

Data Analytics

Latin American Healthcare Compliance Certification Program

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Agenda

- 1 Introduction
- 2 What is Forensic Data Analytics?
- 3 Data Analytics Techniques
- 4 Using Data Analytics
- 5 Continuous Monitoring
- 6 Barriers to success

1.

Introduction



Why Analytics?

“Data is the new oil!” - The Economist



Data & Technology Explosion

- ▶ Increased availability of structured & unstructured data within organizations and public information (social networks, government records, etc).



Regulatory Environment

- ▶ Regulators around the globe have been involved in major enforcement actions.
- ▶ Violations are heavily penalized.
- ▶ Government's higher expectations for ethics and compliance programs.



Compliance Trends

- ▶ Business compliance requirements are growing.
- ▶ Increased social awareness about transparency and competence.



New Insights

- ▶ Success in business relies on how quickly the new insights are identified and addressed.



Profit Improvement

- ▶ Organizations are under increased pressure to improve their profit margin.

- ▶ Analytics is one of the key enablers of identifying and predicting the insightful trends from the existing plethora of data.

- ▶ Analytics can help recognize key profit drivers, revenue leakage risks and co-relating the data from multiple sources.

- ▶ The latest analytical and technology solutions are highly capable of managing big data.

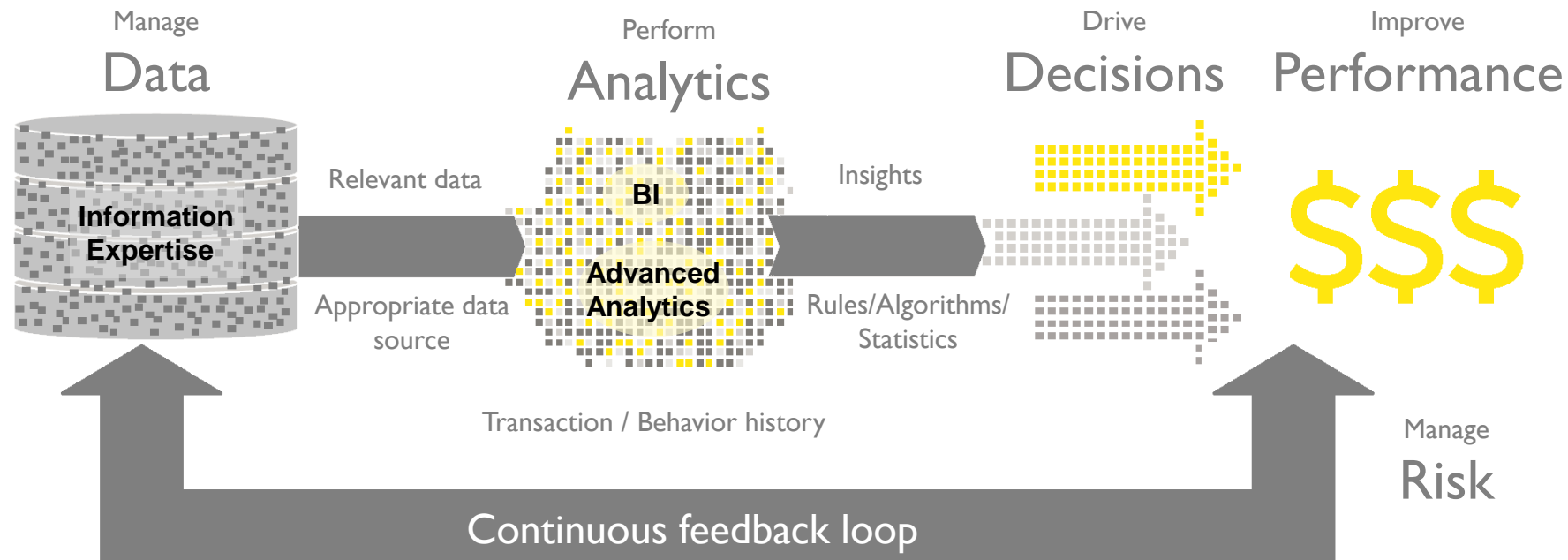
What do we mean by “Data Analytics”?



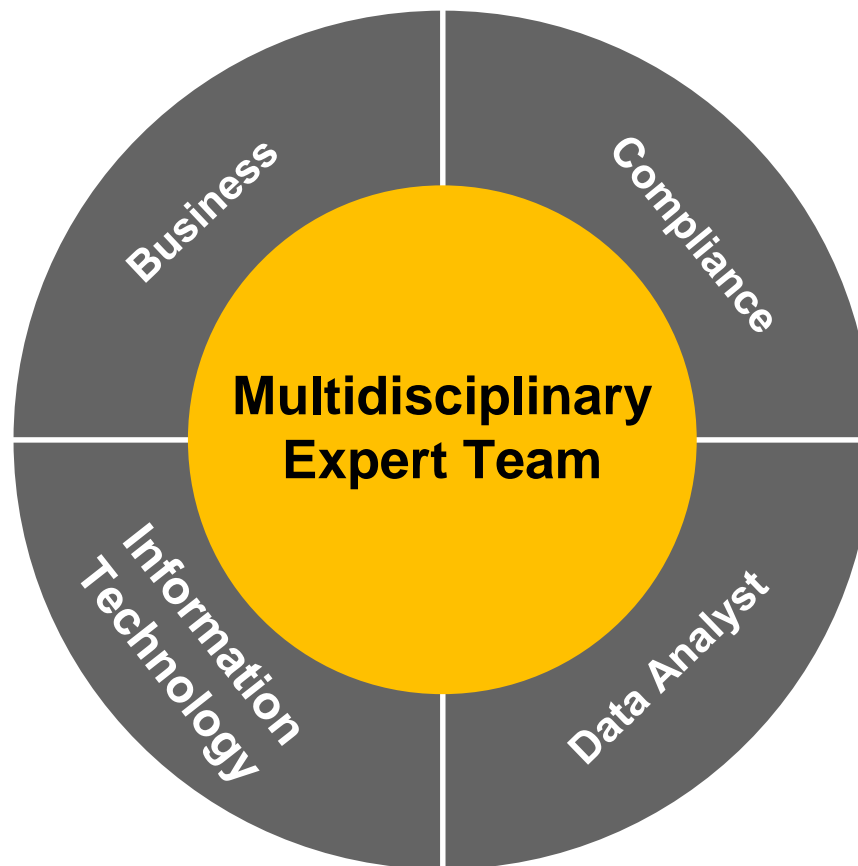
*The extensive use of data, technology and advanced quantitative analysis to drive **fact-based** decision making and actions*



How to perform Data Analytics?



To drive better decisions, we must first ask the **right business questions** and then seek answers in the data. Thus, our work moves left to right, but our thinking must move from right to left.



Progressive Stages



What happened?

Descriptive

- ▶ Understanding, visualizing and reporting what has already happened with historic data.

What is going to happen?

Predictive

- ▶ Understanding the underlying relationship between data to find out why something happened, or to predict what will happen in a given scenario.

What should we do?

Prescriptive

- ▶ Determining which decision or action will produce the most effective result.



Increasing Complexity



2. Forensic Data Analytics

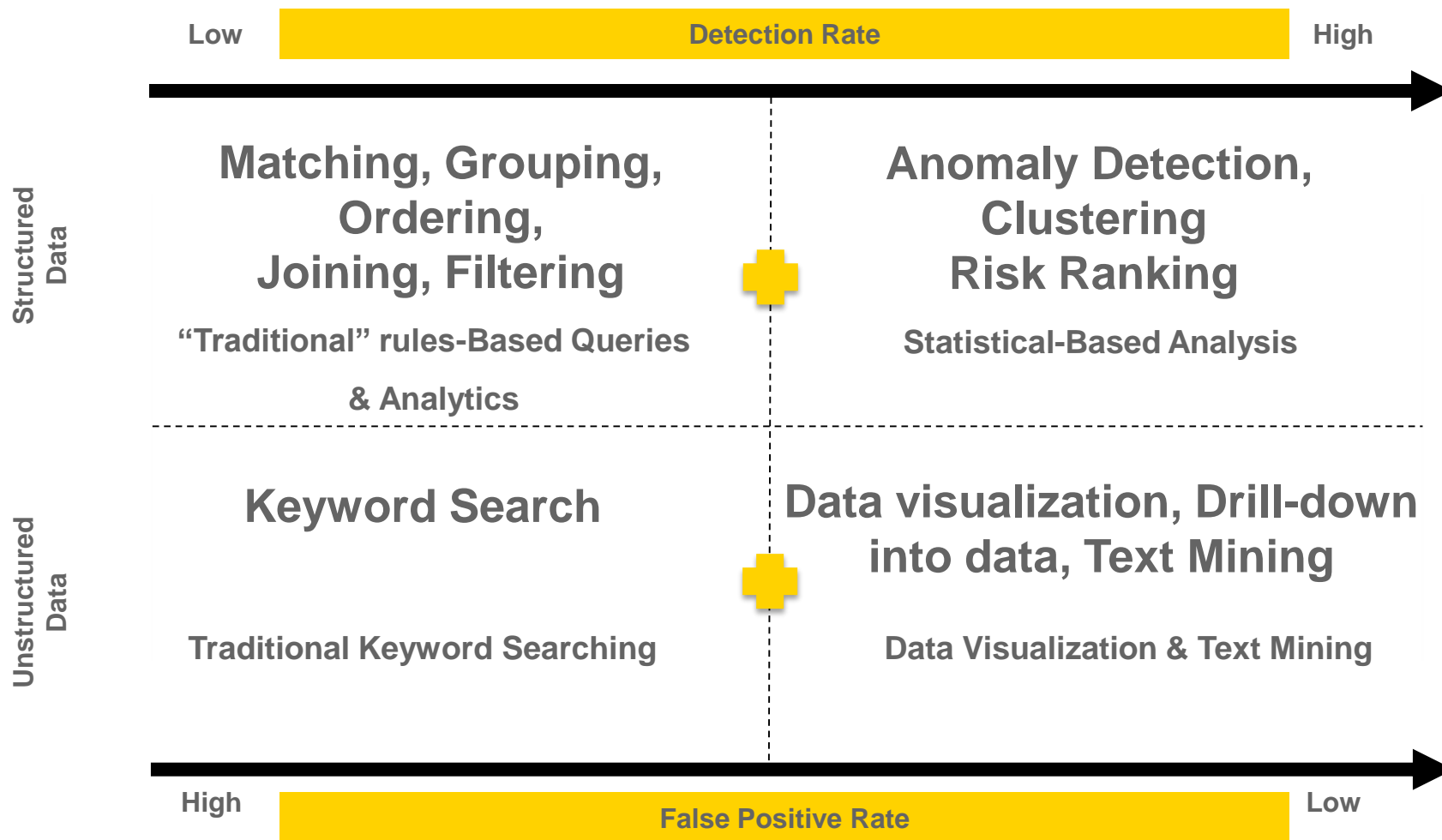
What is Forensic Data Analytics (FDA)?

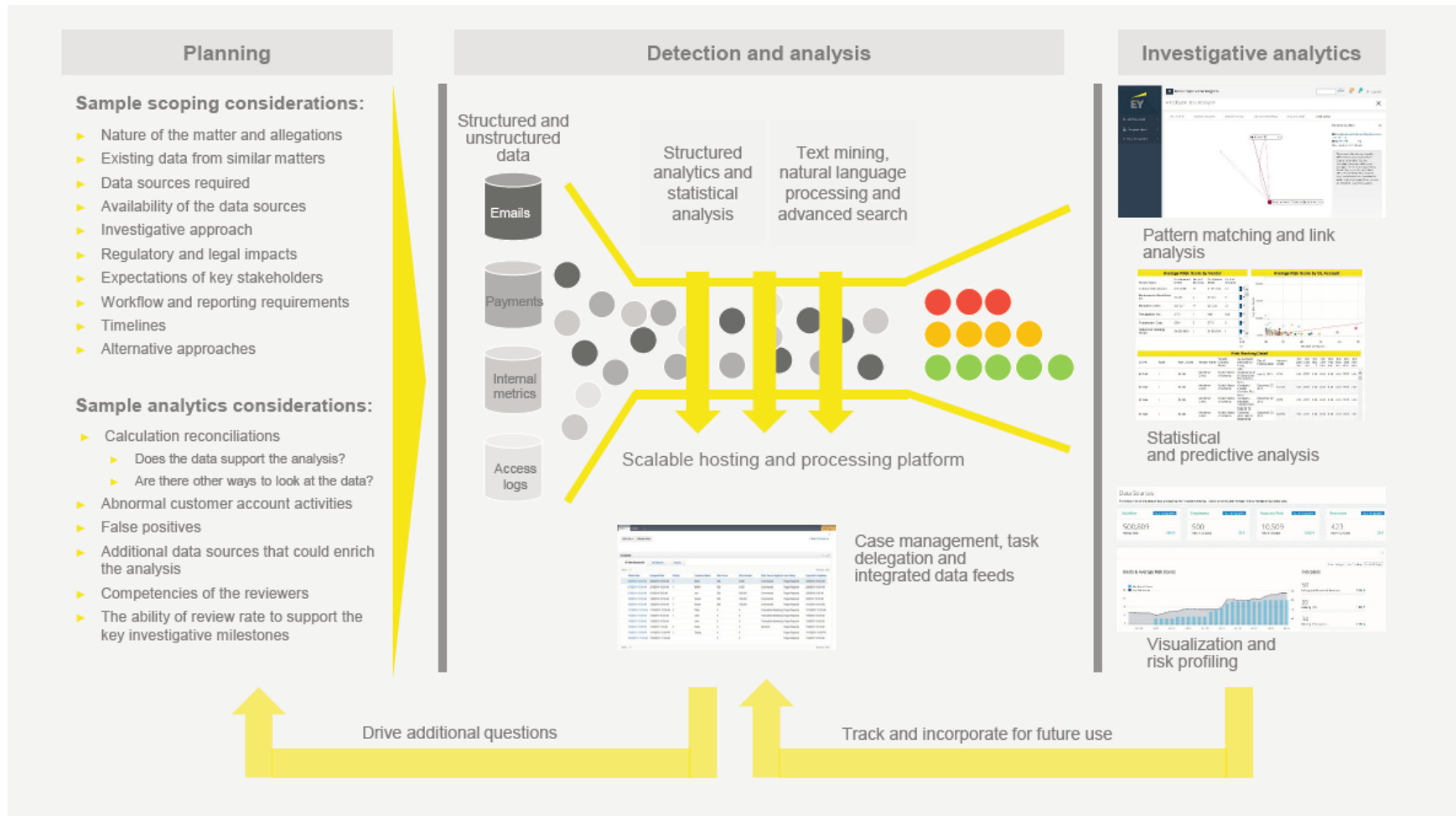


*FDA refers to the **ability to collect and use data**, both **structured** (e.g. general ledger, transaction data, contractual data) and **unstructured** (e.g. email, voice, free text fields), **to prevent, detect, monitor or investigate** potentially improper transactions, events or patterns of behaviour related to **misconduct, fraud and non-compliance issues**.*

FDA Maturity Model

Beyond traditional “rules-based queries”





3. Data Analytics Techniques



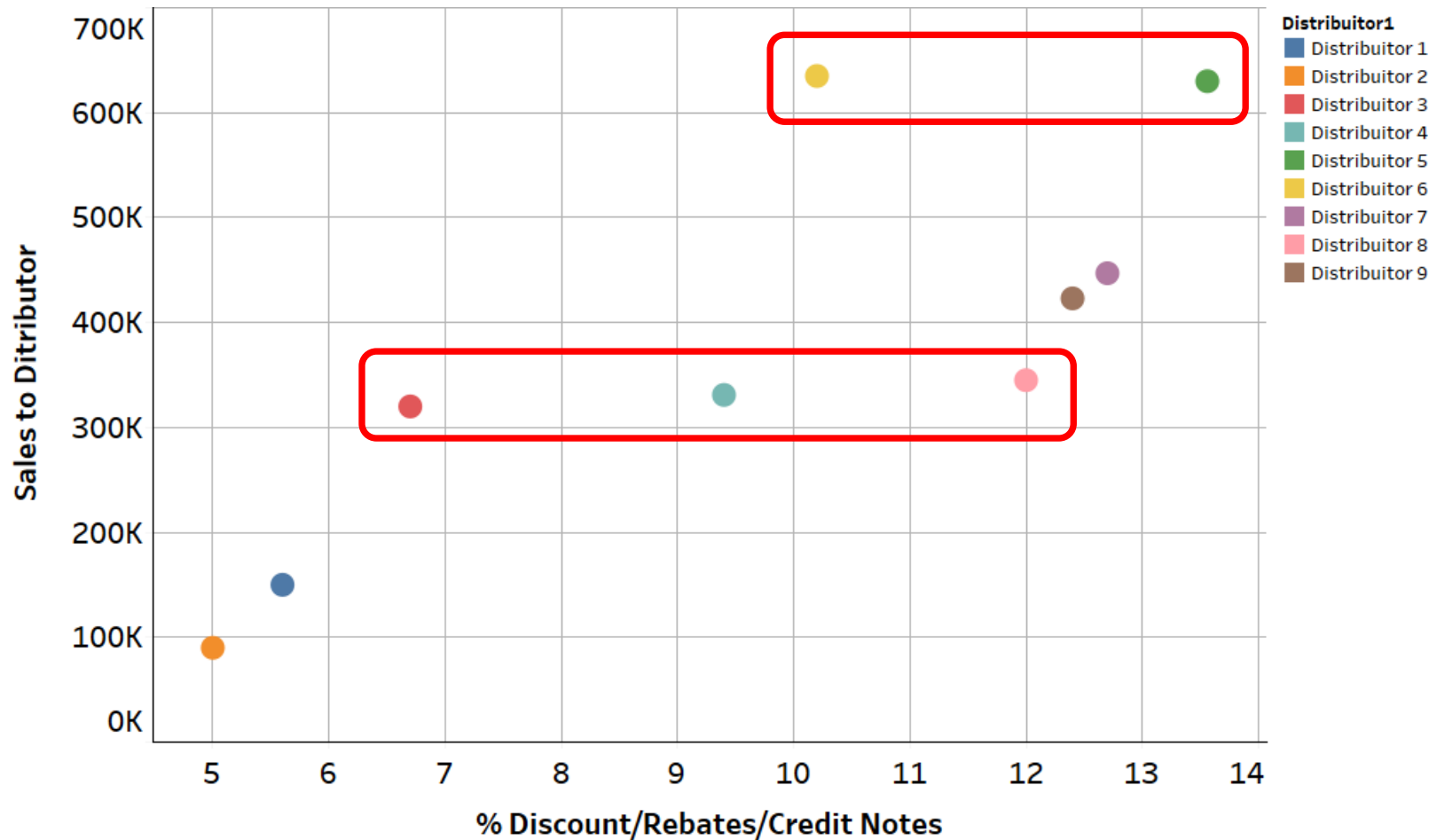
Different techniques



Technique	What is it?
Rules-based analytics	Testing data against known behaviors / patterns.
Risk scoring	Using scoring models to identify and determine areas of higher risk.
Visual analytics	Using interactive dashboards for reporting and trend analysis (includes social networks).
Text mining	Analysing natural language text: <ul style="list-style-type: none">▶ Keyword matching.▶ Concept analysis.▶ Sentiment analysis.
Predictive analytics	Using existing data to understand trends and predict future behavior.

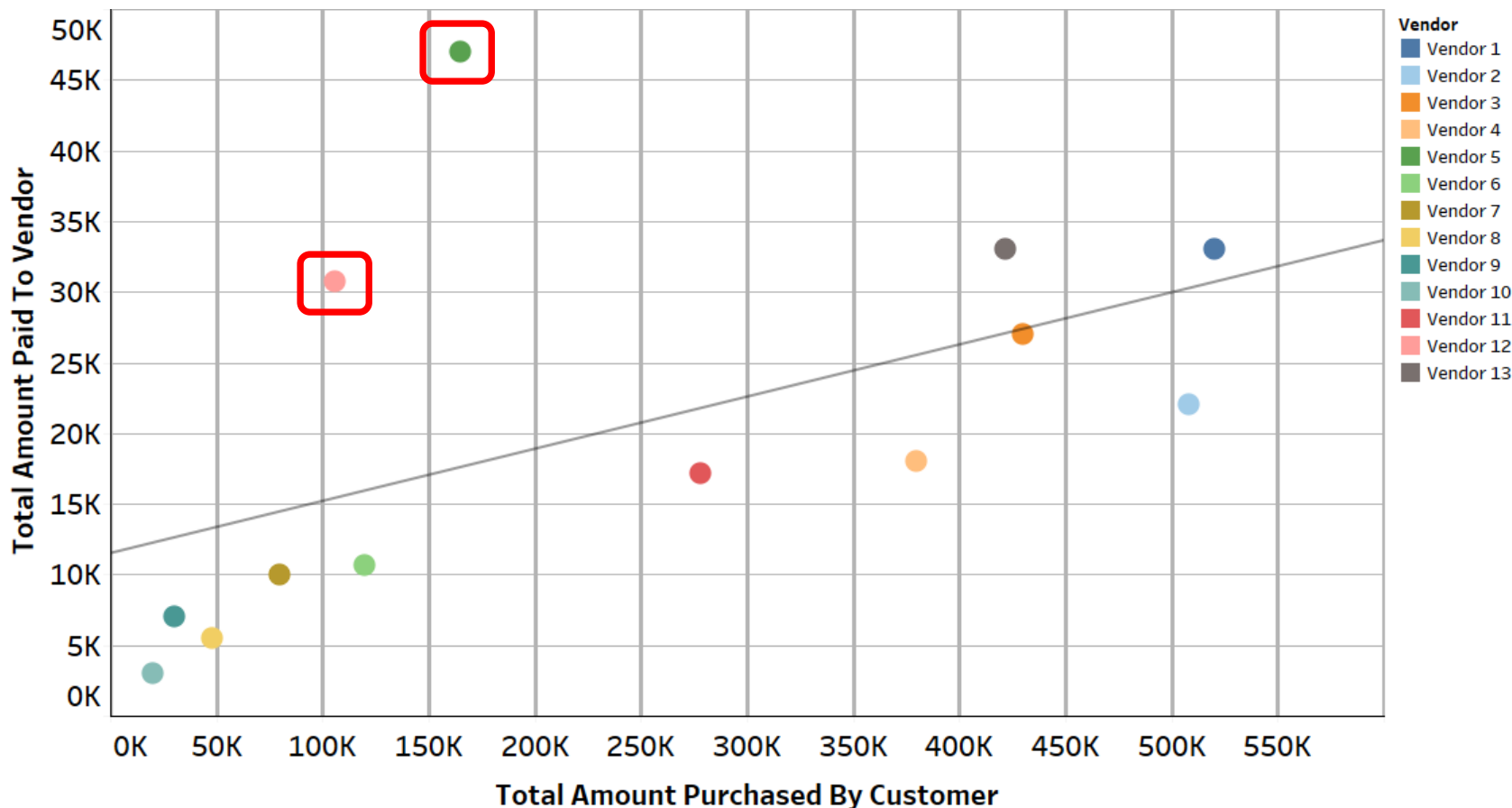
Different techniques – Examples (cont.)

Discount to Distributors



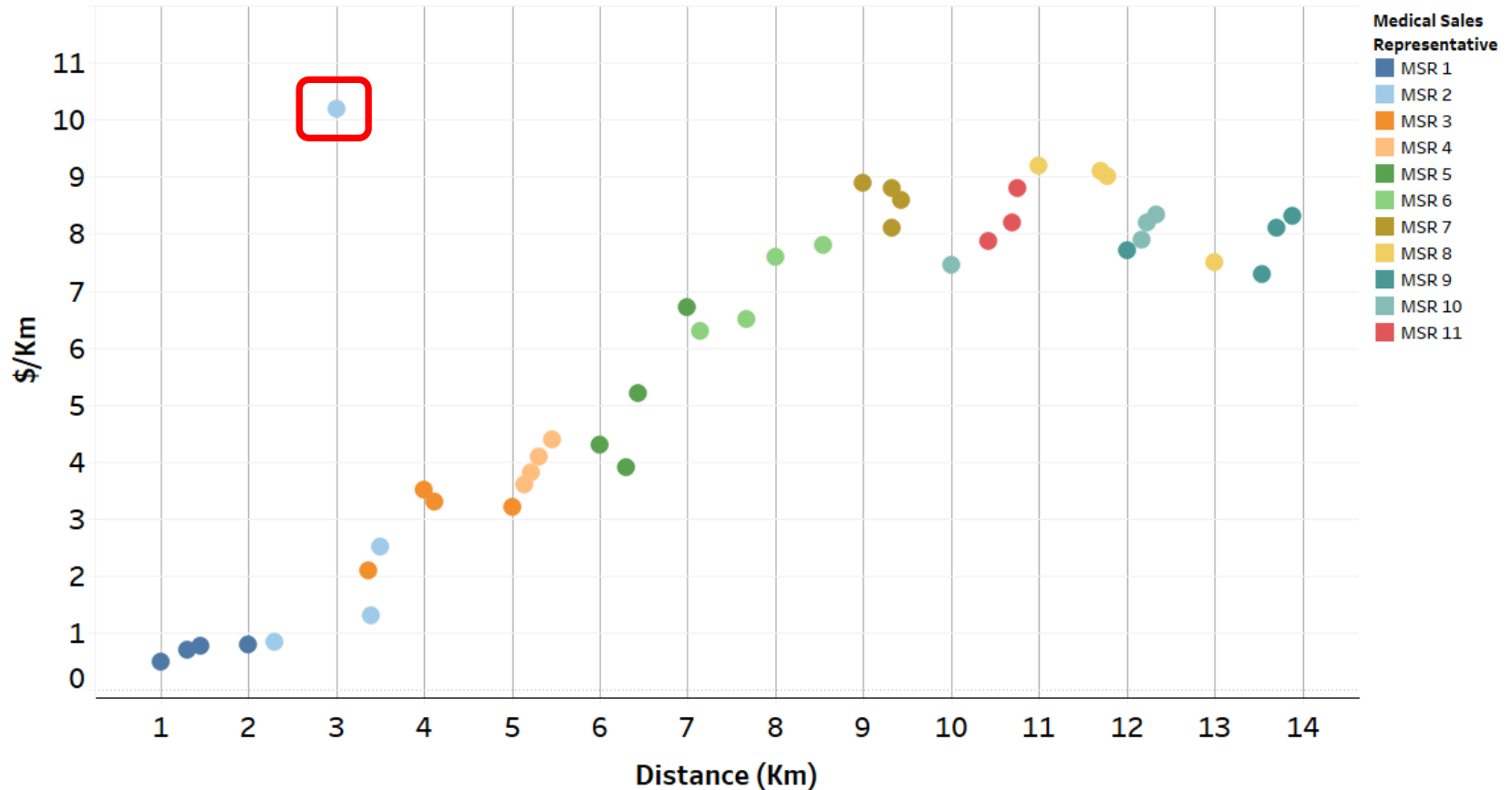
Different techniques – Examples (cont.)

Vendor - Customer



Different techniques – Examples (cont.)

T&E – Medical sales representative Journey Price

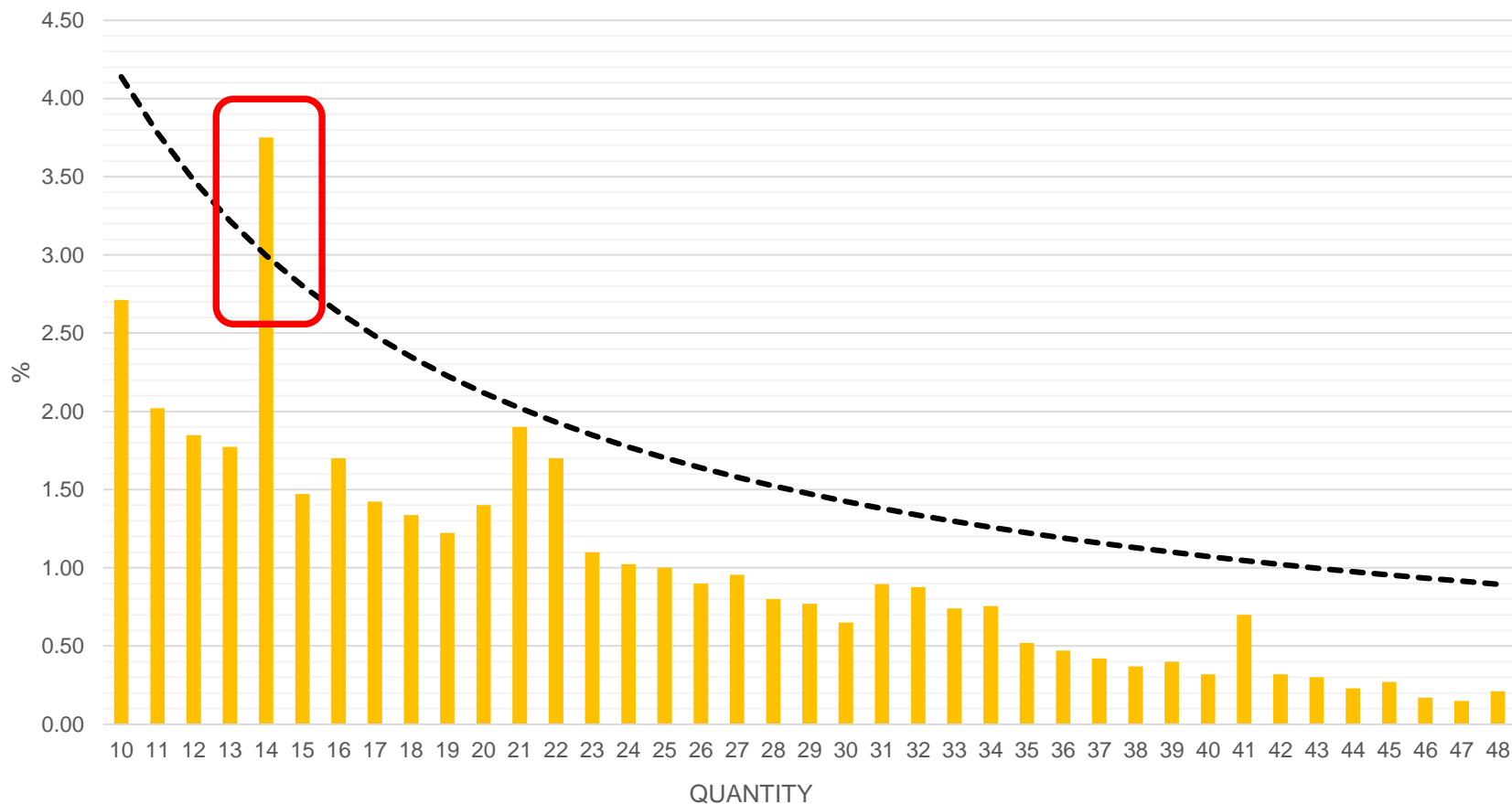


Different techniques – Examples (cont.)

Two Digits Benford's Law - Expenses

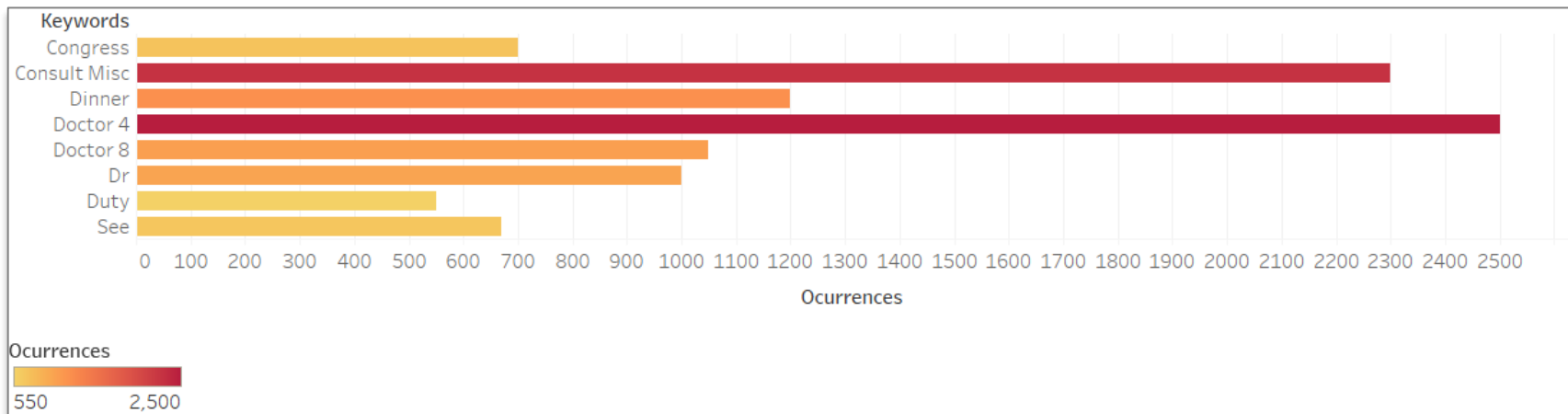


Benford's Law



Different techniques – Examples (cont.)

Text Mining - T & E

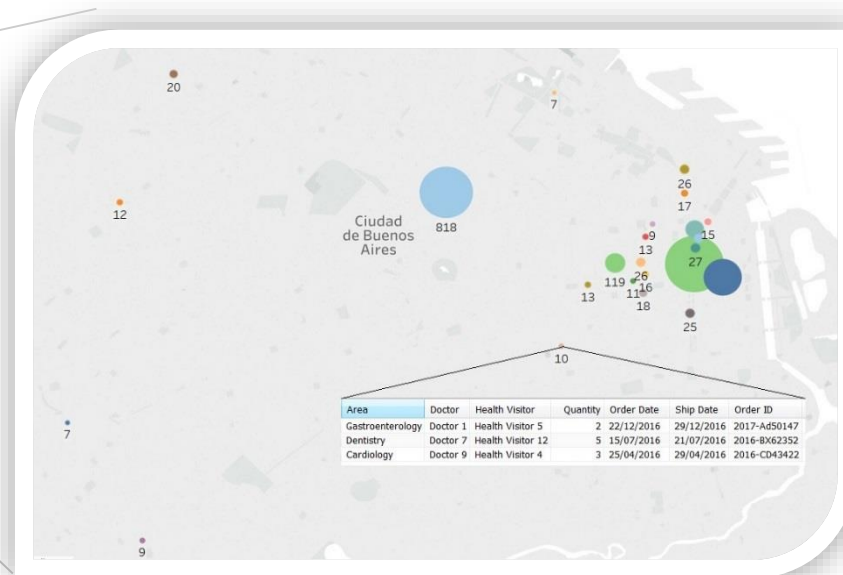
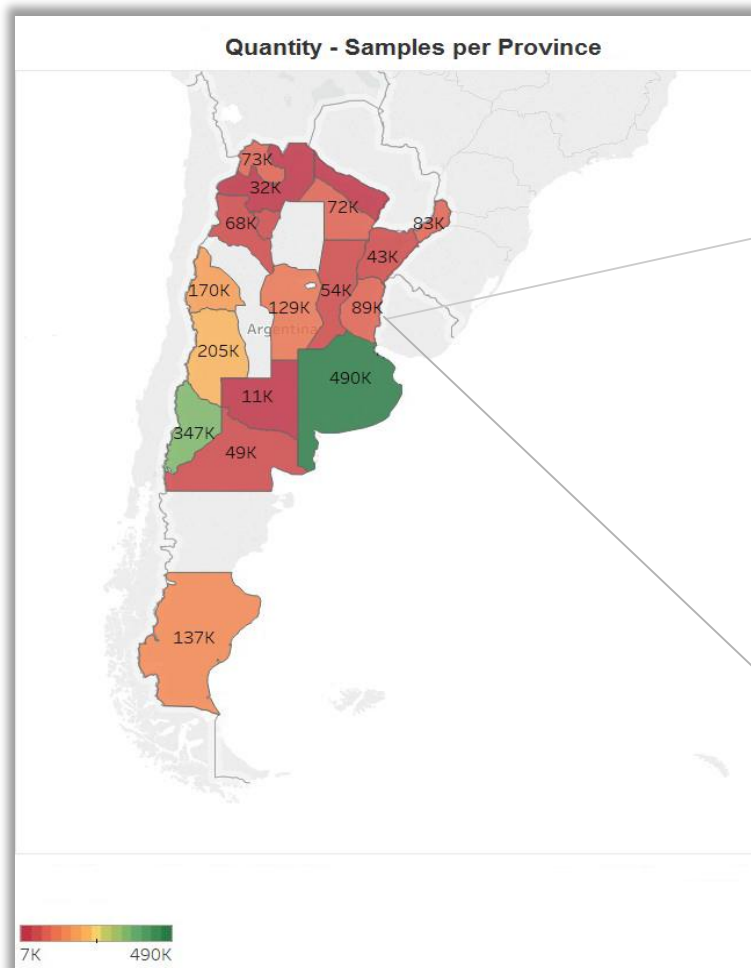


Different techniques – Examples (cont.)

Geolocation



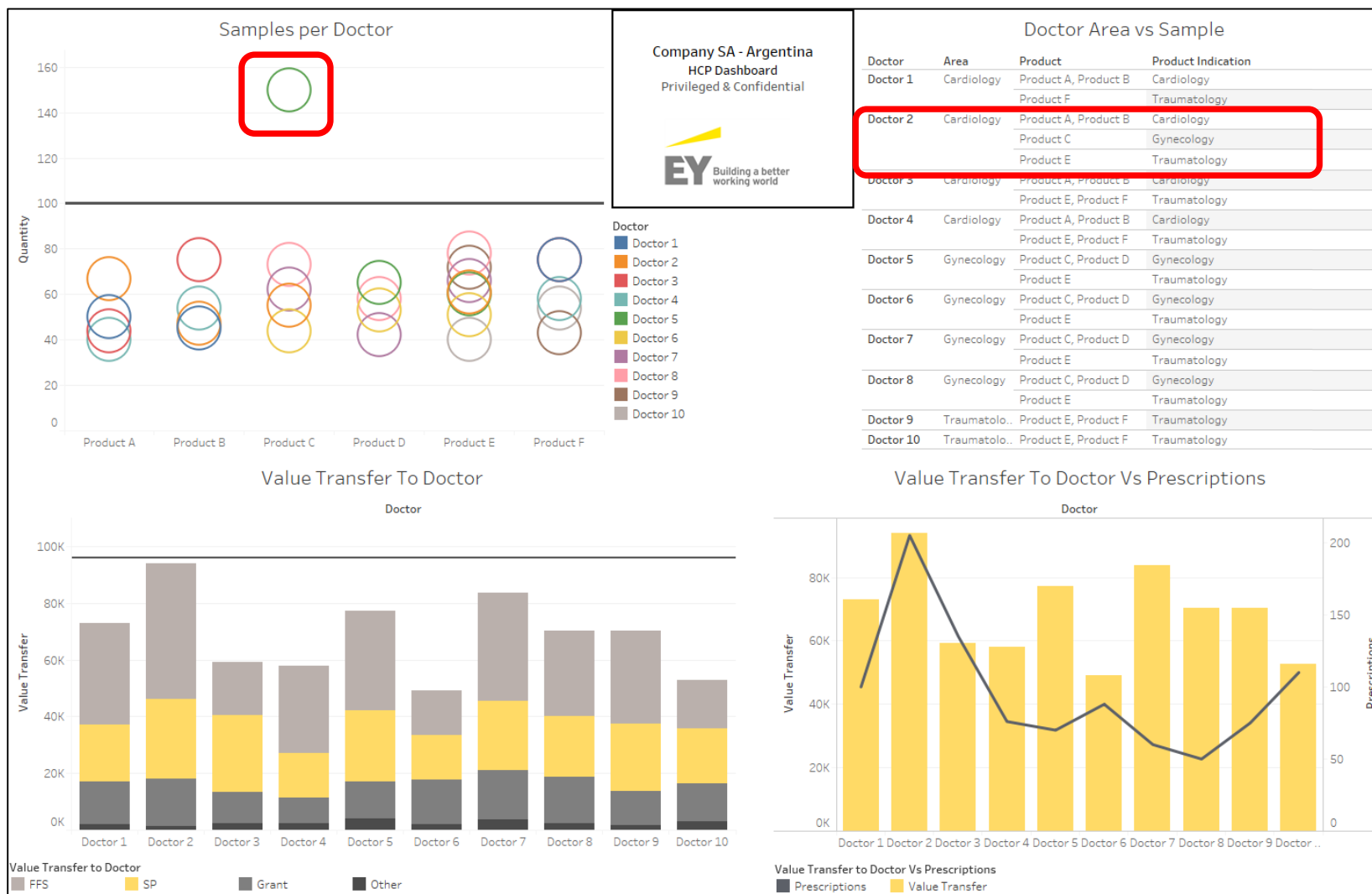
Samples Provided Vs Promotional Grid



4. Using Data Analytics

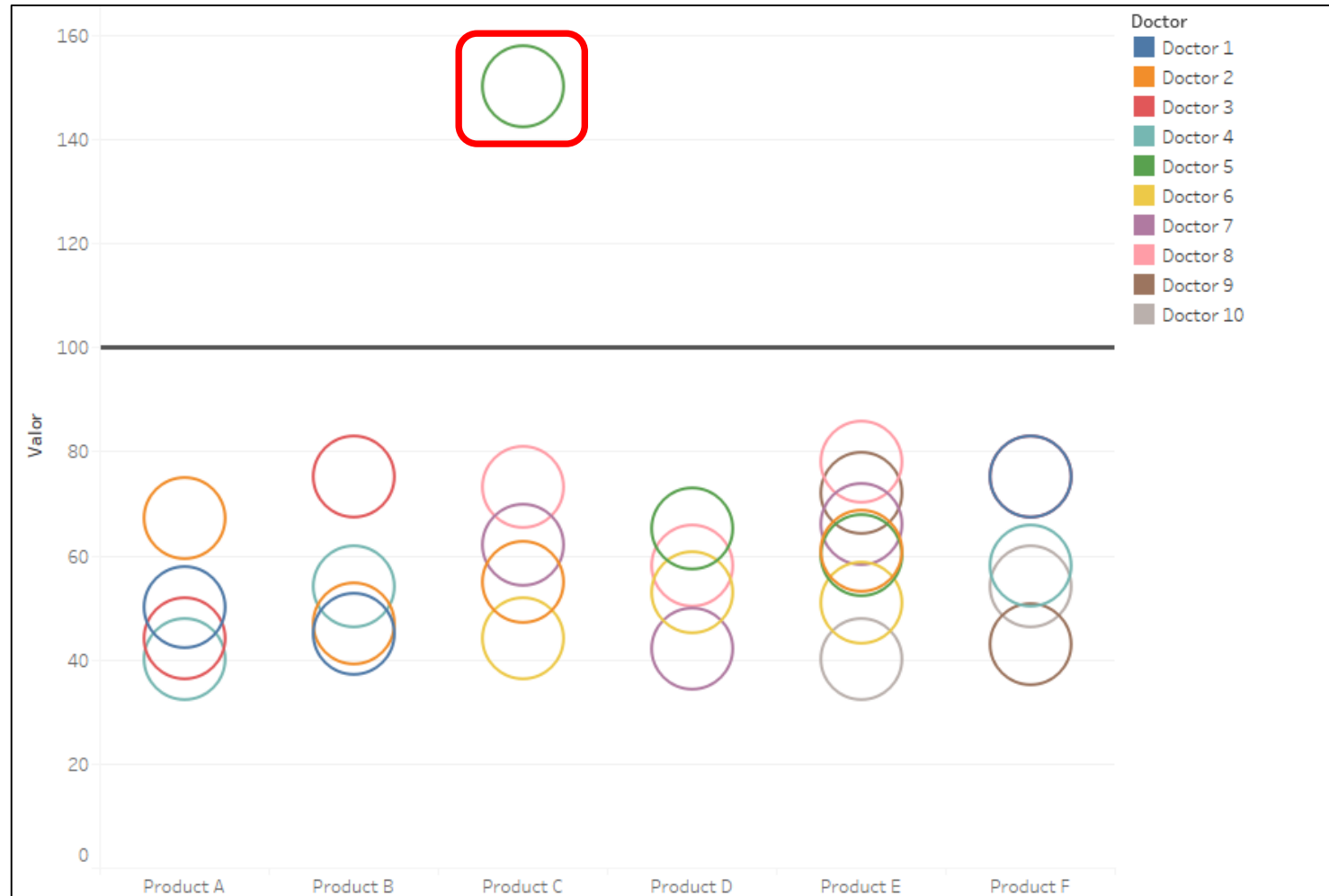


Dashboard Main View



Dashboard – Example Doctor 5

Samples per Doctor



Dashboard – Example Doctor 2

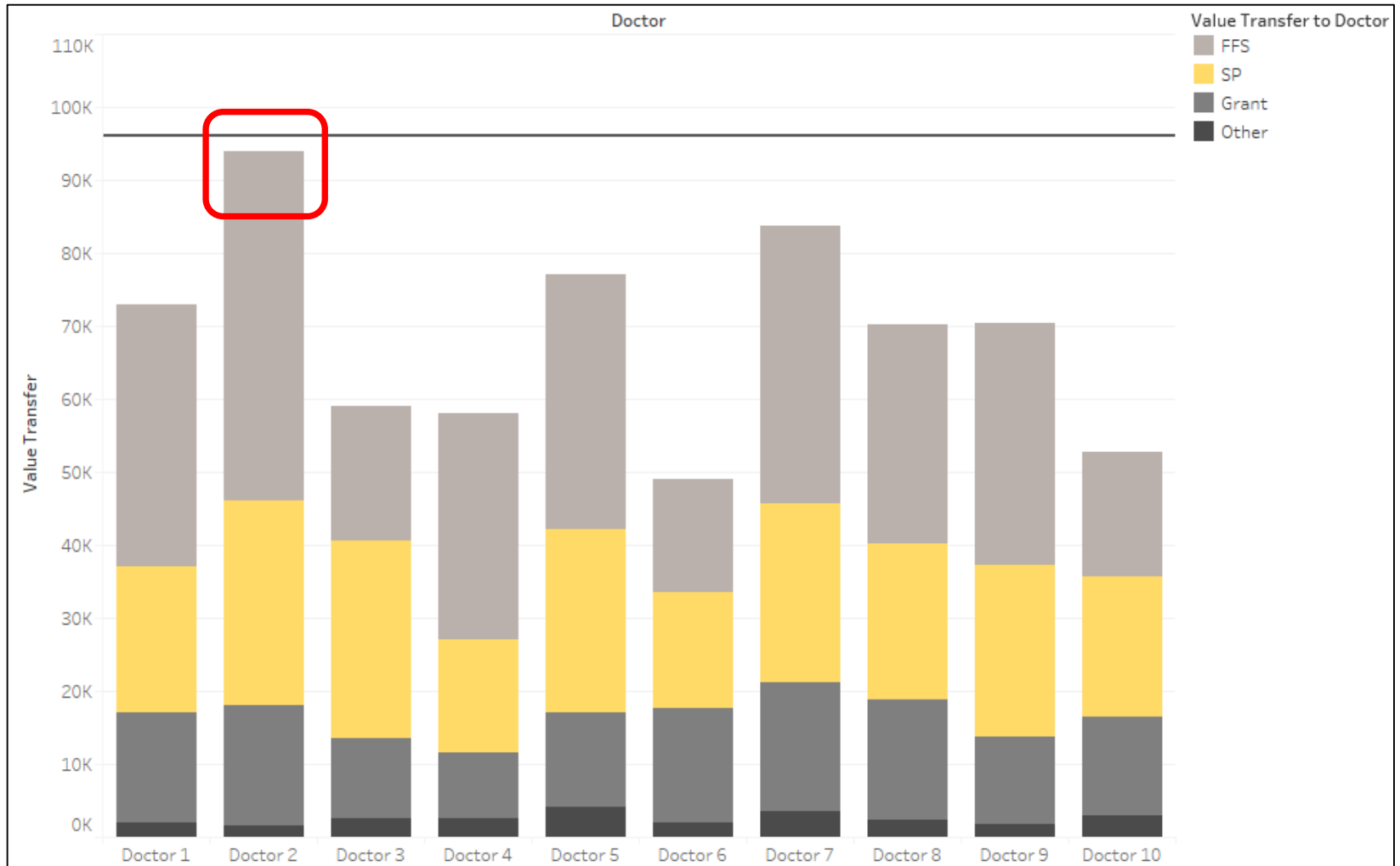
Area vs Received Product



Doctor	Area	Product	Product Indicat..
Doctor 1	Cardiology	Product A, Product B	Cardiology
		Product F	Traumatology
Doctor 2	Cardiology	Product A, Product B	Cardiology
		Product C	Gynecology
		Product E	Traumatology
Doctor 3	Cardiology	Product A, Product B	Cardiology
		Product E, Product F	Traumatology
Doctor 4	Cardiology	Product A, Product B	Cardiology
		Product E, Product F	Traumatology
Doctor 5	Gynecology	Product C, Product D	Gynecology
		Product E	Traumatology
Doctor 6	Gynecology	Product C, Product D	Gynecology
		Product E	Traumatology
Doctor 7	Gynecology	Product C, Product D	Gynecology
		Product E	Traumatology
Doctor 8	Gynecology	Product C, Product D	Gynecology
		Product E	Traumatology
Doctor 9	Traumatology	Product E, Product F	Traumatology
Doctor 10	Traumatology	Product E, Product F	Traumatology

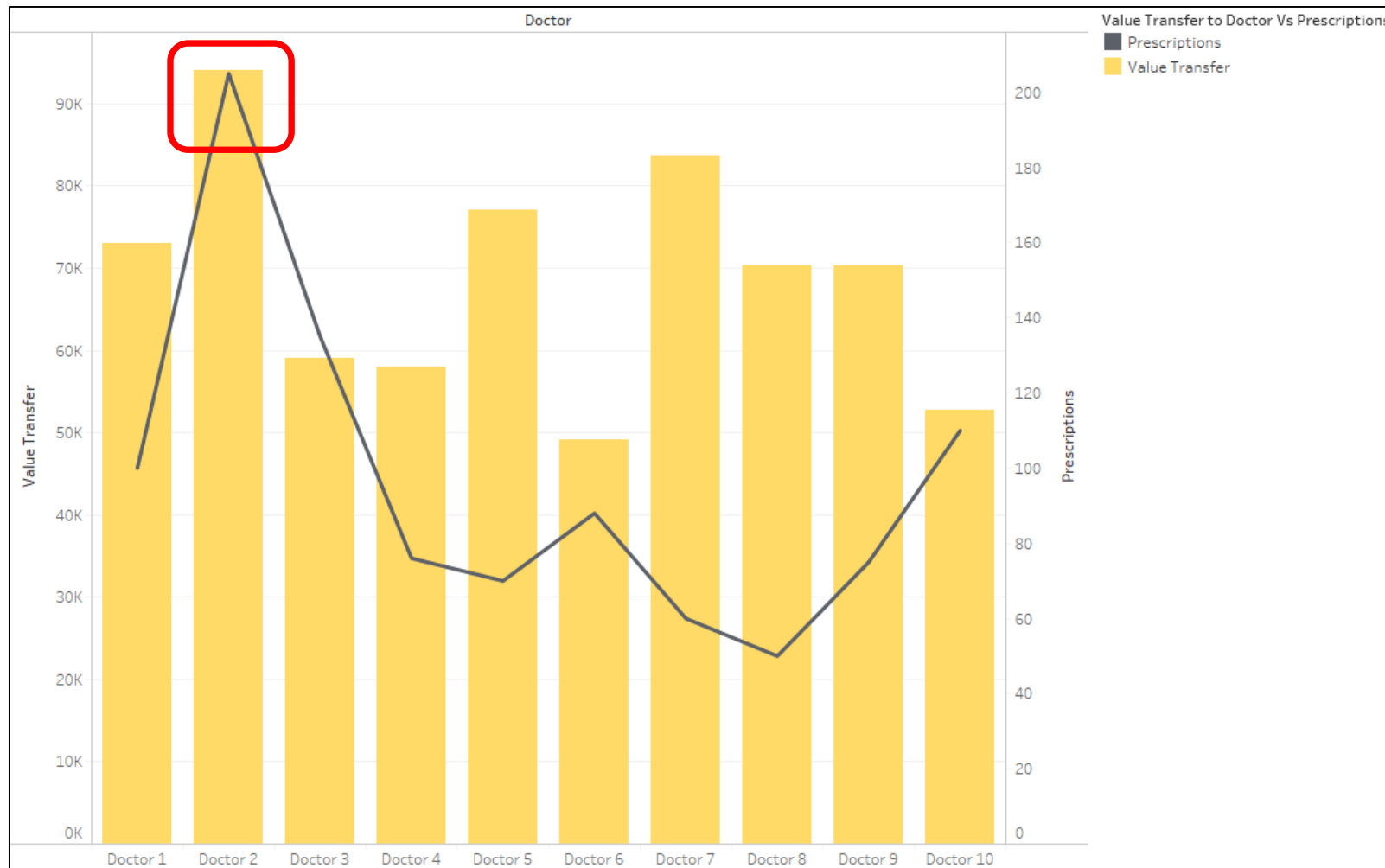
Dashboard – Example Doctor 2

Value Transfer to Doctor



Dashboard – Example Doctor 2

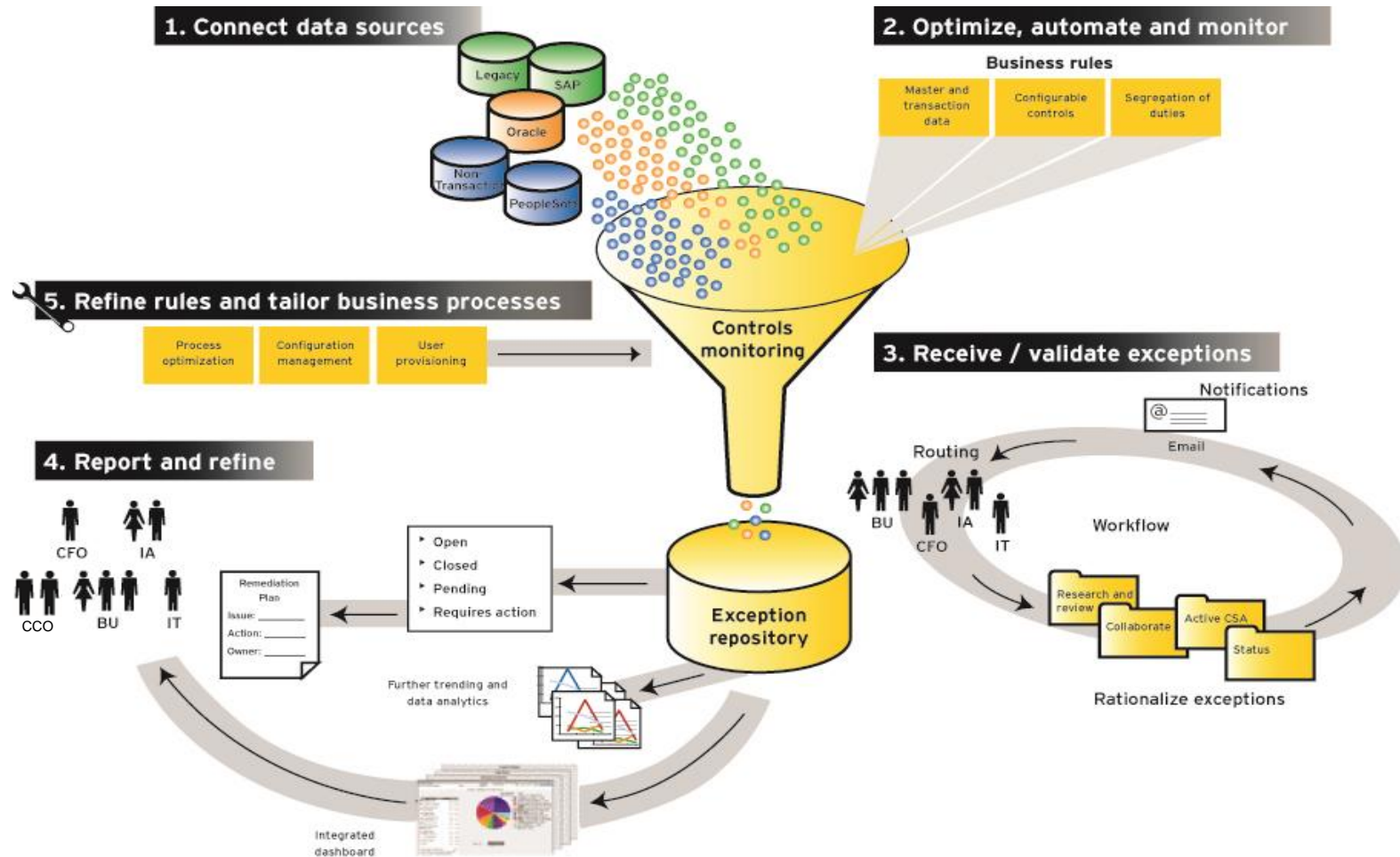
Value Transfer to Doctor vs Prescriptions





5. Continuous Monitoring

Analytics for continuous controls monitoring



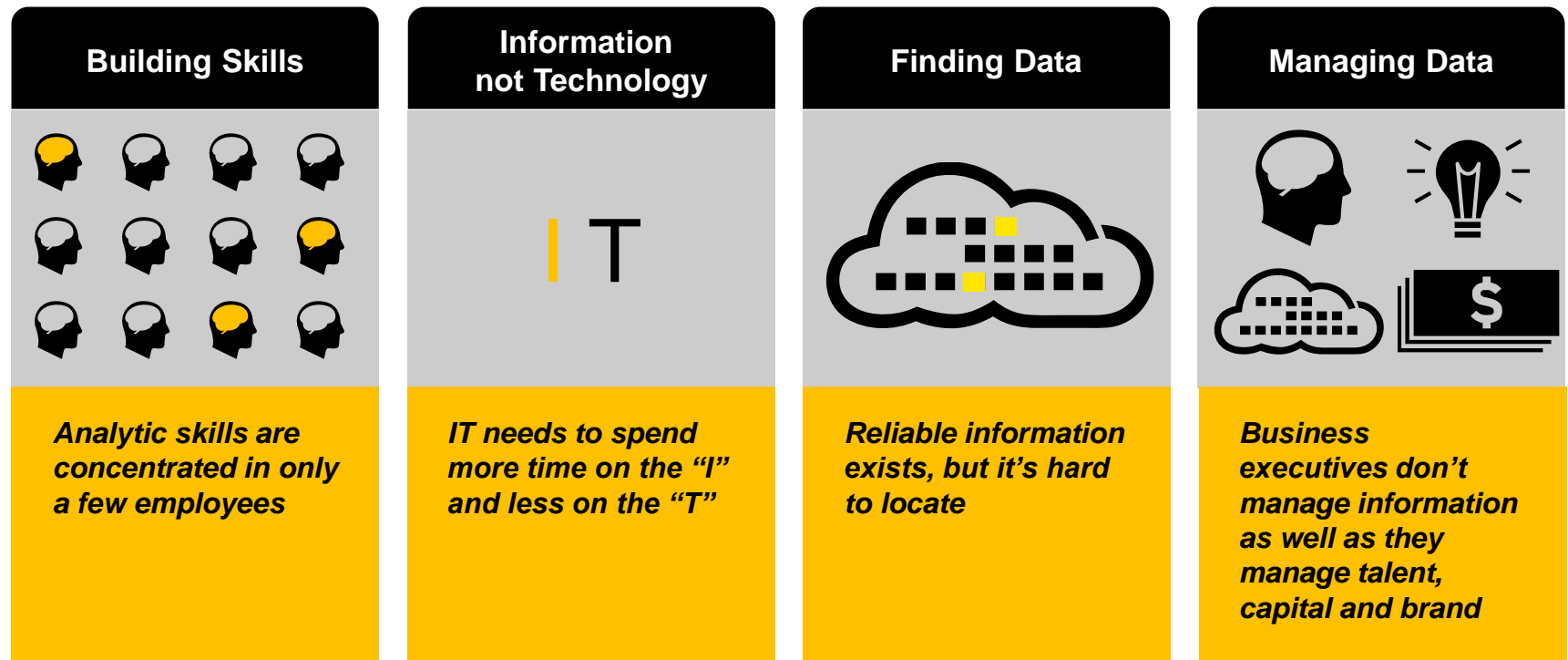
6. Barriers to success



Barriers to success



Four problems prevent organizations from realizing better returns on their analytics¹:



¹ “Good Data Won’t Guarantee Good Decisions”, Harvard Business Review, April 2012



Q&A



The better the question. The better the answer.
The better the world works.



Thank you!
Obrigado!
Gracias!



The better the question. The better the answer.
The better the world works.



Building a better
working world

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