

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



John Standish, Chief Analytics Officer

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

**February 24, 2017 - Los Angeles, CA
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

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

Advanced Analytics

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

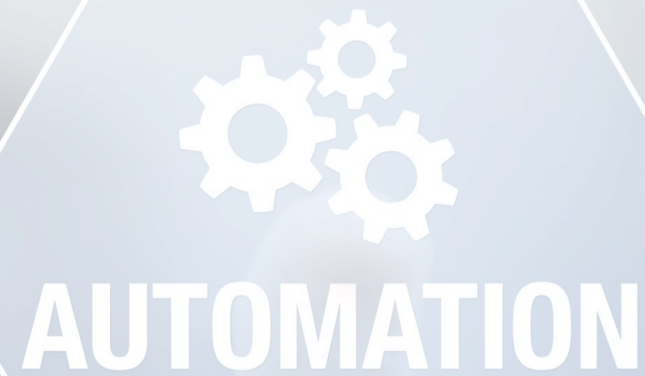
The ROAD for Workers' Compensation Analytics

- **Robotic Process Automation (RPA)**
- **Operational Intelligence**
- **Aalytics - Deep Learning**
- **Dynamic Predictive Modeling**

**MACHINE
LEARNING**

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**



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.

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 systems. The resulting survival model revealed surprising patterns that changed the way

Experiment with data points!

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

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NETWORK
CONNECTIVITY



BIG DATA



SMART GRID



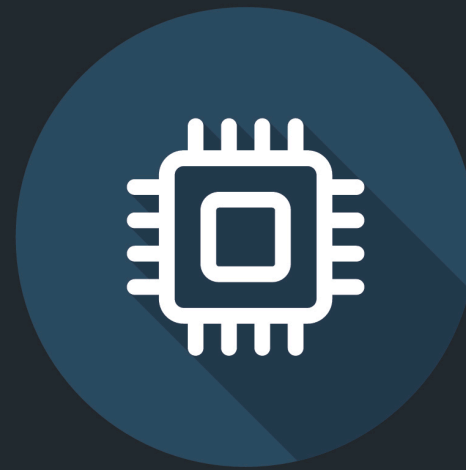
HEALTHCARE
SYSTEMS



INFRASTRUCTURE
MANAGEMENT



AUTOMATION



CYBER-PHYSICAL
SYSTEM



SMART HOME

INTERNET OF THINGS

Future

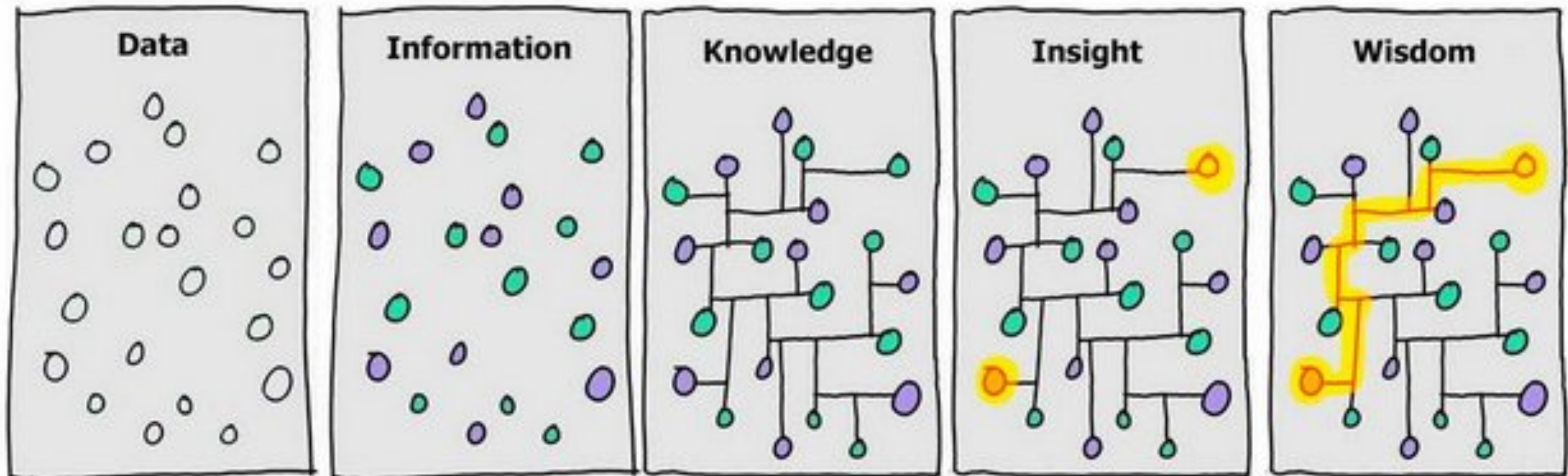
Eight Top Ideas by Insurers for the IoT



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**

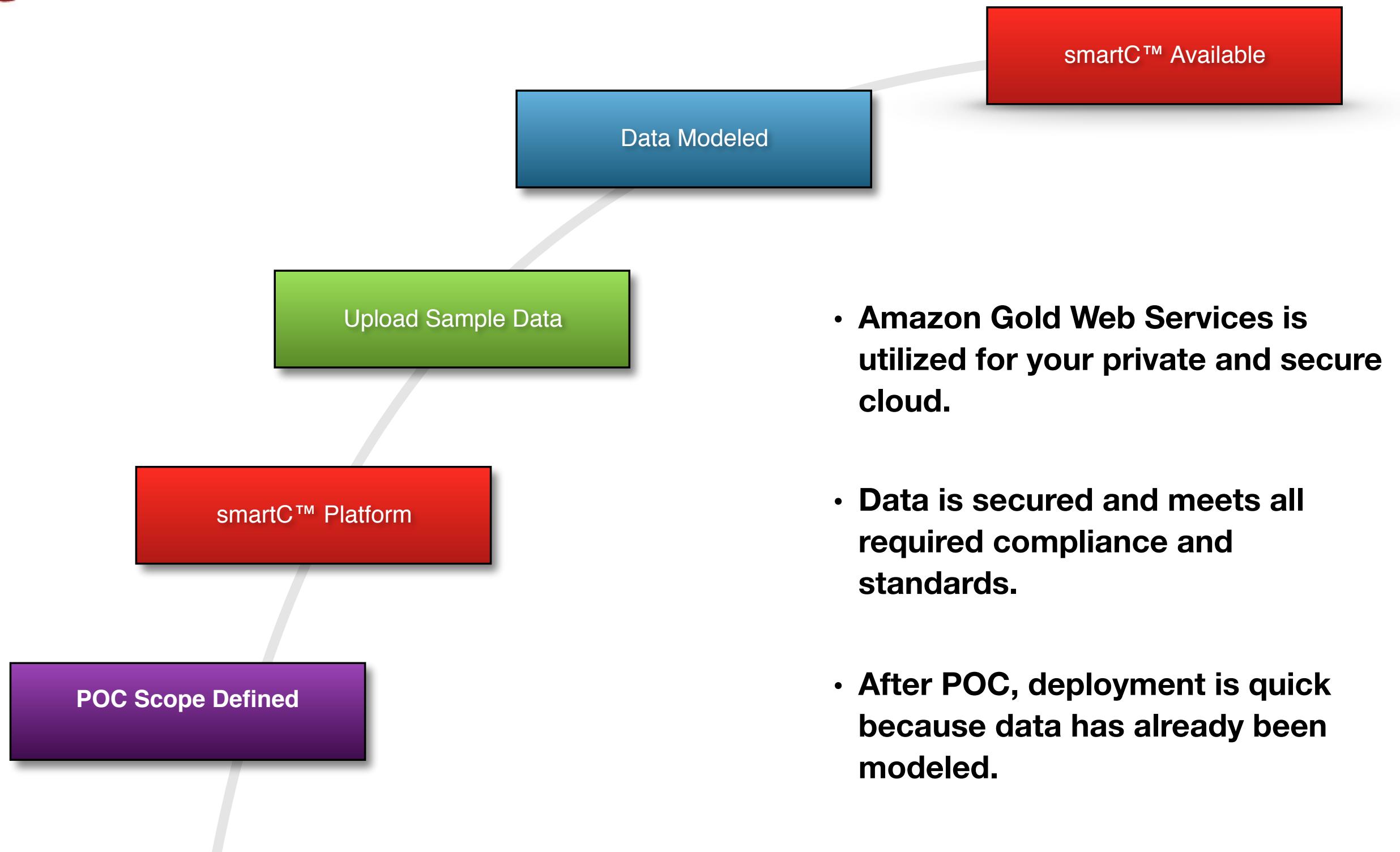
Call to Action



Call To Action

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

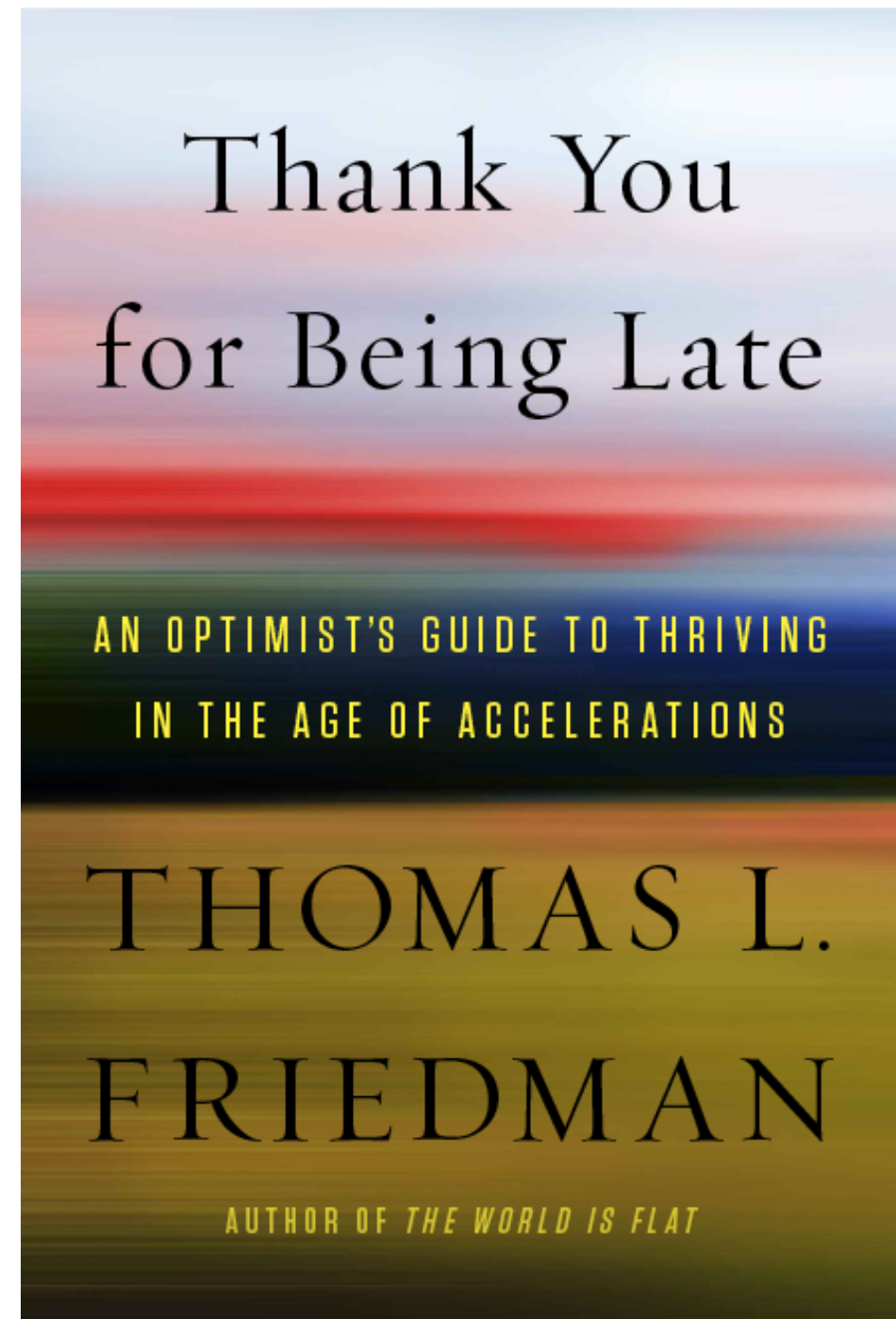
Proof of Concept Process



Suggested Reading

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

Thomas L. Friedman

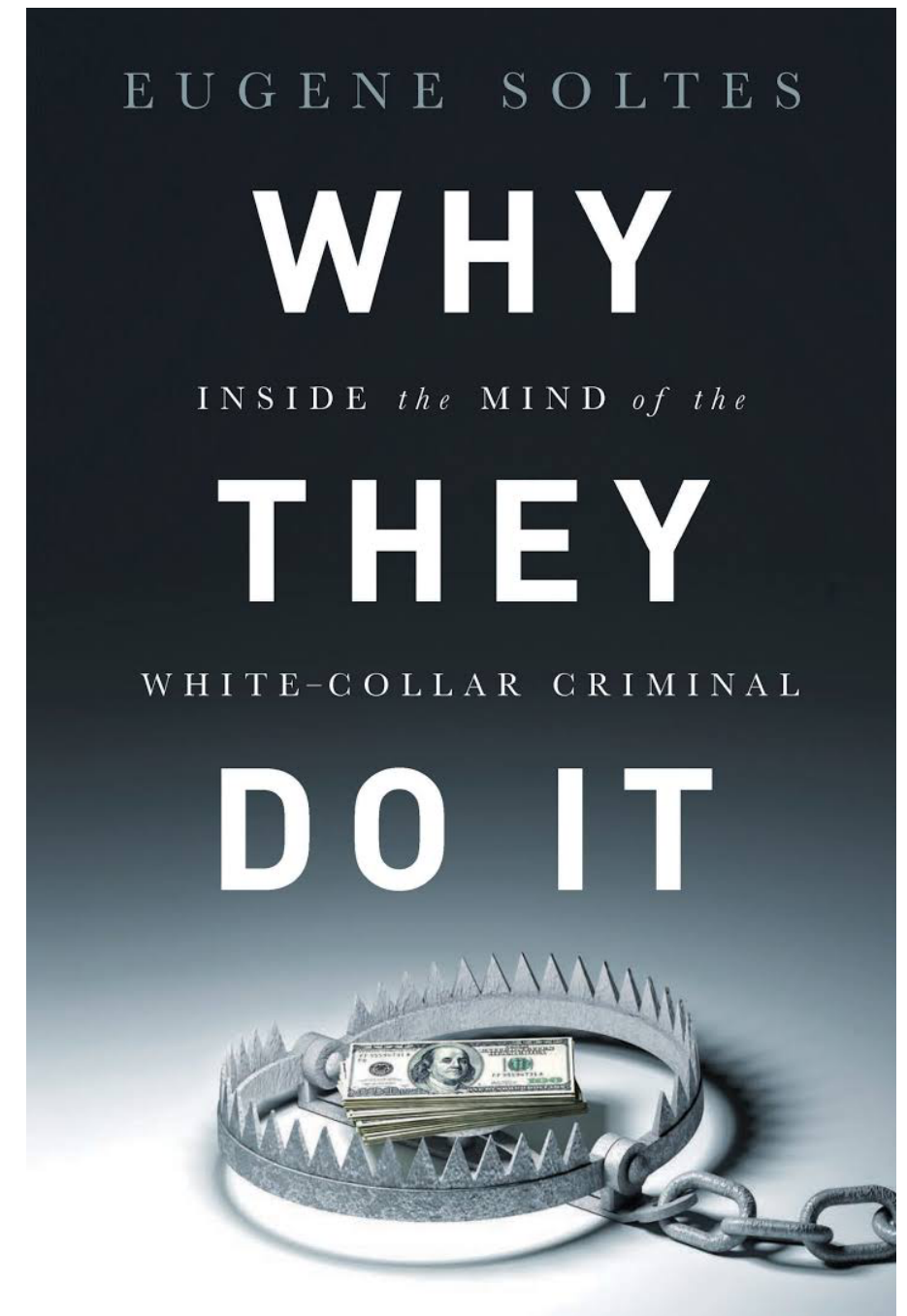


<http://www.thomaslfriedman.com/thank-you-for-being-late/>

Suggested Reading

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

Eugene Soltes



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

Thank You!



John Standish
Chief Analytics Officer
jstandish@infinitelytics.com
(760) 809-3553
info@infinitelytics.com
Toll Free: 844-826-6906