

MSiA 410

Generating Business Value with Analytics

CLASS 1: CLASS INTRO, GBV

Joel Shapiro
Clinical Associate Professor, MEDS

Northwestern | Kellogg



Generating Business Value

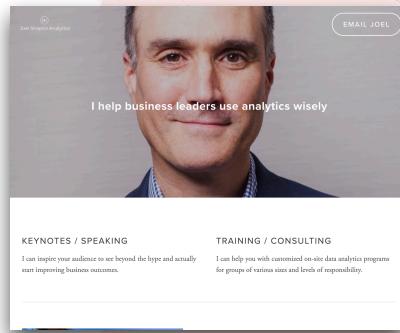
TODAY'S AGENDA

- 1. Introduction**
- 2. Syllabus Review**
- 3. Why business people should care about analytics**



Clinical Associate Professor of Data Analytics

- Data Analytics Decisions (KMCI 940)
- ACL (MECN 615)
- Lots of Exec Ed



Small Analytics Consulting Practice,
JoelShapiroAnalytics.com



Chief Analytics Officer for SaaS provider. AI-driven sales & revenue planning / ops software.





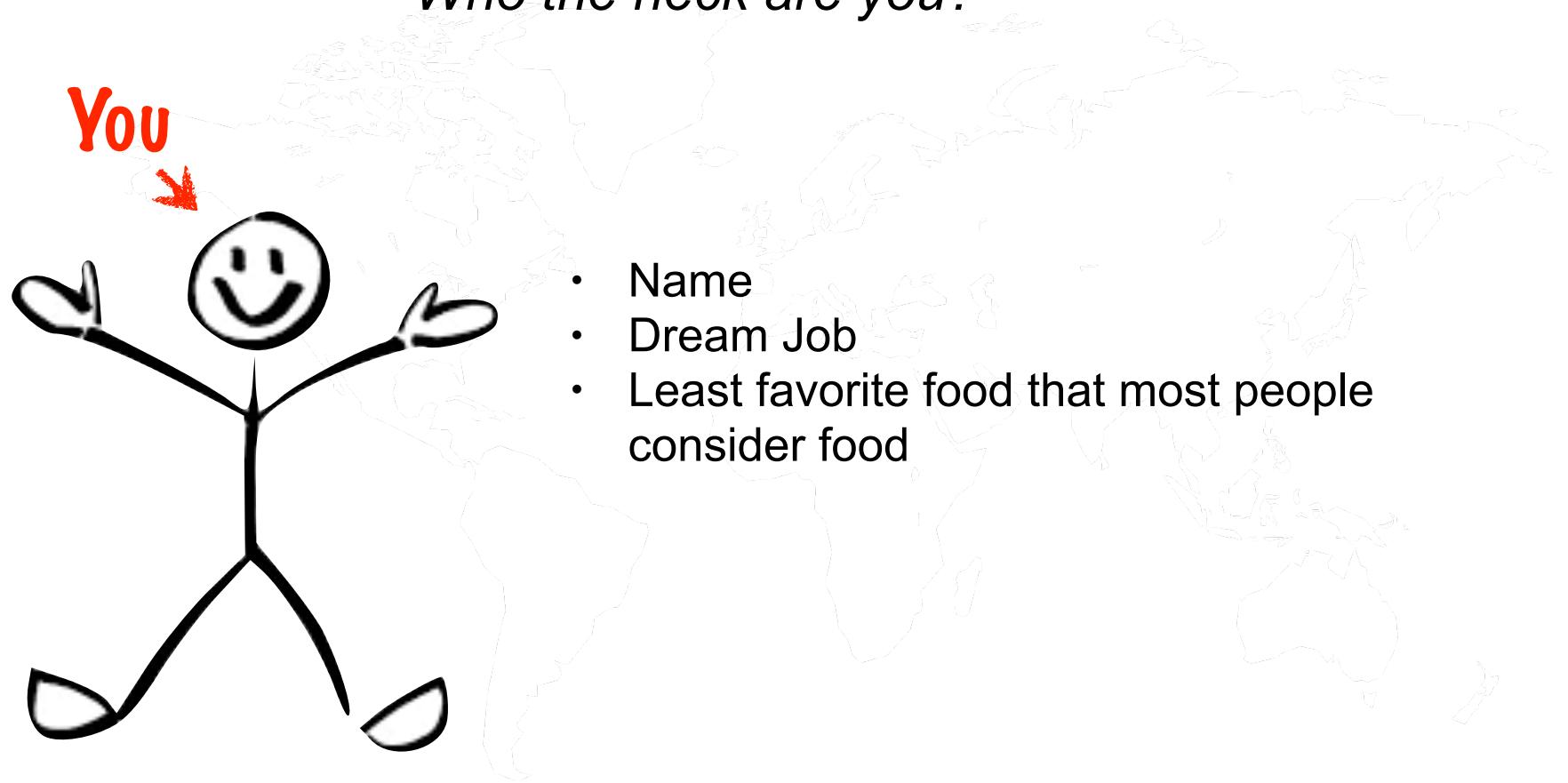
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Student Introductions

Who the heck are you?



- Name
- Dream Job
- Least favorite food that most people consider food



1. What do you think about University's Square work?
2. What do you think about Blue Badger's use of the information provided?

Northwestern
Kellogg
School of Management

JOEL SHAPIRO
Blue Badger Auto Club



The Blue Badger Auto Club was founded in 1952 by a small group of dedicated automobile enthusiasts. It now serves over one million members, providing them with a range of travel-related services, including roadside assistance, discounts on routine auto maintenance at a wide network of auto service centers, downloadable maps, discounts at select restaurants, free vacation planning tools, and more.

For years, Blue Badger relentlessly strived to accomplish their "three pillars of success:"

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A QUICK RECAP OF MONEYBALL

- In 2002, A's had one of the **smallest budgets** for player salaries
- GM was **Billy Beane**
 - Former high-potential major league player
- Assistant was **Paul DePodesta**
 - Econ major from Harvard
 - Interested in baseball stats



What player stats contributed most to baseball runs?

A QUICK RECAP OF MONEYBALL

- Analytics showed: “OBP” and “slugging”
- These were NOT
 - What scouts looked for
 - What baseball stats typically emphasized
 - What other people prized
 - What got players high salaries
- Implied that some players were undervalued
- **A's began hiring these players**

**Result = A's won.
A LOT**



THE SEMINAL “BIG DATA” MOMENT... BUT WHY?

- Were the data new?
- Were the statistical methods new?
- Were computational capabilities new?
- Was interest in baseball stats new?
- What's left?



THE REAL MONEYBALL TAKEAWAY

Moneyball isn't really a data story. It's a business leadership / business success story first and foremost.

Business success with analytics isn't really about the measurement, the IT, or the data science. It's about being a great critical thinker who understands what data can do for you.



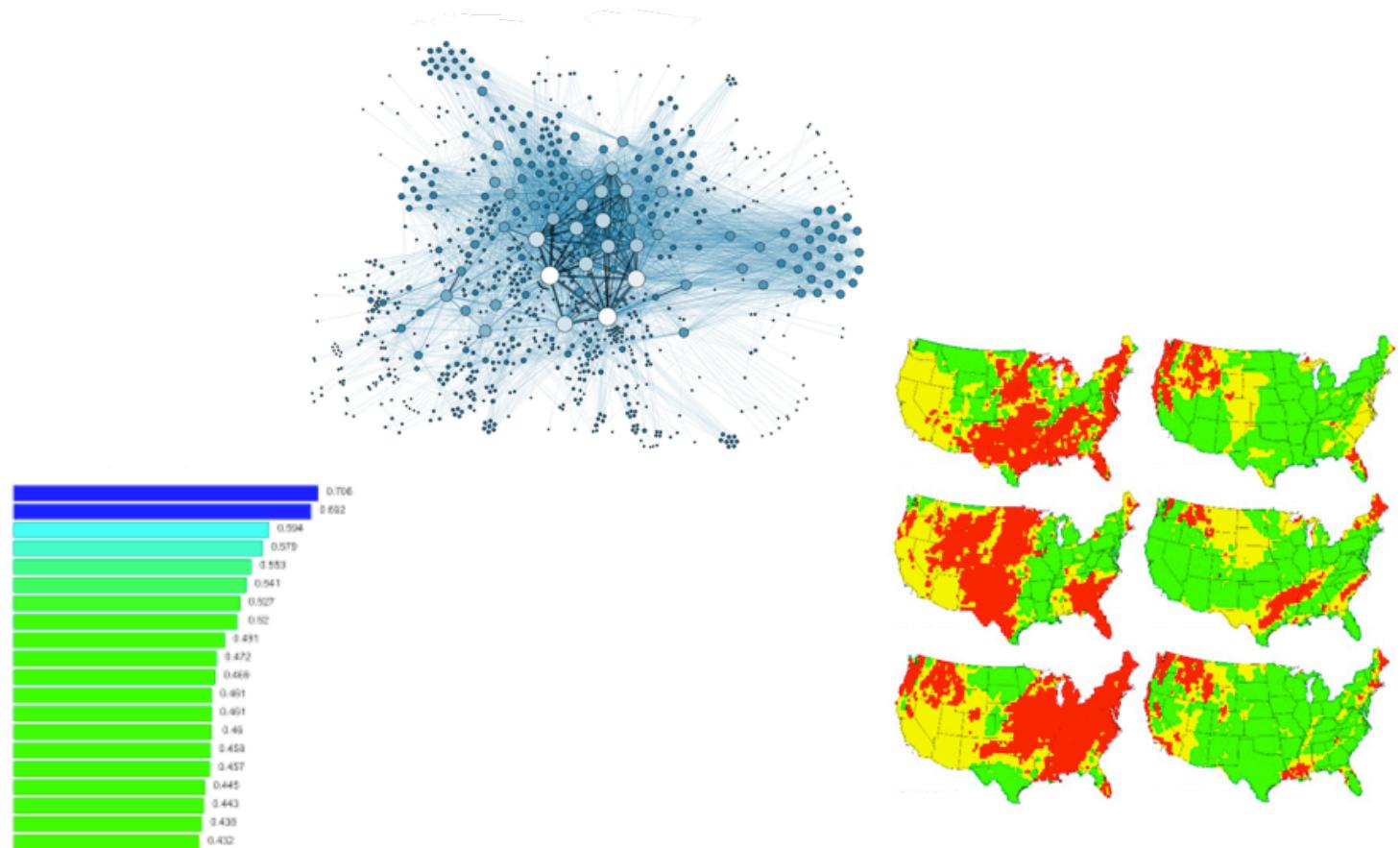


MAKING SURE ANALYTICS GENERATES VALUE...

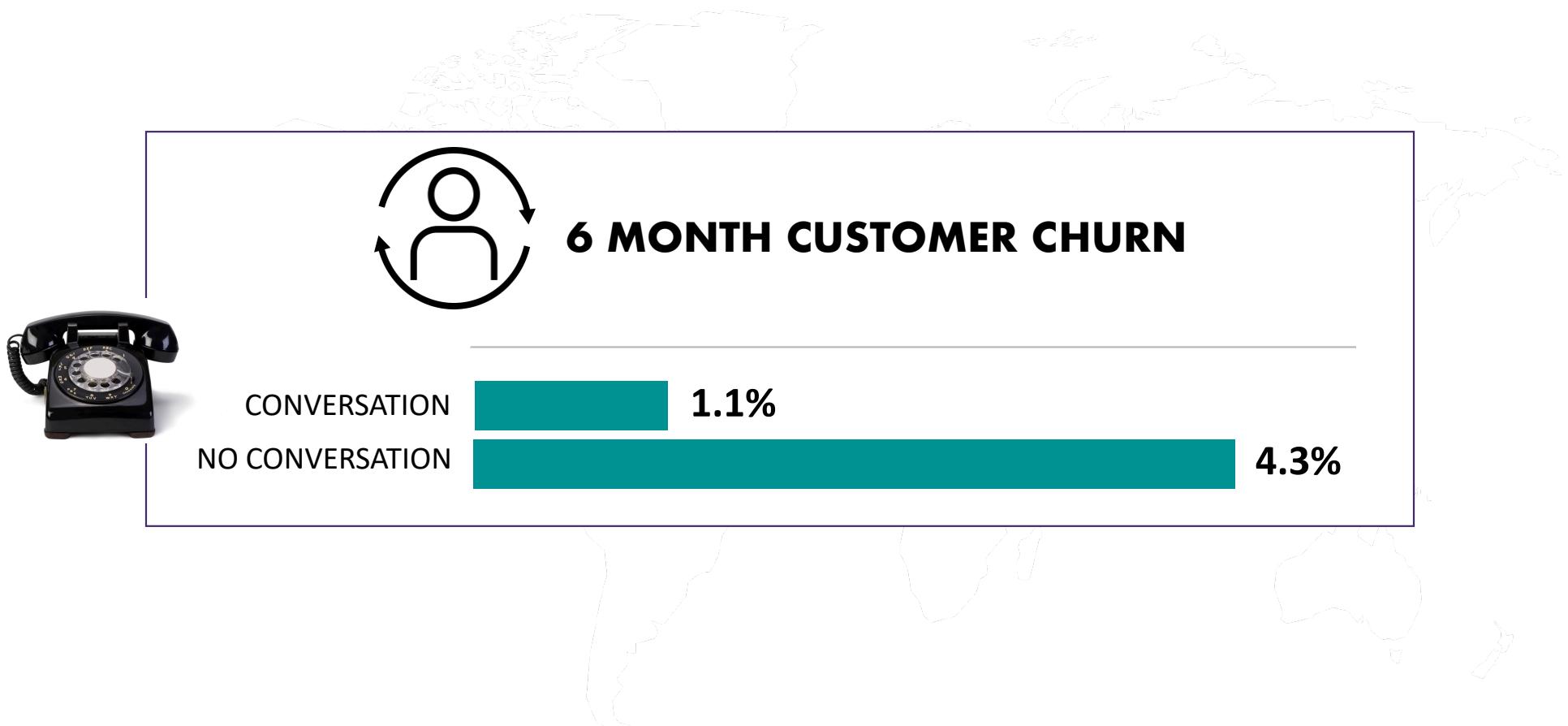
3 Keys

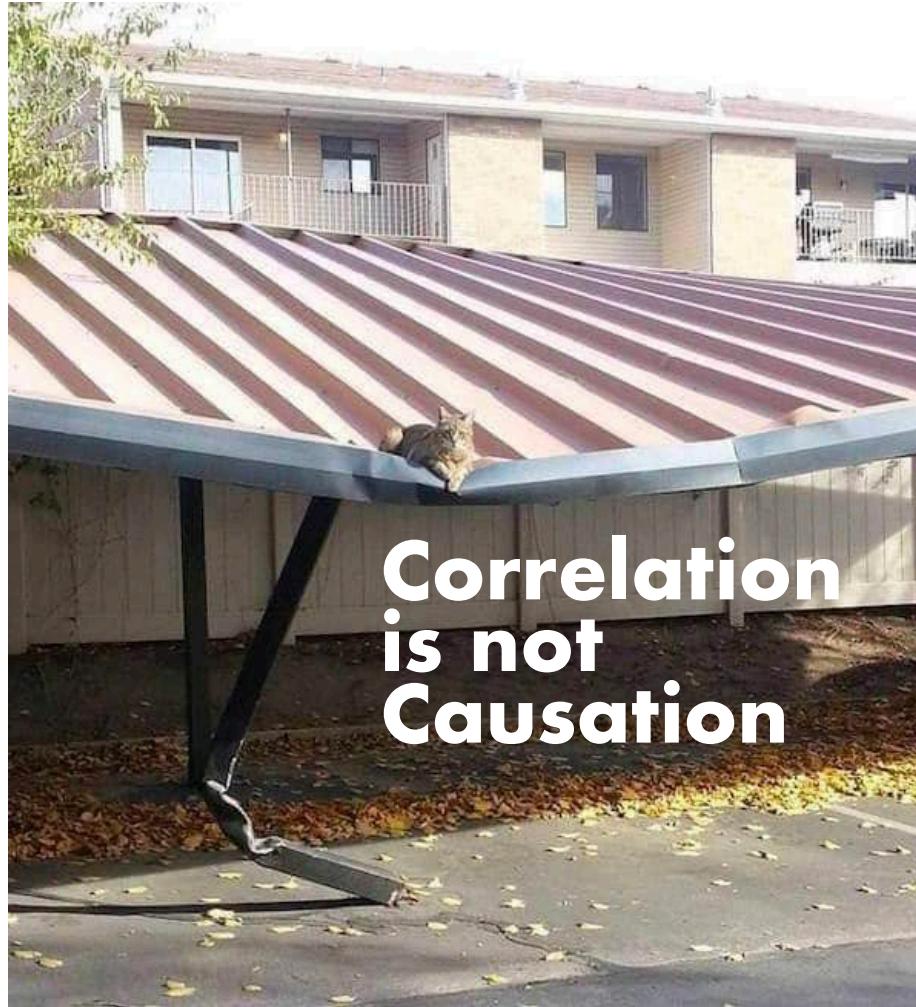
1. Clearly define the problem / question you're trying to solve / answer
2. Be evidence-driven, not data-driven
3. Get buy-in from the business leadership

AT A FINANCIAL SERVICES FIRM LEADERSHIP CONFERENCE...



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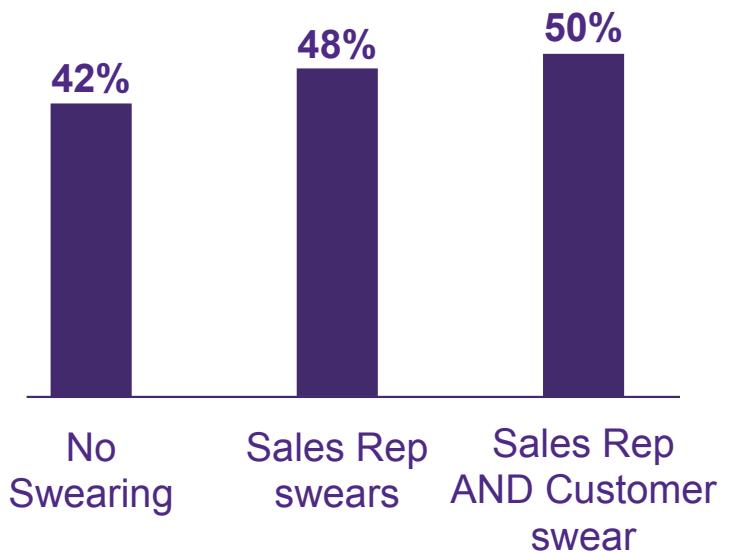
Yours
Yours







“CURSING HELPS YOU WIN”



<https://www.gong.io/blog/how-cursing-impacts-sales/>

REPORTING ISN'T ANALYTICS

The Big Important Weekly Report

Sales Volume	14/08/17	21/08/17	28/08/17	04/09/17	11/09/17	18/09/17	25/09/17	02/10/17	09/10/17	16/10/17	23/10/17	30/10/17
Office 1	15,508	15,973	16,772	16,940	17,618	18,499	19,239	19,431	19,431	20,403	20,199	20,199
Office 2	15,594	15,594	15,750	16,065	15,744	14,799	15,095	14,491	14,346	14,489	14,344	14,201
Office 3	15,675	15,989	16,788	17,124	17,638	17,814	18,705	18,518	19,074	19,074	19,074	18,883
Office 4	14,487	14,632	14,486	15,210	15,058	15,209	15,817	16,133	16,456	16,950	17,628	17,981
Staff Head Count	14/08/17	21/08/17	28/08/17	04/09/17	11/09/17	18/09/17	25/09/17	02/10/17	09/10/17	16/10/17	23/10/17	30/10/17
Office 1	110	109	108	109	107	109	107	109	110	108	110	109
Office 2	103	102	101	102	101	103	104	103	104	104	105	107
Office 3	107	106	107	105	106	107	106	107	106	105	104	104
Office 4	105	103	102	101	99	99	97	96	94	93	91	93
Operating Costs	14/08/17	21/08/17	28/08/17	04/09/17	11/09/17	18/09/17	25/09/17	02/10/17	09/10/17	16/10/17	23/10/17	30/10/17
Office 1	\$5.99 m	\$5.94 m	\$5.89 m	\$5.94 m	\$5.83 m	\$5.94 m	\$5.83 m	\$5.94 m	\$5.99 m	\$5.89 m	\$5.99 m	\$5.94 m
Office 2	\$6.10 m	\$6.04 m	\$5.99 m	\$6.04 m	\$5.99 m	\$6.10 m	\$6.16 m	\$6.10 m	\$6.16 m	\$6.16 m	\$6.22 m	\$6.34 m
Office 3	\$6.79 m	\$6.73 m	\$6.79 m	\$6.67 m	\$6.73 m	\$6.79 m	\$6.73 m	\$6.79 m	\$6.73 m	\$6.67 m	\$6.60 m	\$6.60 m
Office 4	\$7.29 m	\$7.15 m	\$7.08 m	\$7.01 m	\$6.88 m	\$6.88 m	\$6.74 m	\$6.67 m	\$6.53 m	\$6.46 m	\$6.32 m	\$6.46 m
Revenue	14/08/17	21/08/17	28/08/17	04/09/17	11/09/17	18/09/17	25/09/17	02/10/17	09/10/17	16/10/17	23/10/17	30/10/17
Office 1	\$8.70 m	\$9.05 m	\$9.60 m	\$9.89 m	\$10.18 m	\$10.69 m	\$11.34 m	\$11.68 m	\$11.57 m	\$12.39 m	\$12.02 m	\$12.14 m
Office 2	\$7.72 m	\$7.64 m	\$7.72 m	\$7.95 m	\$7.87 m	\$7.40 m	\$7.47 m	\$7.10 m	\$7.03 m	\$7.24 m	\$7.24 m	\$7.31 m
Office 3	\$7.67 m	\$7.82 m	\$8.13 m	\$8.37 m	\$8.80 m	\$8.80 m	\$9.42 m	\$9.14 m	\$9.51 m	\$9.60 m	\$9.41 m	\$9.32 m
Office 4	\$6.74 m	\$6.87 m	\$6.80 m	\$7.14 m	\$7.00 m	\$7.14 m	\$7.43 m	\$7.50 m	\$7.80 m	\$7.88 m	\$8.19 m	\$8.27 m

VISUALIZATION ISN'T ANALYTICS



WHAT IS THE DIFFERENCE BETWEEN:



MY DEFINITION OF ANALYTICS

Collecting / analyzing data to create evidence that helps solve a problem

MY DEFINITION OF ANALYTICS



A SALES ANALYTICS FAIL AT GO-BIG TRAVEL



A SALES ANALYTICS FAIL AT GO-BIG TRAVEL

BACKGROUND

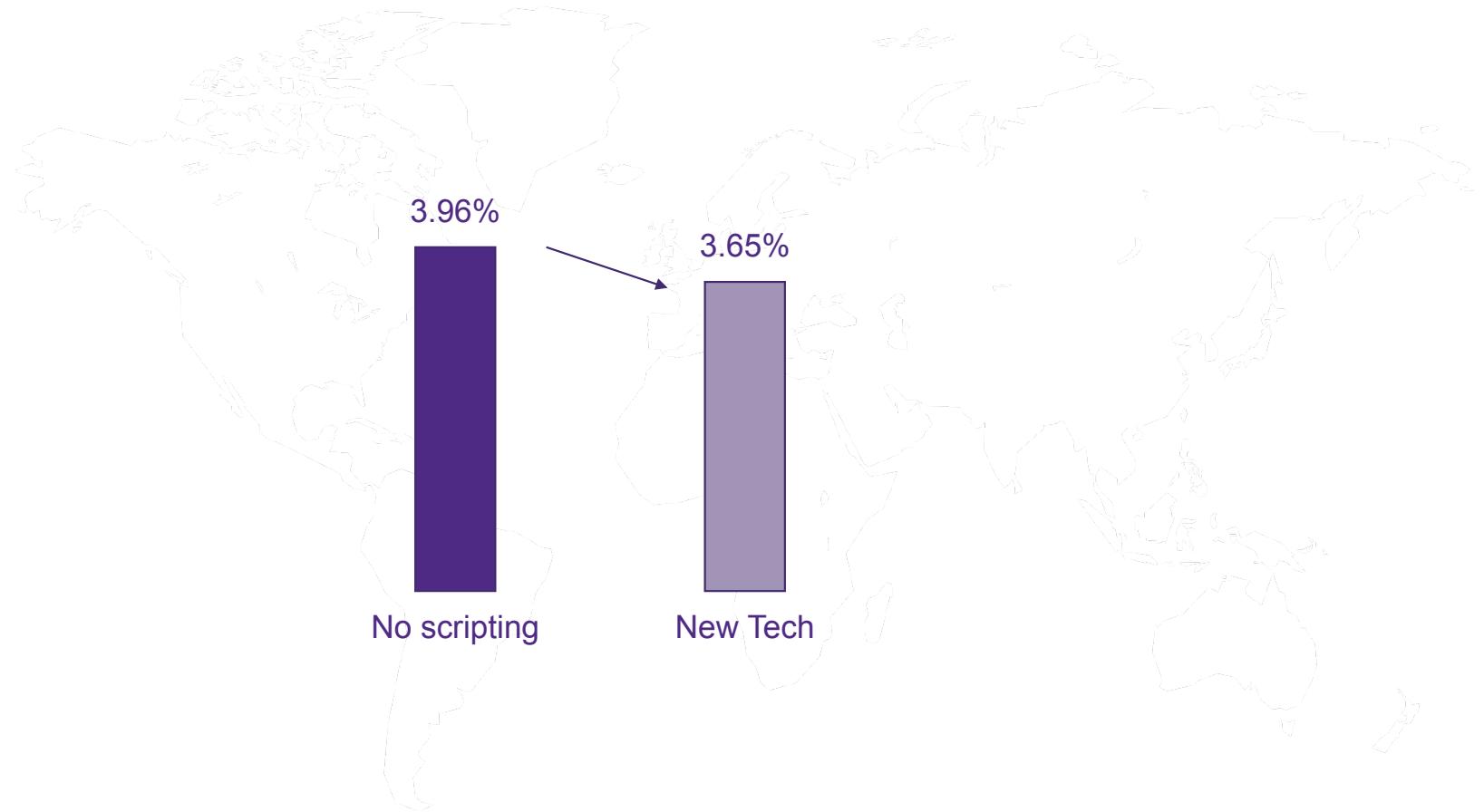
Multi-channel direct selling Vacation Club packages via phone, social, messaging, etc.

Head of sales went to a trade show, and learned about a **dynamic scripting tool** to improve / enhance phone conversations by automatically generating script based on prospect profiles scraped from web.

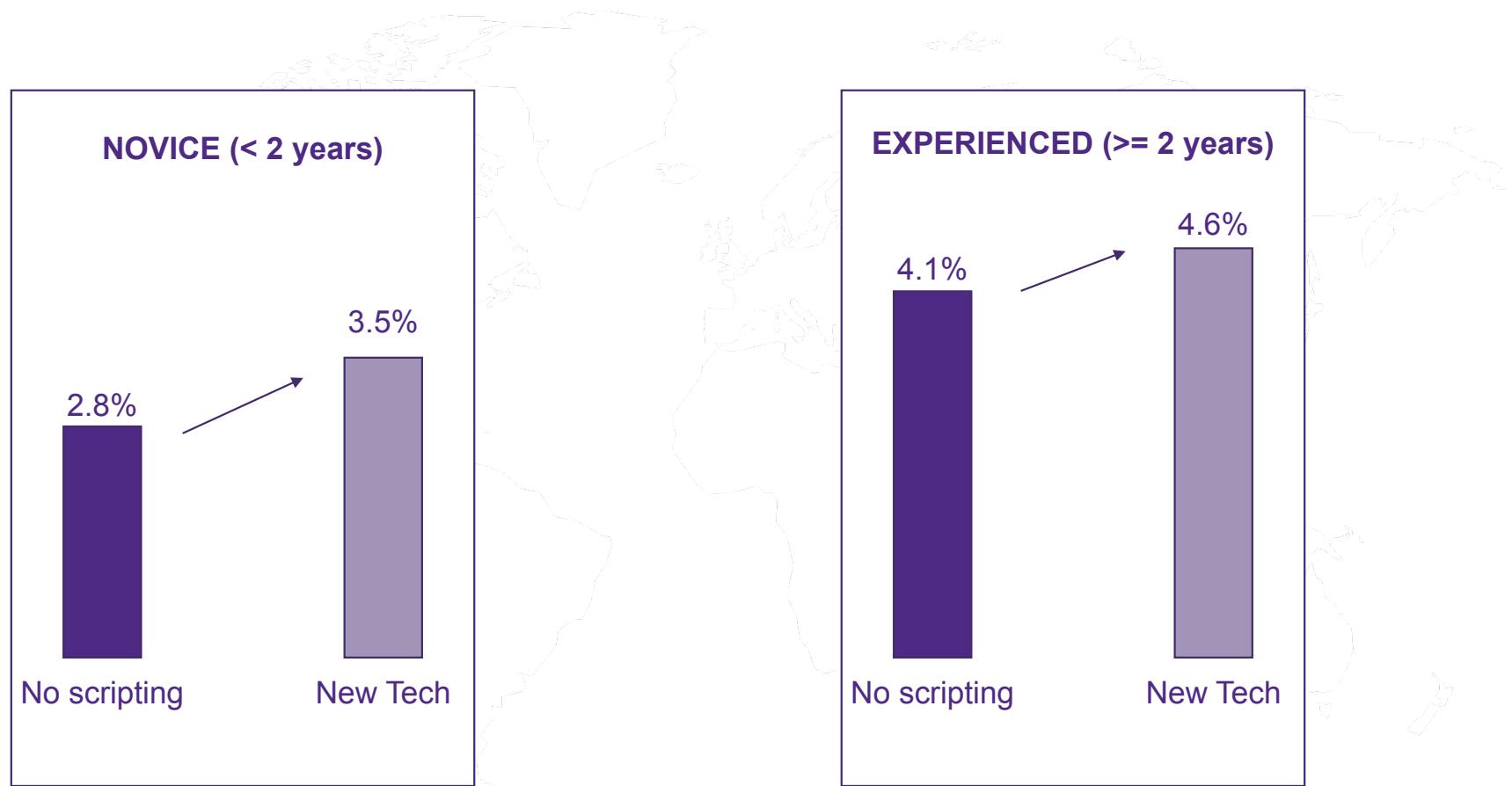
Implemented the new tech, trained entire team, rolled it out and waited for the big bucks to come in...



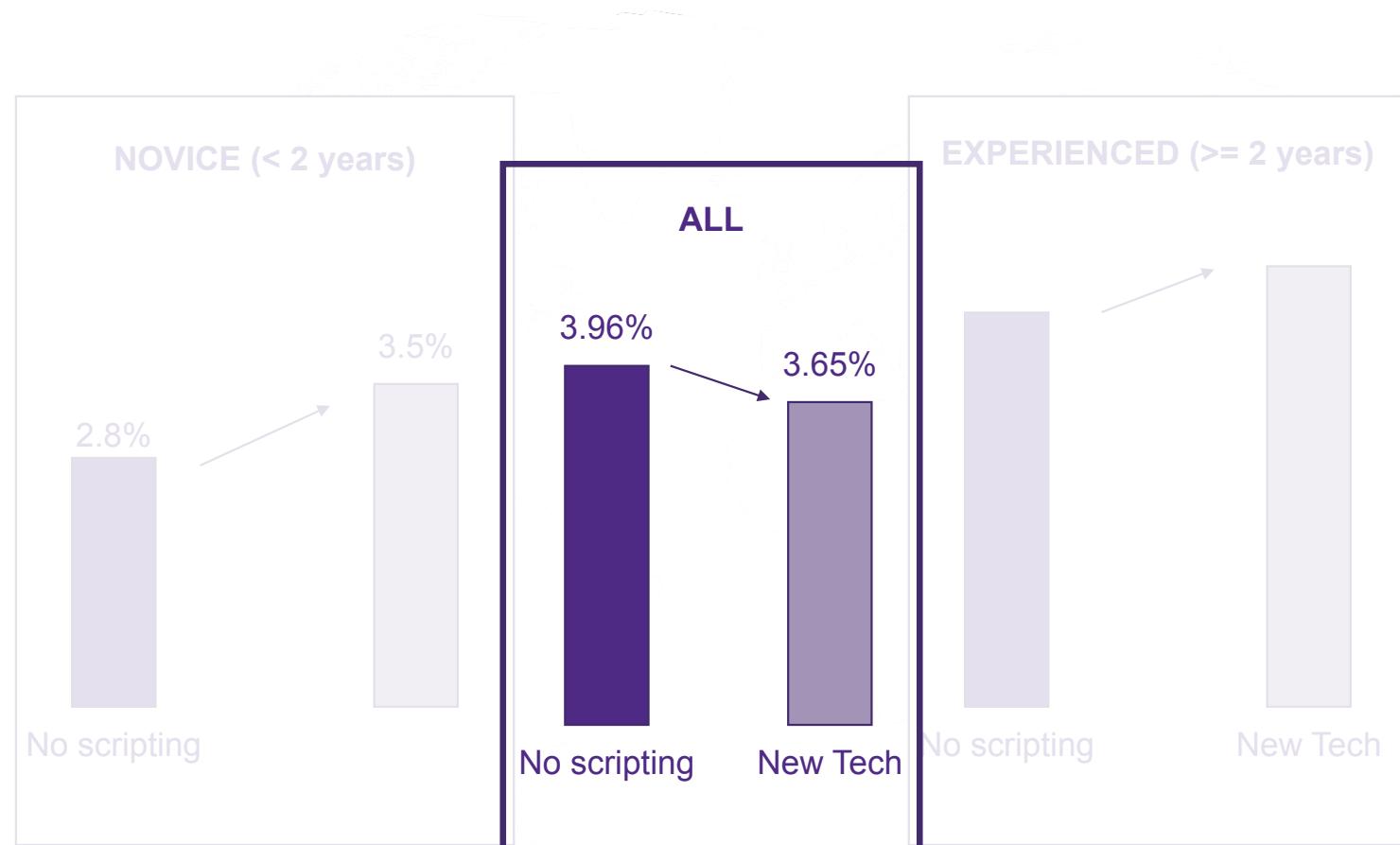
CONVERSION RATES DECREASED WITH NEW TECH



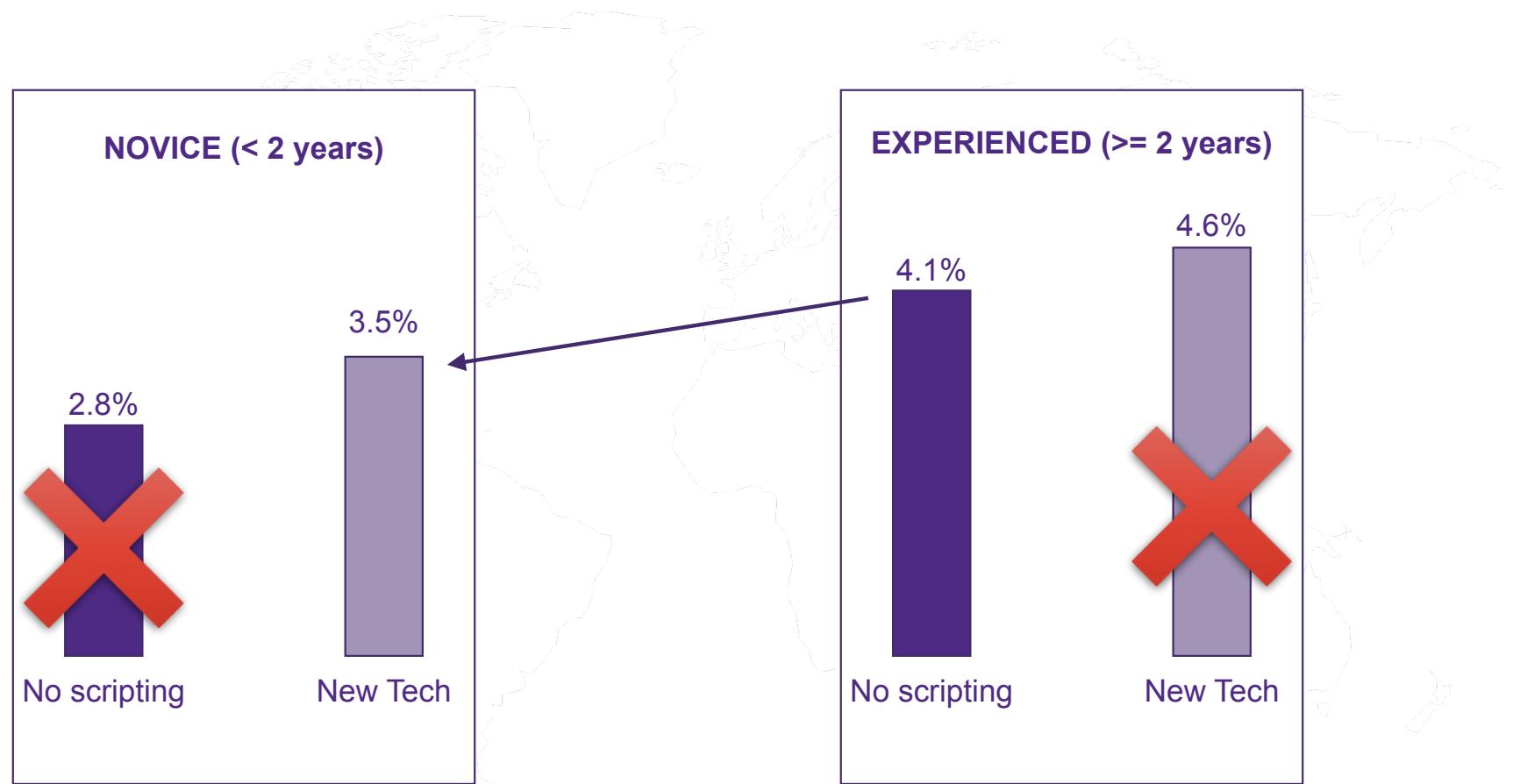
BUT IN REALITY, NEW TECH WAS EFFECTIVE!



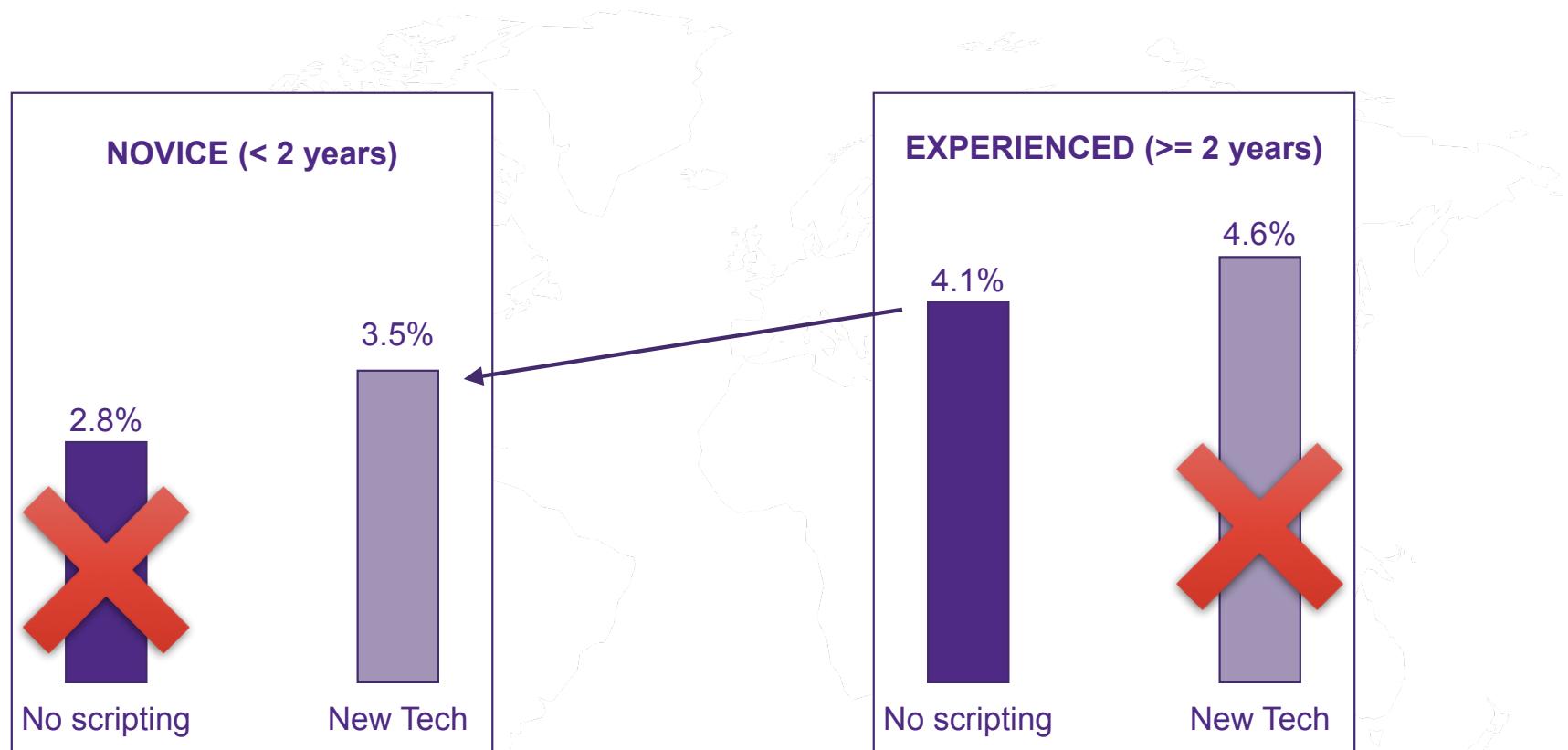
WHY DOES THE OVERALL RATE DECREASE?



WE ARE CONFUSING EXPERIENCE WITH TECH EFFECTIVENESS!

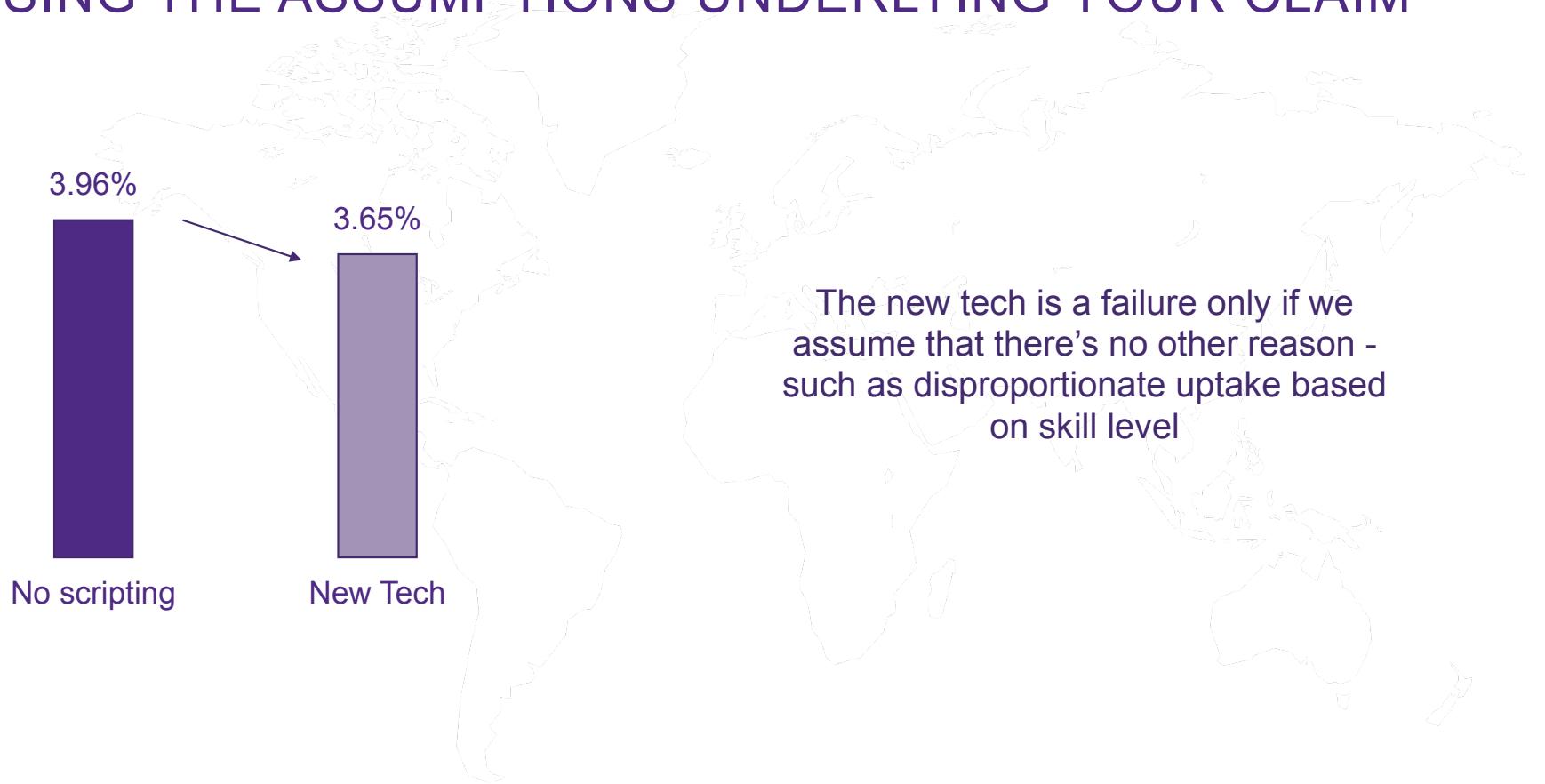


IN FACT, THIS WAS A “SELF-INFILCTED” WOUND

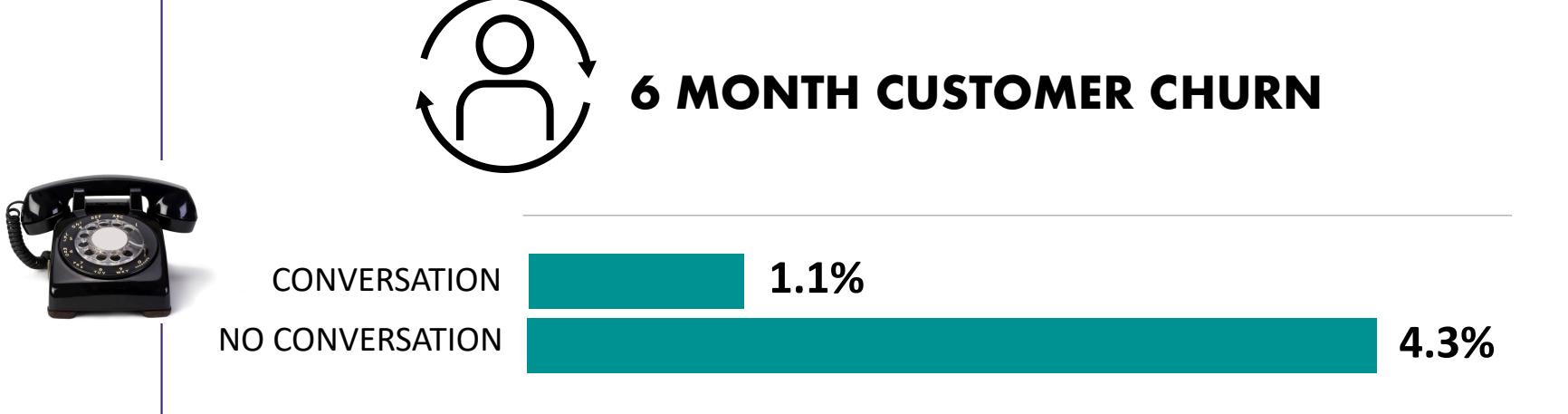


Why do you think novices used the new tech and experienced sellers didn't?

BEING A GREAT CRITICAL THINKER MEANS ARTICULATING AND ASSESSING THE ASSUMPTIONS UNDERLYING YOUR CLAIM



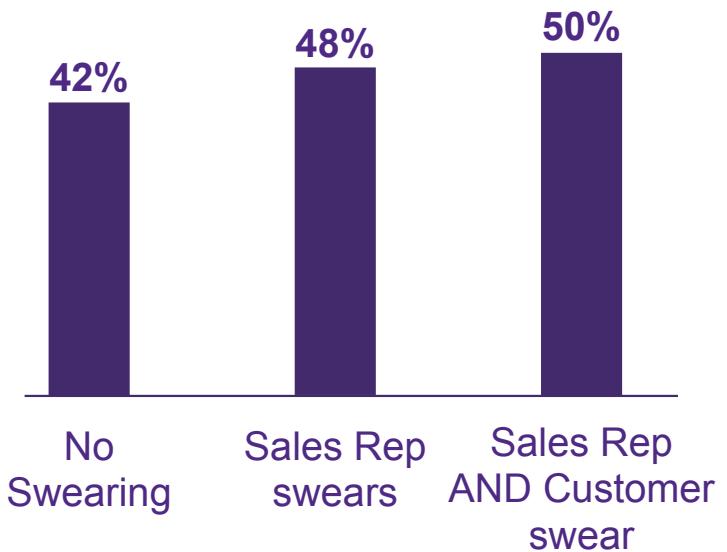
BEING A GREAT CRITICAL THINKER MEANS ARTICULATING AND ASSESSING THE ASSUMPTIONS UNDERLYING YOUR CLAIM



Calling “works” only if we make the assumption that the two groups are equivalent, other than the conversation.



This is good evidence that cursing helps you win only if you assume that, when sales people curse, the customer relationships is identical to cases when the they don't curse.



<https://www.gong.io/blog/how-cursing-impacts-sales/>

MAKING SURE ANALYTICS GENERATES VALUE...

3 Keys

1. Clearly define the problem / question you're trying to solve / answer
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Harrah's

FIRST, THE END RESULT

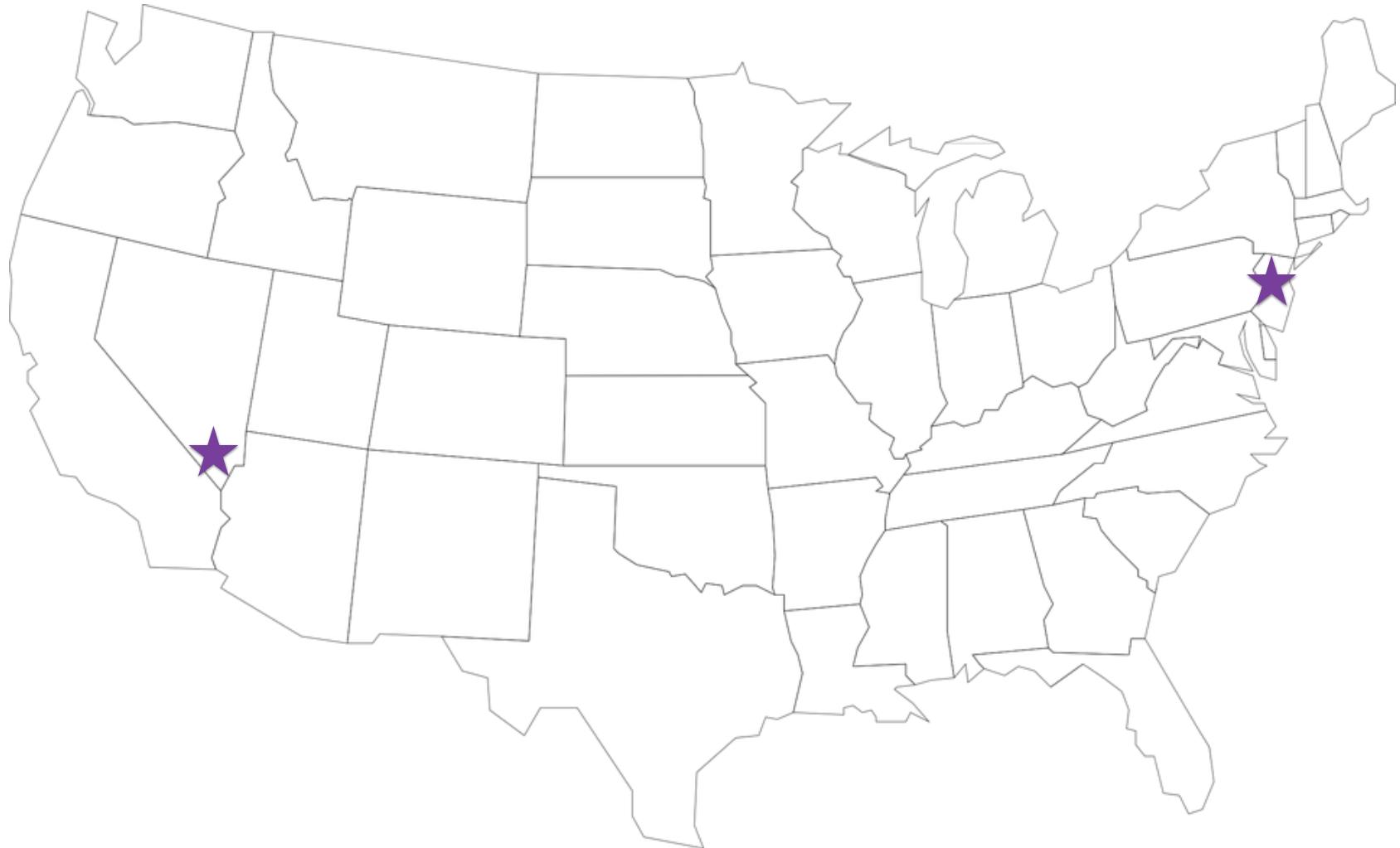
\$400M



\$1B

1998

2002





HARRAH'S OUTLOOK NOT GREAT IN THE 80S AND 90S

Why?

1. Legal gaming market expected to be flat

wynn







How can Harrah's grow?



HARRAH'S TALKS TO THEIR CUSTOMERS

Insight 1. Lots of cross-market play

Insight 2. Harrah's gets only 36% of total gaming dollars from customers

HARRAH'S GOAL...

- **Create relationships** with customers at local casinos, and extend to other destinations
- By putting the customer at the **center of the business**

HARRAH'S GOAL...

- **Create relationships** with customers at local casinos, and extend to other destinations
- By putting the customer at the **center of the business**
- Strategy is to **give customers a choice:**

Go to luxury resort and
be treated like a nobody

OR

Come to Harrah's and
we'll treat you like royalty

↓
(early mover in analytics
for personalization)

HARRAH'S GOAL...

- **Create relationships** with customers at local casinos, and extend to other destinations
- By putting the customer at the **center of the business**

Step 1. Identify customers across markets

Step 2. Determine what constitutes a “good customer”

Step 3. Create incentives for cross-property visits

CUSTOMER CENTRICITY WAS HARD TO ACHIEVE

- Each property had its own reward card / rewards
- Incentives only applied locally
- Each property had its own P&L and resources
- Property managers saw customers as “theirs”
- COO calls them “Feudal Lords” running “fiefdoms.”

SOLUTION

- Rip apart the org
- Create a single integrated behavior tracking tool
- Create a “total rewards” program
- Use predictive analytics to forecast CLV and test ***everything***

RESULTS

We were surprised to find out who our best customers really were. They emphatically were *not* the gold cuff-linked, limousine-riding high rollers we and our competitors had fawned over for many years. Instead, they turned out to be former teachers, doctors, bankers, and machinists—middle-aged and senior adults with discretionary time and income who enjoyed playing slot machines.



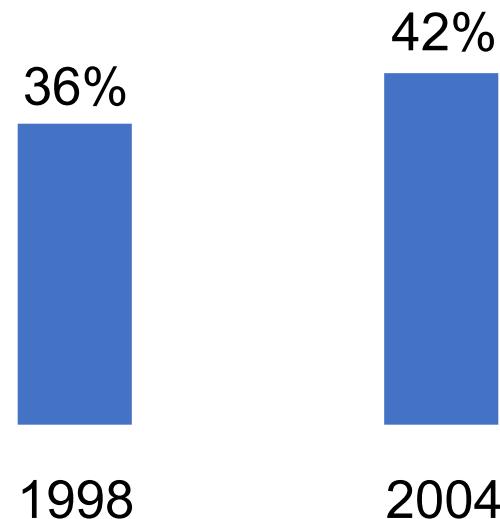
RESULTS

Which incentive do you think was most effective at getting Harsh's most valuable customers to increase # of visits?

- Free hotel stays
- Free gambling chips
- Free food
- Free tix to entertainment

INCREDIBLE SUCCESS STORY!

Share of Gaming Dollars



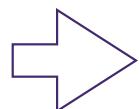
1% improvement = \$40M in profit

WHAT DO THESE STORIES HAVE IN COMMON?

The data science isn't valuable *by itself*. The data science supports the business strategies / goals.

Your technical skills are important, but they are not enough for your success.

Your success depends on your ability to work closely with a business team and to ensure that you provide them with the best guidance on how to solve problems.

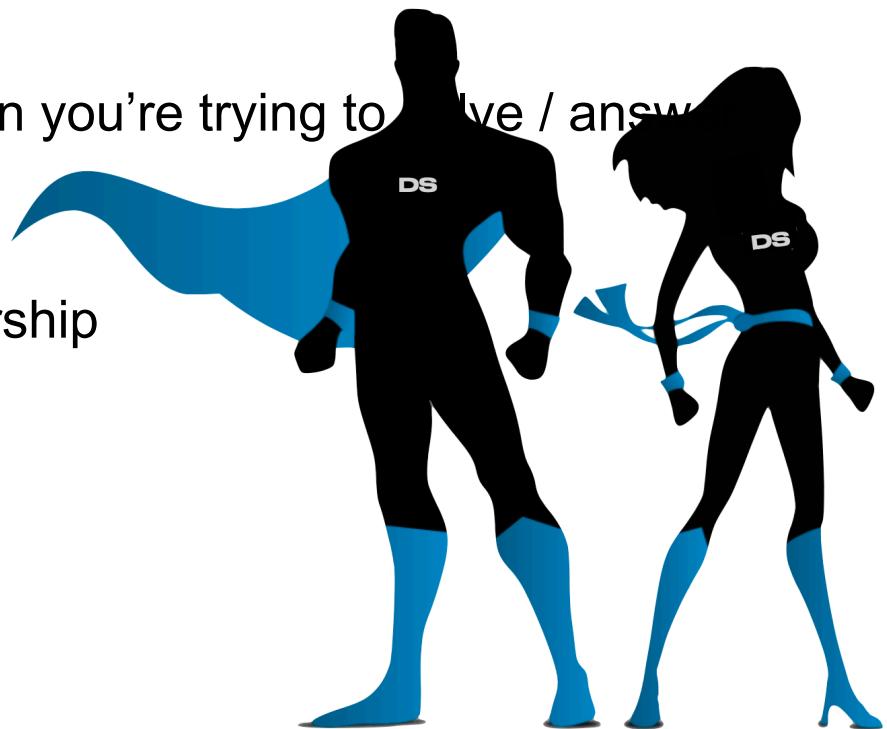


“Generating Value”

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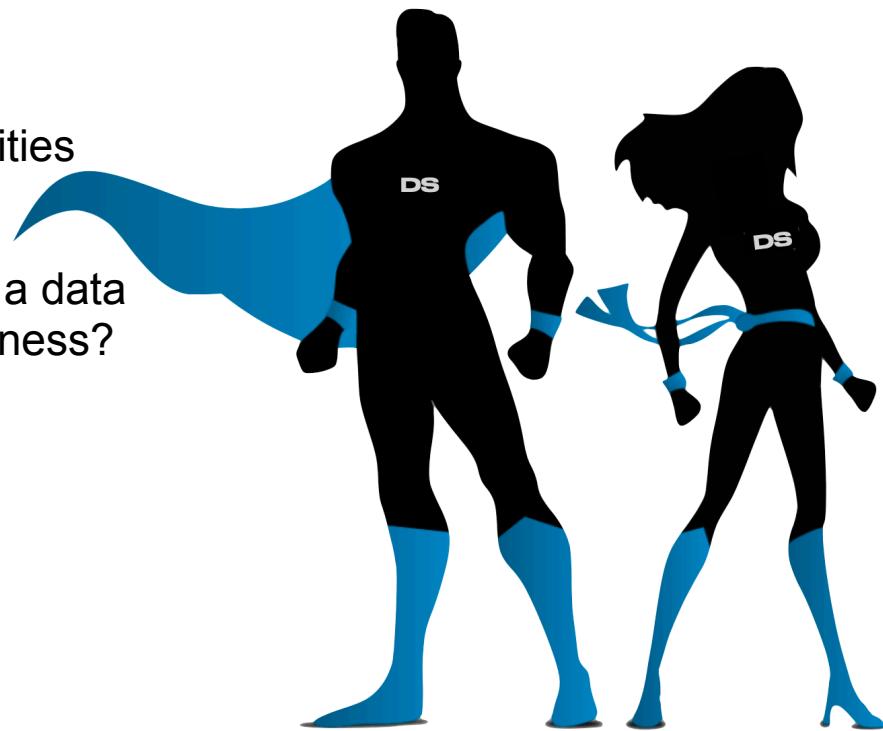


MAKING SURE ANALYTICS GENERATES VALUE...

Let's create the “perfect” data scientist!

What combination of characteristics and capabilities define the “ideal” data scientist?

Or... what characteristics and capabilities might a data scientist have that would provide value to a business?



THE IDEAL DATA SCIENTIST...

