

SESSION 2C: GETTING AIRPORT ANALYTICS OFF THE GROUND

Moderator: Dave Armstrong, Finance Director, Spokane International Airport

Speakers: Mark Richards, Partner, IT Consulting, Plante Moran


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**MARK RICHARDS
PARTNER, PLANTE-MORAN
IT CONSULTING**

*"To produce a mighty book,
you must choose a mighty theme"*


Herman Melville

A meme image featuring Eddard Stark from the TV series Game of Thrones. He is sitting on the Iron Throne, which is made of swords. He has a somber expression and is holding a sword. Two speech bubbles are overlaid on the image. The background is a dark, stone-walled room with a window showing a glimpse of the outdoors.

I am data
driven yet
data starved

...oh, and
winter is
coming

Why was Eddard Stark always so miserable?

A meme featuring Cersei Lannister from Game of Thrones sitting on the Iron Throne. She has a confused expression. Two speech bubbles are overlaid on the image, and a large text caption is at the bottom.

I am drowning
in data and
don't know
where to start

If only I had a
way to easily
make sense
of it

Why does Cersei Lannister look so confused?

Beautiful but Useless



Color Popularity for New Cars in North America 2000-2015

Hover to see the change in rank over time.

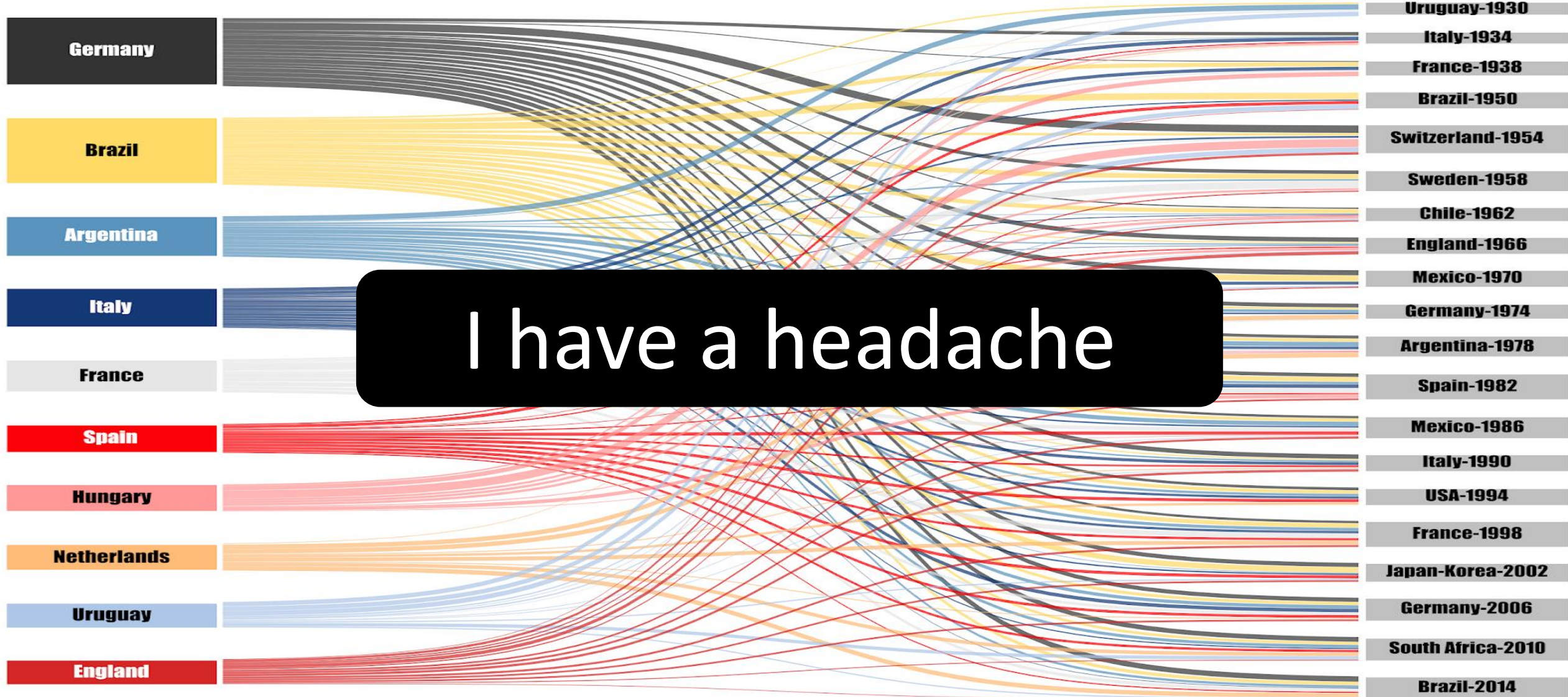


TOP 10 FIFA WORLD CUP COUNTRIES BY GOALS SCORED

TOP COUNTRIES

DISTRIBUTION OF GOALS SCORED BY COUNTRY IN EACH WORLD CUP EDITION

WORLD CUP EDITIONS



I have a headache

SOME TYPICAL CLIENT CHALLENGES



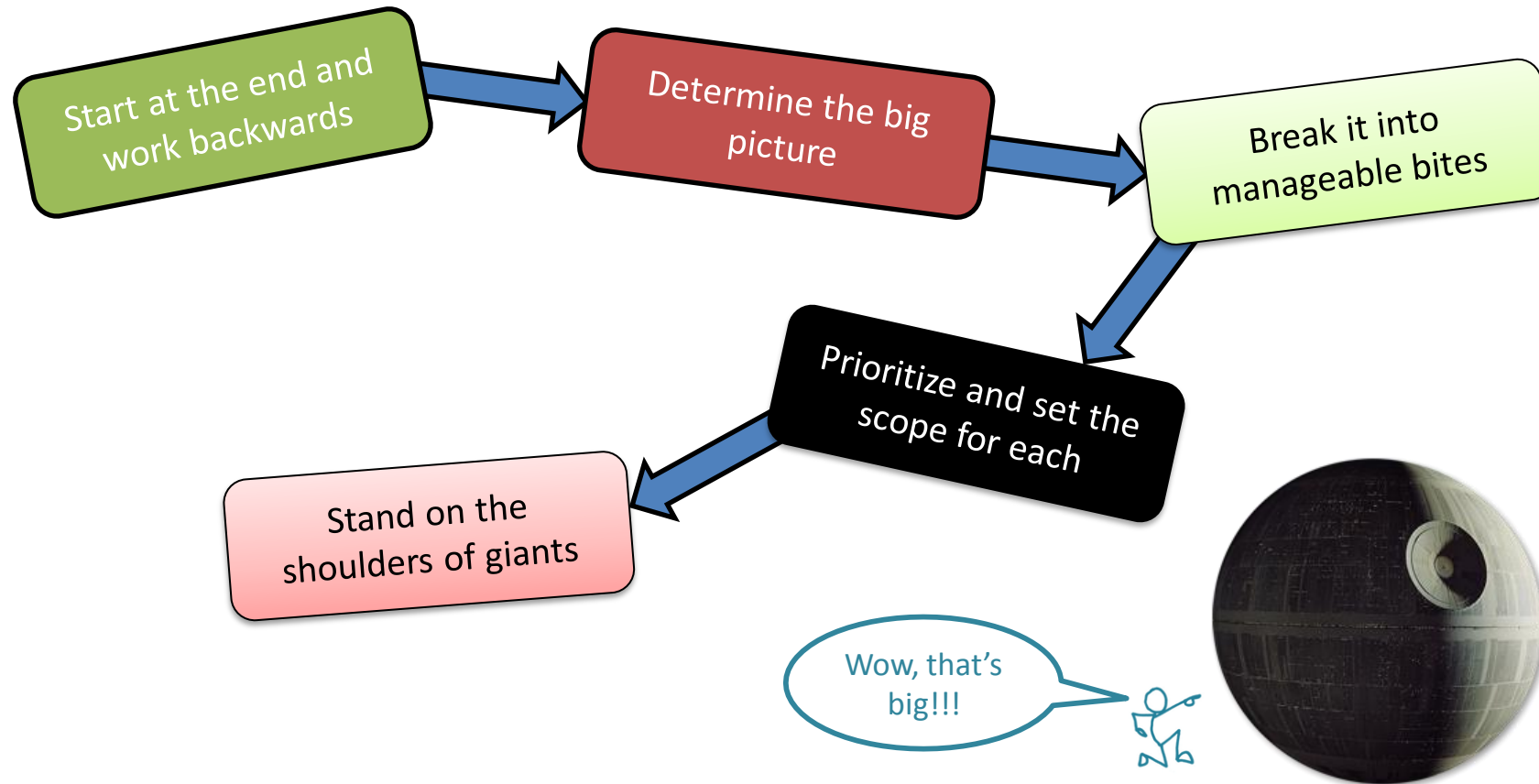
THE THREE KEY QUESTIONS

What

Why

How

BREAK DOWN COMPLEX PROBLEMS



FACILITATION AND QUESTIONS

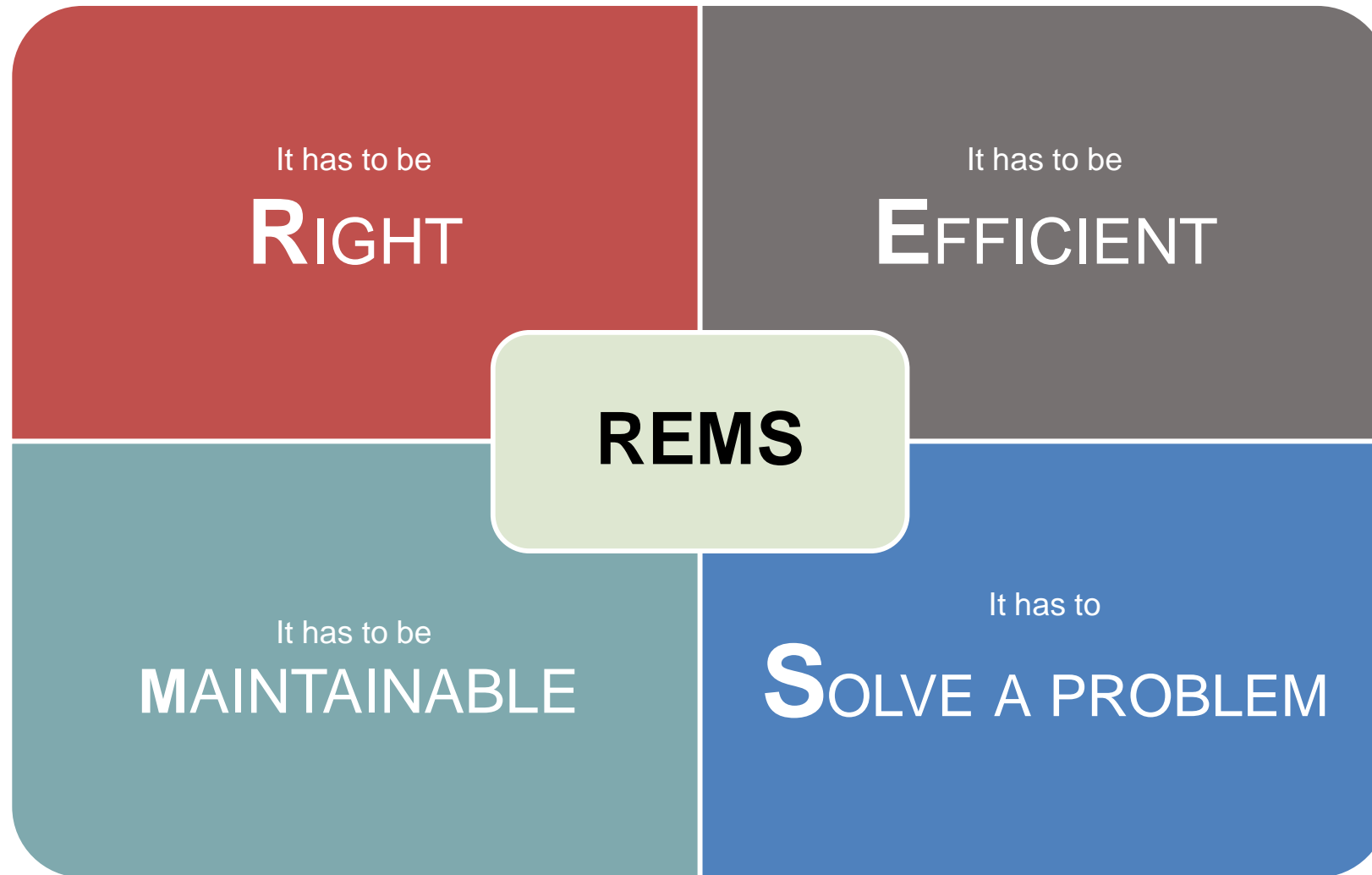
How does this support the mission?

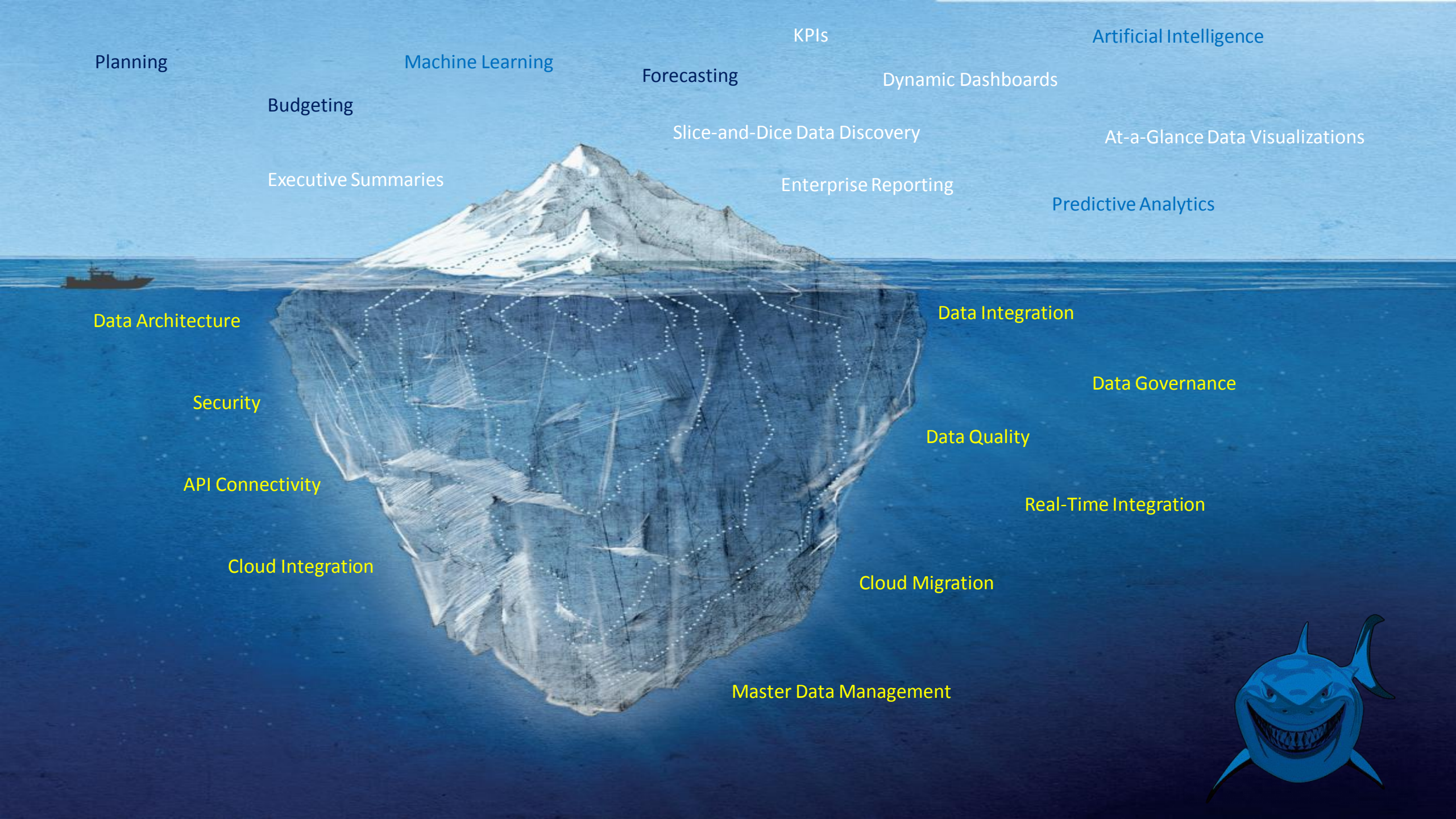
What are my Key Performance Indicators?

How can I bring business users and IT together to answer the important questions?

How do visualizations best help me see the patterns in the data?







Planning

Machine Learning

KPIs

Artificial Intelligence

Forecasting

Dynamic Dashboards

Budgeting

Slice-and-Dice Data Discovery

At-a-Glance Data Visualizations

Executive Summaries

Enterprise Reporting

Predictive Analytics

Data Architecture

Data Integration

Security

Data Governance

API Connectivity

Data Quality

Real-Time Integration

Cloud Integration

Cloud Migration

Master Data Management



WISDOM OF THE BARD ON DATA INTEGRATION

"Reporting without data preparation is a tale told by an idiot,
full of sound and fury signifying nothing"

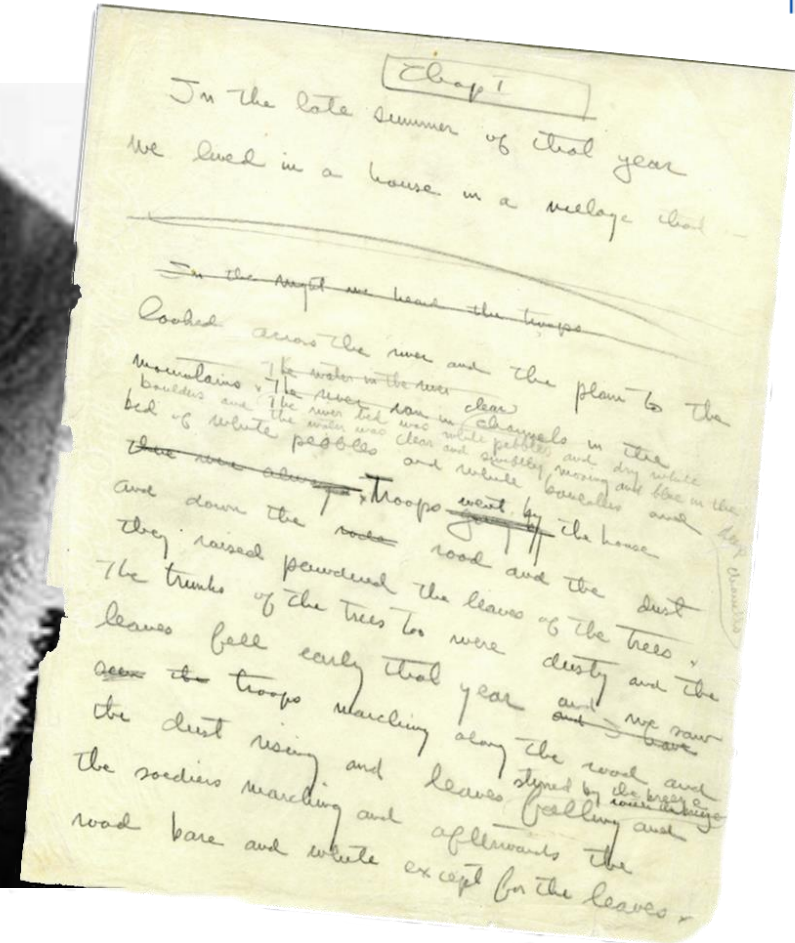
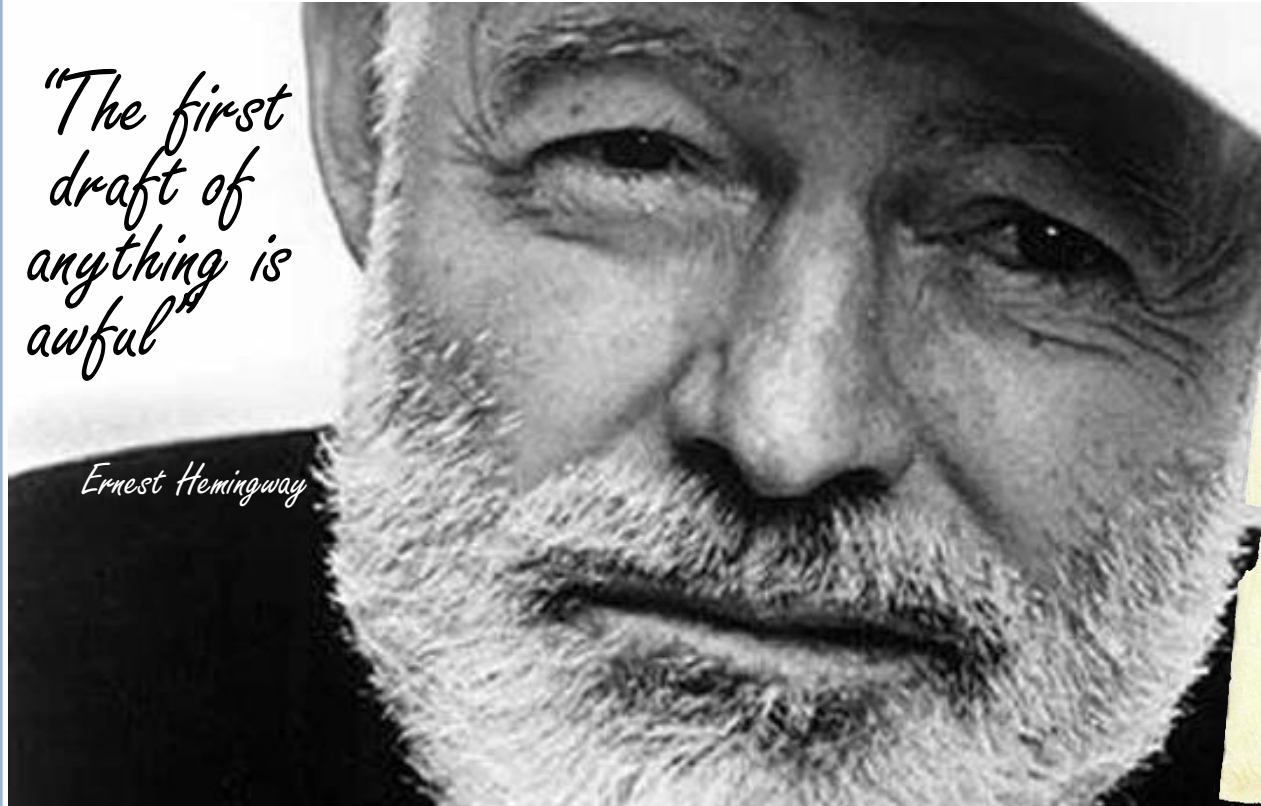
- Billy Bob Macbeth. King of Scotland, Duke of Data



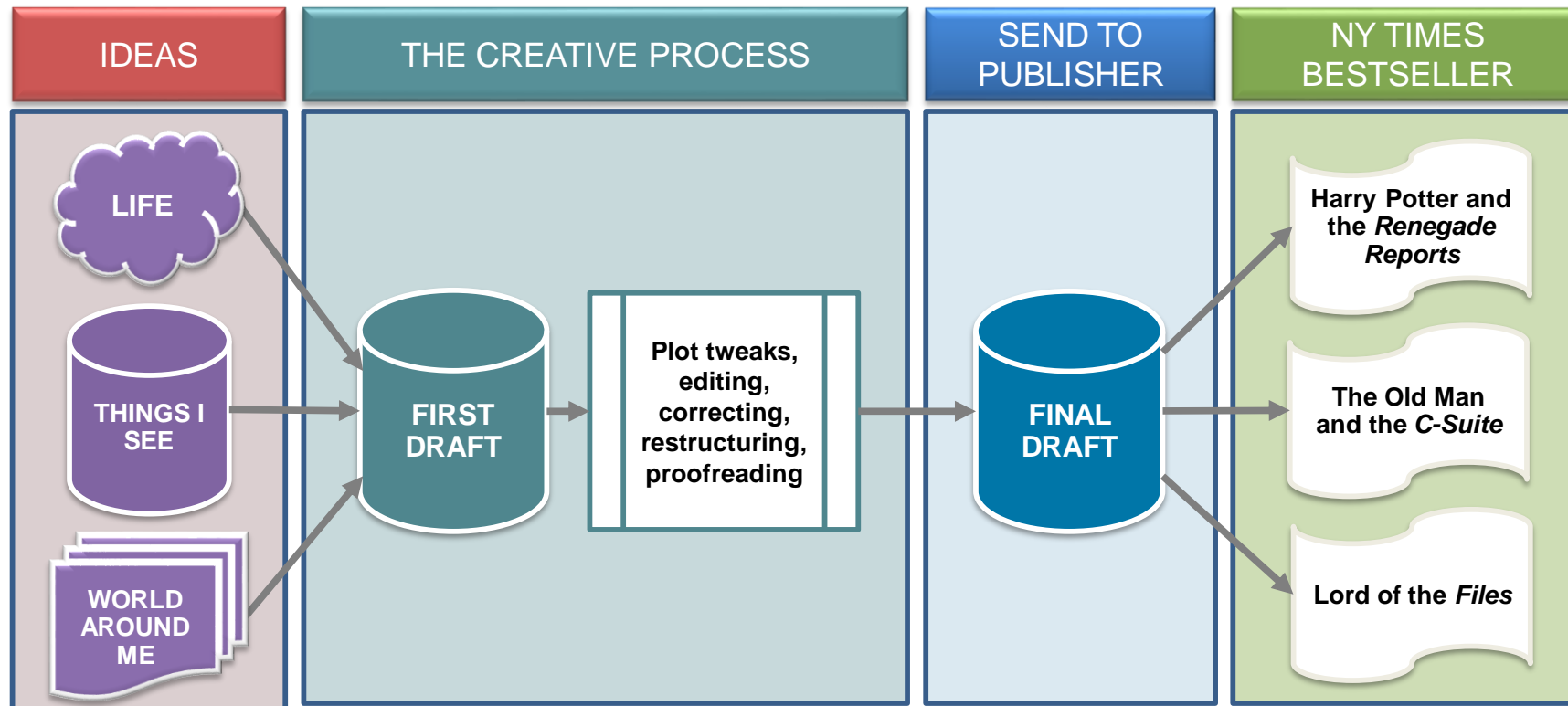
HEMINGWAY ON DATA INTEGRATION

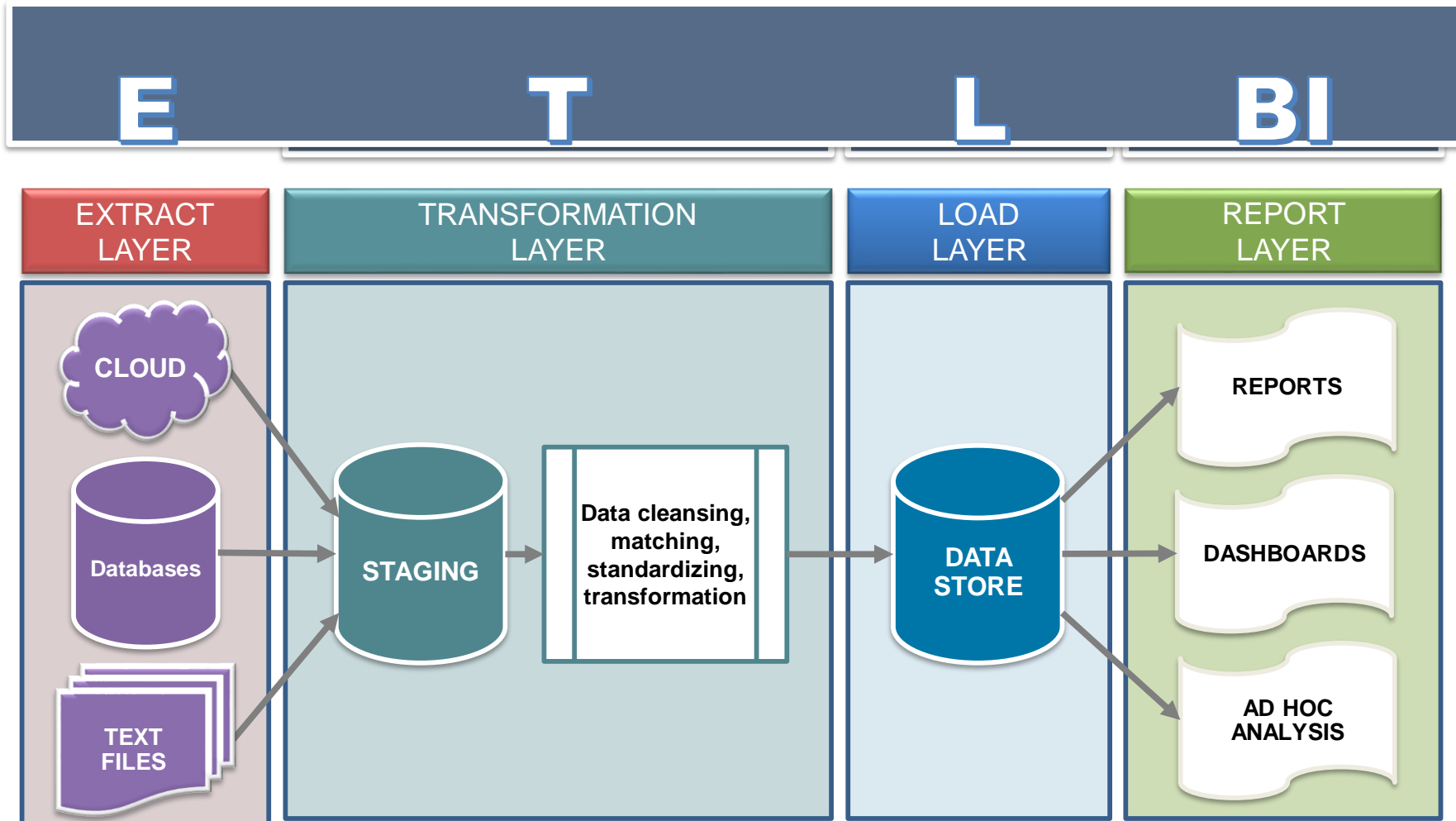
*"The first
draft of
anything is
awful"*

Ernest Hemingway



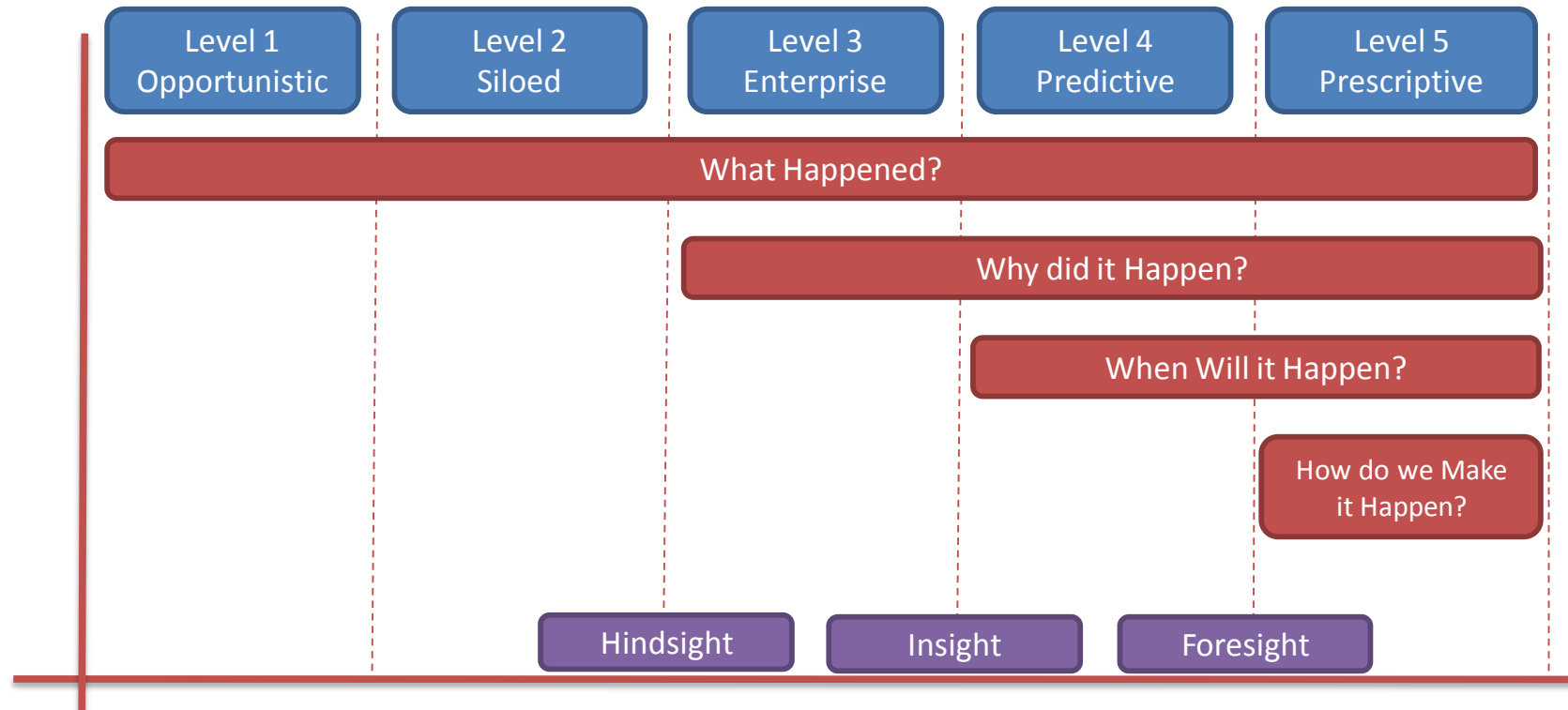
THE LIFECYCLE OF BOOKS







DATA MATURITY



KATIE MCCOY
BUSINESS INTELLIGENCE MANAGER
CHARLOTTE DOUGLAS INTERNATIONAL

OUTLINE

- What problem are we trying to solve?
- Program goals
- Process to get BI off the ground
- Paths to achieve goals
- Where we are now
- Where are we headed

WHAT PROBLEM ARE WE TRYING TO SOLVE?

Information relevant to key decisions is often manual, silo'ed, and difficult to utilize.



PROGRAM GOALS

Leverage highest quality data to tell the full CLT story, enabling fully informed decision-making to achieve sustainable competitiveness and innovation.

Automate

- Current State: Primarily self-reporting with “high touch”
- Future State: Timely, accurate data with little human intervention

Centralize

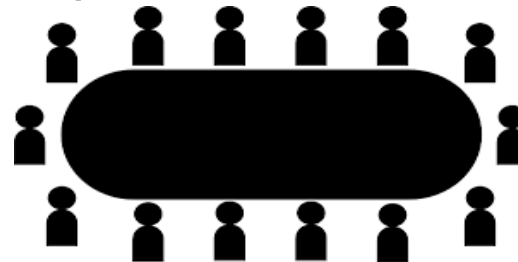
- Current State: Data is stored in various locations, in various formats
- Future State: Data is located in a central repository that is easily accessed

Maximize

- Current State: Silo’ed reporting, decisions often based on institutional knowledge and intuition
- Future State: Data examined multidimensionally for reporting, dashboarding, and analytics

PROCESS TO GET BI OFF THE GROUND

- Inventoried Data Types, Sources, and Systems
- Formed Cross-Departmental “Business Intelligence Architecture Team”
- Met with Airport partners on processes and best practices
- Evaluated technology solutions through vendor demonstrations
- Engaged Consultant for Business Intelligence Assessment
- Participated in business intelligence, innovation, and analytics forums
- Benchmarking with U.S. and Canadian Airports
- Met with City department representatives on enterprise solutions



PATHS TO ACHIEVE GOALS

Path 1: Comprehensive Single Solution, Outsource

- One vendor provides data automation, centralization, and maximization at enterprise level
- Pros: Full-scale; Cutting-edge (first in U.S.)
- Cons: Higher Cost (\$1.4M); Time Consuming; Limited Vendors; Small issues may be amplified through ripple effect

Path 2: Focused, Integrated Solutions, In-house

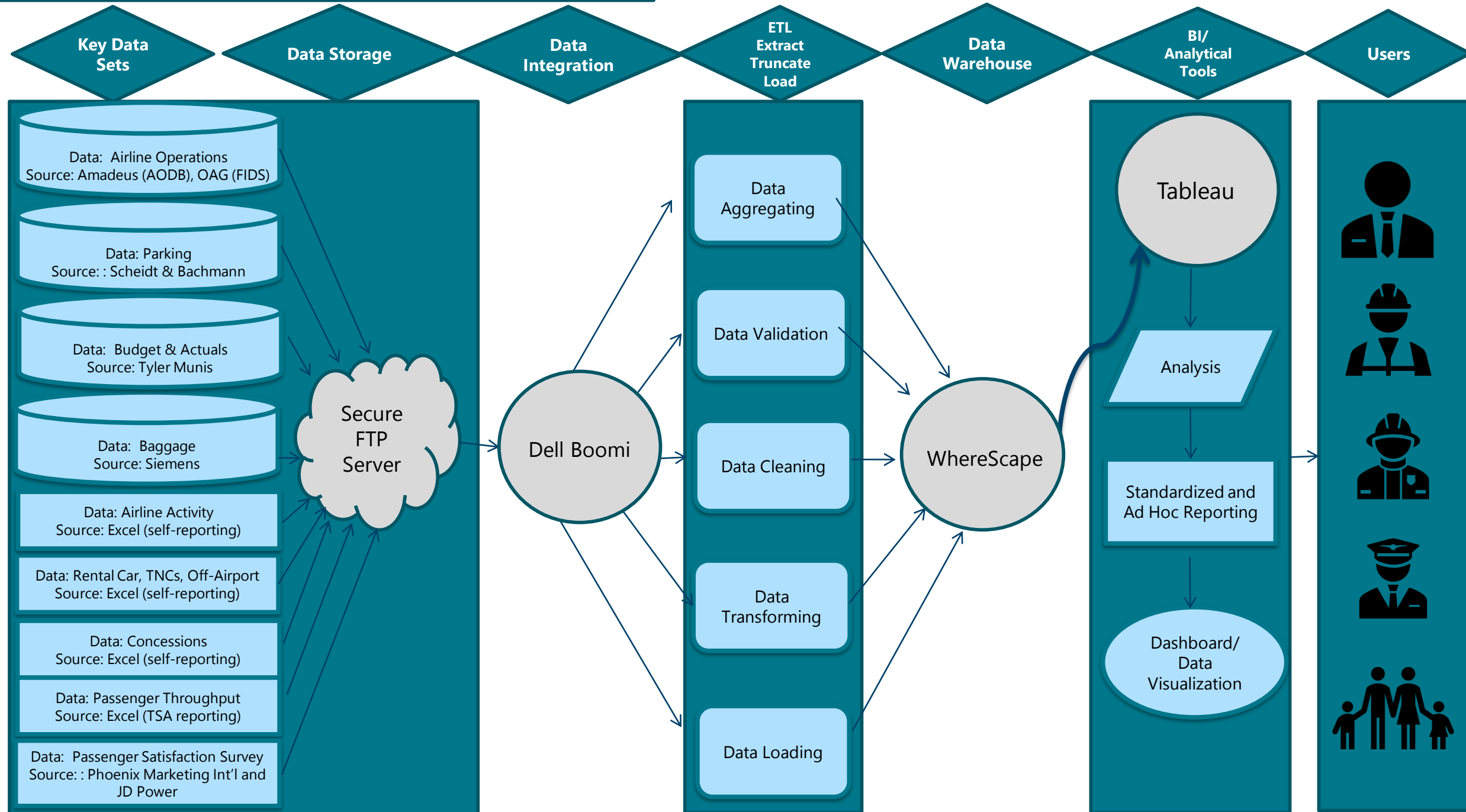
Two or three solutions work in sync at the automation, centralization, and maximization stages

- Pros: Lower cost (\$150k); Multiple vendors, Demonstrated performance at U.S. airports; Staged testing; Local expertise
- Cons: Incremental, phased approach

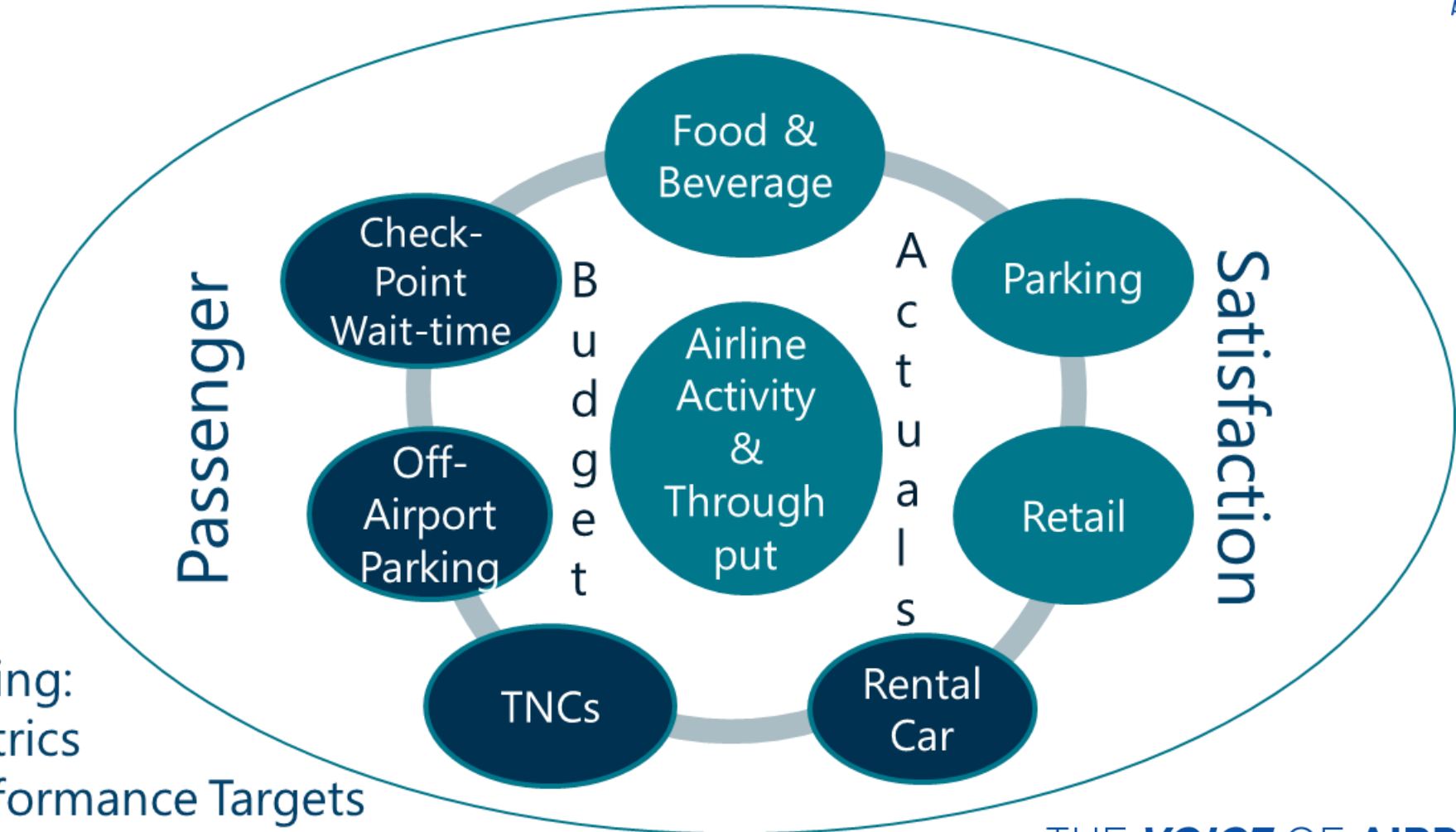


We have a Winner!

Phase 1 & 2 BI Architecture



WHERE WE ARE NOW: PHASE 1 & 2 DATA SETS

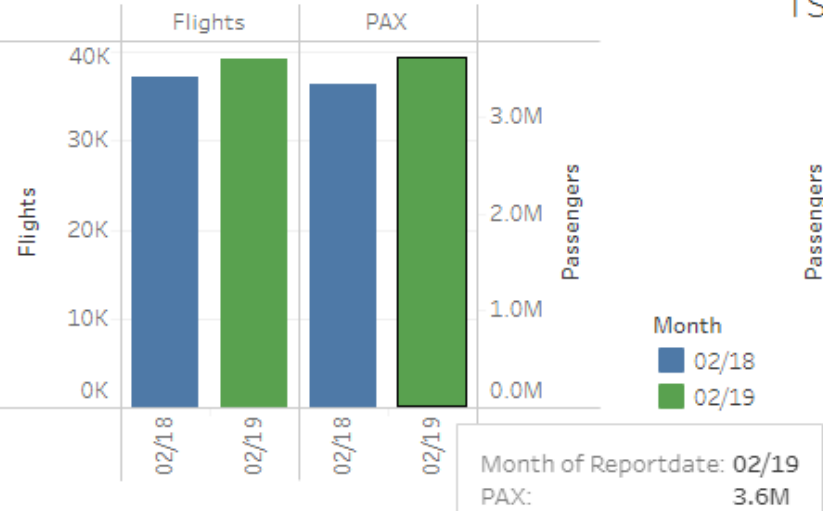


Including:

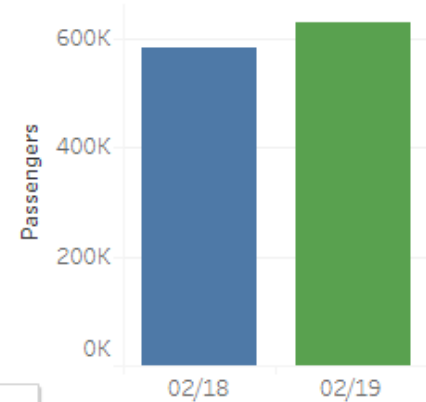
- Metrics
- Performance Targets

Main	Airline Activity By Concourse	% PAX By Carrier	Airline & Cargo Activity	Gate Activity	Net Promoter Score	Restaurant By Zone	Restaurant By Concept	Retail By Zone	Retail By Concept	YTD Parking By Site
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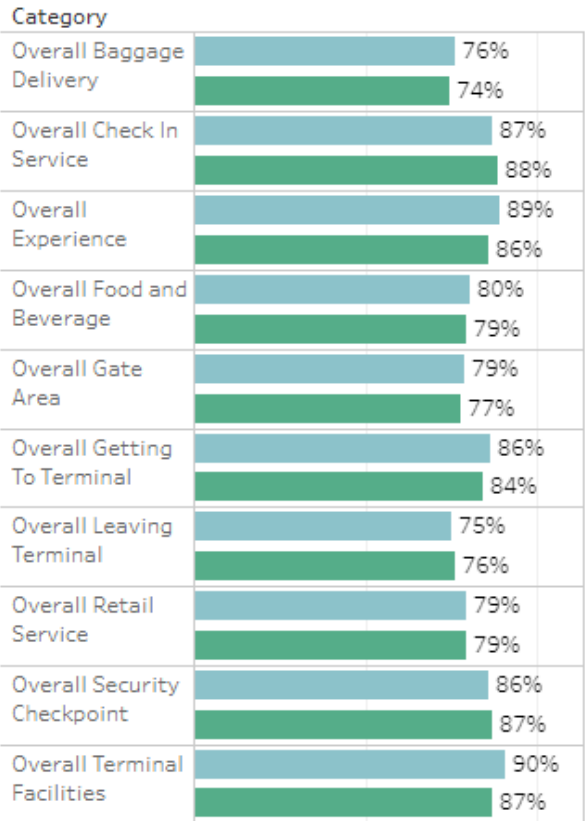
Total Airline Activity



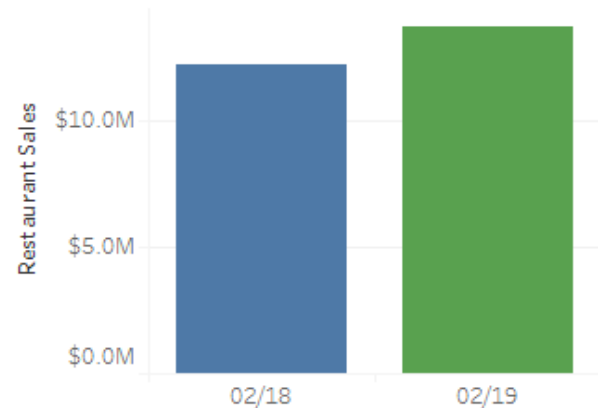
TSA Throughput



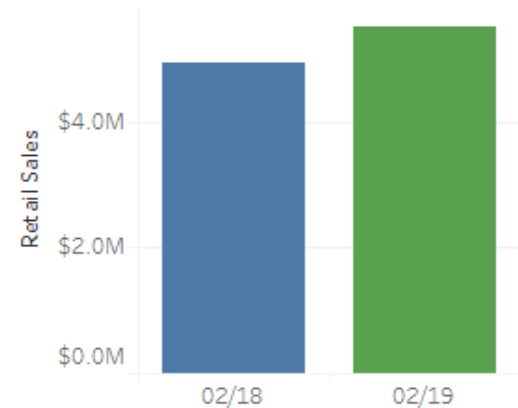
PAX Satisfaction (2017 vs 2018)



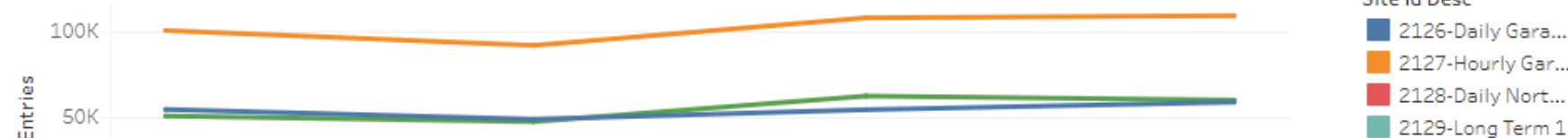
Restaurant Gross Revenue



Retail Gross Revenue



Parking Entries (as of prior day)



WHERE WE'RE HEADED

- Additional Data
 - Facilities (Jet Bridges, Fleet, Moving Sidewalks/Elevators/Escalators)
 - FBO
 - Advertising
 - New Parking System
 - On-Line Booking
 - ACI Financial Benchmarking
 - ????
- Customized Dashboards
- Real-Time Reporting
- Gate and Concessions Optimization
- Predictive Analytics



RAMI HINDIEH, MBA, P.ENG.
ASSOCIATE DIRECTOR,
ENTERPRISE DATA MANAGEMENT
GREATER TORONTO AIRPORTS AUTHORITY



49.5 MILLION
PASSENGERS
In 2018



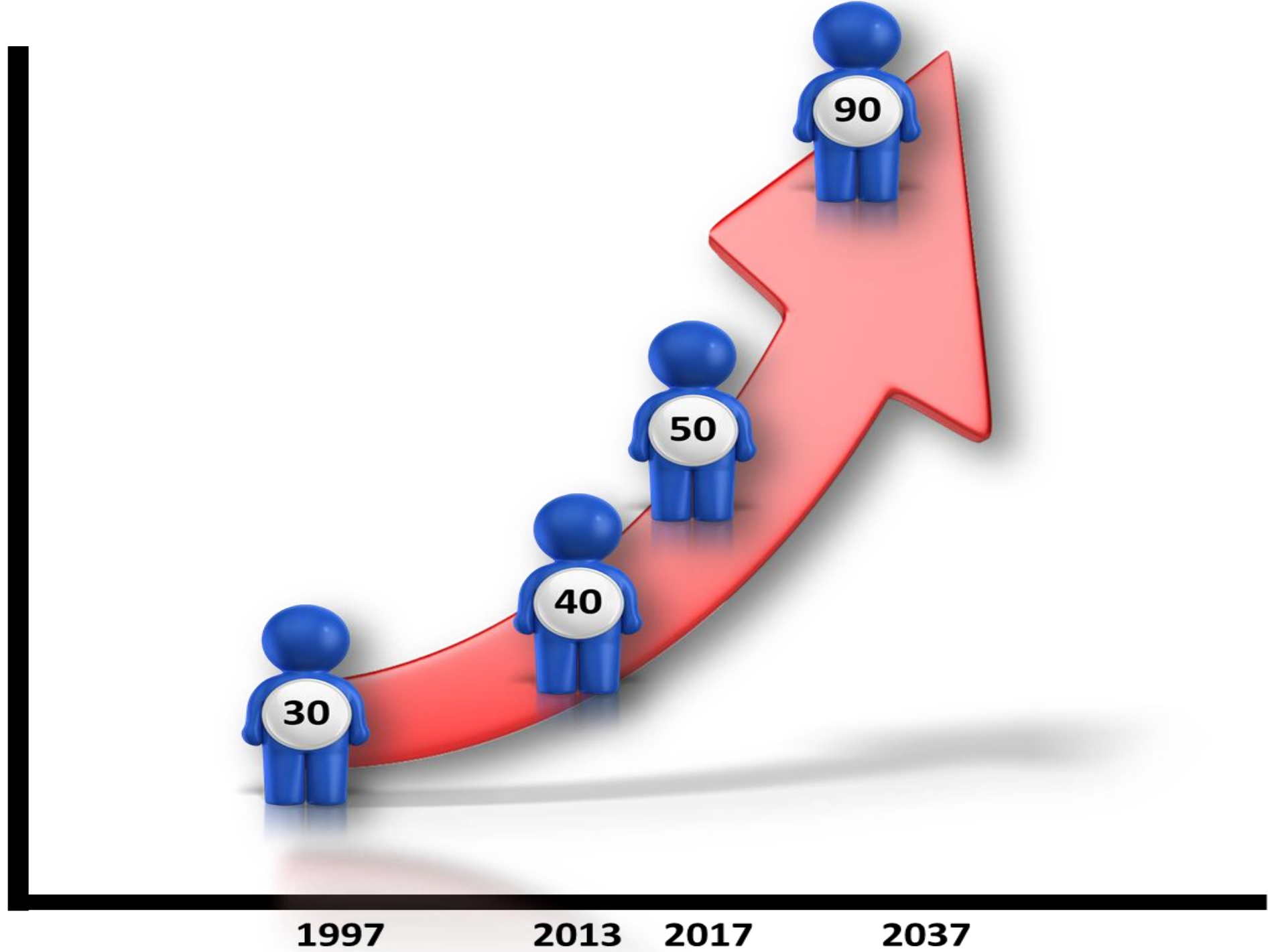
560,000
Tons of Cargo
In 2018



IN THE TOP 3
BUSIEST
NORTH AMERICAN
AIRPORTS
In 2018



180
DESTINATIONS





SEAMLESS PASSENGER FLOW

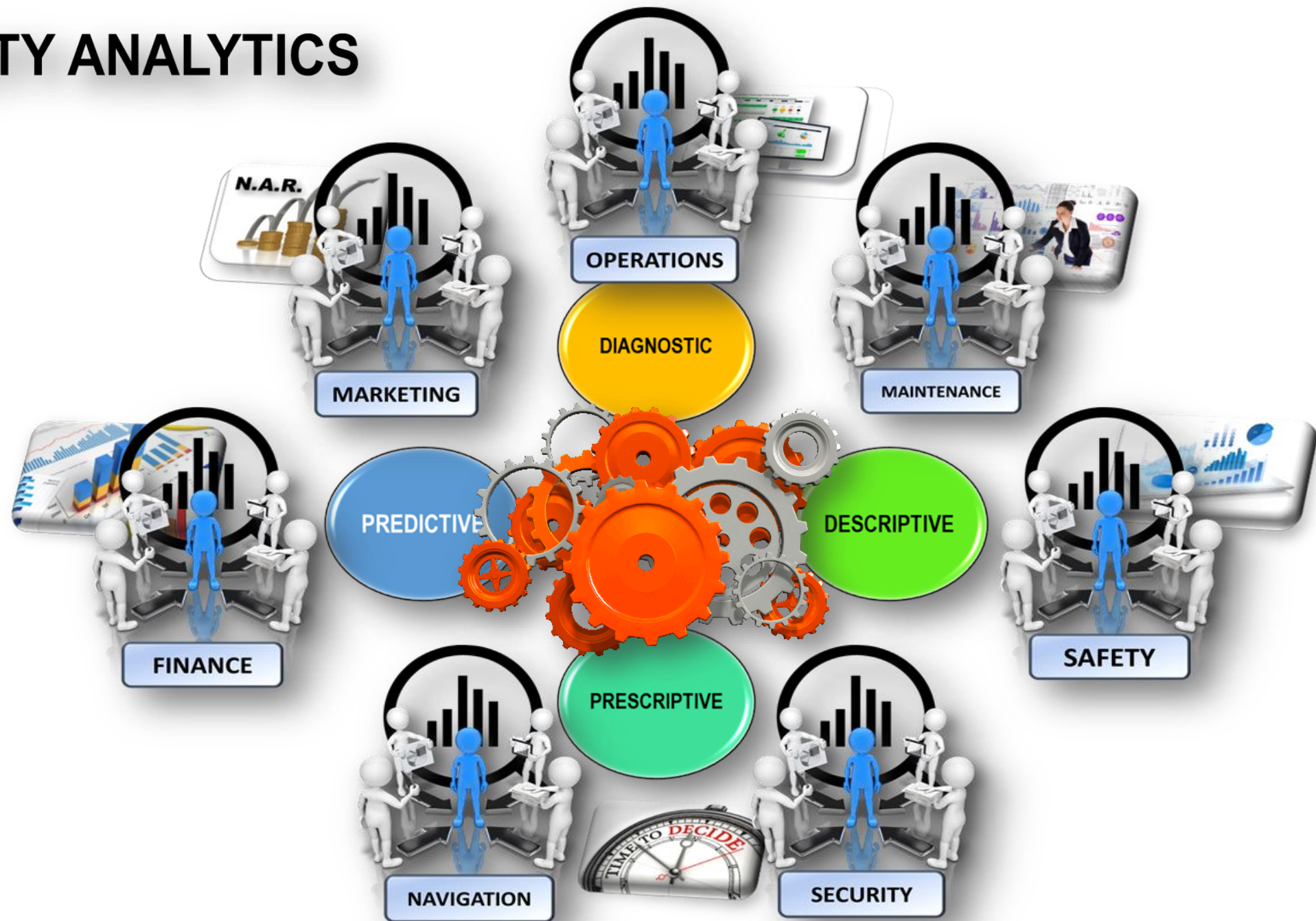




USING DATA FOR OPERATIONAL EFFICIENCIES



QUALITY ANALYTICS









QUESTIONS ?