The Tableau Healthcare Show

Your Third Thursday Skill Pill

Skill Pill 4

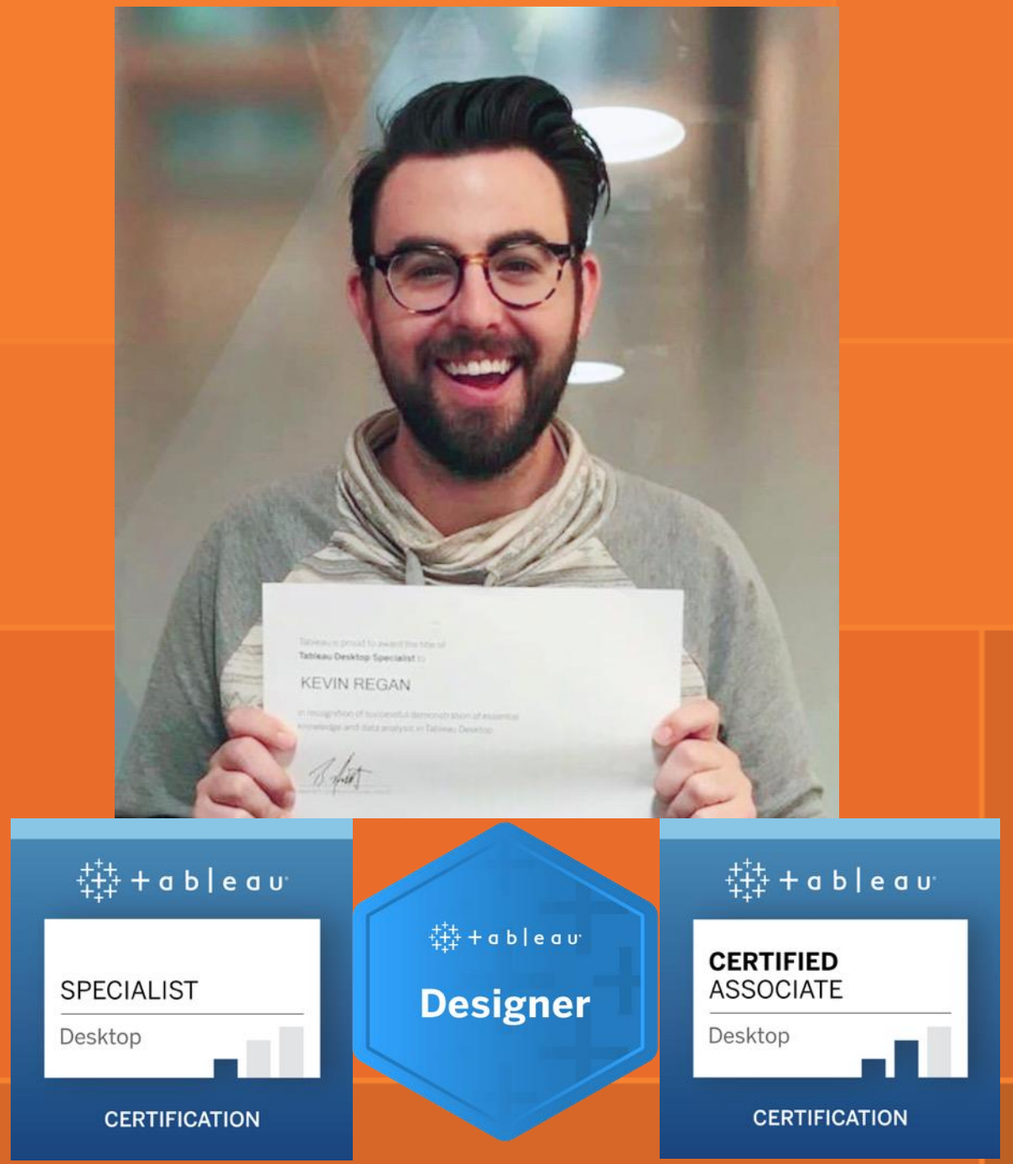
Master your data with Tableau Prep

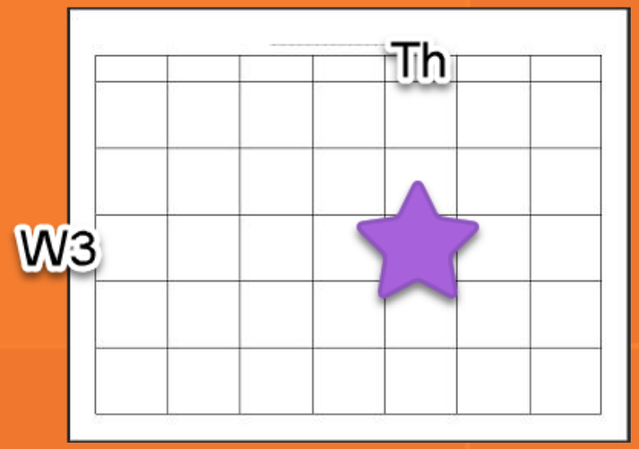
Thursday, January 16, 2020

Kevin Regan

Customer Success Manager

Tableau Healthcare





For Healthcare

Providers, Payers, Admins and Data fans

Information, News and Info Applicable to the Healthcare Analytics Community

Tableau works with **20** out of 20 of the Top Hospitals (US News & World Report)

Tableau has a **dedicated** Healthcare Team for Payers and Providers

Tableau works with **all** major Payers

Tableau works with **over 2,200** healthcare organizations in the USA

Feedback, questions, comments

Email us!

Cisco webex

Questions? Let us know!

tableauhealthcareshow@tableau.com

We are listening and want your input!

tableau

Agenda

- Our Guests Today
- Master Your Data with Tableau Prep
  - Intro to Tableau prep
  - Prep Basics and Demo
  - Advanced Analytics with R/Python Integration
- Q&A

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Today's Presenters

Amir Meimand

Strategic Sales Consultant
Machine Learning and Predictive Analytics
San Jose, CA

CJ Callender

Sales Consultant
Denver, CO

Matt McWhorter

Dir Sales Consulting
Atlanta, GA

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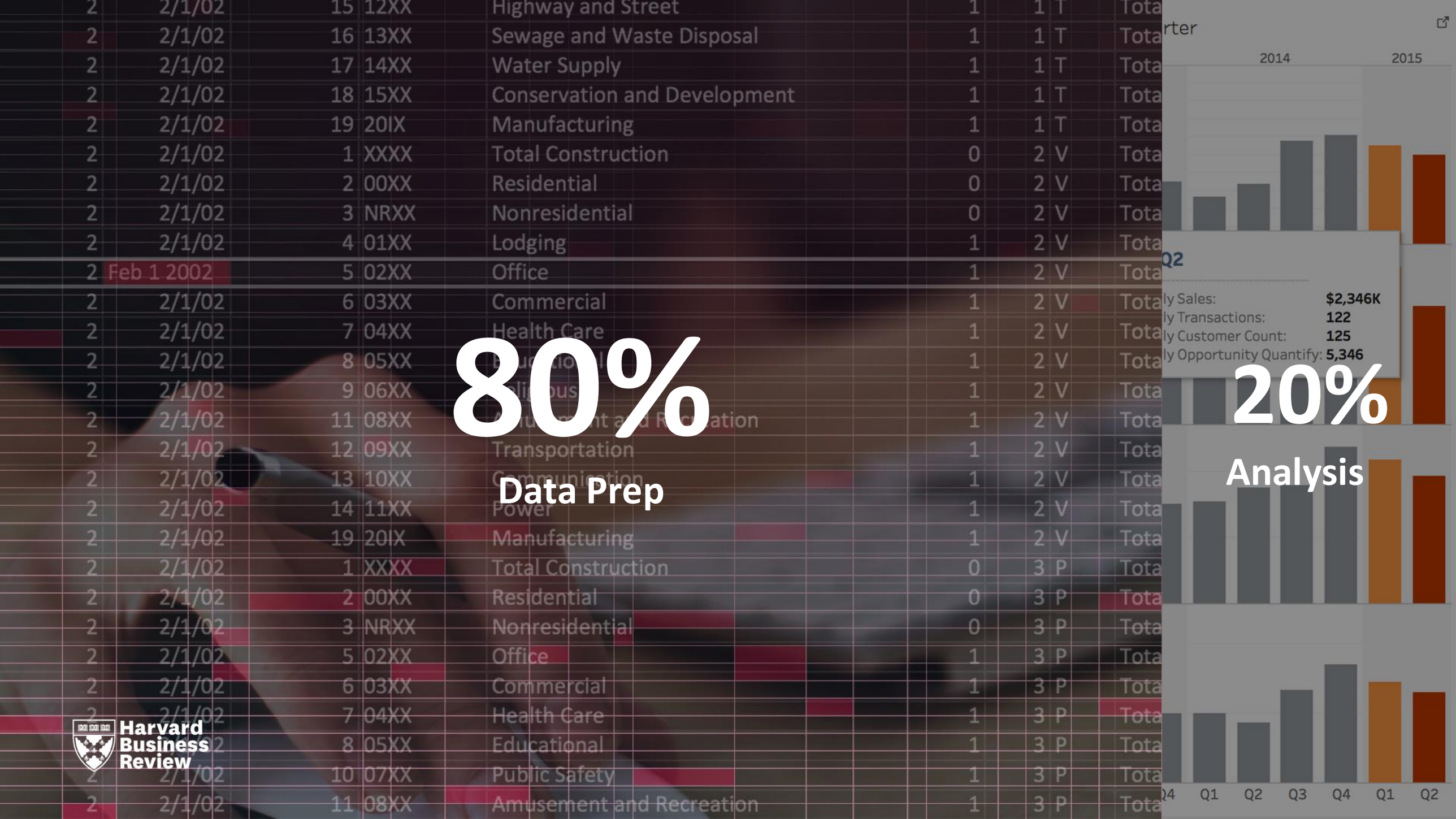
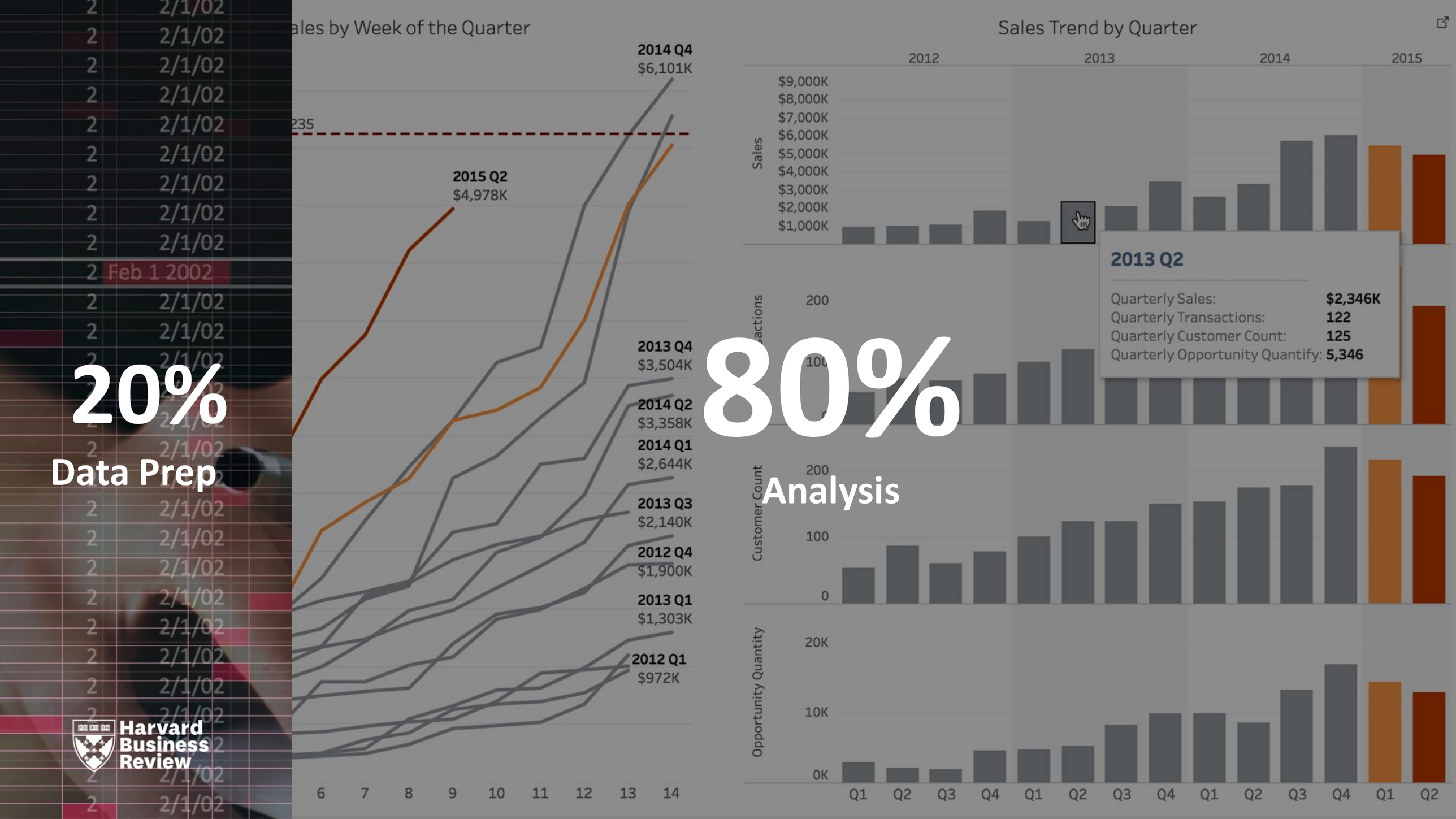

80%
Data Prep
20%
Analysis
Harvard Business Review
2014
2015
Q2
ly Sales: $2,346K
ly Transactions: 122
ly Customer Count: 125
ly Opportunity Quantify: 5,346
Q1
Q2
Q3
Q4
Q1
Q2


20%
Data Prep
Harvard Business Review
ales by Week of the Quarter
2014 Q4
$6,101K
235
2015 Q2
$4,978K
2013 Q4
$3,504K
2014 Q2
$3,358K
2014 Q1
$2,644K
2013 Q3
$2,140K
2012 Q4
$1,900K
2013 Q1
$1,303K
2012 Q1
$972K
6 7 8 9 10 11 12 13 14
80%
Analysis
Sales Trend by Quarter
2012 2013 2014 2015
Sales
$9,000K
$8,000K
$7,000K
$6,000K
$5,000K
$4,000K
$3,000K
$2,000K
$1,000K
2013 Q2
Quarterly Sales: $2,346K
Quarterly Transactions: 122
Quarterly Customer Count: 125
Quarterly Opportunity Quantify: 5,346
200
100
0
Customer Count
200
100
0
Opportunity Quantity
20K
10K
0K
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2

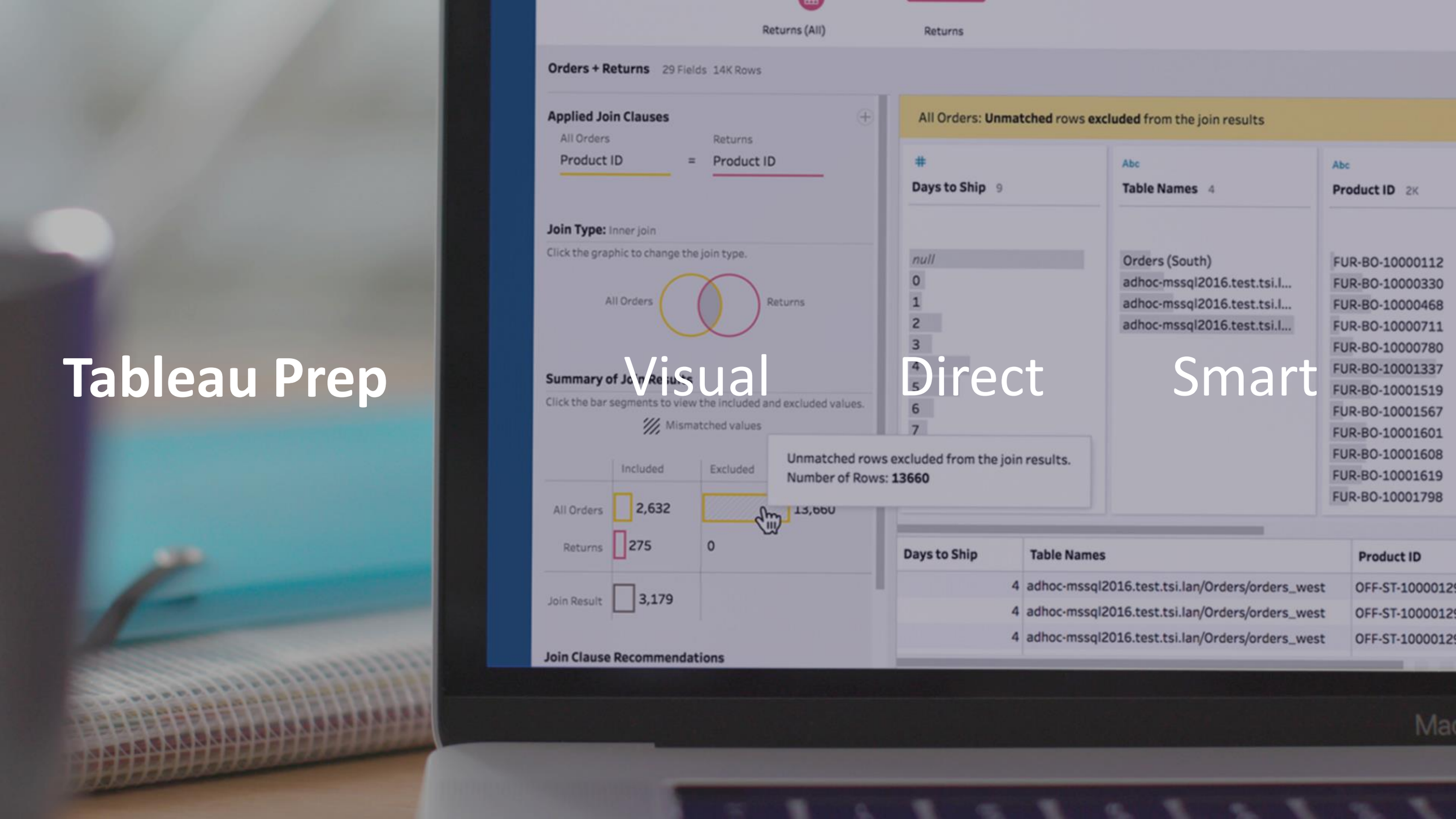


Tableau Prep
Visual
Direct
Smart
Returns (All)
Returns
Orders + Returns 29 Fields 14K Rows
Applied Join Clauses
All Orders
Returns
Product ID = Product ID
Join Type: Inner join
Click the graphic to change the join type.
All Orders
Returns
Summary of Join Results
Click the bar segments to view the included and excluded values.
Mismatched values
Included
Excluded
All Orders 2,632
Returns 275
0
Join Result 3,179
Join Clause Recommendations
All Orders: Unmatched rows excluded from the join results
Days to Ship 9
Table Names 4
Product ID 2K
null
0
1
2
3
4
5
6
7
Orders (South)
adhoc-mssql2016.test.tsi.l...
adhoc-mssql2016.test.tsi.l...
adhoc-mssql2016.test.tsi.l...
FUR-BO-10000112
FUR-BO-10000330
FUR-BO-10000468
FUR-BO-10000711
FUR-BO-10000780
FUR-BO-10001337
FUR-BO-10001519
FUR-BO-10001567
FUR-BO-10001601
FUR-BO-10001608
FUR-BO-10001619
FUR-BO-10001798
Unmatched rows excluded from the join results.
Number of Rows: 13660
Days to Ship
Table Names
Product ID
4 adhoc-mssql2016.test.tsi.lan/Orders/orders_west
4 adhoc-mssql2016.test.tsi.lan/Orders/orders_west
4 adhoc-mssql2016.test.tsi.lan/Orders/orders_west

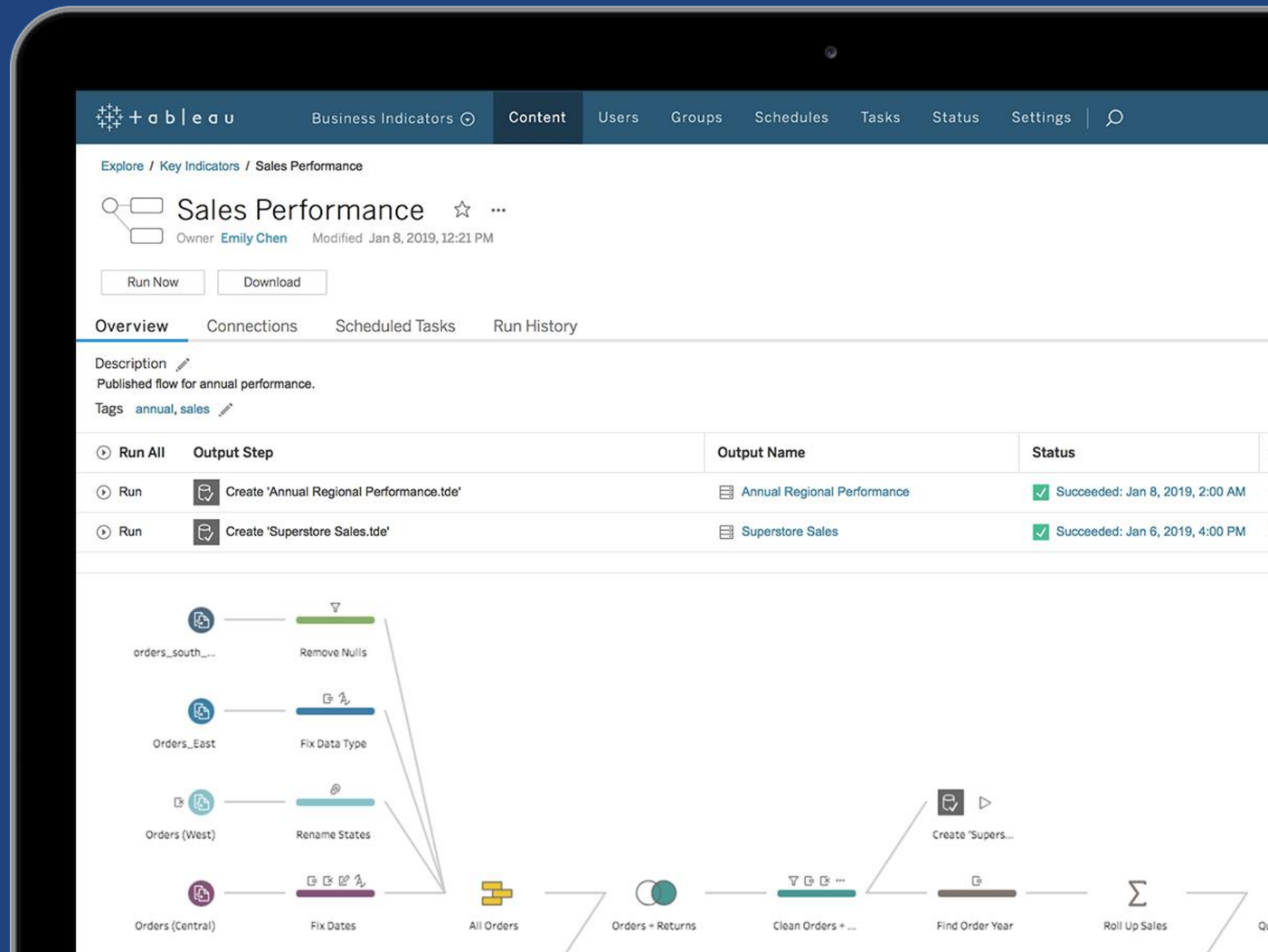
Tableau Prep

Prep Builder

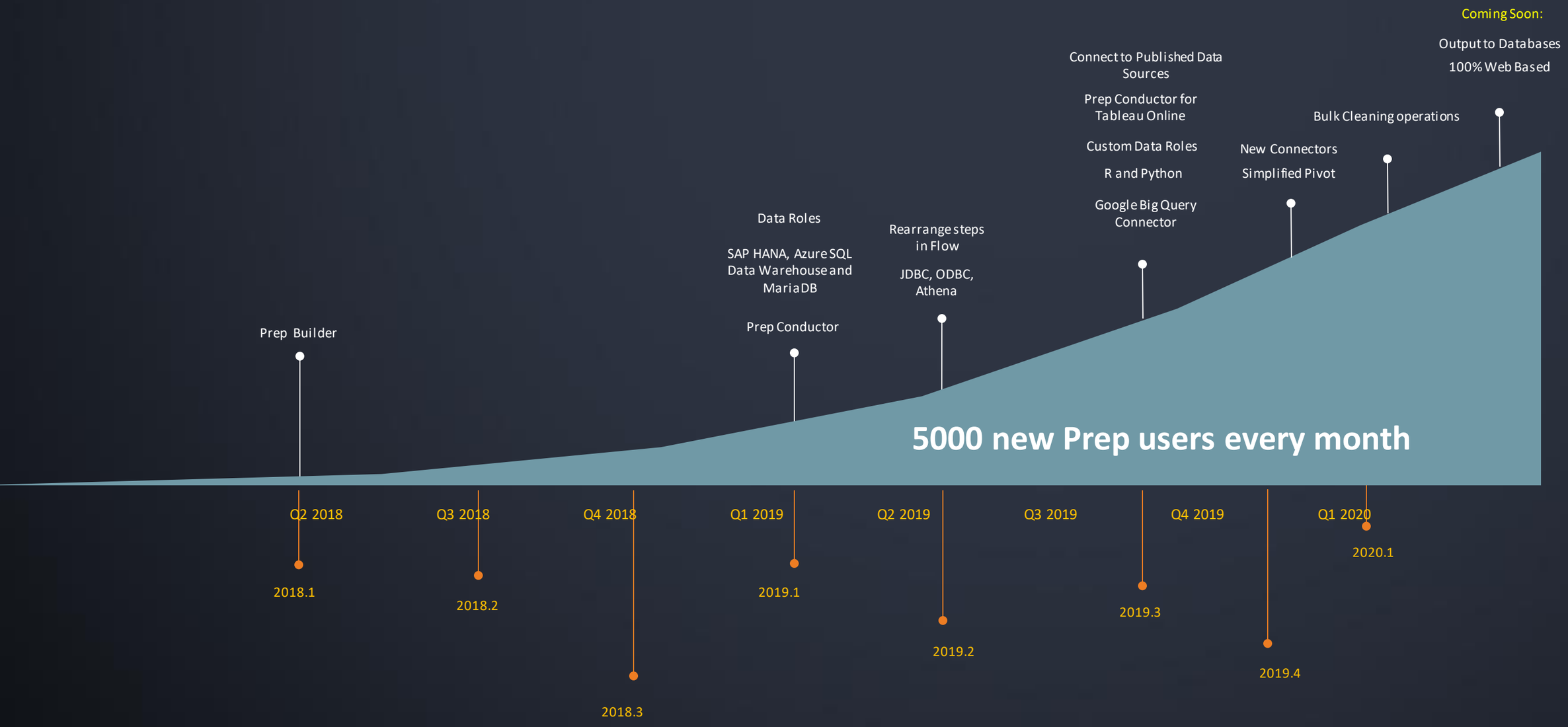
- Profile data
- Transform and clean
- Combine from multiple sources
- Integrate Advanced Models (R/Python)
- Publish data

Prep Conductor

- Automate jobs on the Server
- Support for Online
- Monitoring and alerting



Rapid Innovation and Customer Success

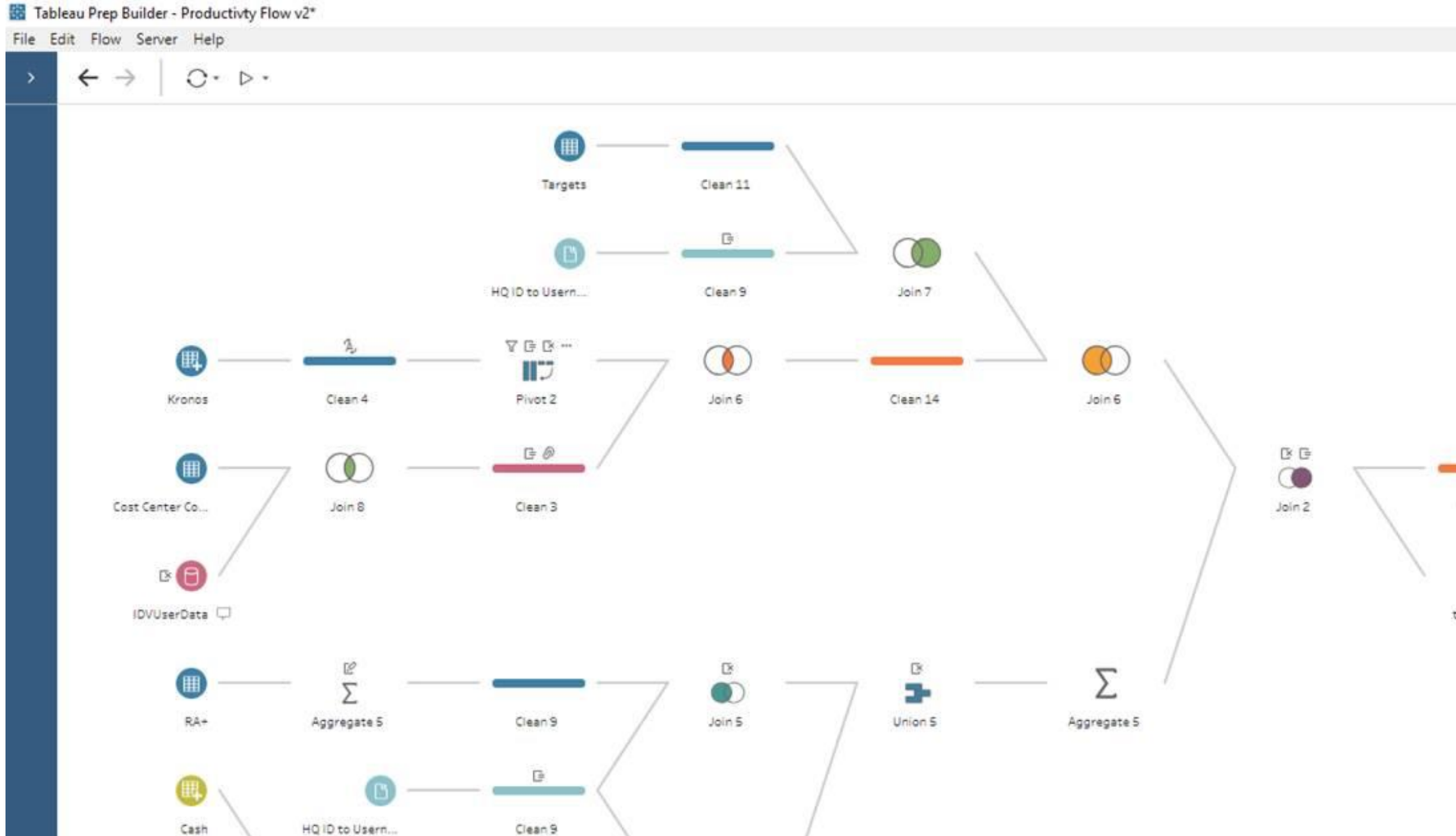


Customer Success With Tableau Prep

- **Trinity Health**

"With Conductor, the promise of being able to step away and let the data refresh on its own is valuable to our team that is moving at warp speed. We can move toward full automation and free up our time to actually do analytics instead of refreshing data sources."

- Andrew Miller, Trinity Health

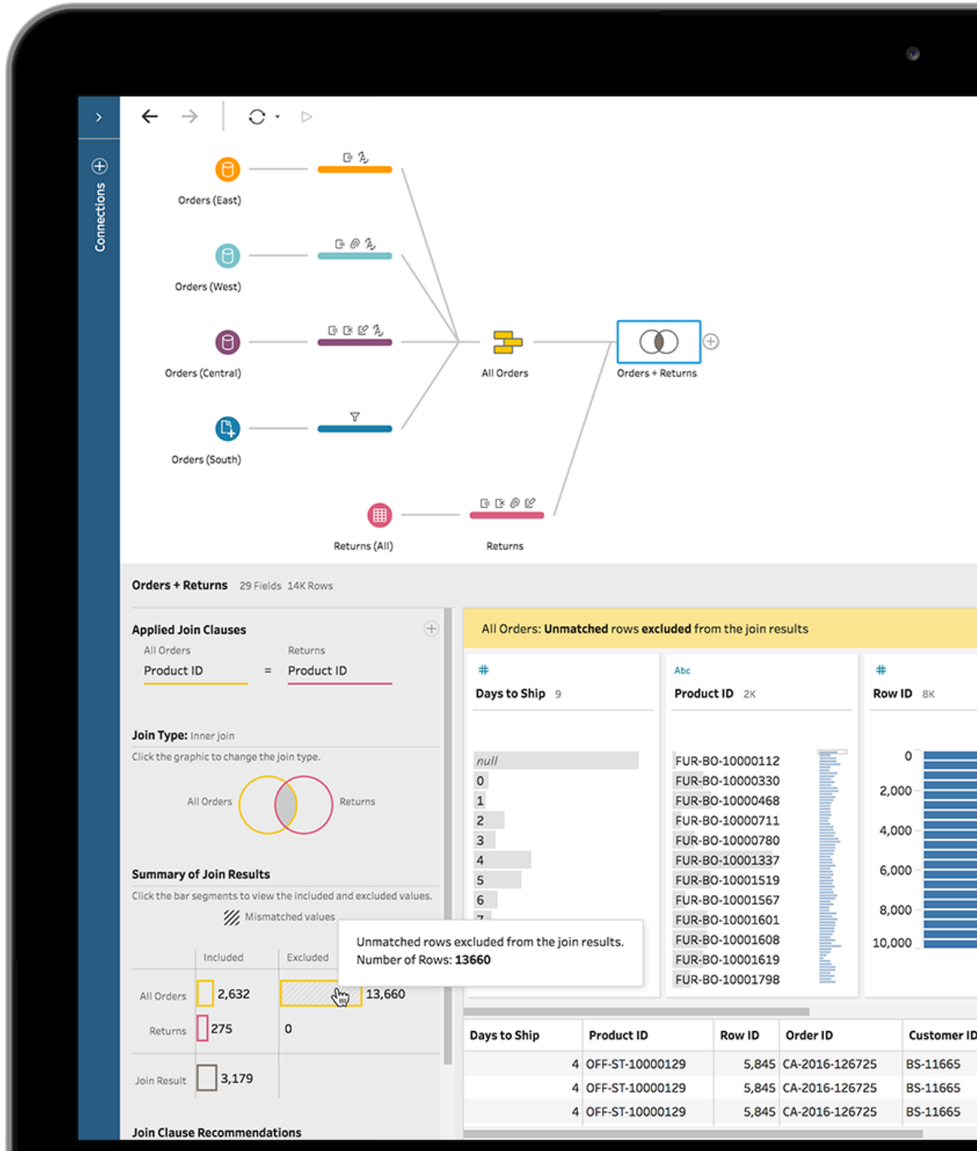


Customer Success With Tableau Prep

- **Major US Hospital**

Lab Operations

- Labs in multiple locations with data in different formats
- Questions: Throughput? Excess Capacity? Delays?
- Combined data into standard structure using UNIONs in Tableau Prep
- Single source for system-wide visibility of Lab operations



Prep Basics

CJ Callender

Sales Consultant
Denver, CO

Advanced Analytics Prep + R/Python

Amir Meimand

Strategic Sales Consultant
Machine Learning and Predictive Analytics
San Jose, CA

Machine Learning and Predictive Analytics in Healthcare

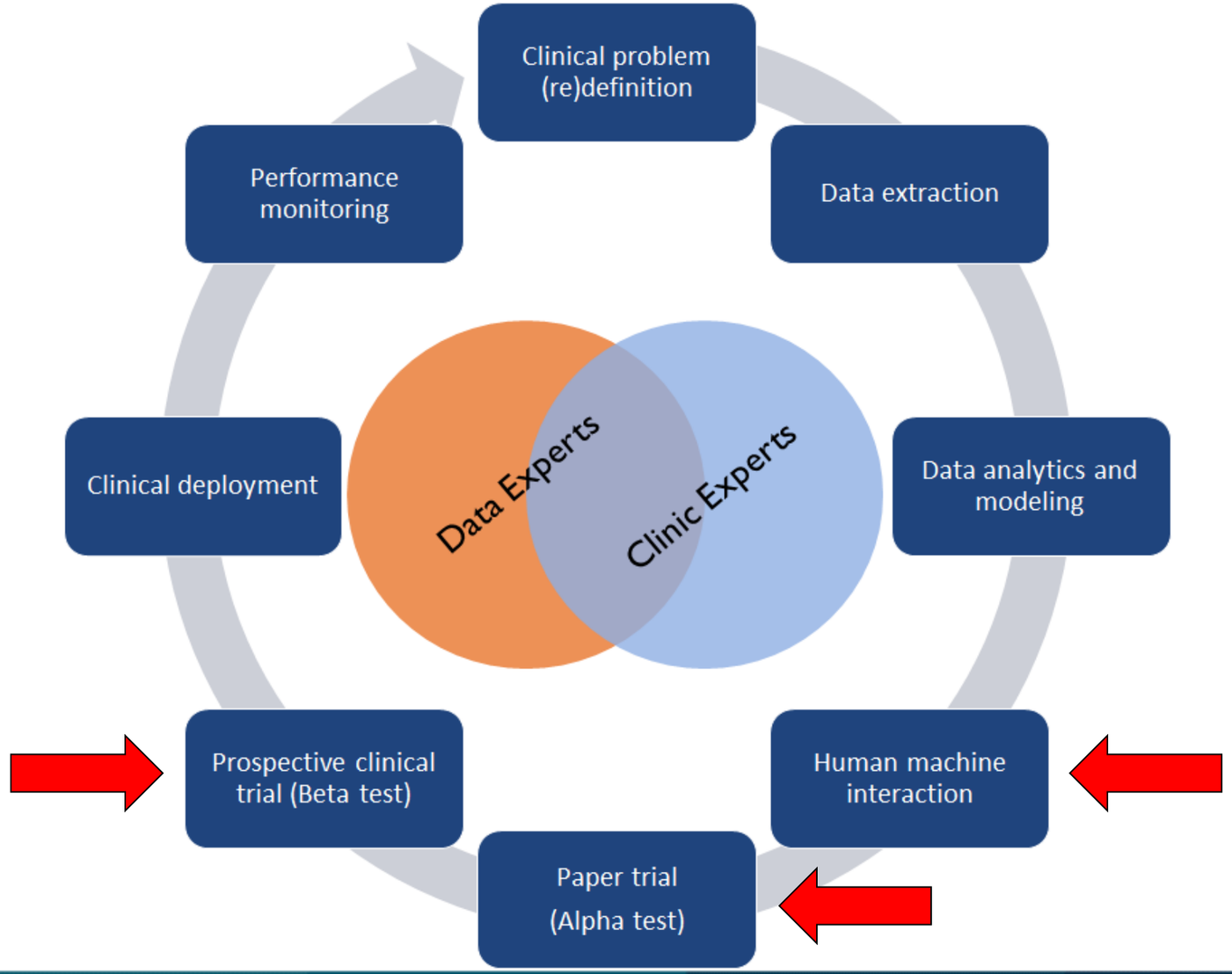
Advanced analytics plays a key role in many health-related realm:

- ✓ **Disease Diagnosis**
- ✓ **Personalized Treatment**
- ✓ **Smart Electronic Health Record**

Healthcare is different from other sectors

- ***Unstructured/Non-standard format***
- ***Generalizability***
- ***Transparency***
- ***Human vs. Machine***

Machine Learning implementation for healthcare



Demo 1

Patient
Alex Avila
Anthony O'Donnell
Arthur Prichep
Cyma Kinney
Aaron Bergman
Pregnancies
Glucose
Blood Pressure
Skin Thickness
Insulin
BMI
Diabetes Pedigree Fu...
Age
6
148
72
35
0
34
0.63
50
Diabetes Risk Prediction
81%
Recommendation
Factors
Glucose
BloodPressure
SkinThickness
What-if Analysis
Diabetes
What-if Analysis
BMI
Diabetes Pedigree Function
Blood Pressure
Glucose
Skin Thickness
Insulin
33.6
0.627
68
120
35
0
The probability of having diabetes would change to: 63%
Current Risk Level
Simulatd Risk Level
Normal Level

Text Processing

- Electronic Health Records (EHRs) includes detailed information such as lab tests, medications, disease status, etc.
- Information mostly available as unstructured free text
- Extracting key information can facilitate the medical diagnosis process

Lawrence Weed

American physician

Born: December 26, 1923, Troy, NY

Died: June 3, 2017, Underhill, VT

Lawrence Leonard "Larry" Weed was an American physician, researcher, educator, entrepreneur and author, who is best known for creating the problem-oriented medical record as well as one of the first electronic health records.

Demo 2

Probability Prediction

Asthma_Probability

Hypercholesterolemia_Probability

Obesity_Probability

62%

78%

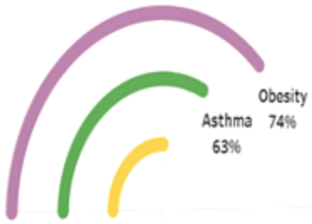
Patient Info

Gender	Age	Admission	Status	Service	Discharge
Female	57	7/12/2006	Signed	None	11/4/2006

Summary Past

Electronic Health Records (EHRs) - Past

Health Status



Hypertension , hypertrophic cardiomyopathy , cigarette smoking , obstructive sleep apnea on CPAP , morbid obesity , status post gastric banding in 1998 , chronic lower back pain , sciatica , history of DVT off Coumadin since 2000 and aortic insufficiency.

Learning Resources

- Tableau Prep integration with Python
- Python in Tableau Prep: Simple useful scripts
- Advanced Analytic with TabPy
- TabPy Tools
- Tableau Sci-Fic: Tableau + Data Science
- https://www.tableau.com/about/blog/2018/7/master-tableau-prep-list-learning-resources-92064?edition=prep&lang=en-us&platform=mac&version=2019.4.1

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Register for the Next Show

Feb 20th 12:00 Eastern

Skill Pill 5: Tableau Blueprint: Healthcare Edition

https://www.tableau.com/learn/series/tableau-for-healthcare

tableauhealthcareshow@tableau.com

We are listening and want your input!

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