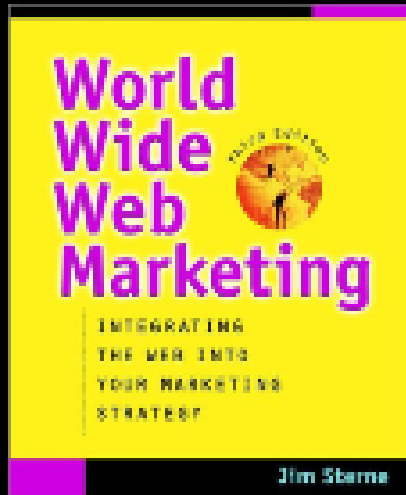
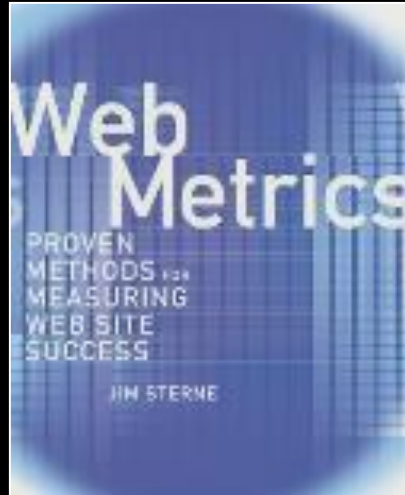


Jim Sterne

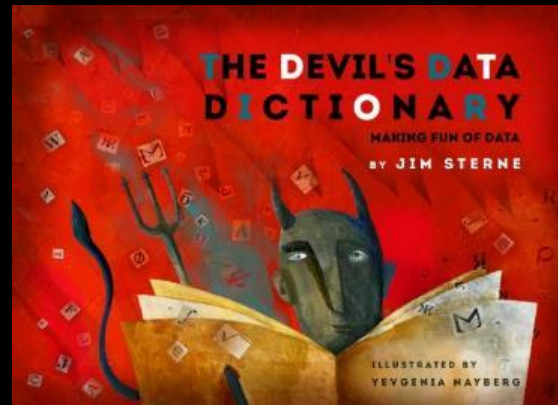
# What Makes a Great Analyst?



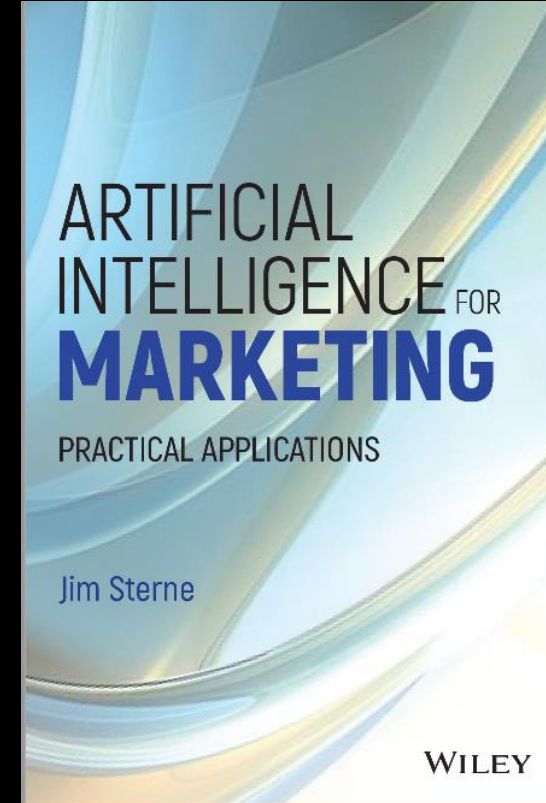
1995



2002



2015



2017

# What Makes a Great Analyst?

Puzzle Lover

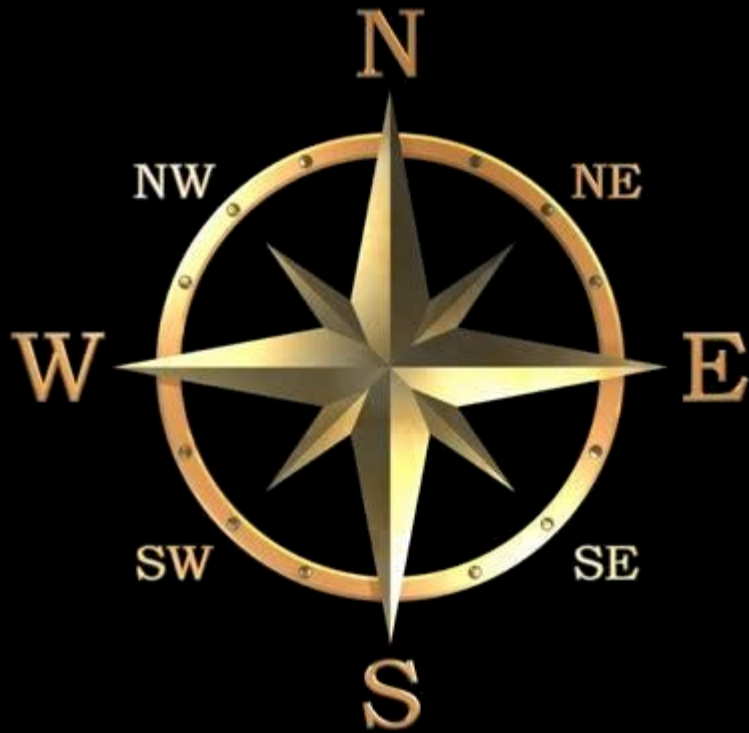
Problem Solver

Lateral Thinker

Tool User

Master Communicator

# What Makes a Great Analyst?



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# Puzzle: What Are They Trying to Accomplish?

# Puzzle: What Are They Trying to Accomplish?

## Business Goals

Increase Revenue  
Lower Costs  
Improve Customer Sat.  
Increase Capabilities

## Marketing Goals

Raise Awareness  
Improve Attitude  
Influence Influence  
Inspire Interaction  
Generate Sales  
Drive Endorsements

# Puzzle: How Do I Prioritize Ad Hoc Queries?

	A	B	C	D	E	F
1		Query A	Query B	Query C	Query D	Query E
2	Easy	5	1	3	3	2
3	Cheap	5	2	4	2	4
4	Fast	5	1	3	5	5
5	Impact	2	5	4	5	2
6		17	9	14	15	13

Is revenue at risk?

How soon is it needed?

How hard it is to answer the question?

Does it overwhelm the department?

Can they get the answer themselves?

Do I need to curry favor this week?

Is the boss asking for it?

Is the boss's boss's boss asking for it?

Just how bad  
will it really be  
if I say no?

# Puzzle: Do I Trust My Data?



# Puzzle: Do I Trust My Data?

Valid	Defined
Credible	Relevant
Reliable	Correlate-able
Consistent	Understandable
Clean	Complete
Unbiased	Timely









White House appointed  
**Dr. DJ Patil**  
as the first US  
Chief Data Scientist

If you're not thinking about how to  
keep your data clean from the very  
beginning, you're fucked. I  
guarantee it.

# Puzzle: Do I Trust My Data?

Valid	Defined
Credible	Relevant
Reliable	Correlate-able
Consistent	Understandable
Clean	Complete
Unbiased	Timely

# Puzzle: Can I Confidently Recommend?

Would I stake my reputation?

Would I risk my own money?

Would I advise my uncle?

# Puzzle: Can I Test It?



I believe we can improve

**this** number

by **this** percent

in **this** time frame

with **this** investment

And we can prove it with **this** test

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# Why?

Why do you ask?

Why do we do it that way?

Why did that happen?

Why can't we make it better?

Why are you looking at me that way?

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# Lateral Thinker Tool Kit

Segmentation

Anomalies

Beer

The most exciting phrase that  
heralds new discoveries, is not Eureka!  
but: Hmmm, that's funny  
- Isaac Asimov

# Beware

It's easy to misuse numbers

It's even easier not to know you're doing it

## Bias

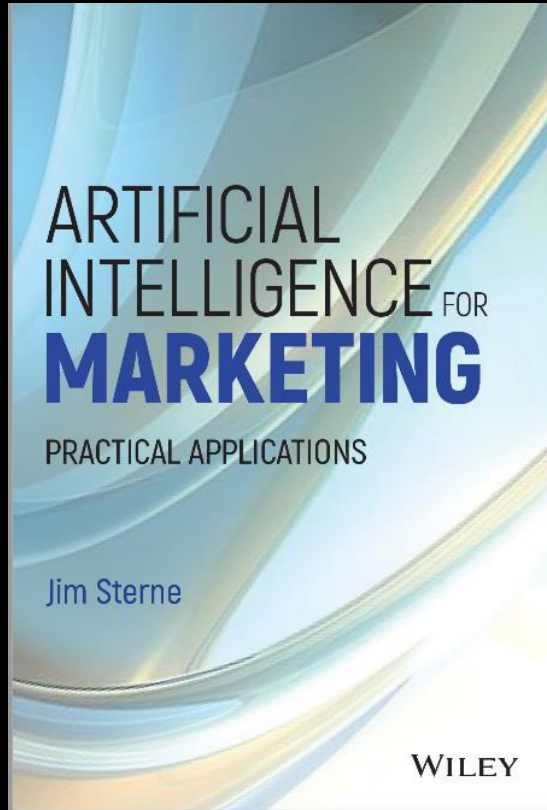
# Beware

Hindsight bias	knew it all along
Representative bias	stereotyping
Anchoring bias	small detail sets baseline
Availability bias	the first thing that comes to mind
Expectancy bias	only see what I expect
Confirmation bias	only see what I agree with
Self-serving bias	my success is your failure
Self-consistency bias	have always thought this

<http://www.youtube.com/watch?v=3RsbmjNLQkc>

<http://www.clickz.com/clickz/column/2076211/dont-believe>

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# Software Grows Up

Specific Logic

Mathematical Model

Statistical Model

Machine Learning

# Artificial Intelligence

Computer Vision

Natural Language Processing

Conversation Bots

Machine Learning

# Three D's of Machine Learning

01

## Detect

Discover the most predictive attributes for a given outcome

02

## Decide

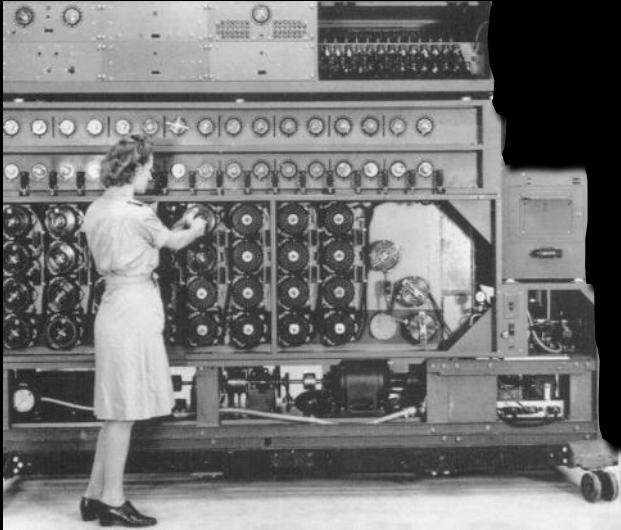
Infer rules from the data, weigh the attributes, and suggest a course of action

03

## Develop

Alter opinions about attributes and their weightings

# Man vs. Machine



Is there a pattern?

Is there an anomaly?

What can be omitted?

What if we changed the time scale?

What if this is the wrong problem?

What additional data would be revealing?

What if we look at it sideways?

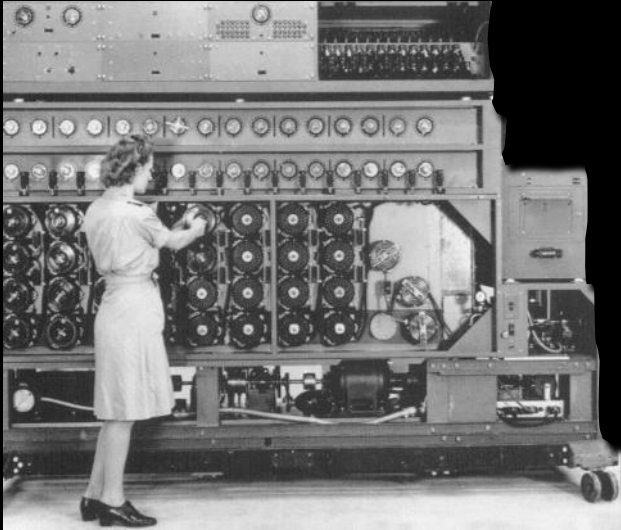
What if it had wheels?

What would Chuck Norris do?





# Man *and* Machine



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Computers are incredibly fast, accurate, and stupid. Human beings are incredibly slow, inaccurate, and brilliant. Together they are powerful beyond imagination.

*Albert Einstein*

---



# Man *and* Machine

## What can *you* do?

Identify desired outcome



# Man *and* Machine

## What can *you* do?

Identify desired outcome

Hone your Smell Test skills

Be the enthusiast

Start small

# What Makes a Great Analyst?

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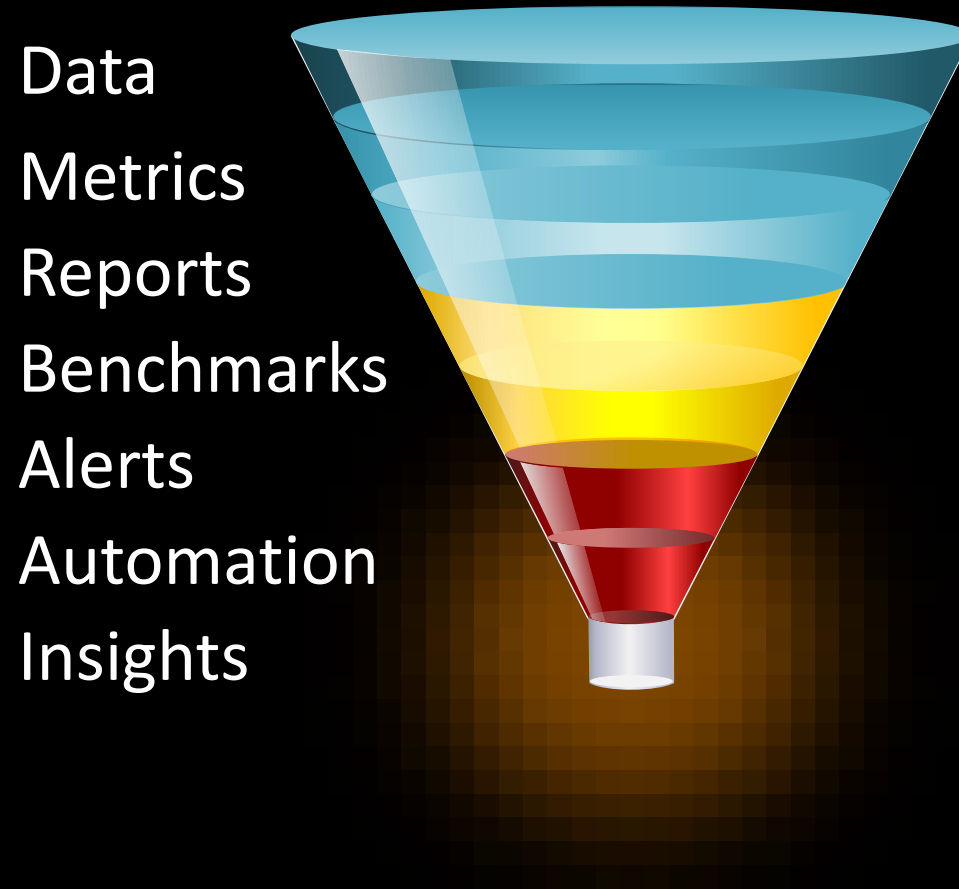
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# Communicate Insights Only



# Communicate Insights Only

Tell stories instead of delivering reports

Leave off the sausage making details

Tie everything to the bottom line

Help individuals achieve their goals

Have an opinion

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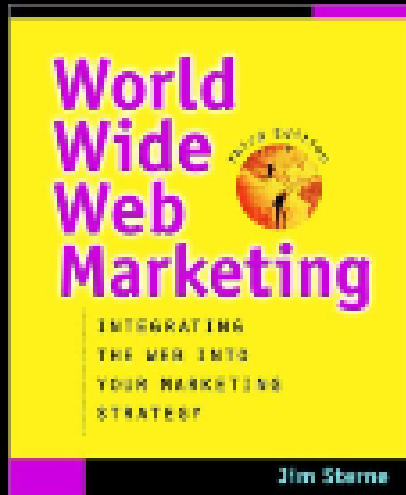


# The Only Pie Chart. Ever.

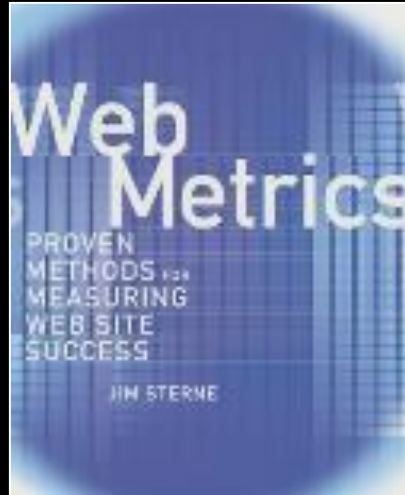


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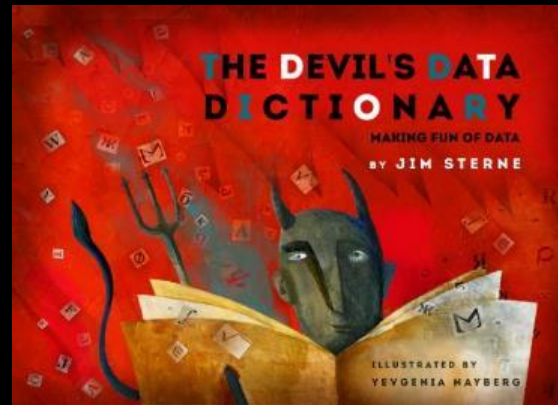
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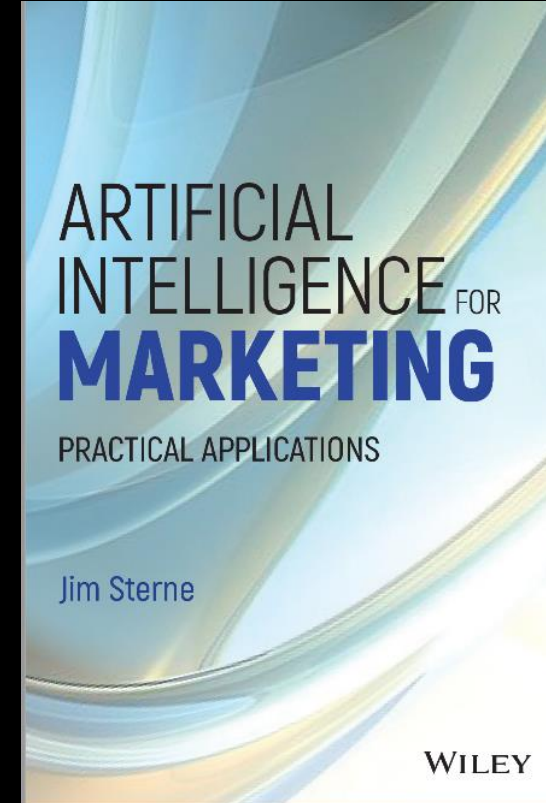
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