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Beyond Opioids: Moving ADEs from the Basement to the Boardroom

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TENNESSEE Center for Patient Safety

Cynosure HEALTH

Disclosure of Conflicts of Interest

The speaker reports no real or apparent conflicts of interest.

Today's Agenda

- Hypoglycemia and High INRs as true harm
  - Why they are not recognized as such
  - Why they are not reported
- How do we raise attention? Lessons from the IP's
- Tabletop and Report Out: YOUR next steps
- Adjourn

Today's Objectives

- Define the harms that occur from hypoglycemia and poor suboptimal warfarin management
- Describe why "Rodney Dangerfield" harms don't get the attention they deserve
- Recognize what's coming down the track regarding reporting
- Copy and Paste from the IP's: How did HAI's move from the Basement to the Boardroom?
- Determine next steps for YOU to move the data on these harms

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Hypoglycemia and High INRs: The Rodney Dangerfield of ADEs

- “The cost of doing business.”
- “They are OK.”
- ”Nothing bad happened”
- ”Easy to fix.”

We get no respect.

<70 >4.0

So…are they a problem?

- At minimum, they flag process errors
- INRs > 4
  - If age > 60, RR bleeding = 30, Absolute annual rate = 50%
  - All ages: risk increases exponentially with INR increase
  - Greatest risk factor after age is recent antibiotic use
  - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1124331/
- Normoglycemia in hospitalized patients
  - Increases Morbidity and mortality (NICE SUGAR studies, 2009)
  - Target should be 140-180 mg/dL
- ADA: <54 mg/dL is clinical hypoglycemia
  - Likely to be unable to rescue self

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Warfarin Best Practices

Simplify

- Warfarin:
  - How often do you see an INR >5 in a patient NOT on warfarin?
  - Count all patients who had an INR >5 (numerator)
    - Assume on warfarin
  - Count all patients who received warfarin (denominator)
  - CLOSE ENOUGH

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Warfarin Safety: What Works

- An admission INR is obtained on all patients before 1st inpatient warfarin dose, even if on warfarin as an outpatient
- Daily INRs are checked on all patients
- Daily INRs tracked and trended and used for predictive modeling

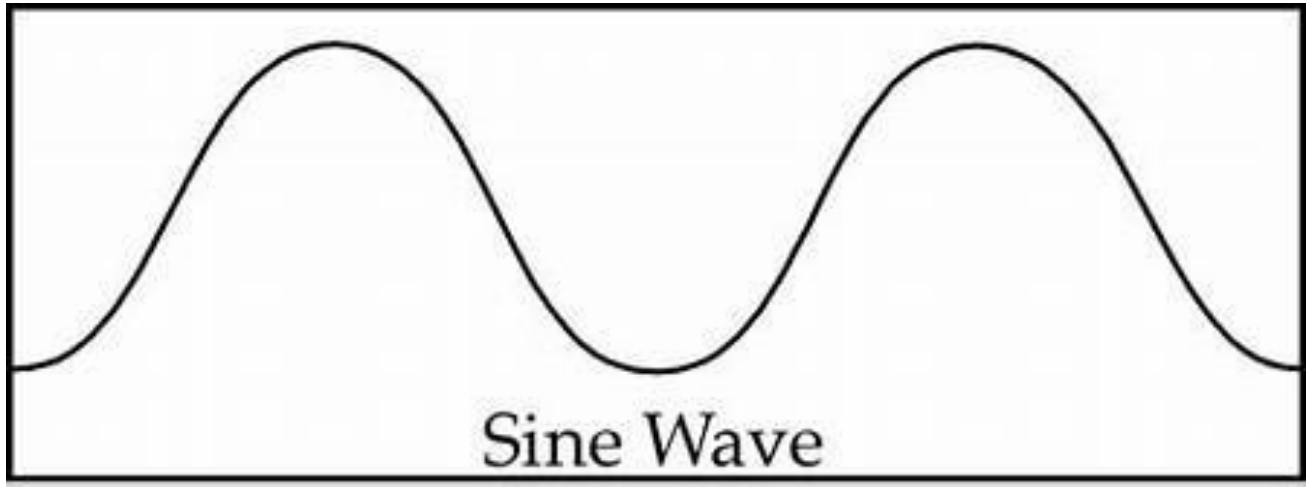
Warfarin Safety: What Works

- The pharmacy manages the dosing with standard algorithms
  - 2nd best: pharmacy assists prescriber in dosing orders
  - Generally worst: “usual care”
- All dosing is based upon the daily INR results

Warfarin Safety: What Works

- Dosing adjustments are anticipatory, not reactive
- All known Drug-Drug and Drug-Food Interactions are considered
- All doses timely
- Consider exclusion of patients known to have labile INRs (many reasons)

Avoid the Sine Wave



The High INR Process Improvement Discovery Tool

Mini RCA High Inpatient INR Process Improvement Discovery Tool (Minimum 10 charts/Maximum 20 charts) Note: Do NOT spend more than 20-30 minutes per chart!																				
Instructions: (1) Mark an X in the box where a process failure occurred. You may check more than one box per chart. (2) The processes with the most common failures could be a priority focus.																				
Process	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:
The prescriber was managing the warfarin without pharmacy assistance.																				
An INR was not obtained and resulted before the first inpatient dose was ordered.																				
Daily INRs were not obtained.																				
Dosage adjustments were not made based on the last daily INR result.																				
Dosage adjustments were reactive ("oops, too high"), not anticipatory ("it's going up fast, time to decrease the dose").																				
Warfarin dosage adjustments were made based upon known drug-drug interactions.																				
Warfarin dosage adjustments were made based upon known food-drug interactions.																				
Patient history of poor INR control predicted that this patient would create challenges for warfarin management.																				
At least one inpatient warfarin dose was missed or refused.																				
Warfarin or other medication errors (e.g. wrong med, wrong, dose, missed dose) occurred that would affect the INR.																				
Other (specify)																				

http://www.hret-hiin.org/resources/display/high-inr-chart-review-tool

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Glycemic Control: Best Practices

Simplify Data Collection

- Insulin:
  - – How often do you see a glucose <50 in a patient NOT on insulin?
  - – Count all patients who had a glucose <50 (numerator)

    Assume on insulin
  - – Count all patients who received insulin (denominator)
  - ➢ Divide!
    - –CLOSE ENOUGH

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Insulin Safety: What Works

- Assessing/Readjusting home dietary intake/home insulin dosing on admission
- Target range 140 -180 !!!
- Standard orders for sudden NPO/loss of line

Insulin Safety: What Works

- Basal + Bolus + Correction for all patients who are eating
- Basal + Correction for non-critically ill patients who are NPO or on 24 hour feeds
- Correction only (Sliding Scale) for NOBODY!

Insulin Safety: What Works

- Coordination of meals and insulin
- Consideration for changing insulin regimen if glucose <100 mg/dl
- Change insulin regimen if glucose <70 mg/dl
  - Studies show that a high percentage of patients with glucose < 50 had a previous event of < 70 in the same hospitalization

Insulin Safety: What Works

- Insulin drips for critically ill patients with glucose > 180 mg/dL

Safe Glucose Levels in Hospitalized Patients

The ADA Standards of Care 2017:

The Road = 140 – 180
Rumble strip = 100
Wall = 54 mg/dl

Action at the white line keeps you from the cliff!

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Even More Important When Unstable

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Hypoglycemia Process Improvement Chart Review Tool

Mini RCA Hypoglycemia Process Improvement Discovery Tool (Minimum 10 charts/Maximum 20 charts) **Note: Do NOT spend more than 20-30 minutes per chart!**

Instructions: (1) Mark an X in the box where a process failure occurred. You may check more than one box per chart. (2) The processes with the most common failures could be a priority focus.

Process	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:	Chart #:
Target < 140 mg/dL (see glucose correction orders for patient)																				
Glucose < 100 without regimen modification																				
Glucose < 70 without regimen modification																				
Patient not receiving basal insulin																				
Patient eating but not receiving bolus insulin																				
Patient on Sliding Scale Insulin alone																				
Sudden loss of parenteral glucose																				
Sudden NPO																				
Sudden loss of appetite (includes nausea, vomiting, etc)																				
Home insulin regimen continued on admission without modification/reduction																				
Lack of meal-insulin coordination																				
Other (specify)																				

http://www.hret-hiin.org/resources/display/hypoglycemia-chart-review-tool

The Future of Reporting??

- Will there be a national reporting requirement for these harms?
- It is being discussed at CMS and TJC
- What threshold?
  - Glucose < 40?
  - What INR?
- Don’t be caught unprepared!

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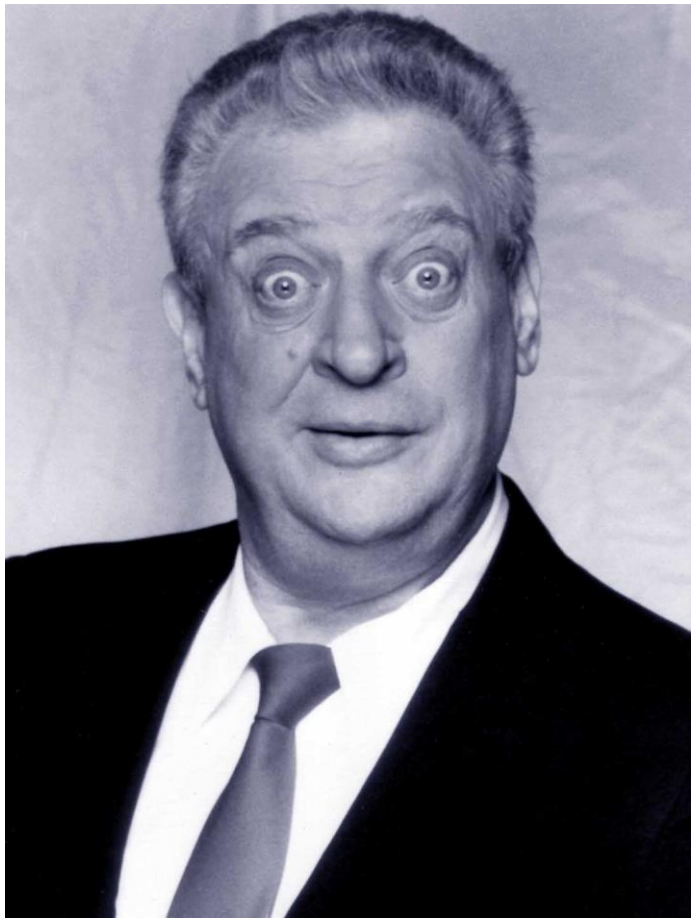
Lessons from the IP's:
Getting Insulin and Warfarin Harm to the Boardroom

How Can We Get Respect for ADEs?



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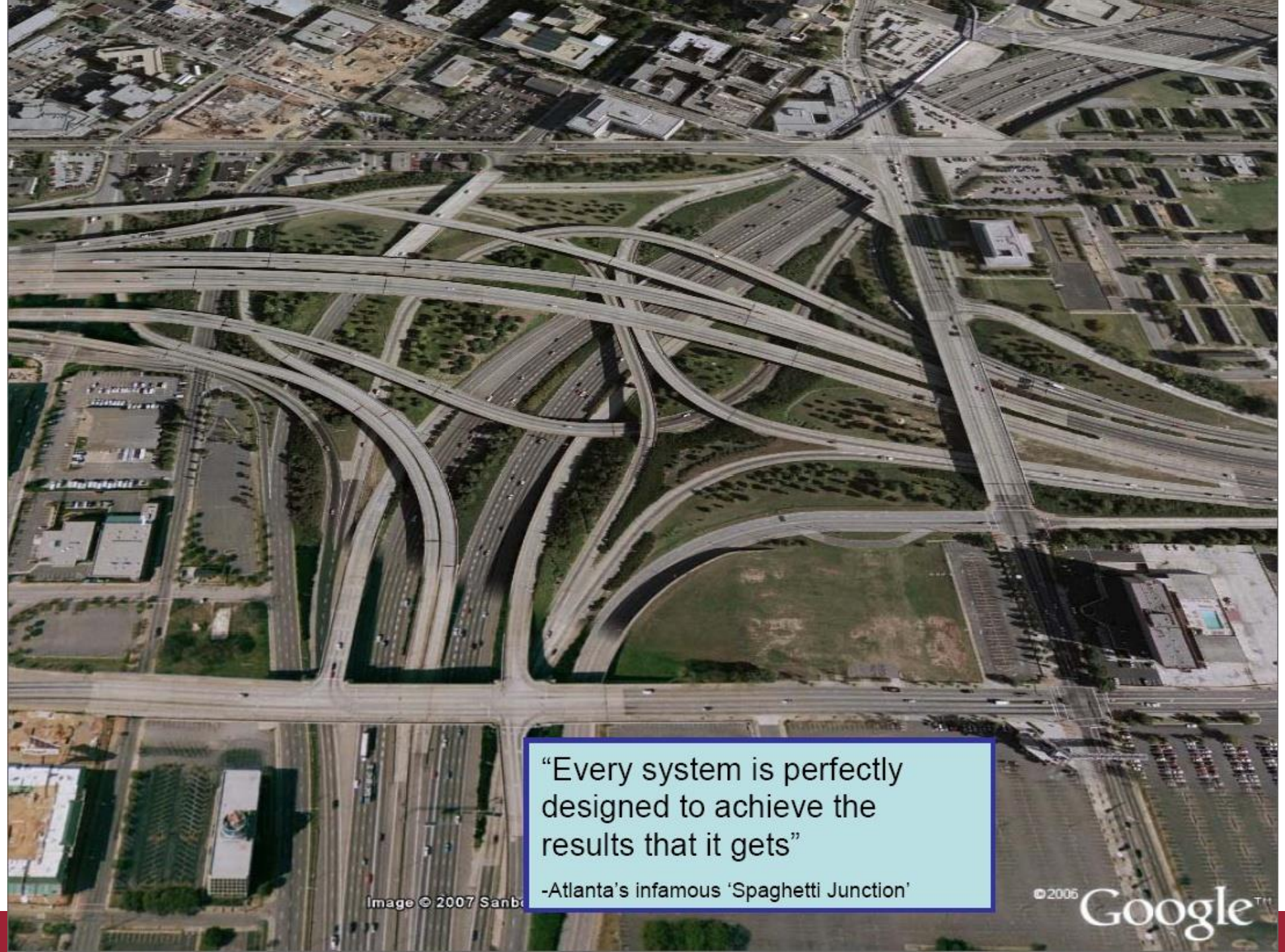
Your Turn

Table Top:

What Will You Do Next to Move these Harms out of the Basement?

Report Out and Discussion: Your Next Steps


“Every system is perfectly designed to achieve the results that it gets”
-Atlanta’s infamous ‘Spaghetti Junction’
Image © 2007 Sanb
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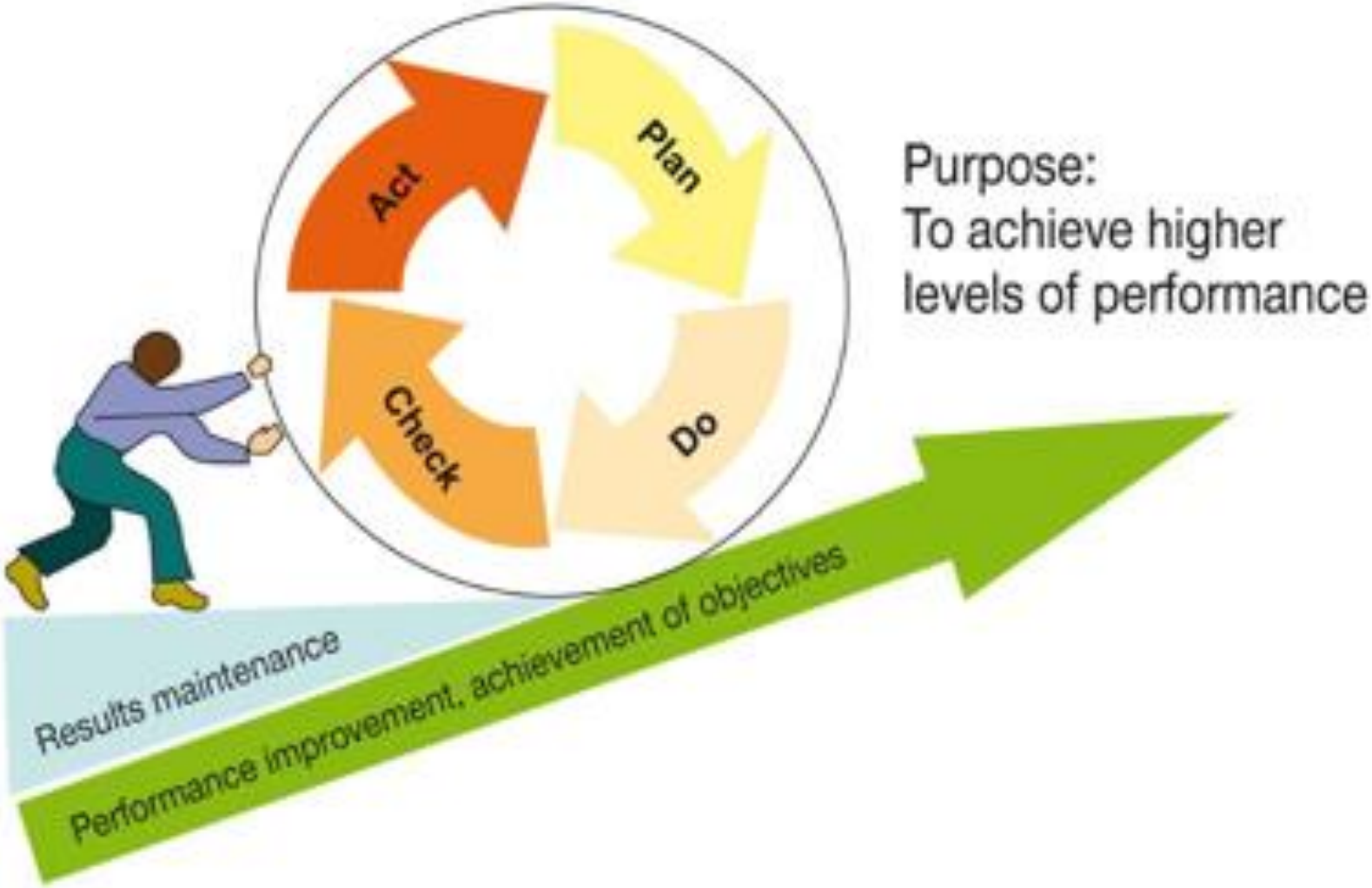
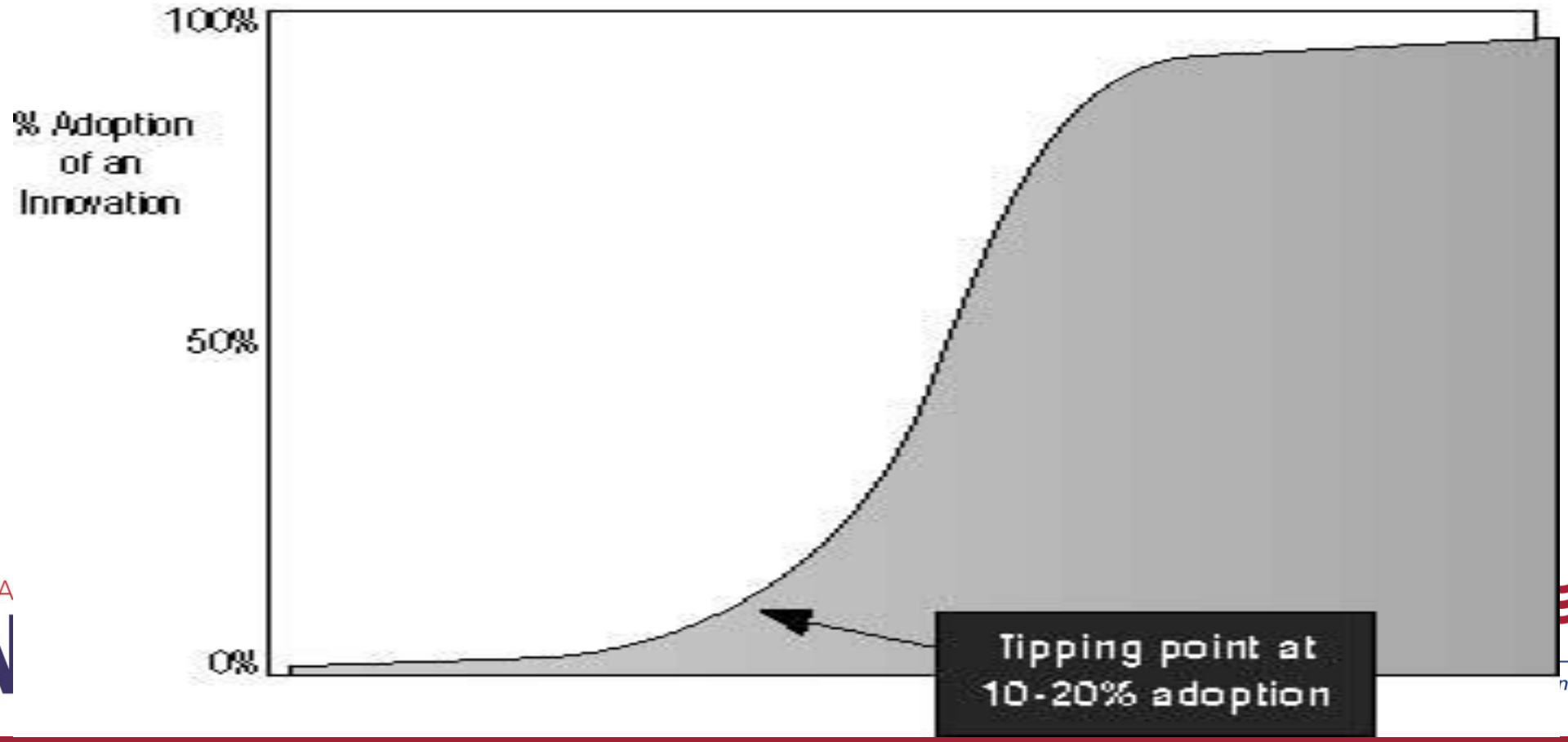
So how do we get there?


Act
Plan
Check
Do
Purpose:
To achieve higher
levels of performance
Results maintenance
Performance improvement, achievement of objectives

Improvement is Non-linear

A Core Concept

Innovation Adoption S-Curve



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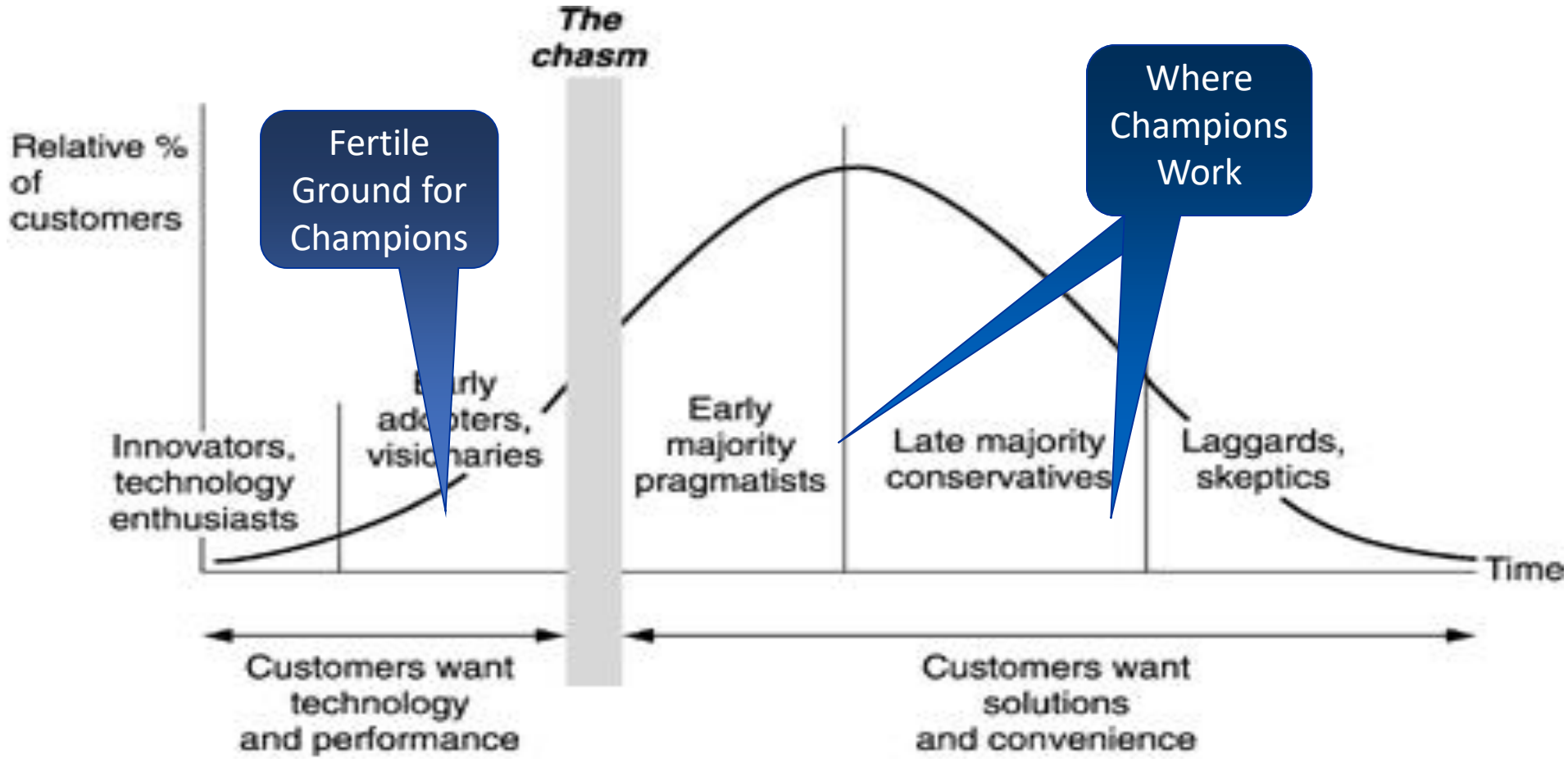
Adopters and Who to Persuade First: Roger's Model of Diffusion



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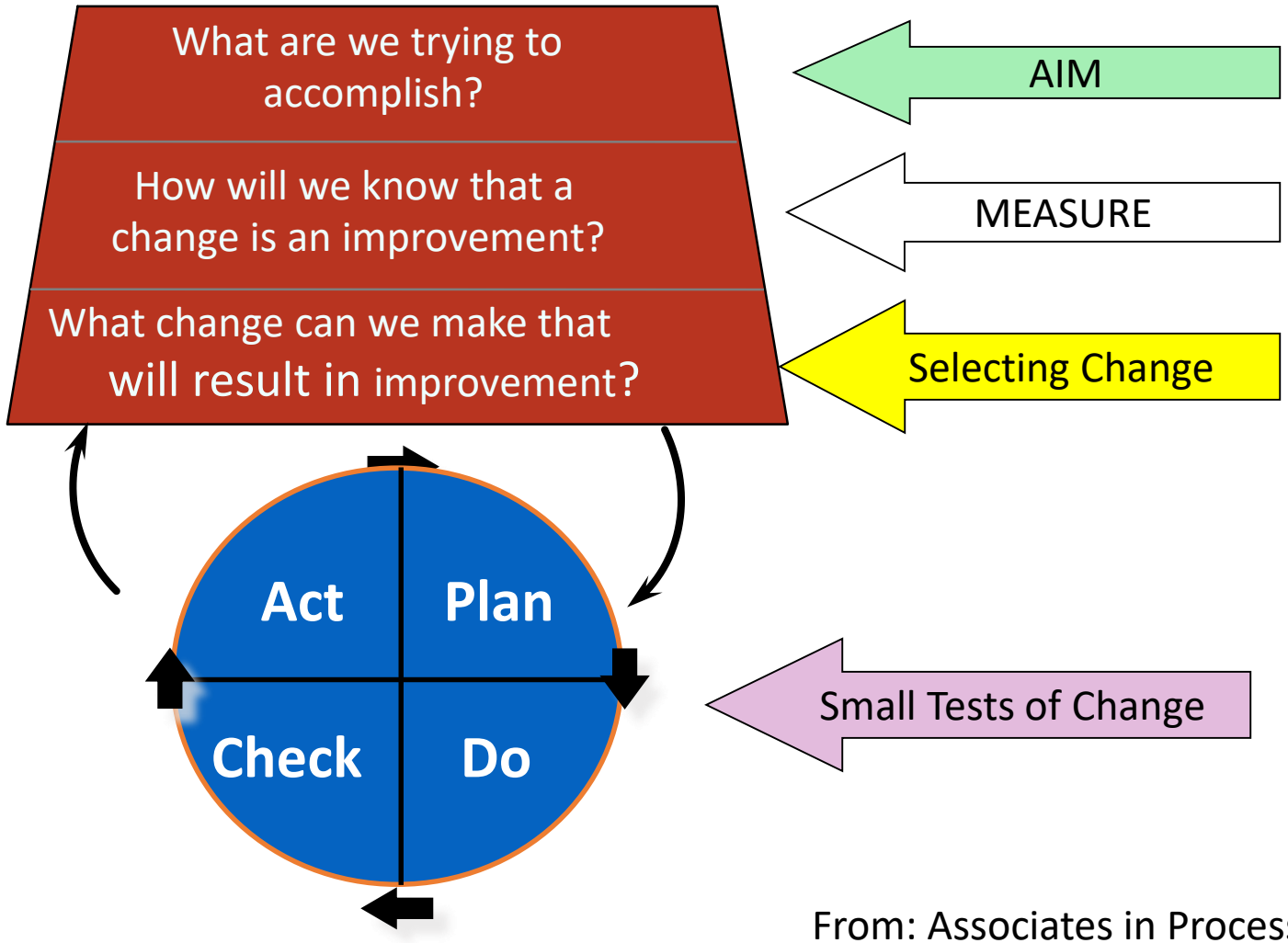
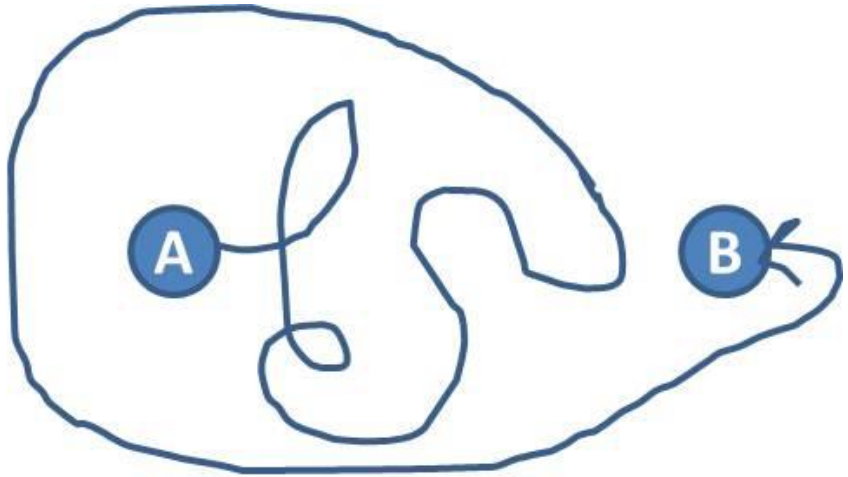
Model For Improvement



From: Associates in Process Improvement

What Quality Improvement Isn't

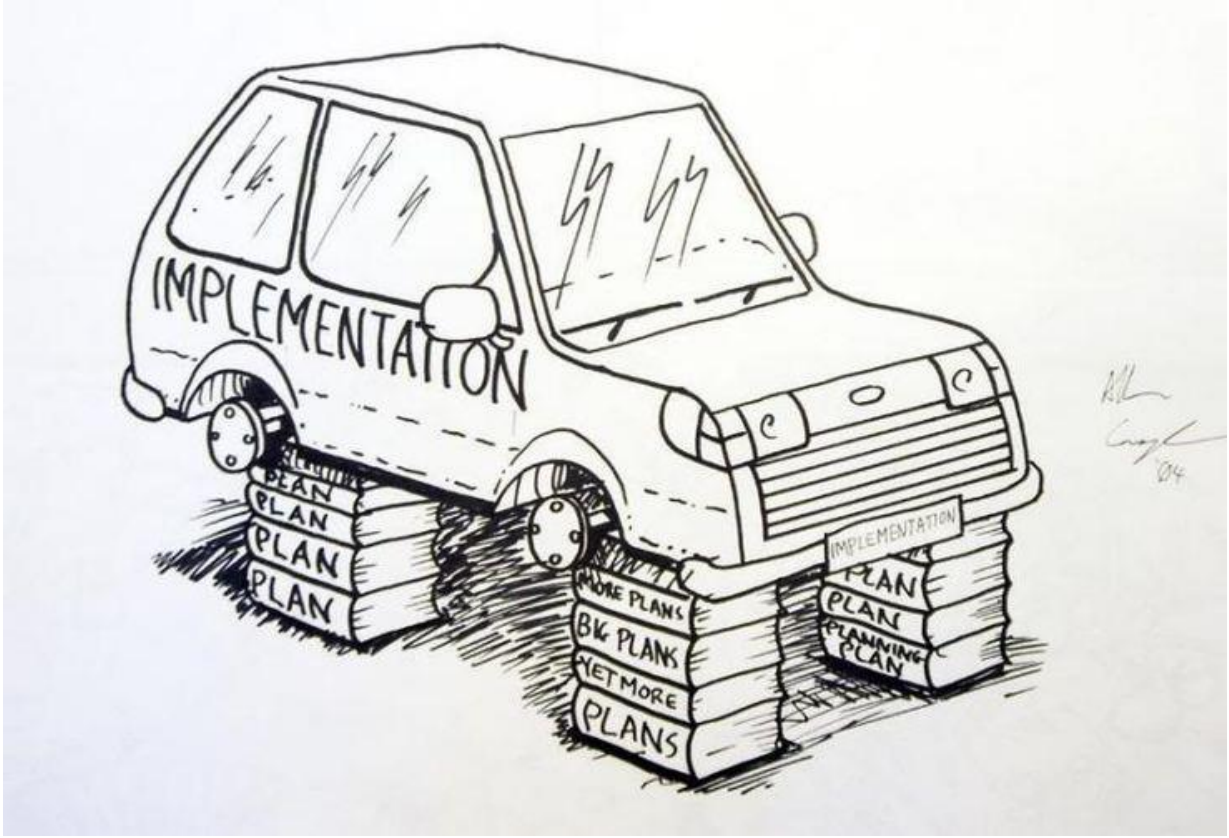
Engineer

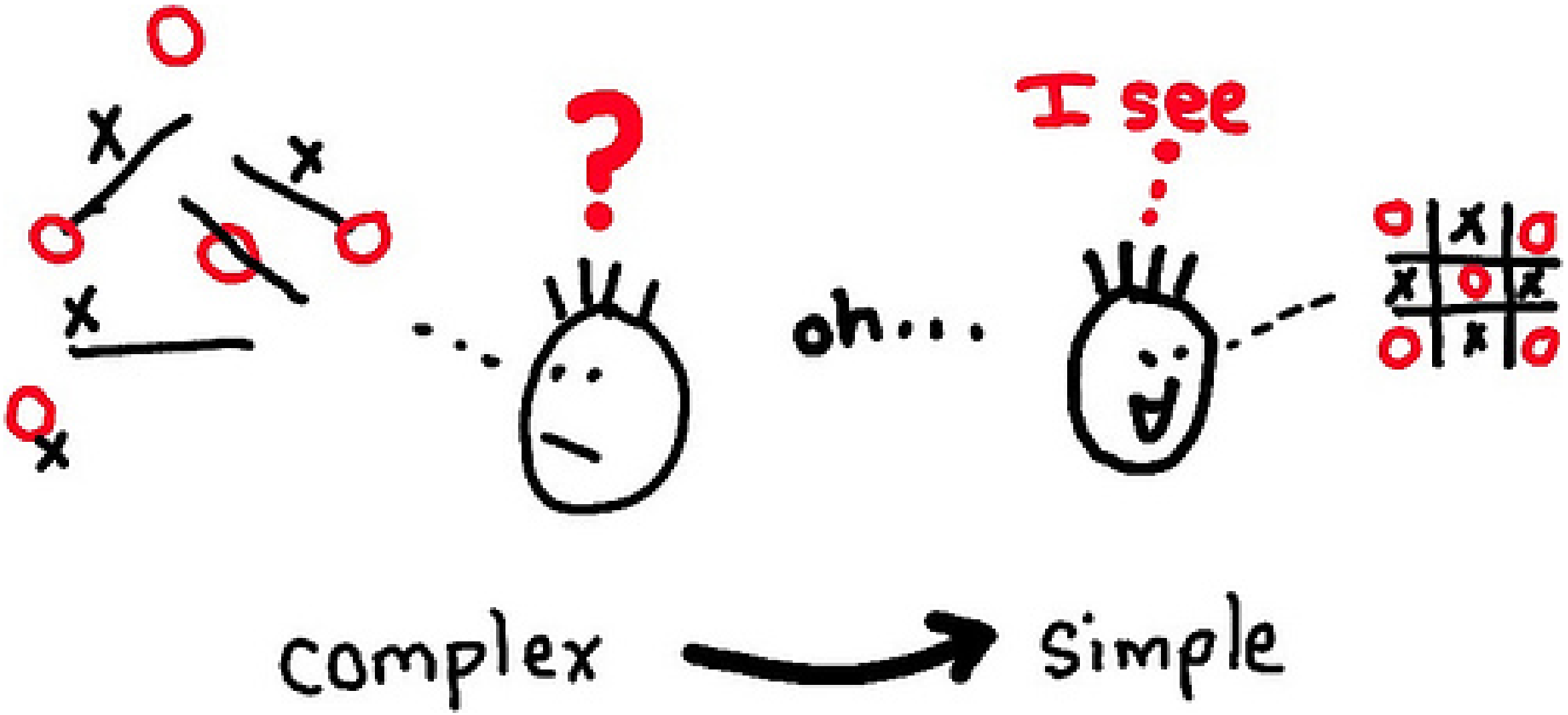


~~Social Scientist~~

QI Leader

A Focus on Implementation




?
oh...
I see
complex
simple

Questions?

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