

The Value of Artificial Intelligence and Advanced Analytics in Identifying and Reducing Workers' Compensation Fraud



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**2017 California Dept. Industrial Relations,
Division of Workers' Compensation Conference**

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March 3, 2017 - Oakland, CA**

Employers' Fraud Task Force



EMPLOYERS' FRAUD TASK FORCE
Preserving the Integrity of Our Workers' Compensation System

<http://www.fraudtaskforce.org>

(714) 637-3350

Context: Behavior -

The things people do and why they do them



Claims: Who, What, When, Why, Where and How?

Customer Satisfaction

On Demand Gen.

Product/Coverage Mis-Match

Pay or Deny Claims

Who is My Customer?

The Problem



Rising Claim Expenses

Behavioral Patterns vs. Manual

Rising Severity of Claims

Big and Fast Data

Data Silos

What is the solution?



Advanced Analytics - WC Context

Dynamic Modeling

AUTOMATION

01

Automated data gathering

Data enrichment

Referral speed and accuracy

Right Data

OPERATIONAL INTEL

02

Provider validation,
ICD Codes NDC
Codes, medical necessity, context based social media

Right Time

ANALYTICS

03

Patterns, machine learning, underwriting risk, severity of claims, loss ratios, Rx (NDC), claim expense and reserves, injury patterns

Right Person

Advanced Analytics

DEEP LEARNING

04

Impact - core business process, high data volume, correlations, connect the data silos

Right Decision

PREDICTIVE MODELING

05

Dynamic patterns, litigation severity, risks, losses

Future

Automation Continuum

Artificial Intelligence



Strategic Planning - Rule of 3:

1. State the problem
2. Discover the possibilities
3. Execute



Dynamic Modeling - Rule of 3:

1. Gather data
2. Enrich external data,
integrate and analyze
3. Make the right decision

The ROAD for Workers' Compensation Analytics

- Robotic Process Automation
 - Operational Intelligence
 - Analytics - Deep Learning
 - Dynamic Predictive Modeling

MACHINE RPA) LEARNING

Artificial intelligence



Robotic Process Automation (RPA)

- Gather, collate and validate information
- Synthesize and analyze structured & unstructured data
- Calculate and decide what to do
- Communicate and assist users, clients & customers
- Orchestrate & manage activities
- Monitor, detect and report operational performance
- Learn, anticipate & forecast behavior & outcomes



AUTOMATION

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<http://blogs.wsj.com/cio/2017/02/03/how-analytics-helped-ebay-tackle-worker-retention/>

CIO JOURNAL.

How Analytics Helped eBay Tackle Worker Retention

'Survival model' predicts who is likely to quit

By KIM S. NASH

Feb 3, 2017 12:21 pm ET

Katie Meger, senior manager of talent analytics at eBay, developed a model that indicated if an eBay employee was at risk for quitting. PHOTO: KIM S. NASH/WSJ

NEW YORK – Companies looking for business insight from their mountains of data must first contend with siloed systems and other obstacles. It can be a grueling process, but as an eBay analytics expert explained at Outsell Inc.'s Data Money conference Thursday, taking the time to track down the right data points can help change how a business is run.

Katie Meger, senior manager of talent analytics at eBay, was tagged in 2014 to figure out who was likely to quit the e-commerce company after it announced plans to divest PayPal Holdings Inc. Dr. Meger, who holds a doctorate in psychology and has spent much of her career in analytics, built a so-called survival model, from a wing of statistics used to forecast failure and death.

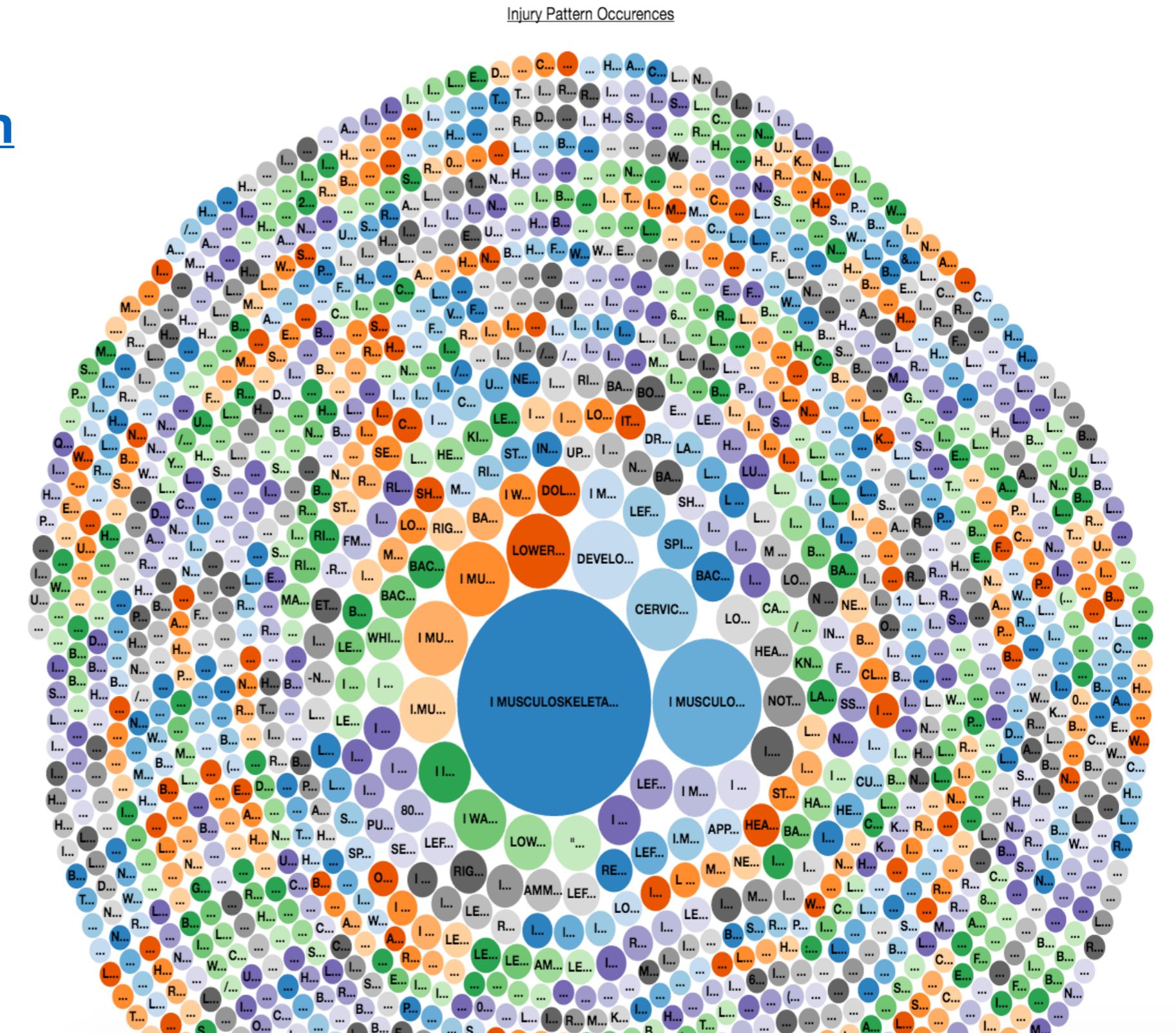
Experiment with data points!

Experimenting with which data points to feed into the algorithm took three months, she said, mainly because needed information about eBay's workforce was housed in several different human resources systems. Neither were all employees included in all the Inf systems. The resulting survival model revealed surprising patterns that changed the way

Pattern Analysis

Machine learning combined with pattern analysis will yield meaningful and actionable insights with your data

** \$100 million W/C fraud investigation and prosecution*





NETWORK
CONNECTIVITY



BIG DATA



SMART GRID



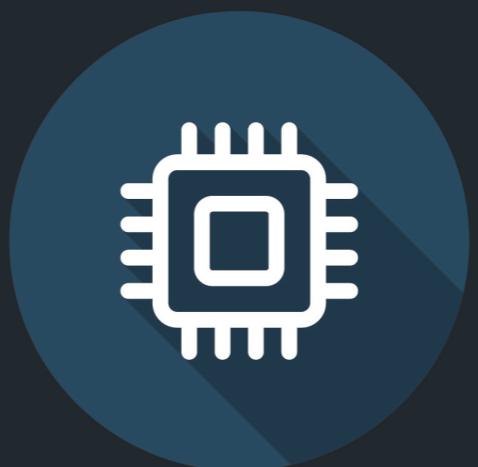
HEALTHCARE
SYSTEMS



INFRASTRUCTURE
MANAGEMENT



AUTOMATION



CYBER-PHYSICAL
SYSTEM



SMART HOME

INTERNET OF THINGS

Future

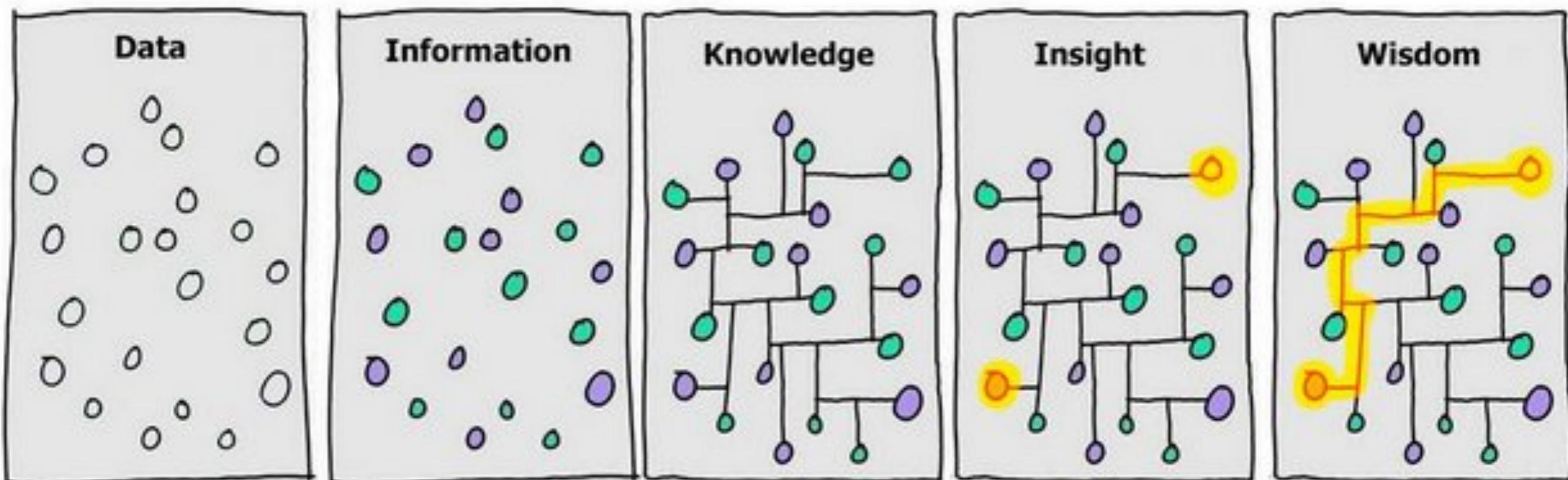
Eight Top Ideas by Insurers for the IoT



Five Keys for Success in Strategic Planning

- **Strategic planning and budgeting are both essential, but they are not the same thing**
- **Strategy amplifies the voices of the front line and customers**
- **Resource allocation is purposefully undemocratic**
- **Don't let the Earth's rotation around the sun determine when you make decisions**
- **Leaders focus on the most important decisions and simplify the rest**

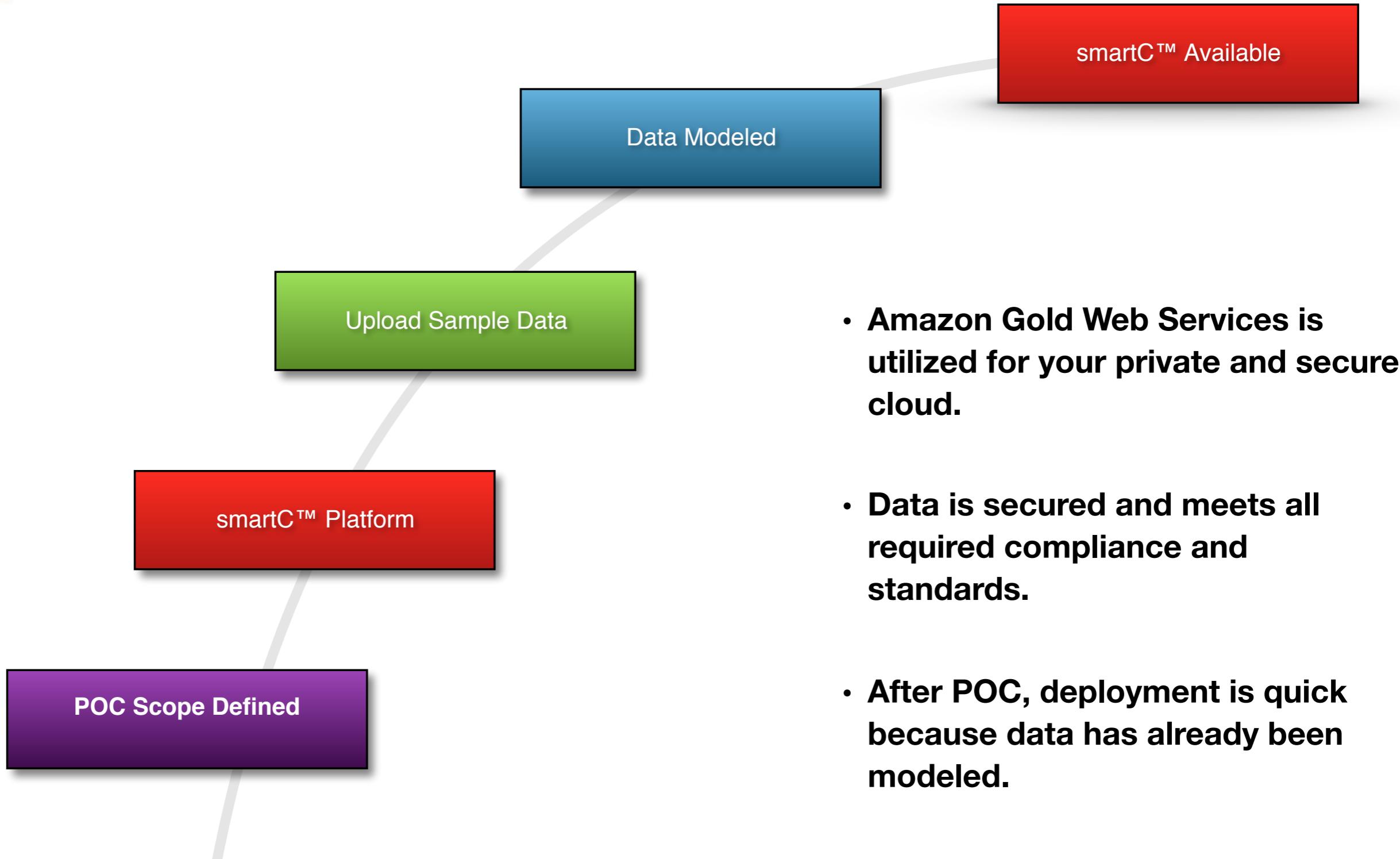
Call to Action



Call To Action

- How to get started
- Know and understand current business problems
- ROAD Map for Analytics (WC and your business process)
- Execute

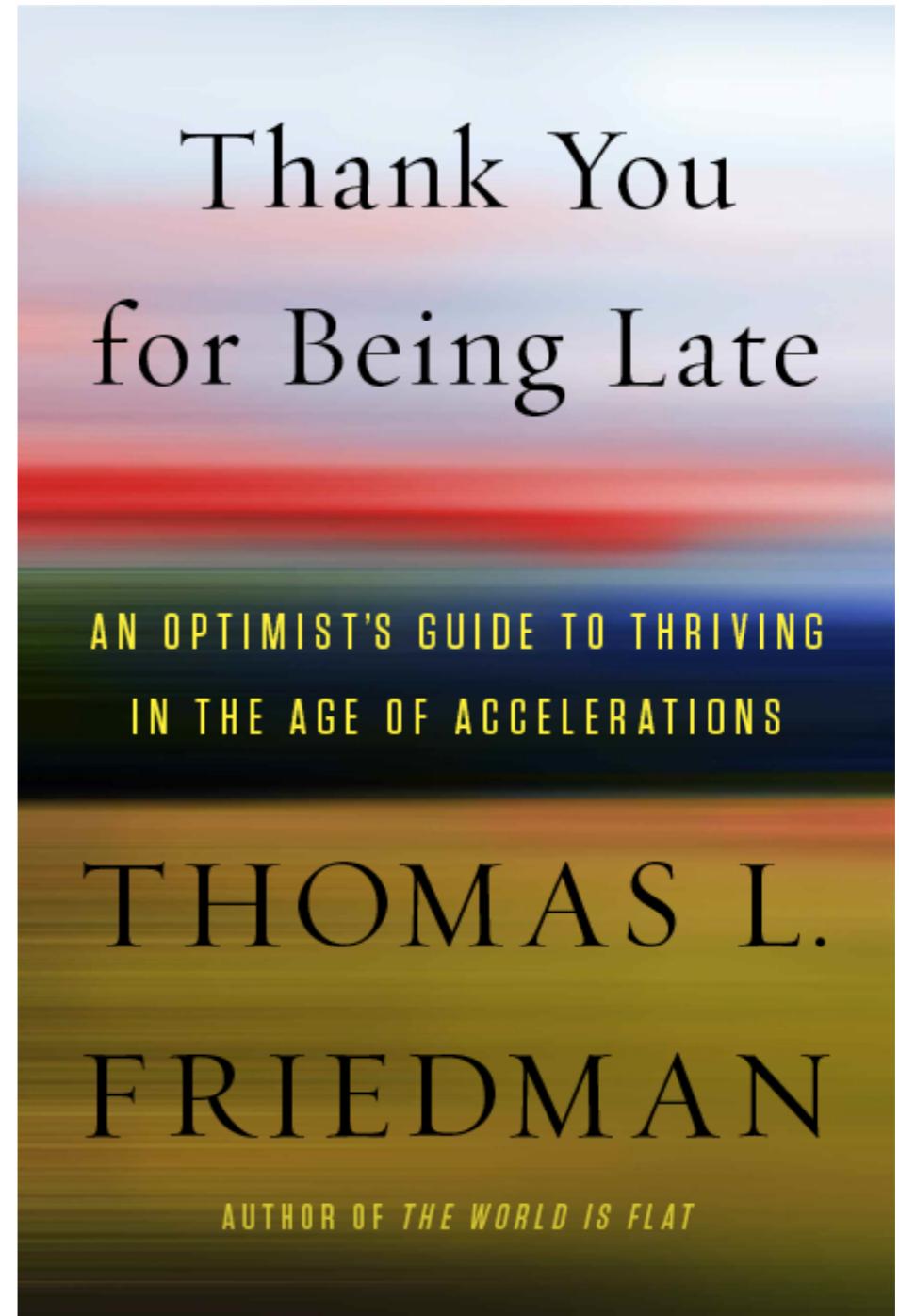
Proof of Concept Process



Suggested Reading

*Thank You for Being Late -
An Optimist's Guide to
Thriving in the Age of
Accelerations*

Thomas L. Friedman



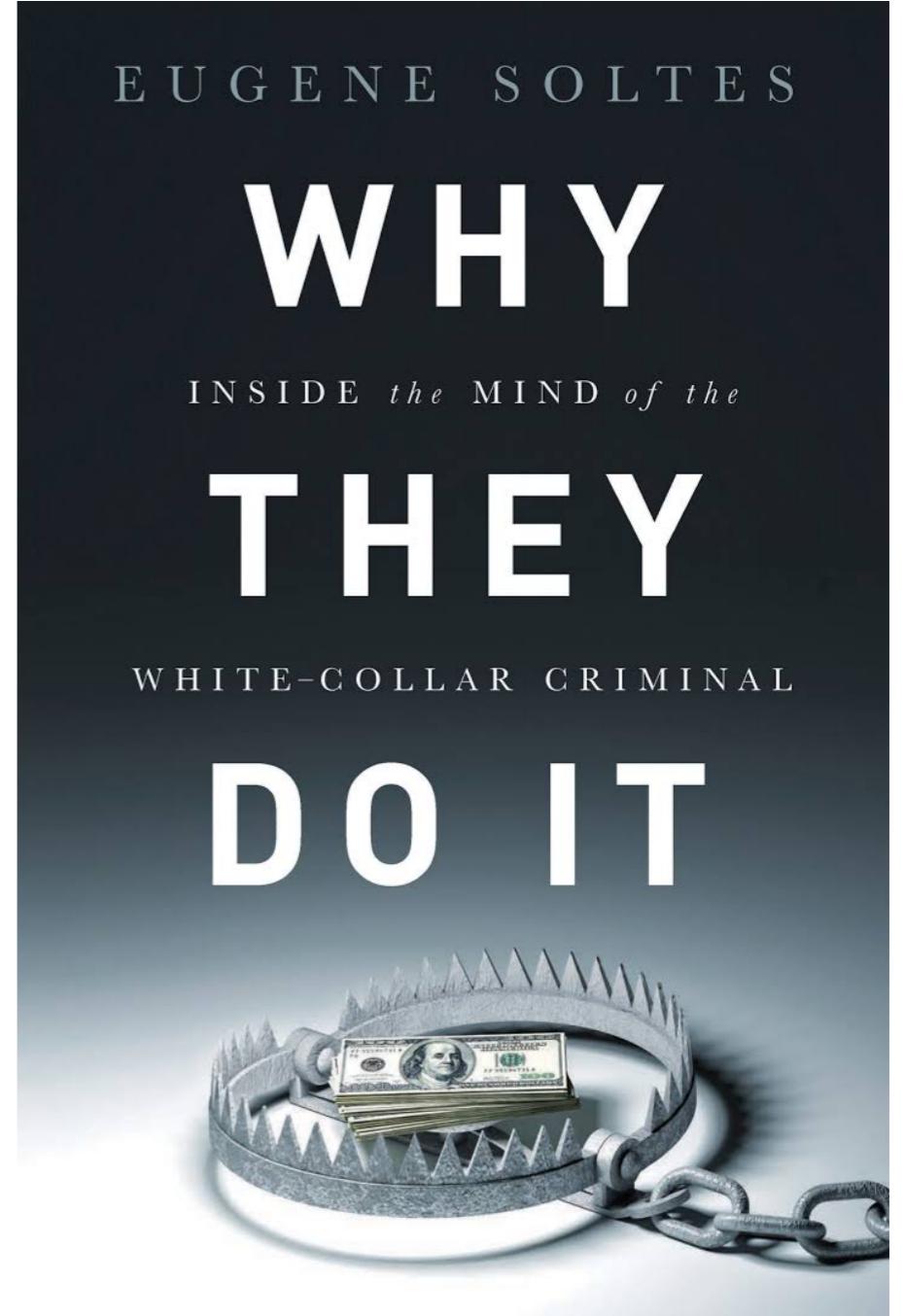
<http://www.thomasfriedman.com/thank-you-for-being-late/>

Suggested Reading

*Why They Do It -
Inside the Mind of a White-
Collar Criminal*

Eugene Soltész

<https://www.amazon.com/Why-They-Do-White-Collar-Criminal/dp/1610395360>



Thank You!



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