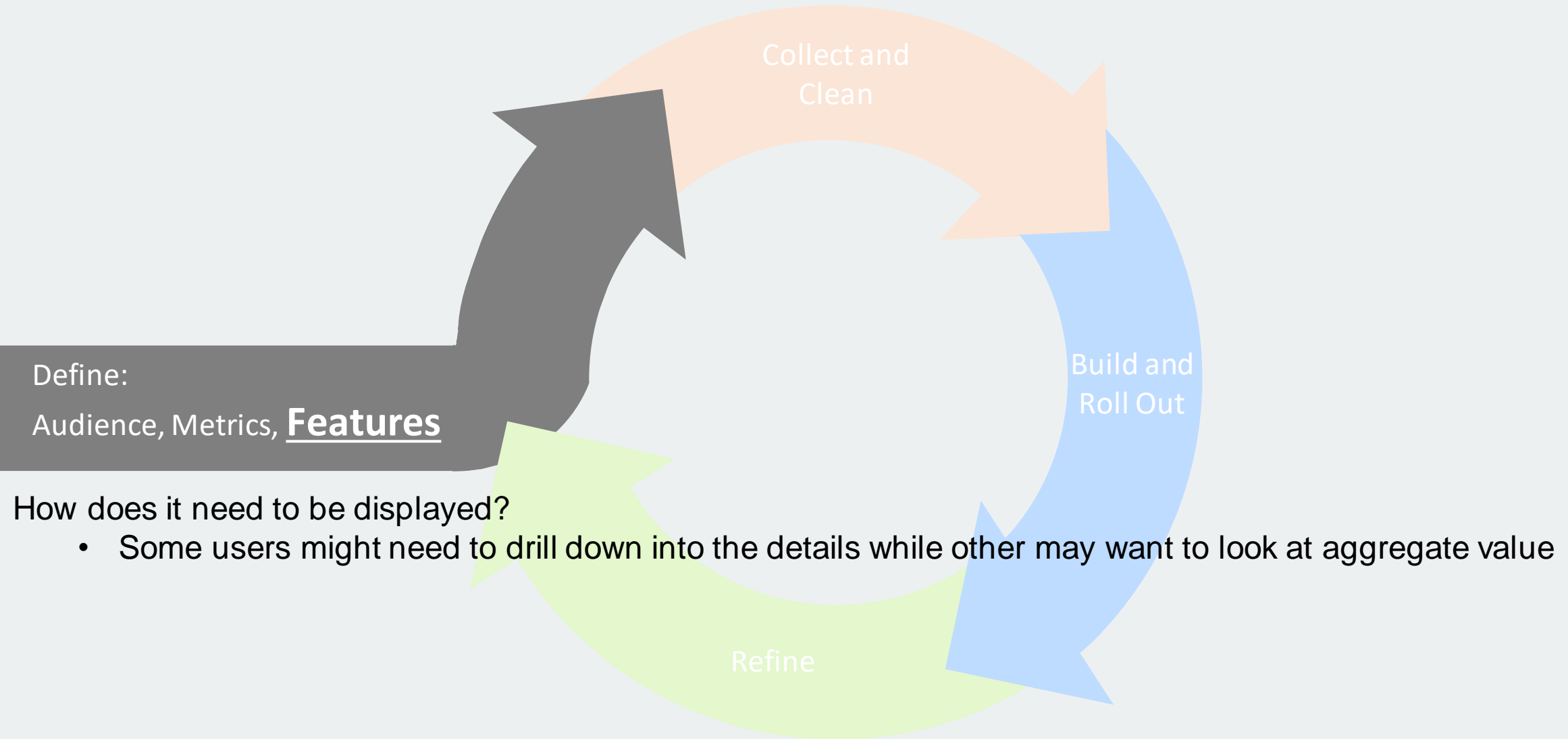
CHART CHOOSER – REFERENCE PAGE
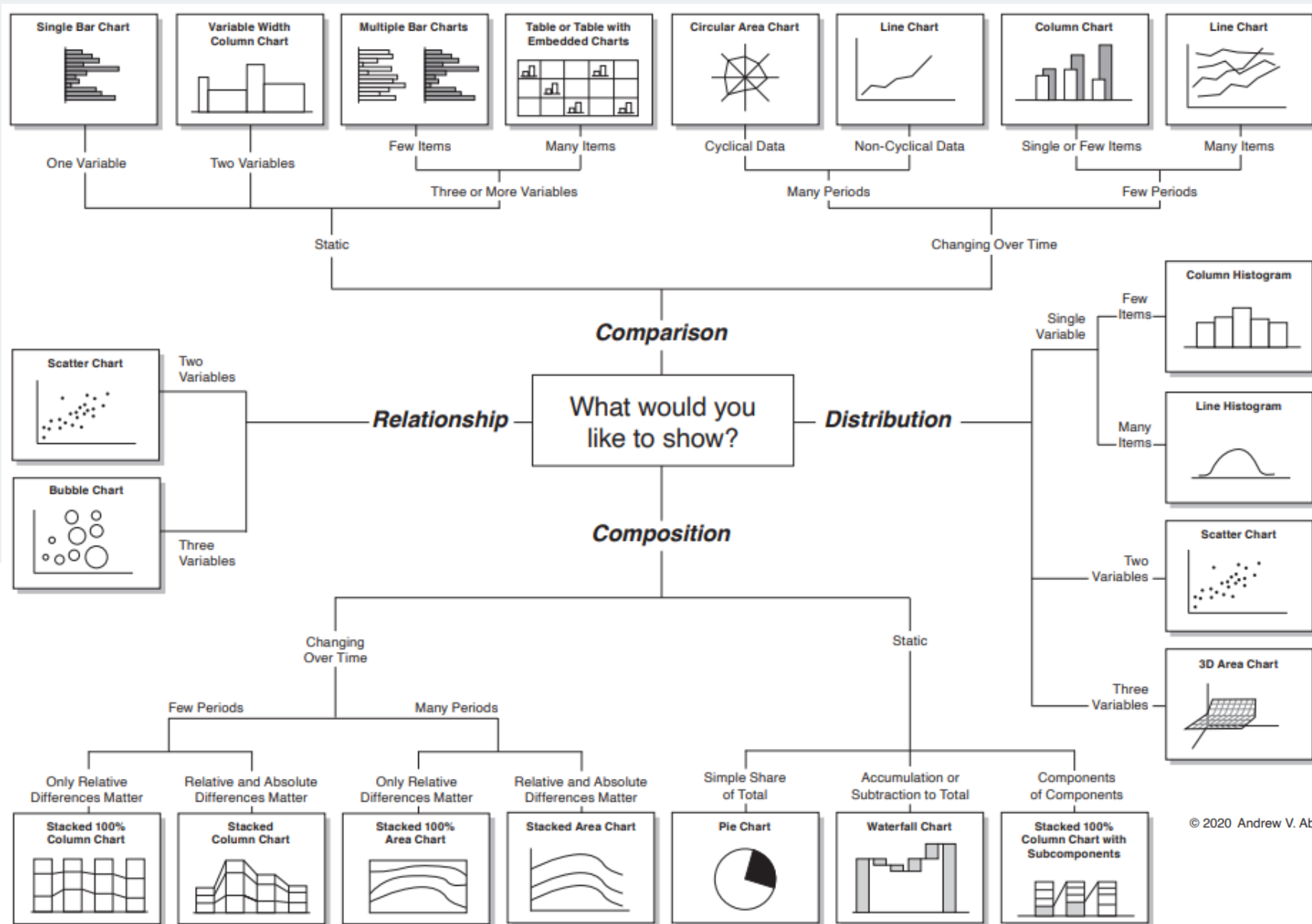
Another useful resource:
https://blog.hubspot.com/marketing/types-of-graphs-for-data-visualization

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www.extremepresentation.com

CHART TIPS & BEST PRACTICES – REFERENCE PAGE

Column Charts

- Best not to have more than 7 categories
- Time should be on the horizontal axis and run from left to right
- Numerical axis should start at zero
- Avoid pattern lines or fills
- Use a bar chart when category names are long, you have more than 7 categories, or are displaying negative numbers
- For stacked column charts do not use too many (4) composing parts

Line Charts

- Best for trend-based visualization
- Good alternative to a bar charts with number of data points/categories is high
- Axis doesn't have to start at zero if intended message is the rate of change or overall trend.
- Time should run from left to right
- Remove guidelines to emphasize trends & reduce distraction

Pie Charts

- Total sum of segments should equal 100%
- Charts should have < 6 categories unless you want to focus on a clear winner.
- Ideally only 2 categories
- Don't use pie charts if category values are nearly identical
- Don't use 3D or blow apart effects – they are distracting

Map Charts

Use for/when:
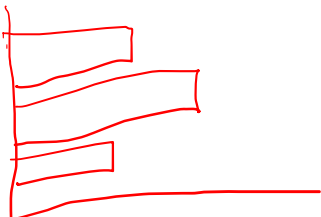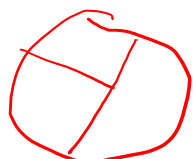
- Quantitative info on a map
- Regional context is important
- Want an overview of data distributions across locations
- ➢ Not great comparing exact values

Source: https://eazybi.com/blog/data_visualization_and_chart_types/

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DRAFTING YOUR REPORT

Who → Audience: Development - Operational
What → Purpose: Track fundraising efforts
→ Key Metrics: Donation by month, % of first time donors, YTD donations, Major gifts by state

Initial layout & plan for report

How

SF report XYZ

Where

excel file abc

DRAFTING YOUR REPORT
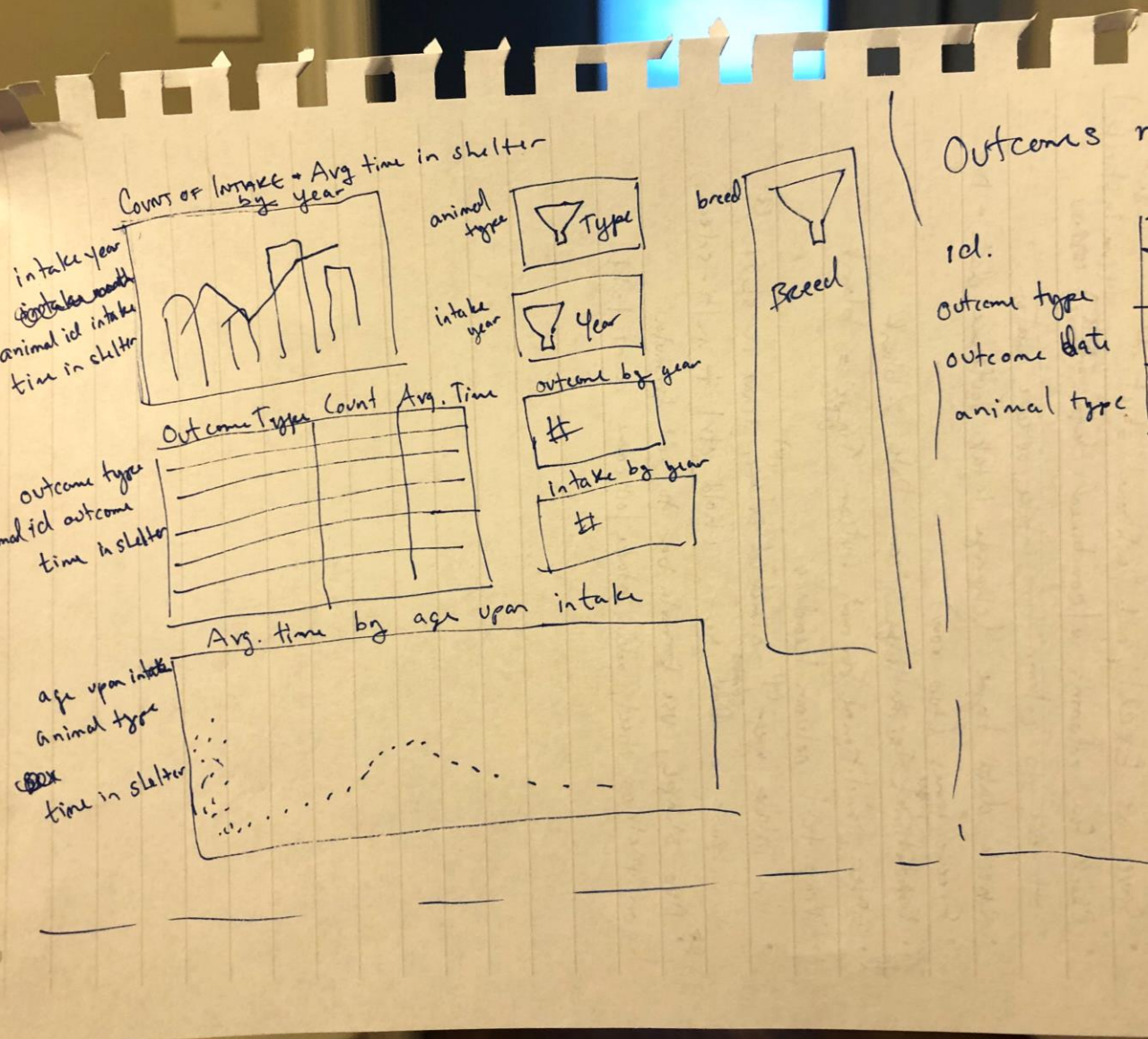
It doesn't have to be pretty.

Determine the chart type.
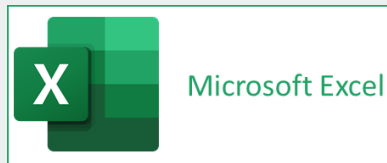
Identify data sources/fields.

CHOOSING THE RIGHT REPORTING FORMAT

WHICH TOOL TO USE

Start Simple

Use Built-In Reporting

Third-Party Visualization

FREQUENCY OF REPORTING

Start Simple	Use Built-In Reporting	Third-Party Visualization
• Might require manual configuration or updates • Better for less frequent reporting depending on complexity	• Setup reports that can be run by users on-demand • Schedule reports to run on a regular basis • Can be used for frequent reporting of common reports (daily, weekly, monthly) • Can be used for one-off reporting of custom needs	• Can be configured to automatically refresh on certain intervals • Possible to update in real-time • Use refresh functionality for on-demand updates • More difficult, but possible, to use for one-off reporting or custom needs

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DISAGGREGATING YOUR DATA

When and why?

Aggregate data is good for seeing trends or an overview. Disaggregating can show the detail.

This helps:

- Identify variables that impact change.
- Drill down into categories, individuals, etc.
- Verify the data you're reporting makes sense.
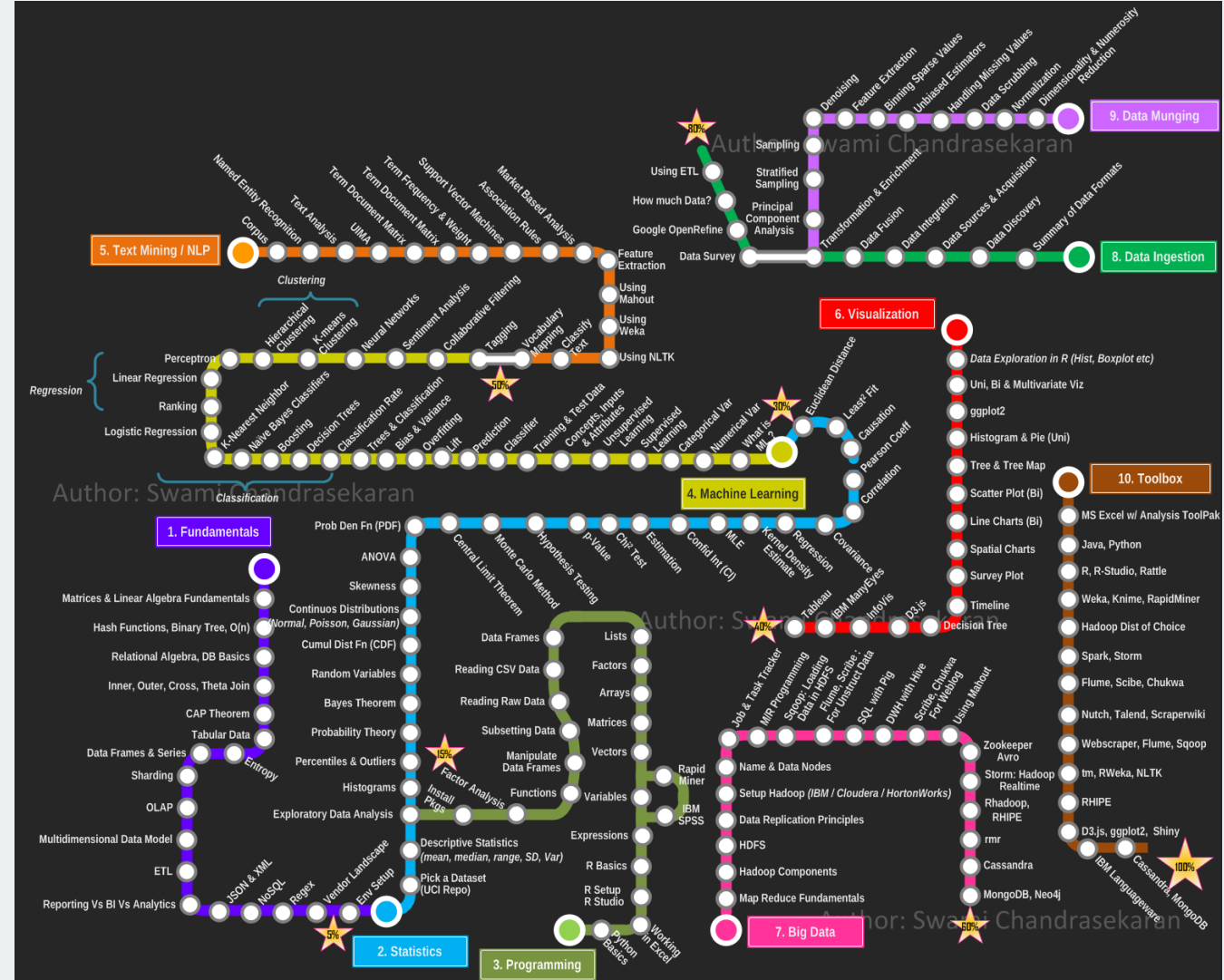- Provide the right information based on the audience.

WHEN TO BRING IN A DATA SCIENTIST

HOW CAN A DATA SCIENTIST HELP?

- Complex data manipulation
- Statistical analysis
- Predictive modeling
- Identify bias in the data
- Ask the *right* questions
- Conduct meaningful surveys
- Evaluate survey data based on method used
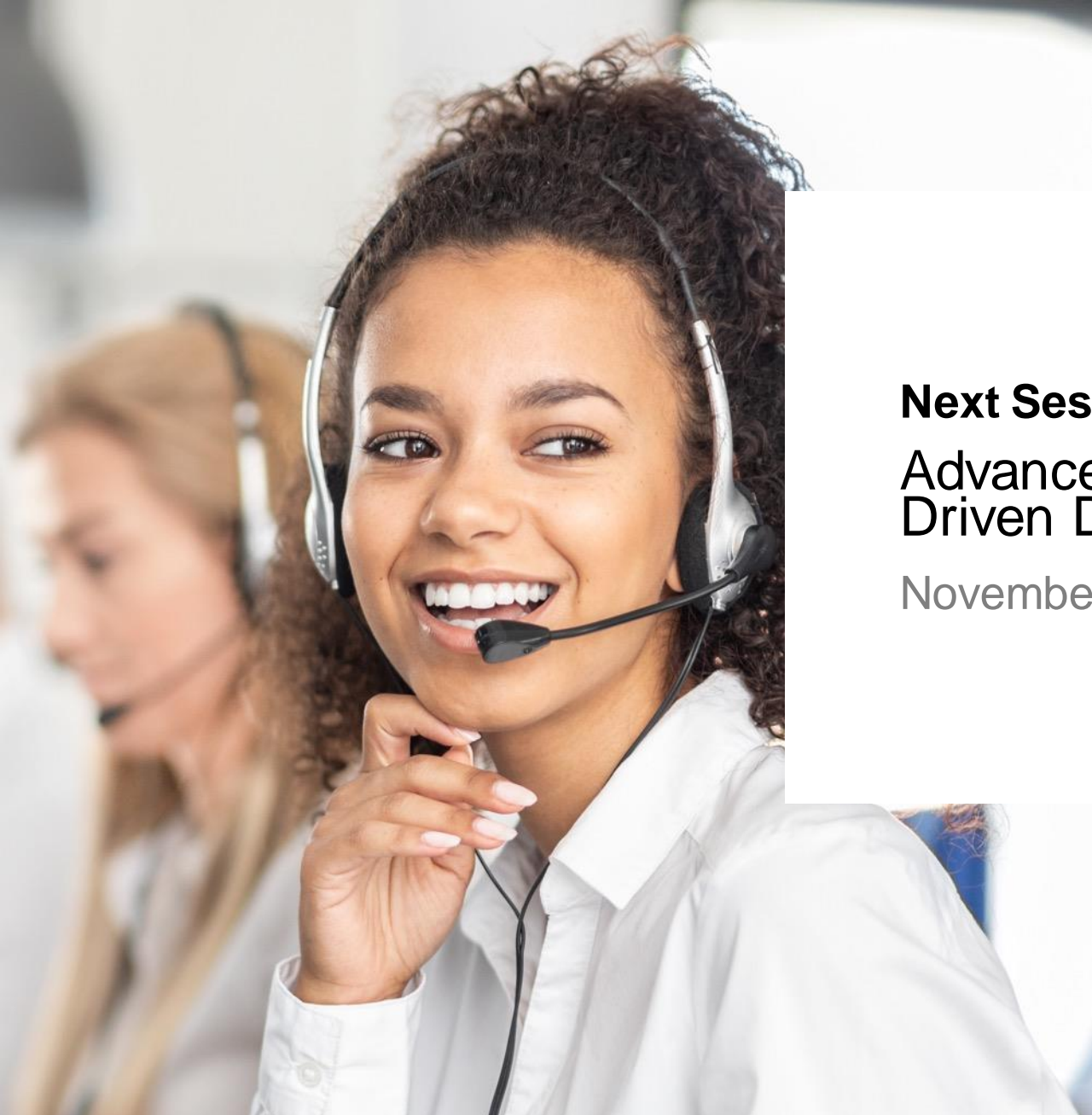- Data warehousing and ETL (extract, transform, load)

HOMEWORK

Draw out and bring a draft report using the datasets you identified in Session 1.

Email a scan or picture of your drawing to training@techimpact.org by Tuesday, 2pm Eastern for instructor critique for Session 3.

Next Session

Advanced Data: Session 3: Data Driven Decision Making

November 19, 2020, 1-2:30pm Eastern

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THANK YOU

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