

# Systematic Innovation in Complex Environments

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19 March 2019





74% of staff are not engaged in their jobs.  
This is not a management problem.  
This is a complexity problem.



ERROR ERROR ERROR



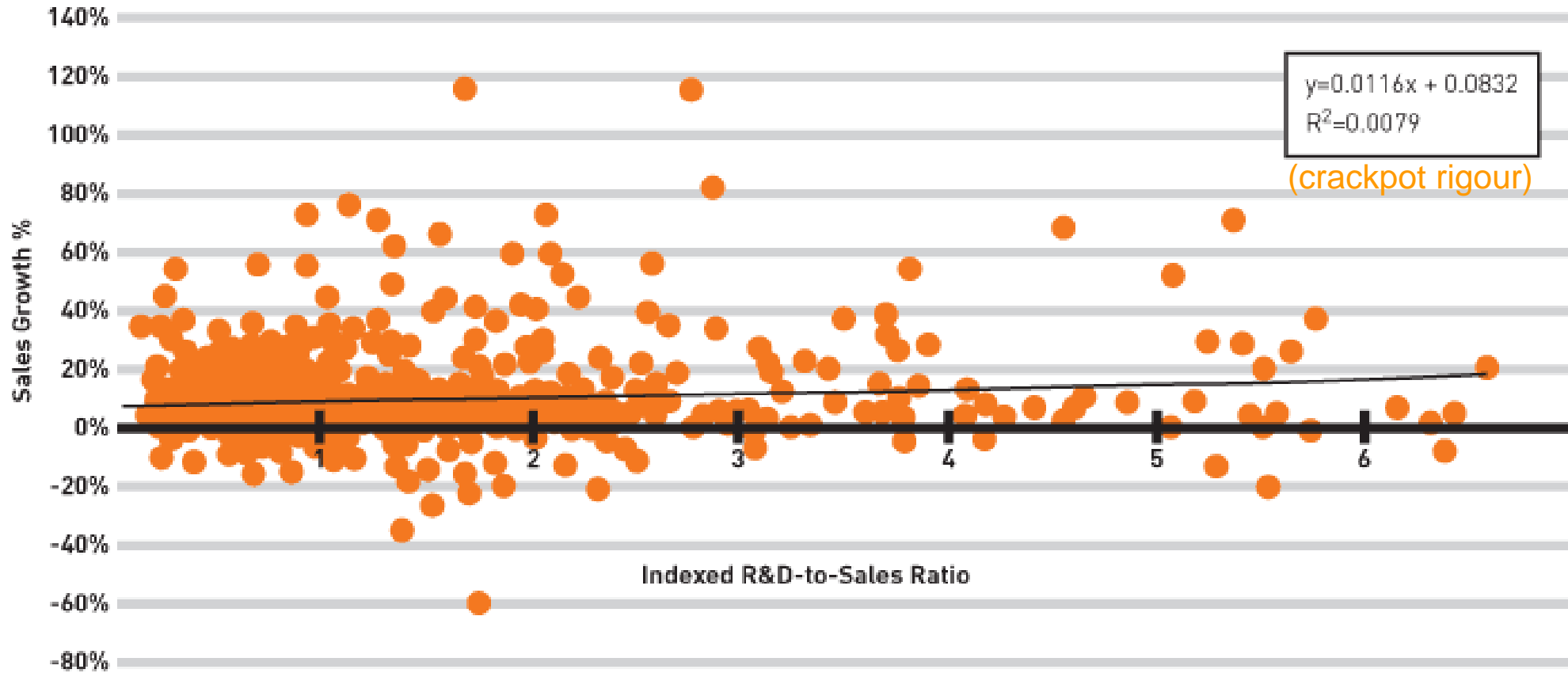
65% of customer interactions are failure demand.  
This is not a management problem.  
This is a complexity problem.



97% of Intellectual Property generates no tangible value.  
This is not a strategy problem.  
This is a complexity problem.

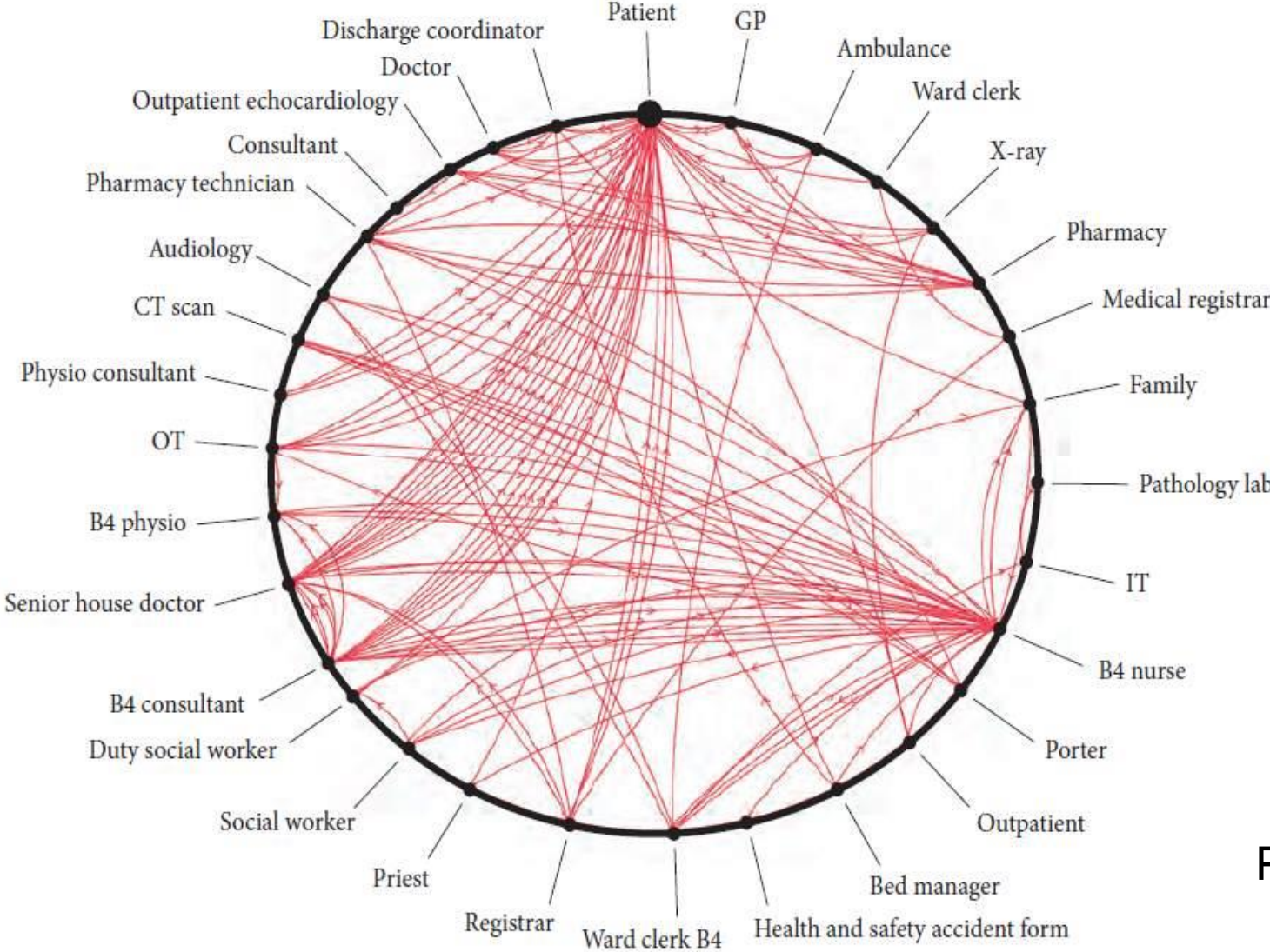
# Innovation: The Performance Disconnect

Averages are meaningless in the innovation context.



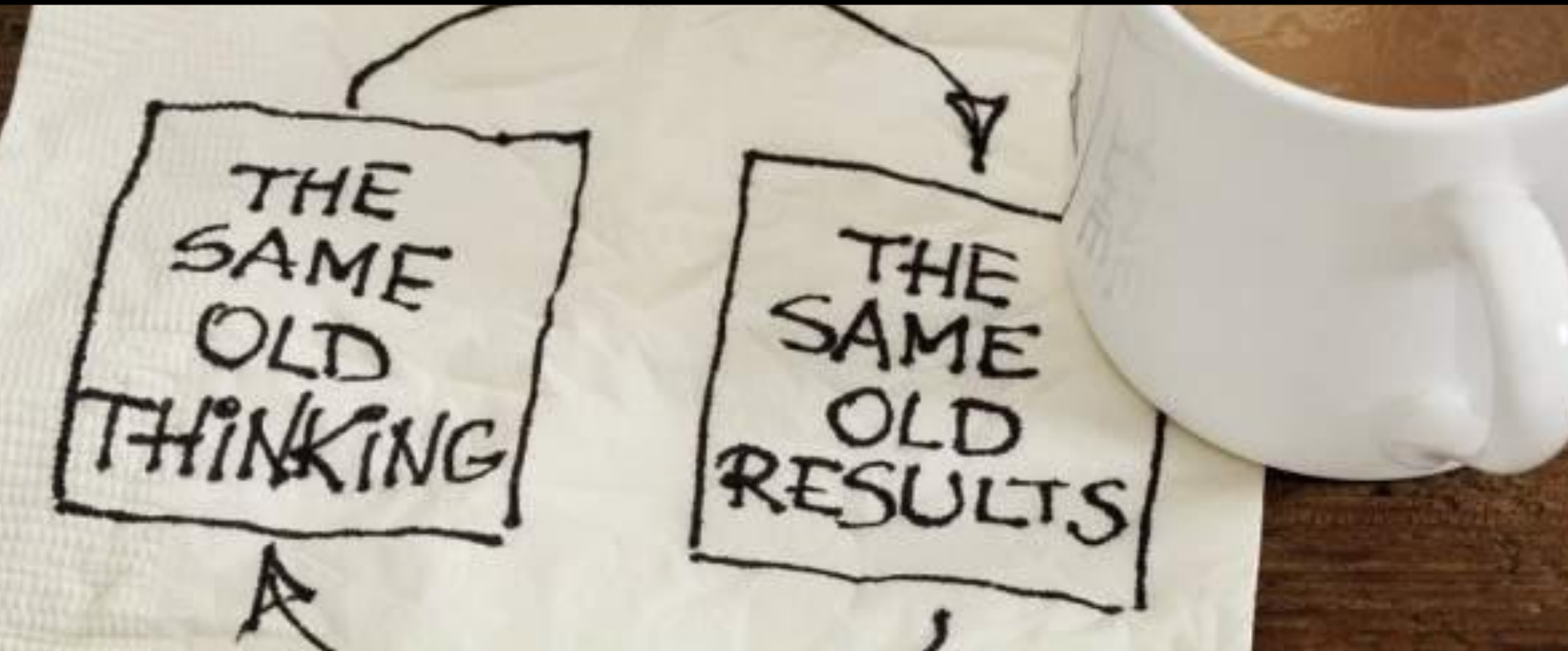
Source: Booz Allen Hamilton Global Innovation 1000

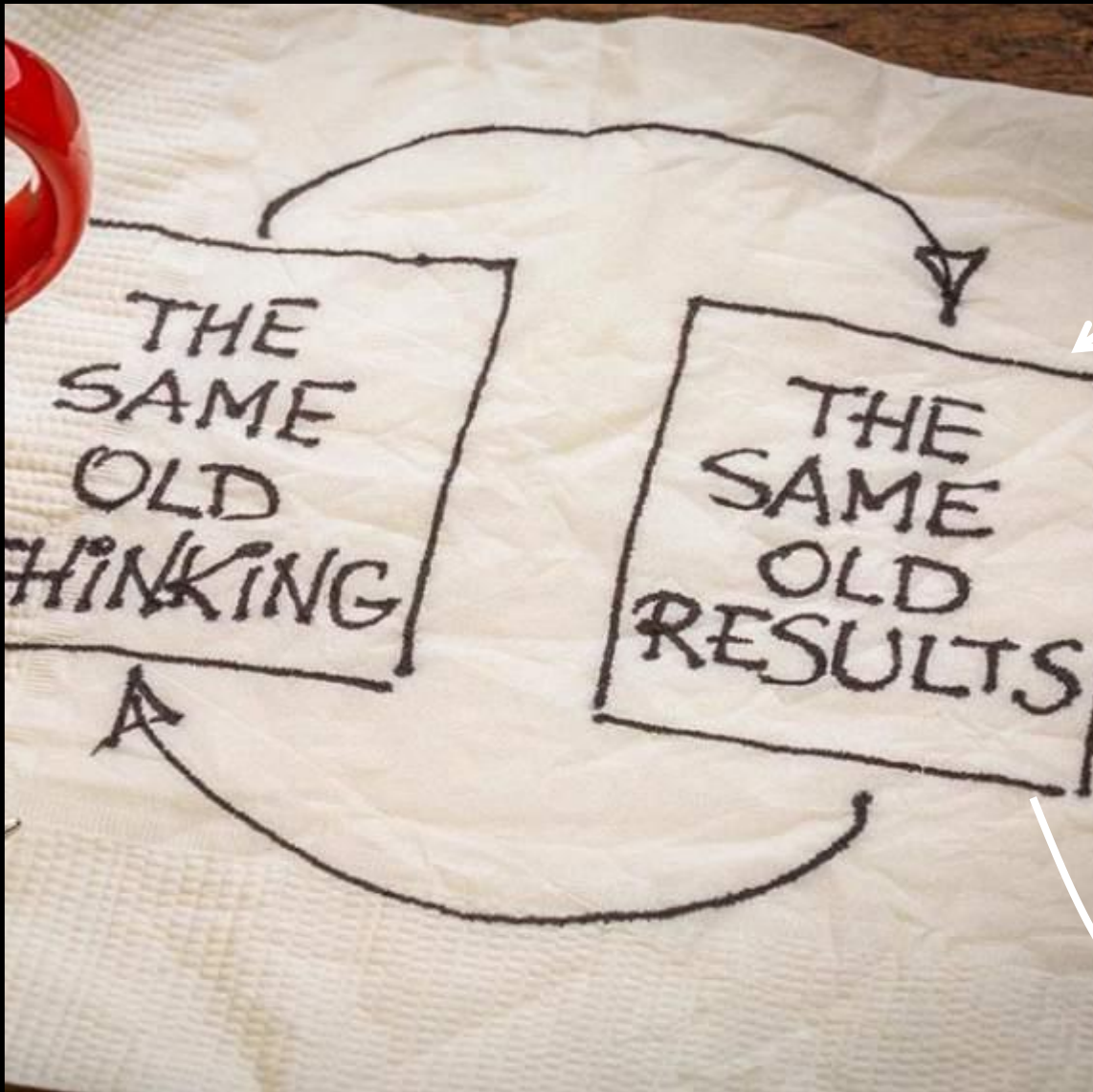
# 197 Hand offs to discharge a patient



Patient Pathway Trauma  
Bolton Hospitals NHS

# Insanity?





THE SAME OLD  
ABSOLUTELY  
EVERYTHING AROUND  
ME??

# SUCCESS

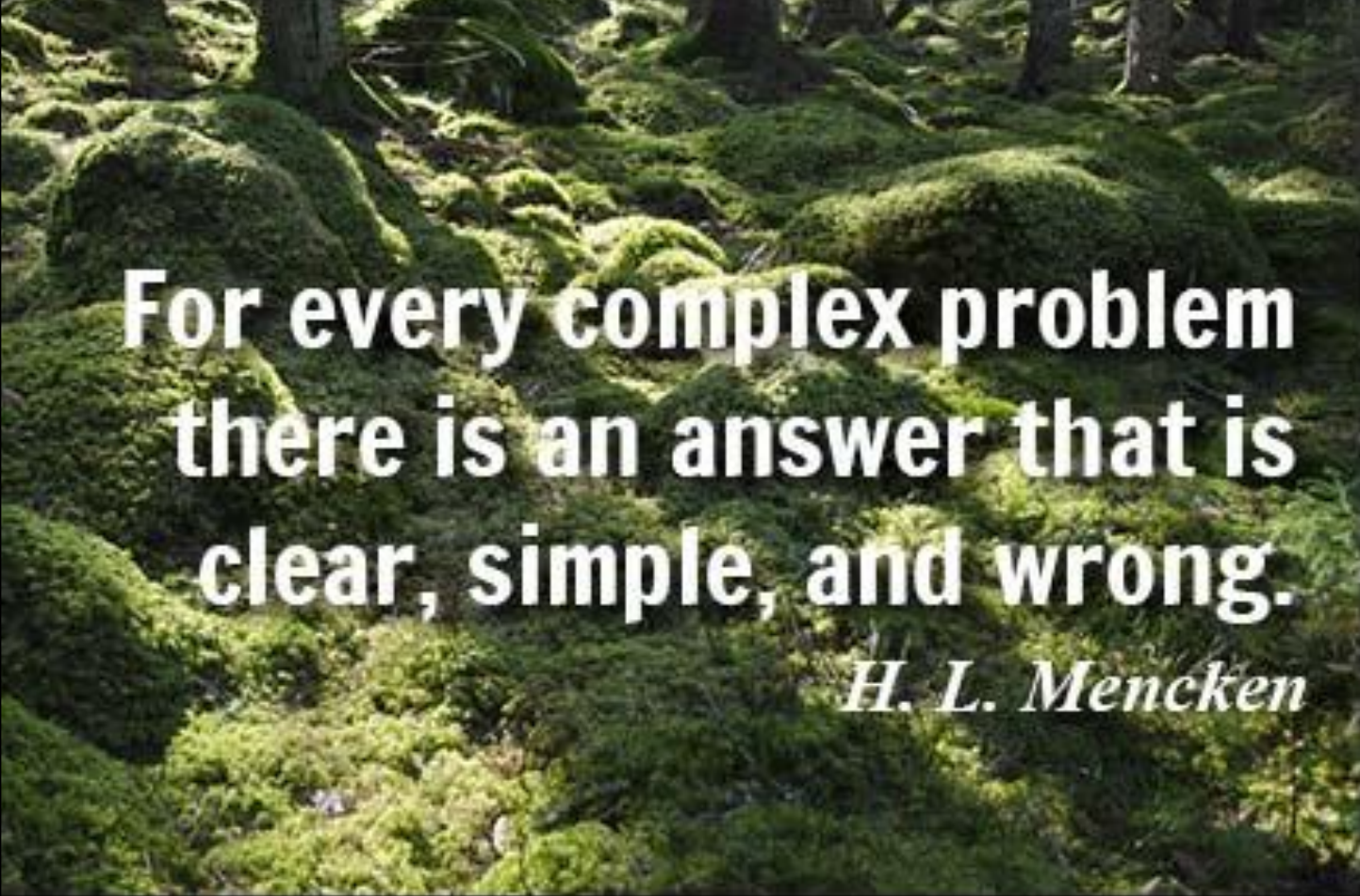


WHAT PEOPLE THINK  
IT LOOKS LIKE

# SUCCESS



WHAT IT REALLY  
LOOKS LIKE



**For every complex problem  
there is an answer that is  
clear, simple, and wrong.**

*H. L. Mencken*

CAUSE and  
EFFECT  
relationships  
are often  
highly  
tenuous...

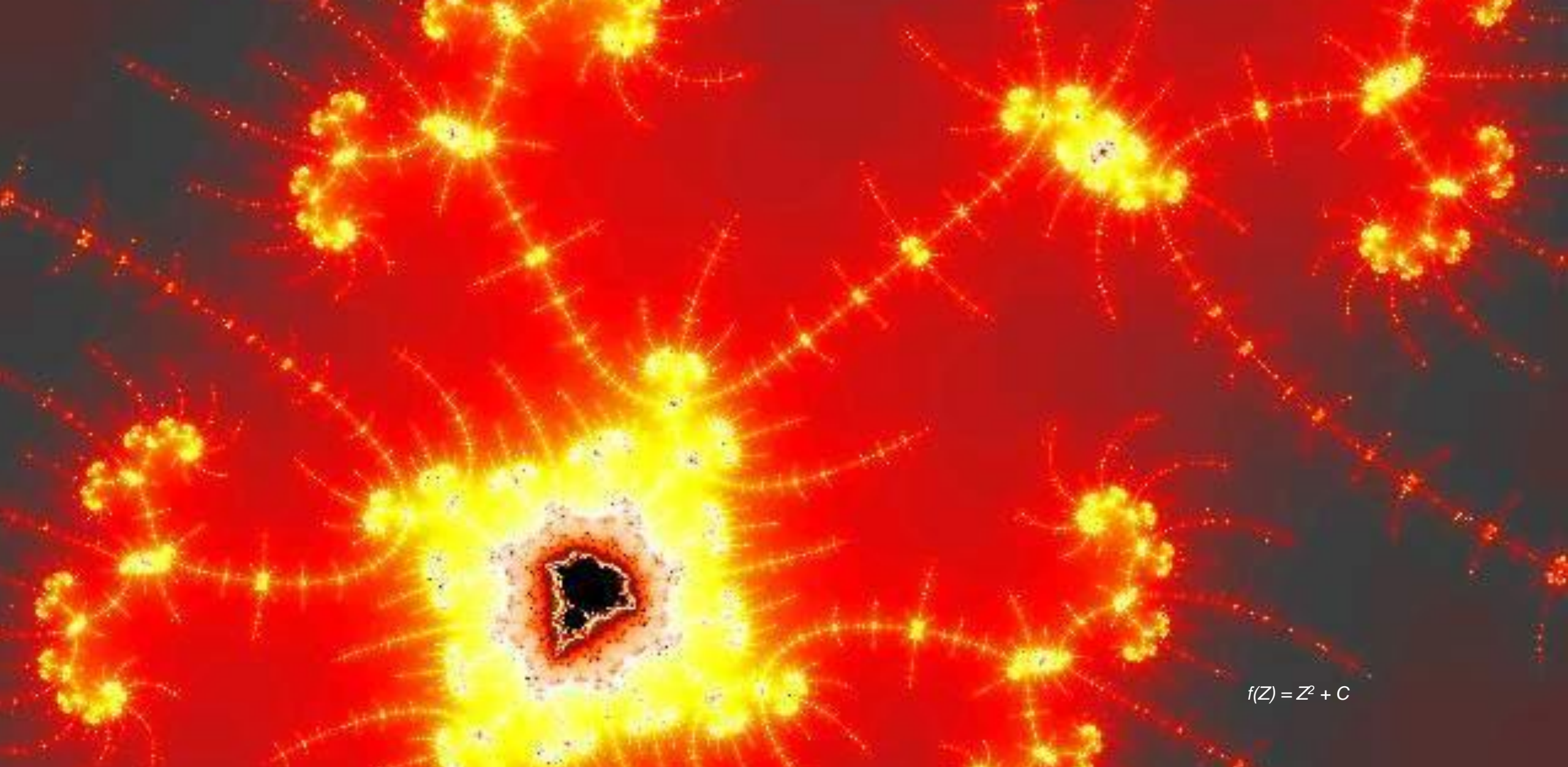




...which means  
you can't 'exclude the  
trivial' because it could turn  
out to be the thing that  
triggers a non-linear shift

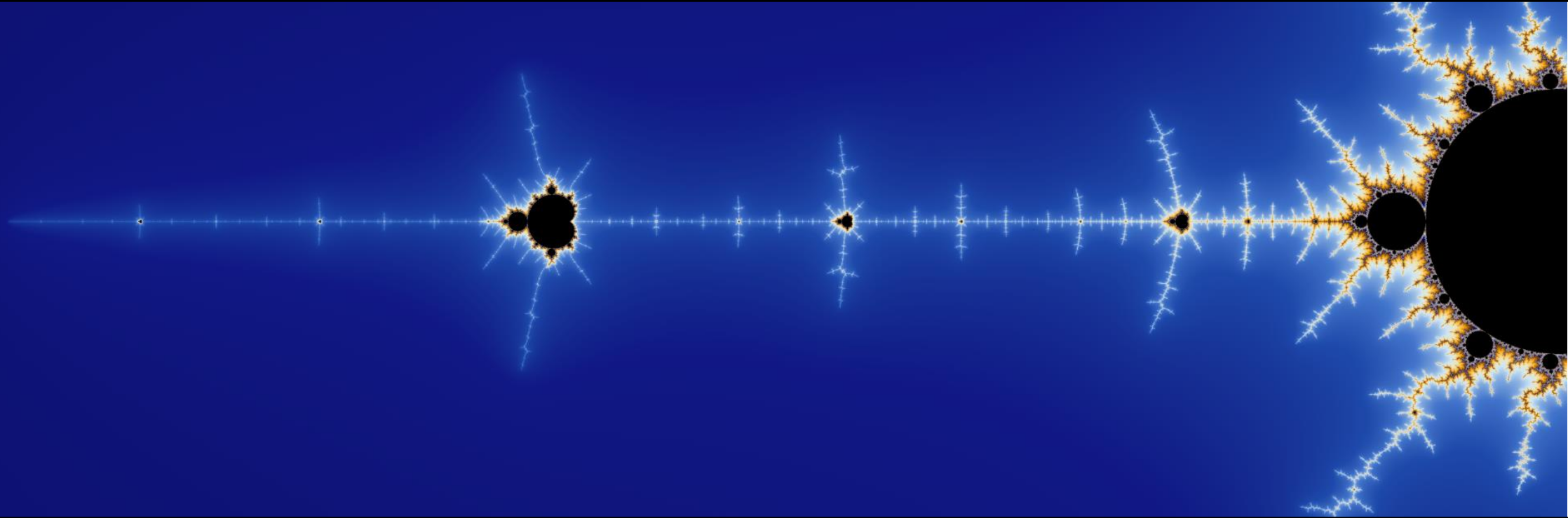
“fly as close to your neighbours as possible”





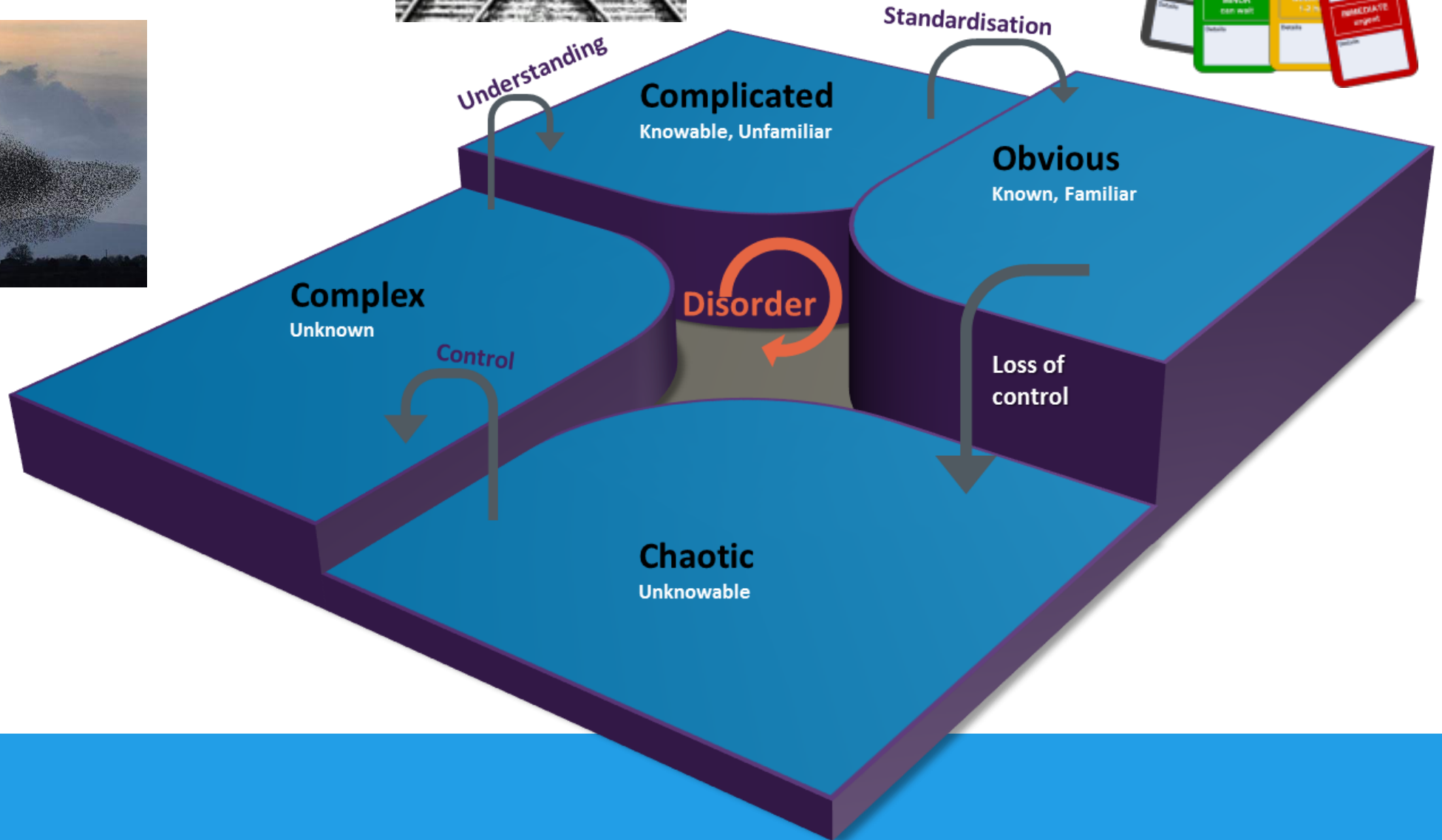
$$f(z) = z^2 + c$$

For every complex problem there are thousands of clear, simple, wrong answers.



For every complex problem there is a clear, simple, right one.  
If we understand and affect **the first principles**.

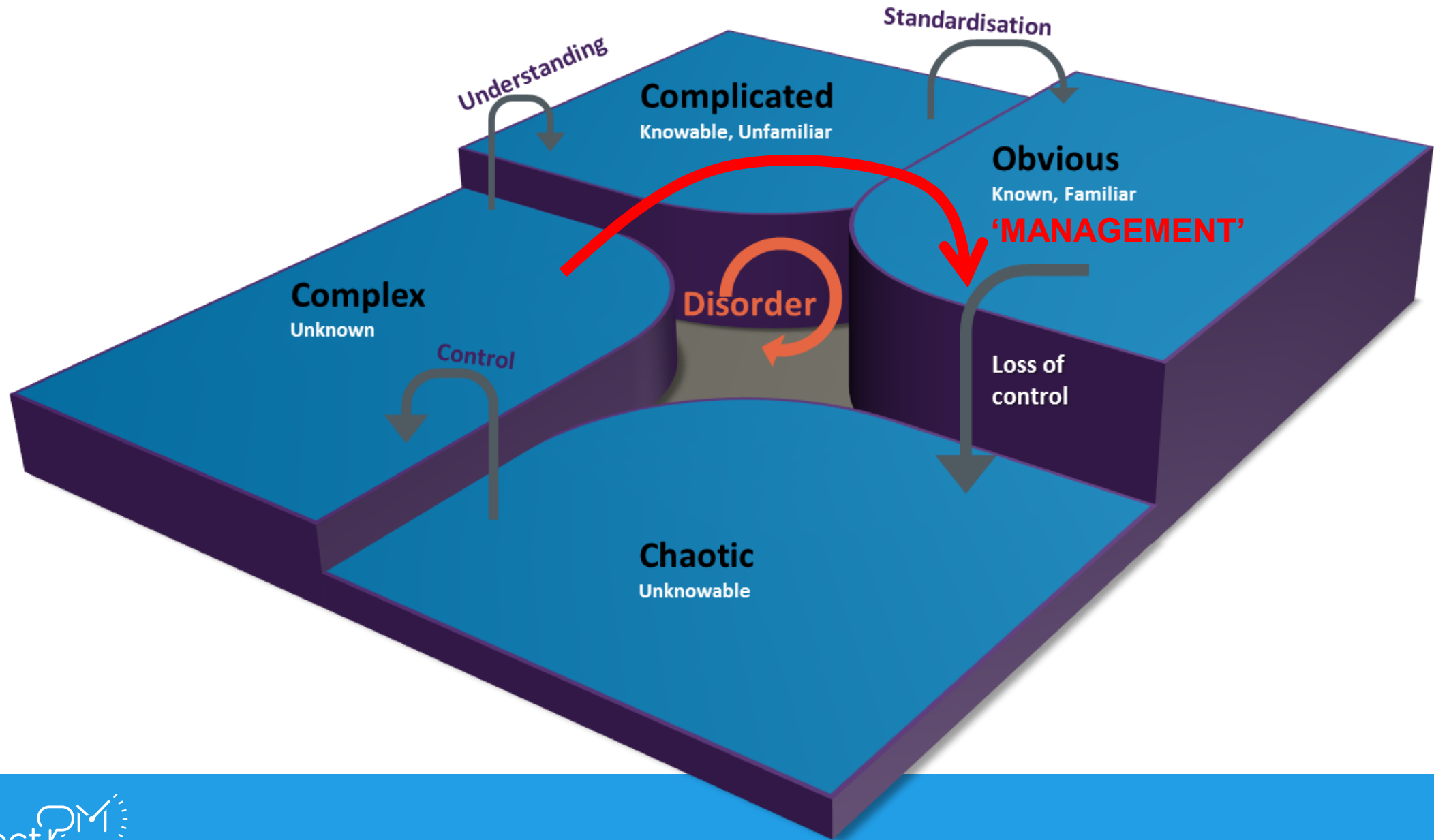
# Cynefin



“get away from the falcon”



# Cynefin



# Two Or More Humans = Complex



“Operational  
Excellence”  
(complicated)

Everything's working  
Feels good  
Clear rules  
Clear Direction  
(‘Progress’)

Knowledge exists

Routine  
Manage-able (Gantt Charts)  
Controllable



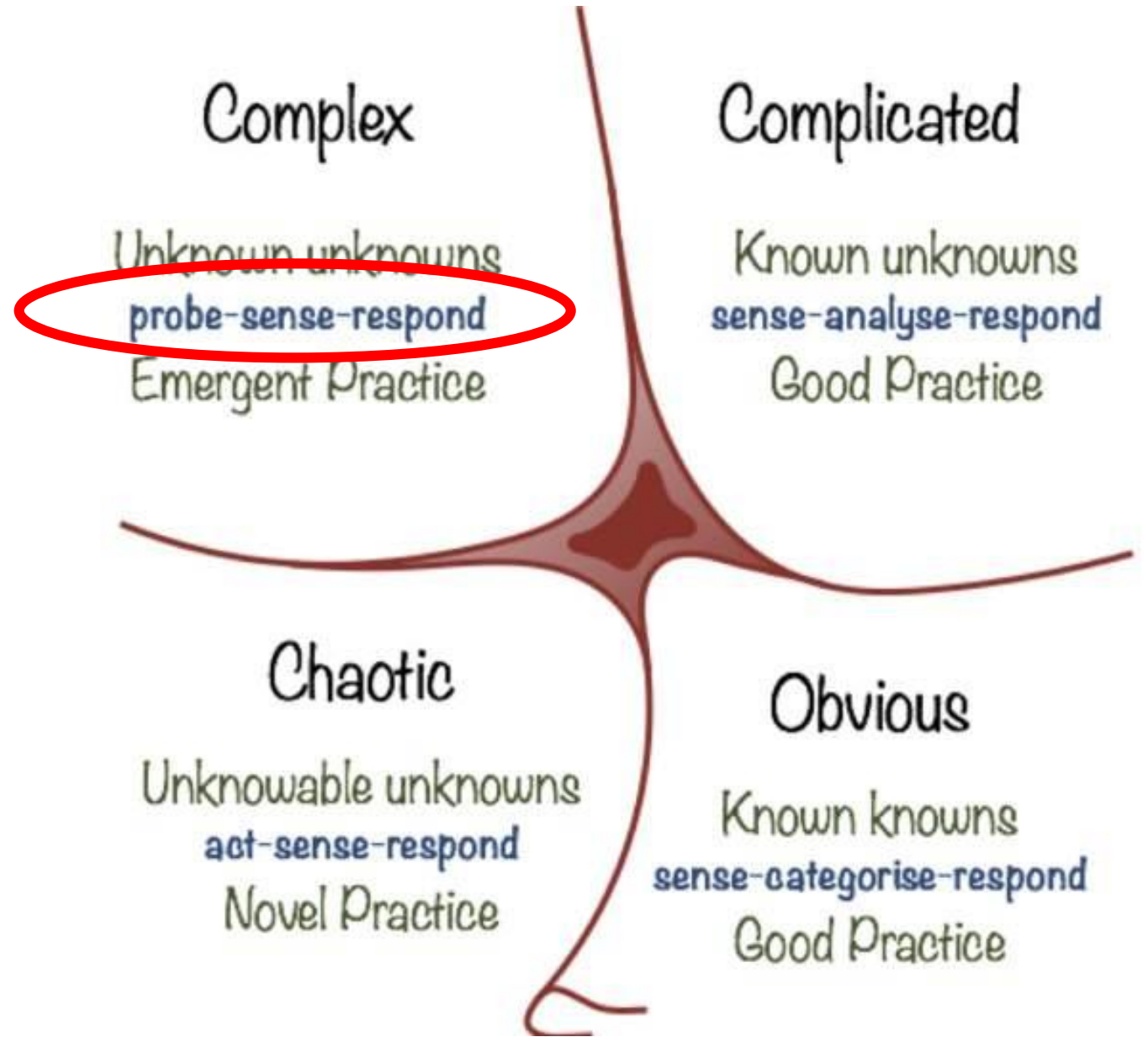
Innovation  
(complex)

Nothing seems to work  
Uncomfortable/horrible  
Confusion  
Find ‘new rules’  
Challenge assumptions

Knowledge has to be found

Creativity  
Not manage-able  
‘Out of control’

# Cynefin



front



back



Image courtesy of Nordstrom, Inc.

# Optimization & Innovation

INNOVATION

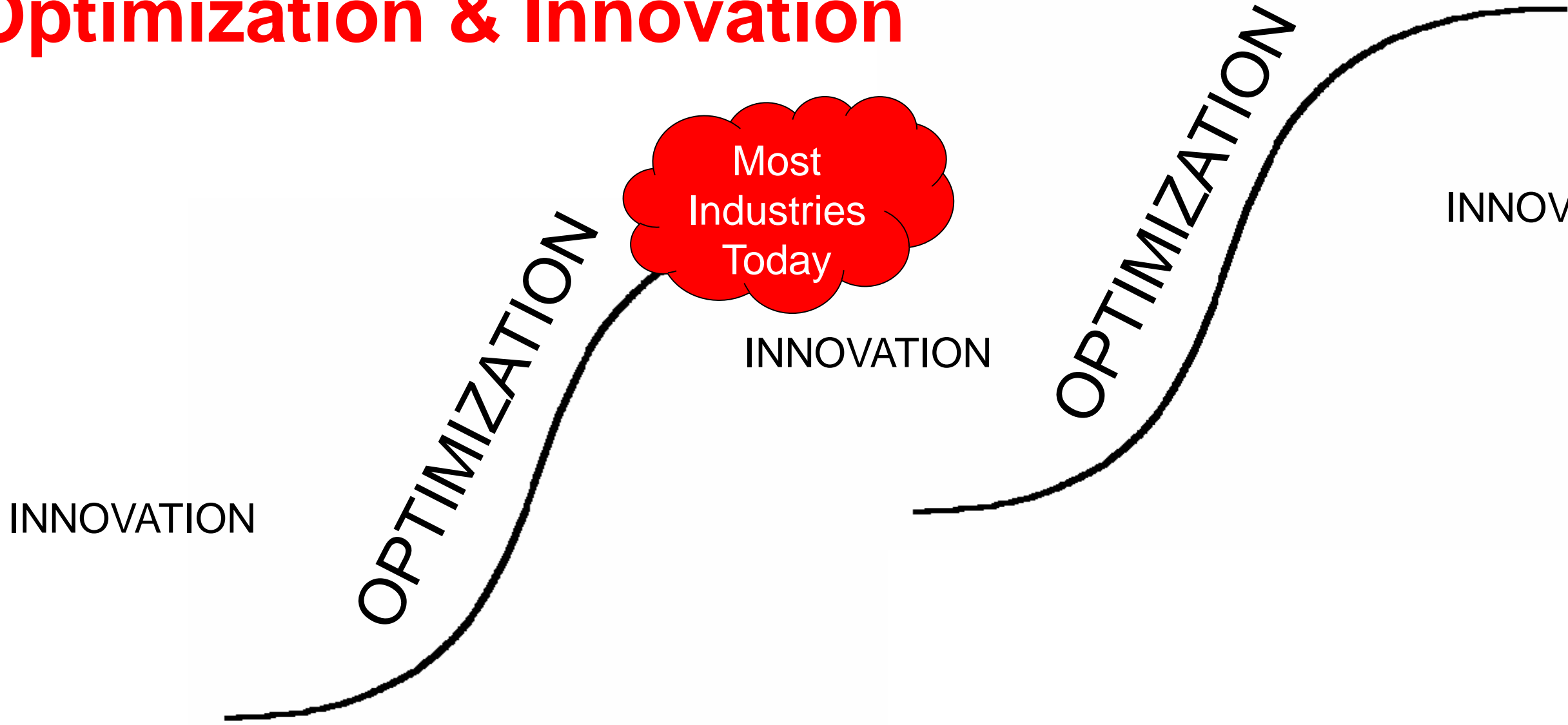
OPTIMIZATION

INNOVATION

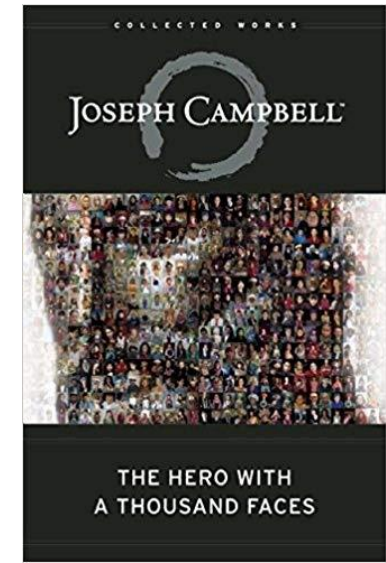
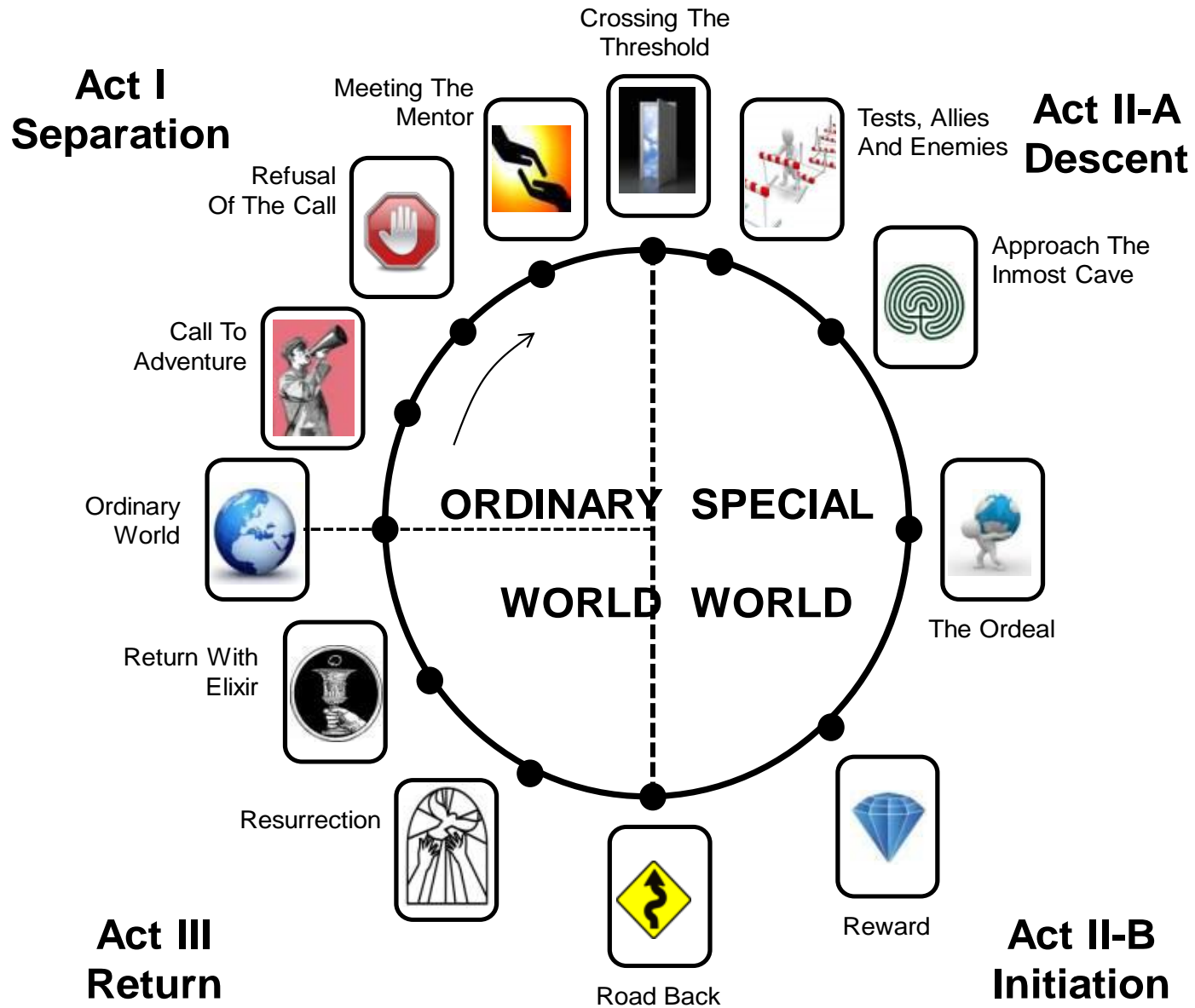
OPTIMIZATION

INNOVA

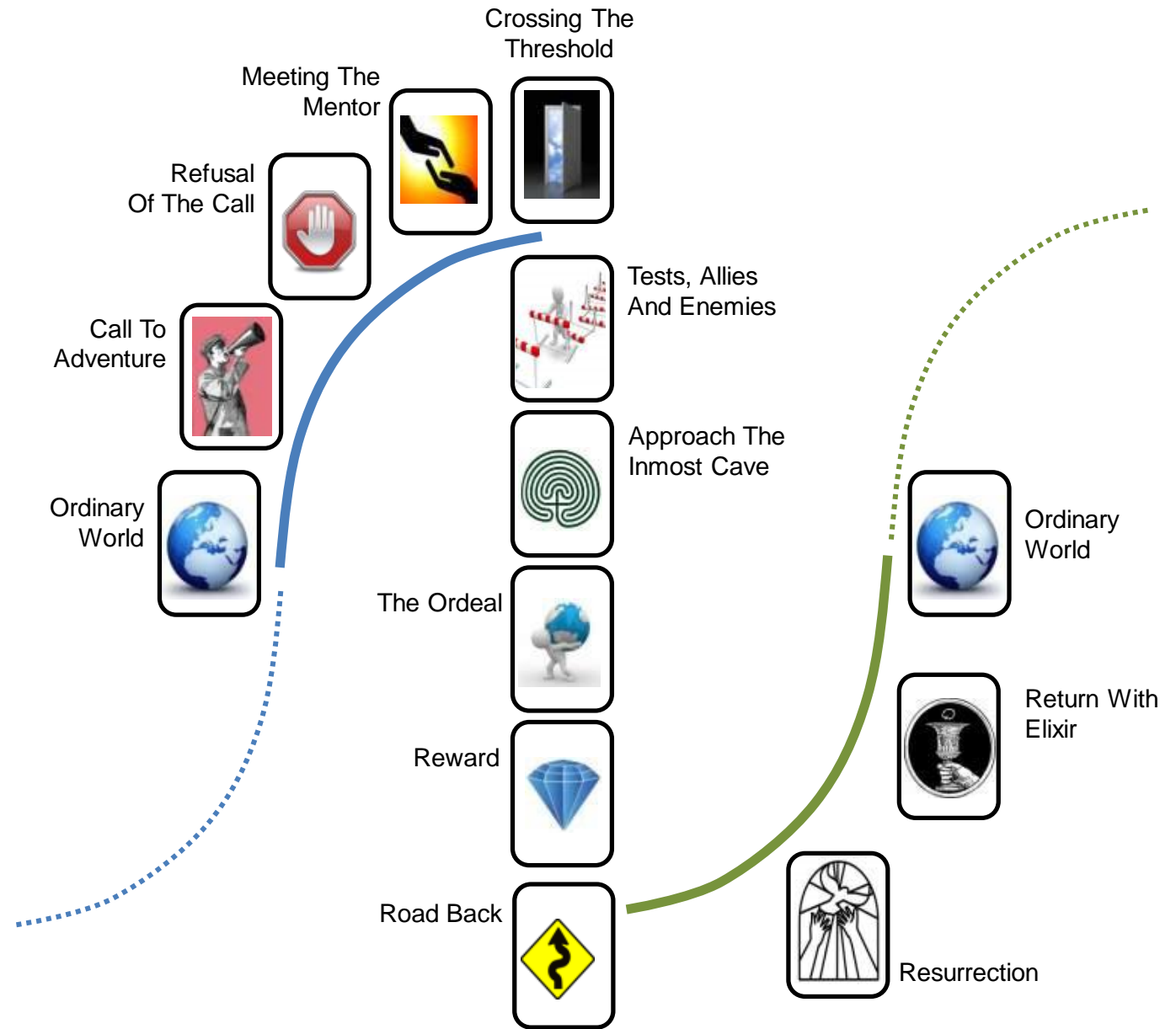
# Optimization & Innovation



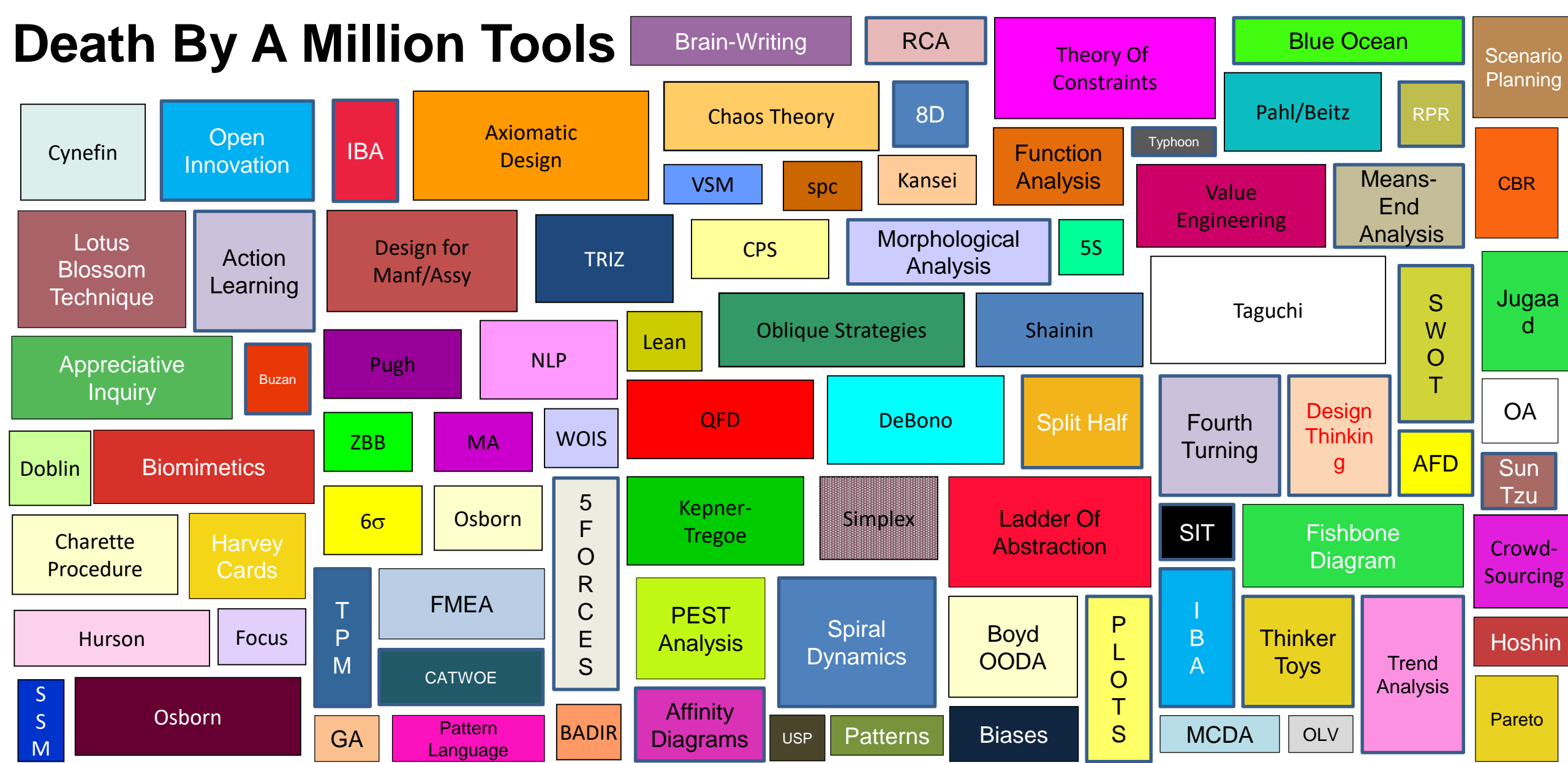
# Hero's Journey



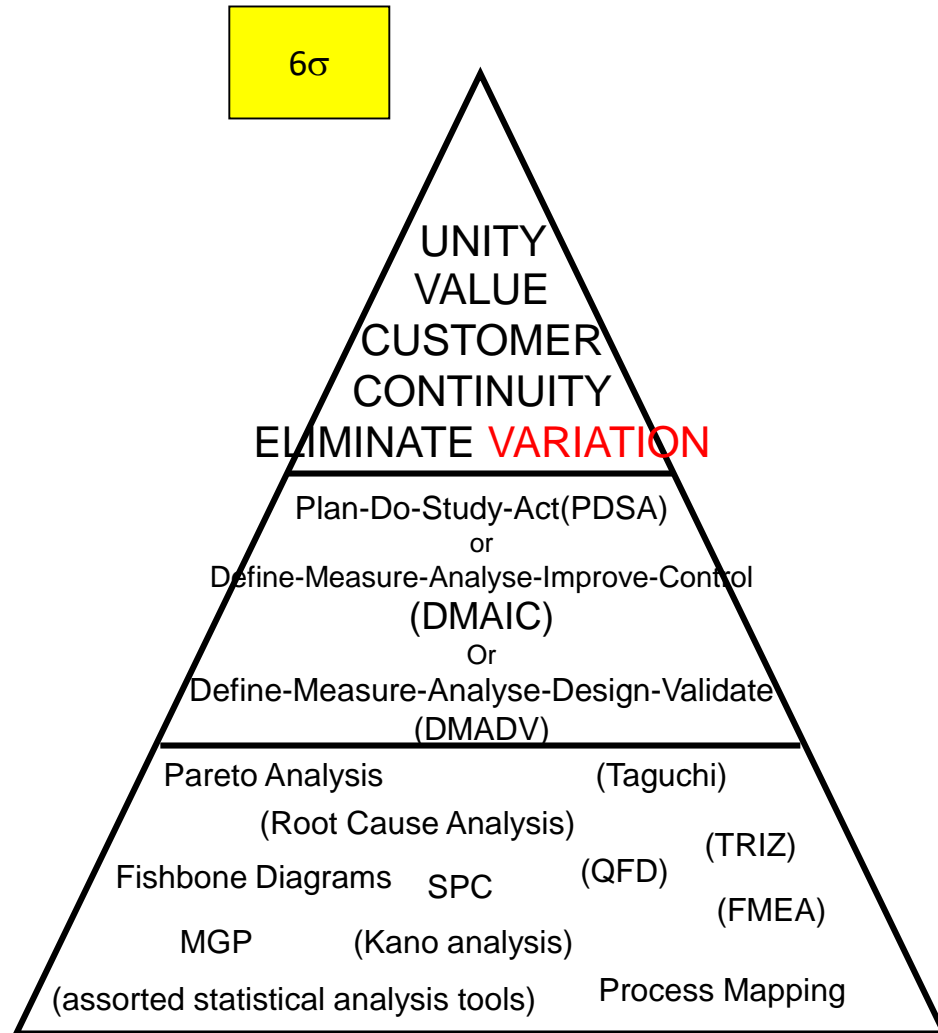
# Hero's Journey & S-Curves



# Death By A Million Tools



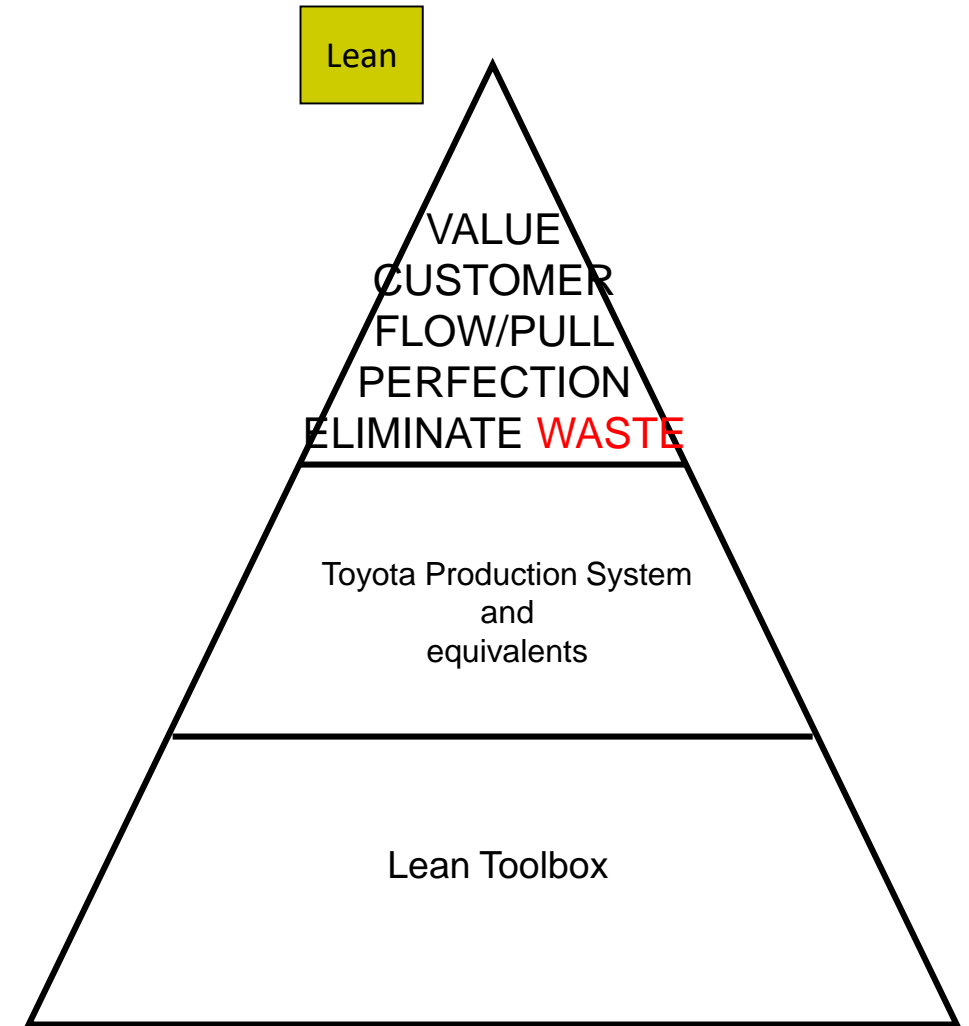
# Philosophical Coherence – Operational Excellence/Complicated



**Philosophy**

**Method**

**Tool**

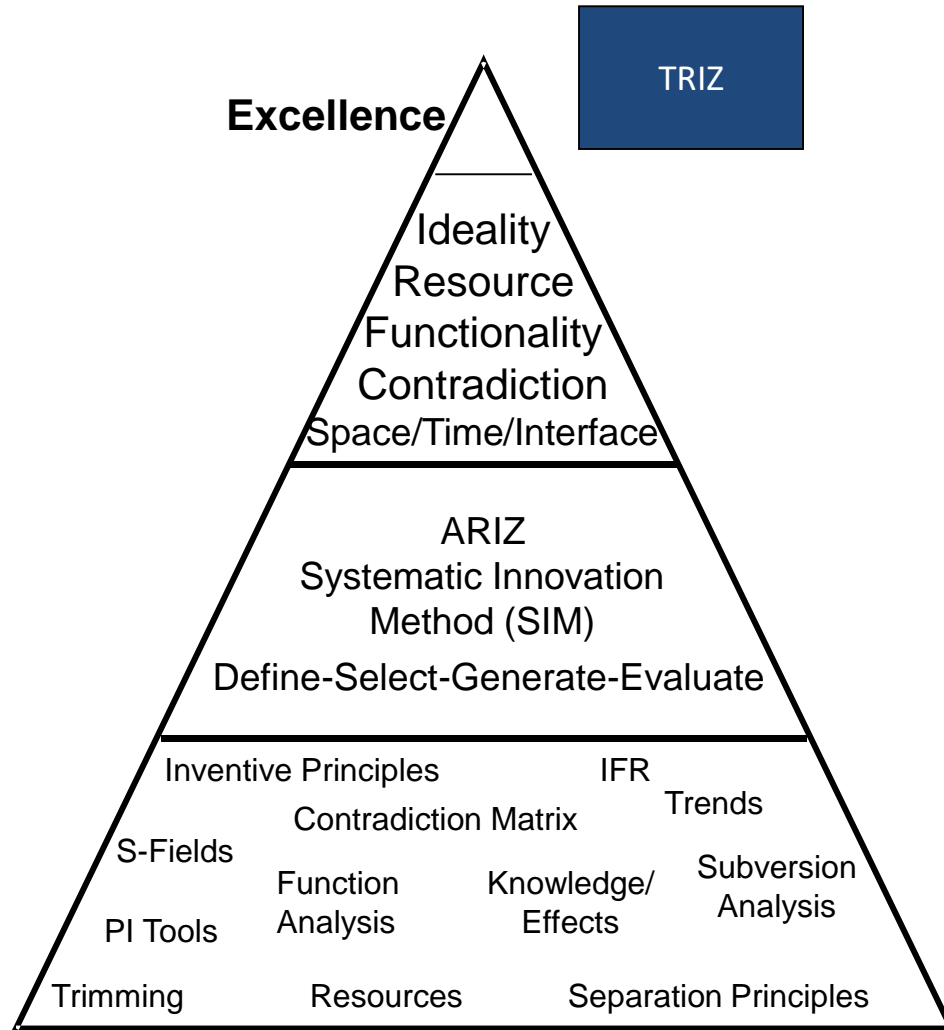


# Wrong Place, Wrong Time



Reduce Waste  
Reduce Variation

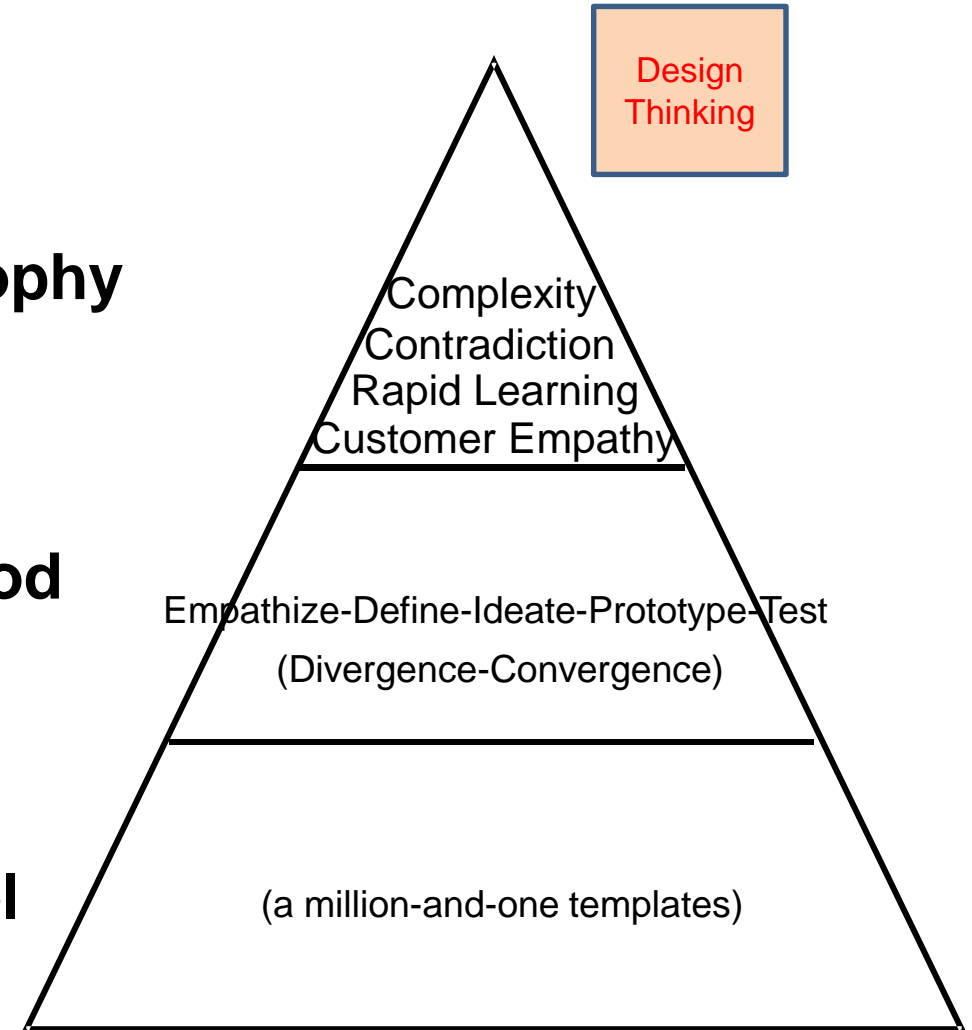
# Philosophical Coherence – Innovation/Complex



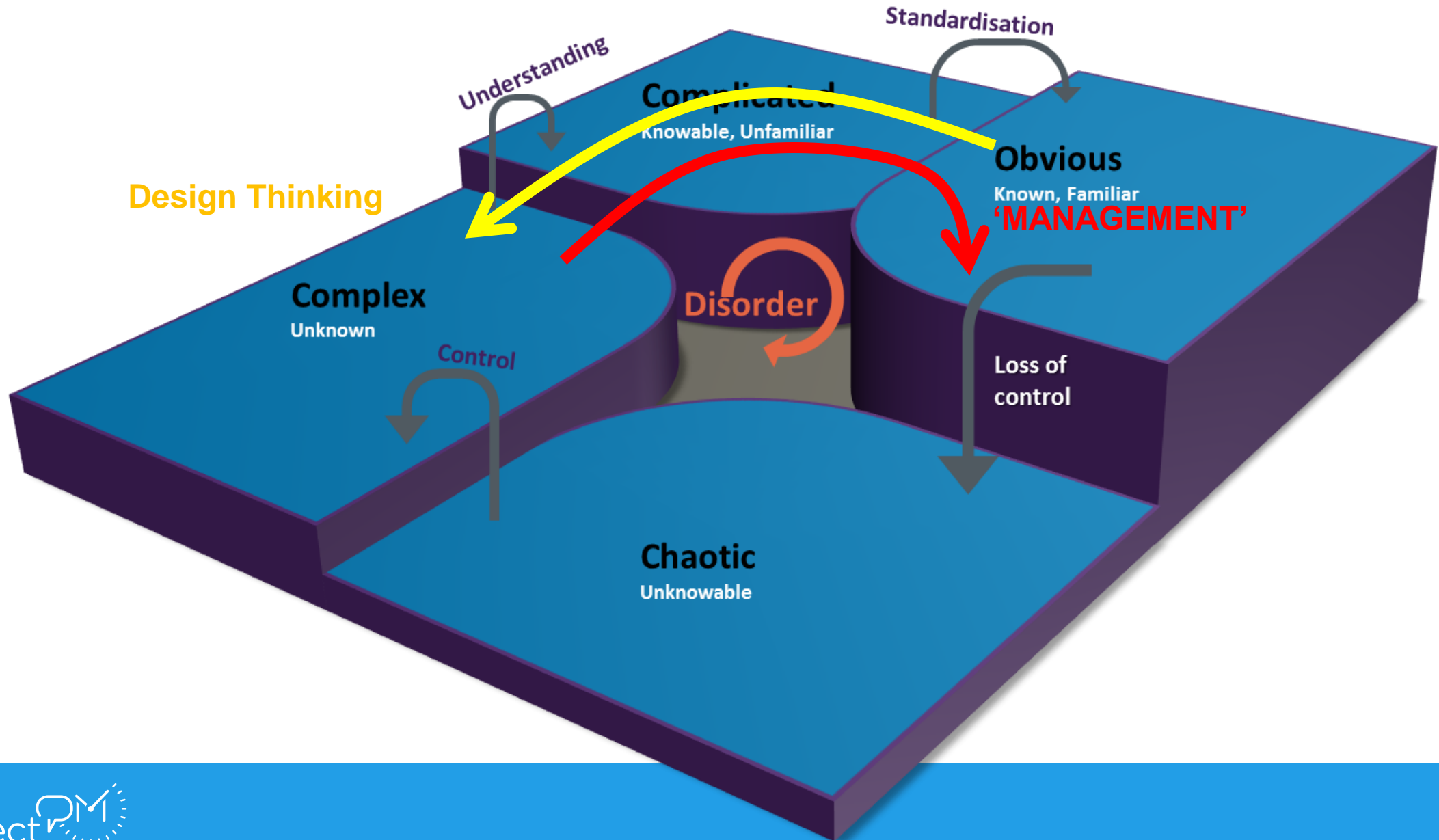
## Philosophy

## Method

## Tool



# Cynefin





# COBRA+



...establish where you're heading...

**Compass**

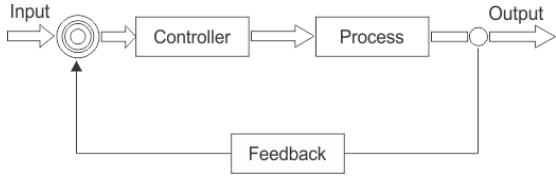
+

**Outcomes**

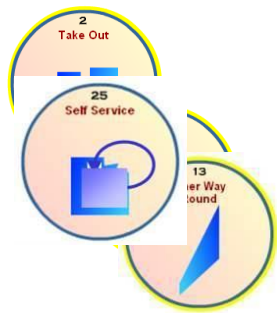
**And's**

**But's**

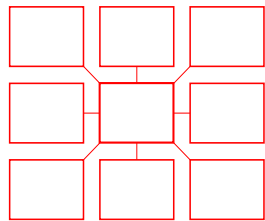
**Resources**



...establish how well solutions match need and deployment capabilities, then iterate as appropriate...

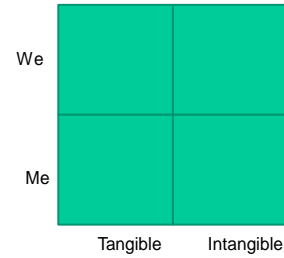


...generate solution clues...

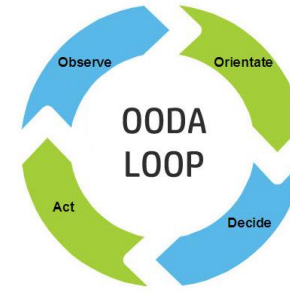


...identify available resources...

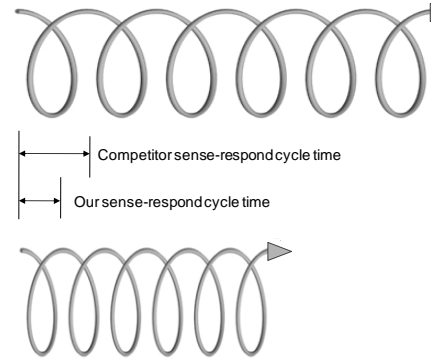
...map stakeholder outcome needs...



...establish 'yes, but' barriers...

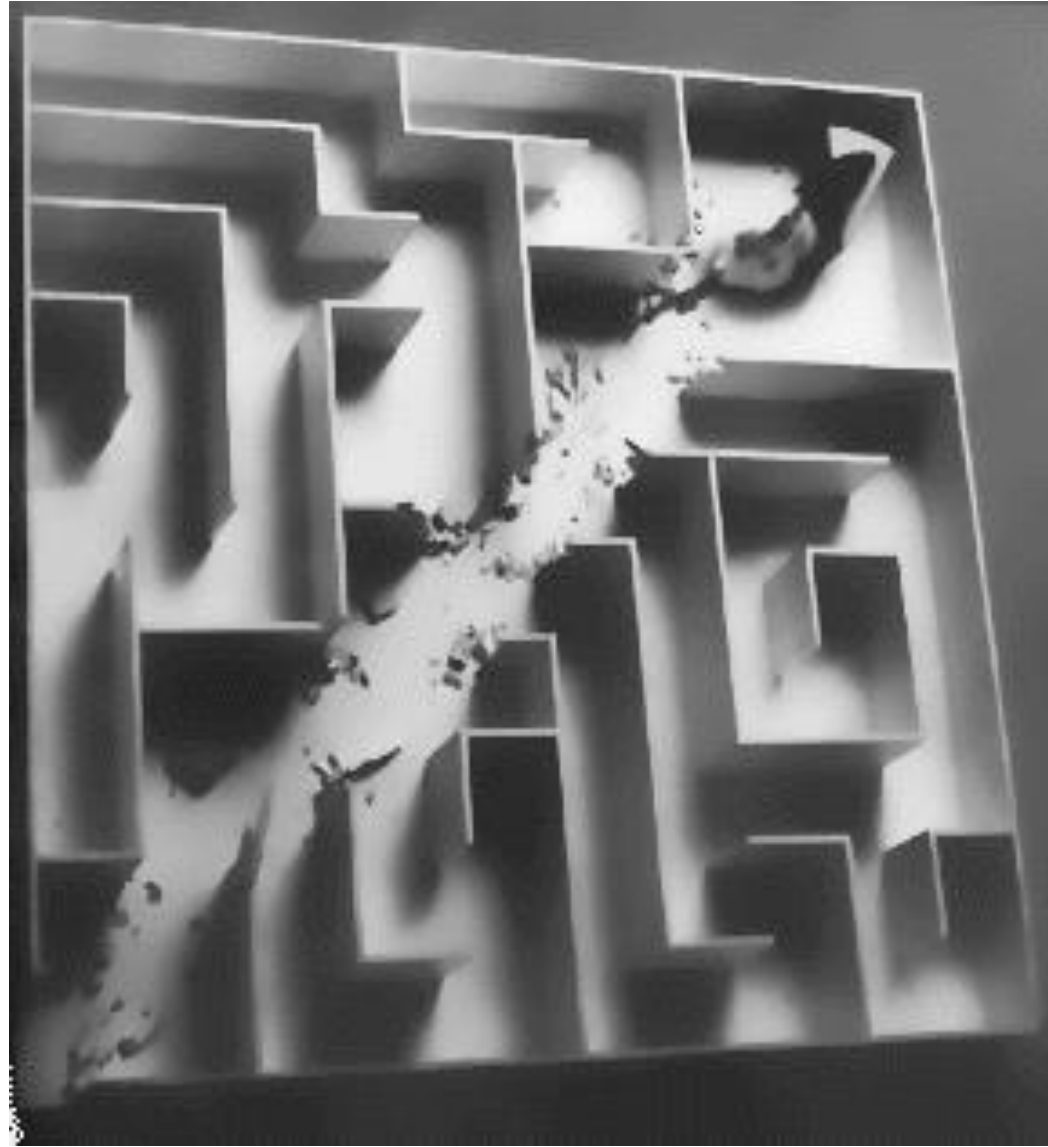


**PULSE RATE**



# COBRA - Compass

## Everything Heads Towards An 'Ideal'



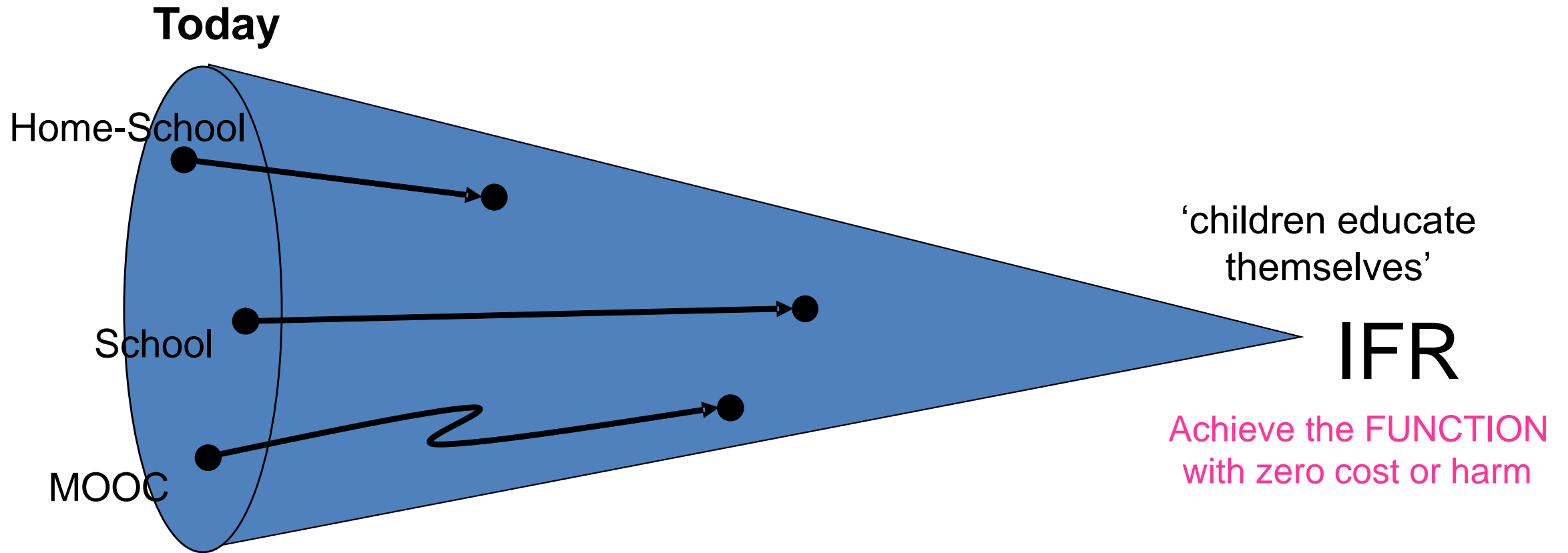
Ideality =

$$\frac{\text{Perceived (Benefits)}}{(\text{Cost} + \text{Harm})}$$

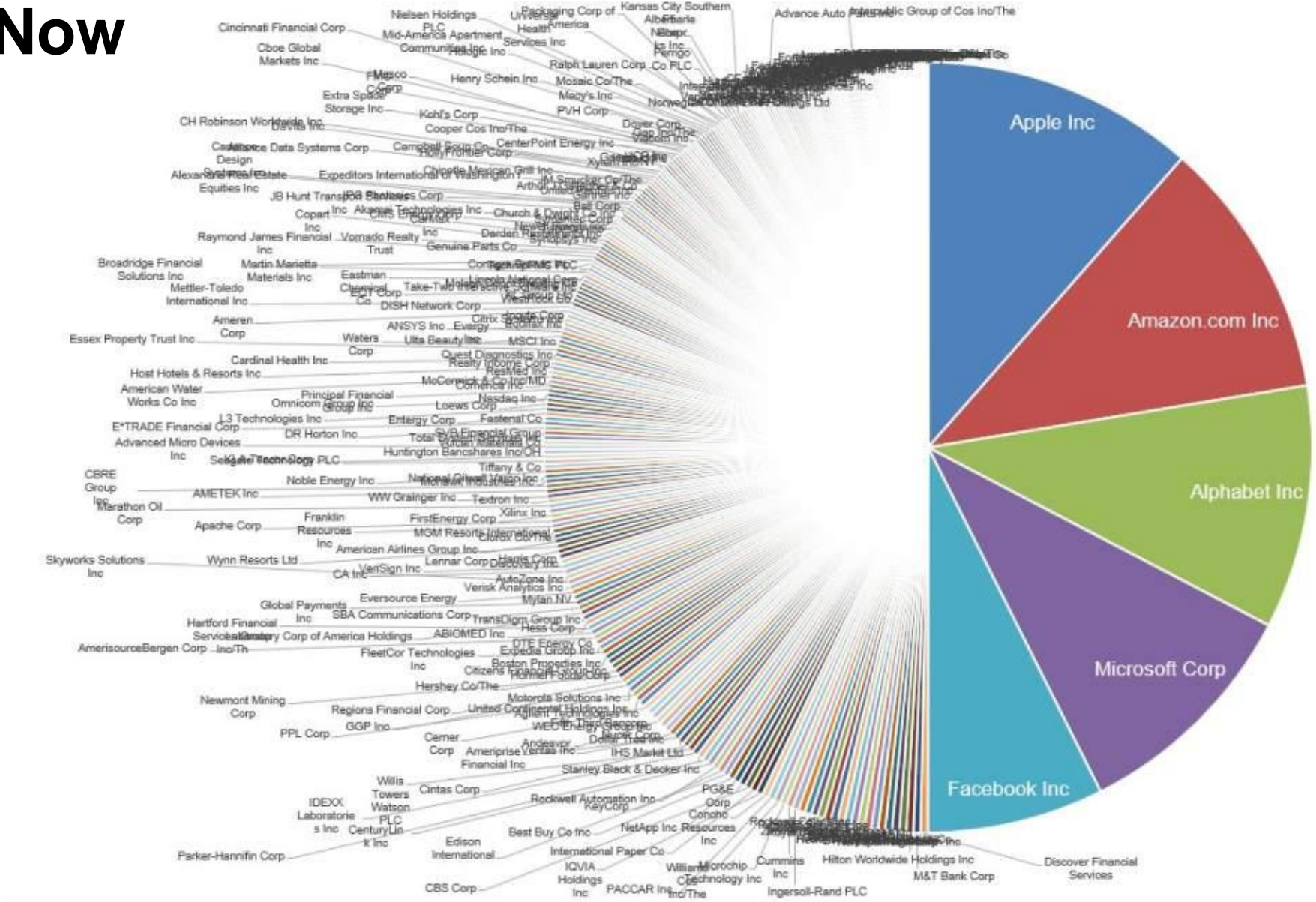
Ideal =

Free, Perfect, Now

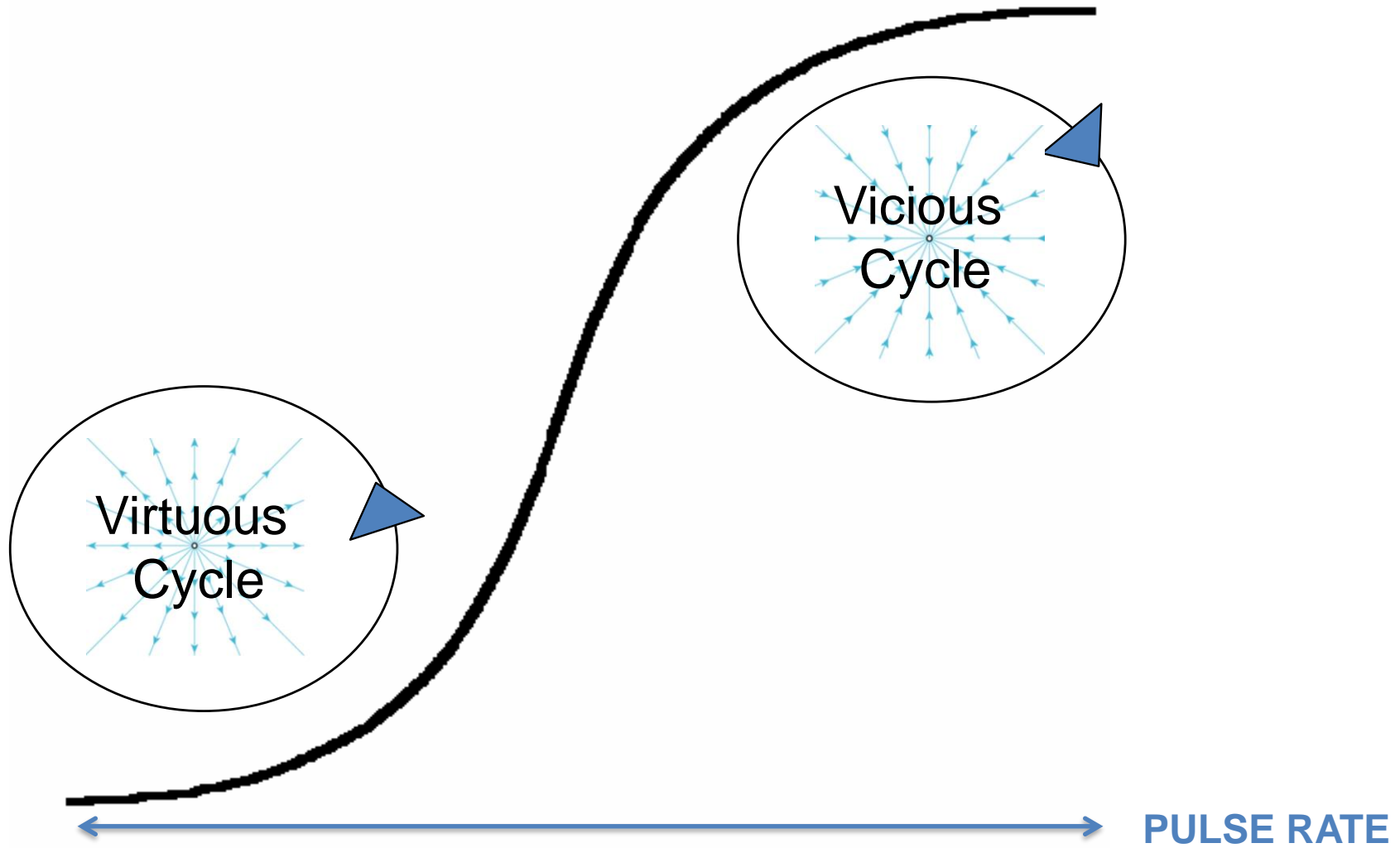
# Compass Example: Education



# Free, Perfect, Now & NASDAC:

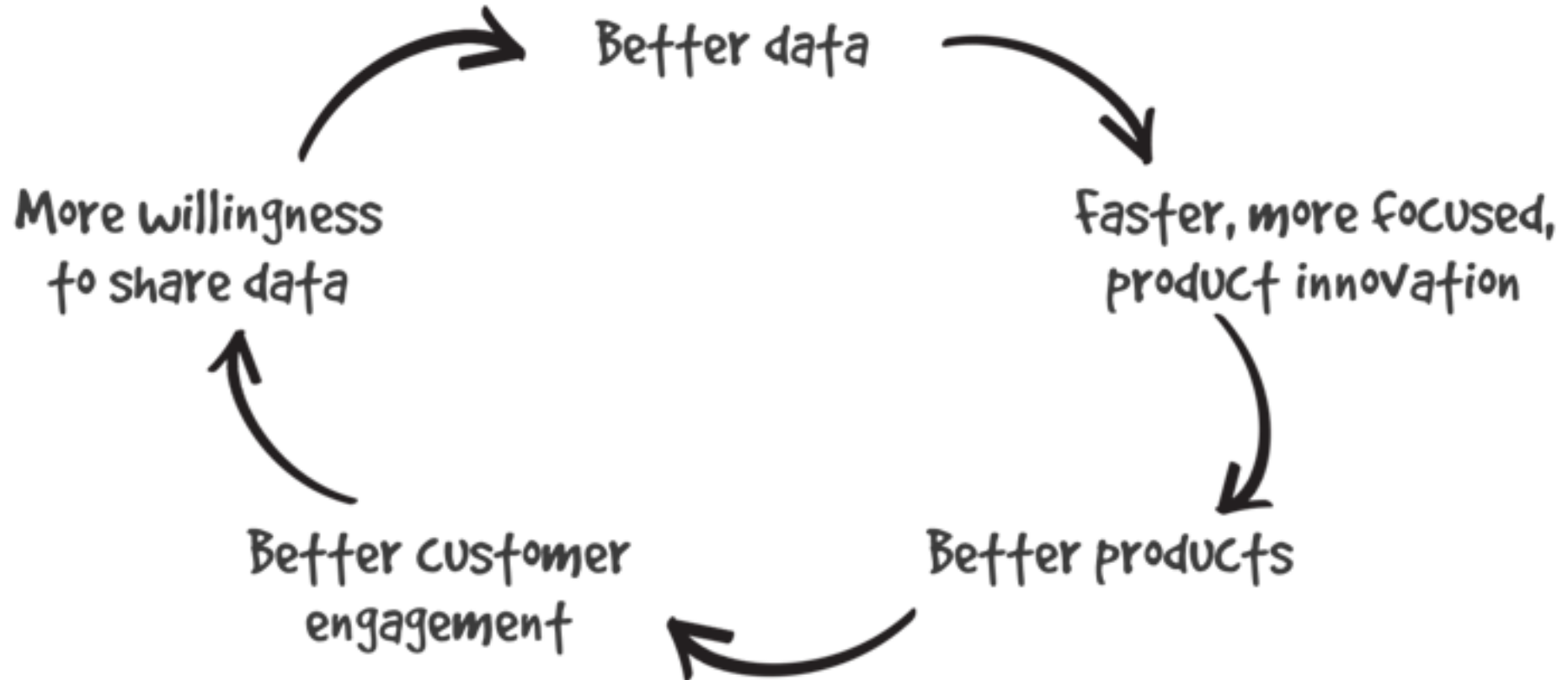


# Embracing Complexity: Cycles

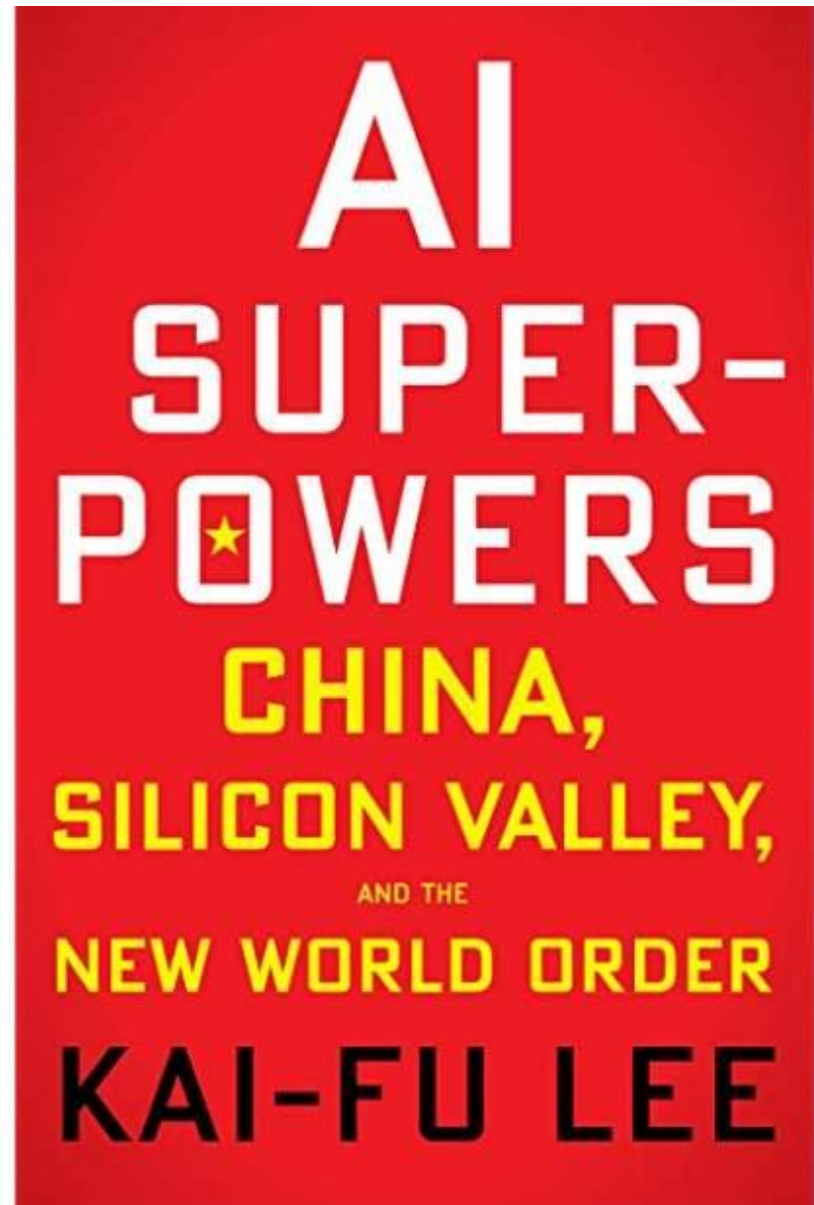
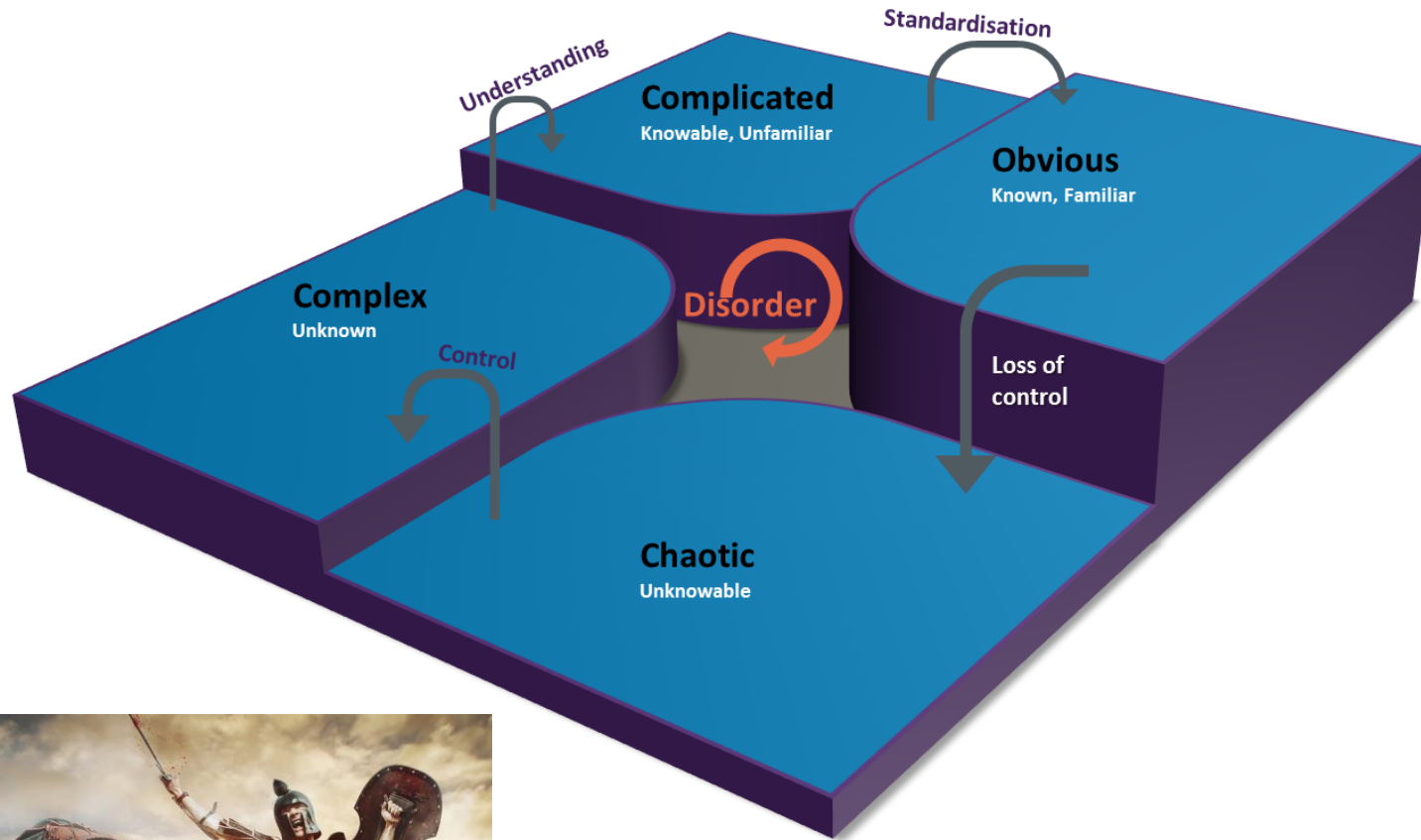


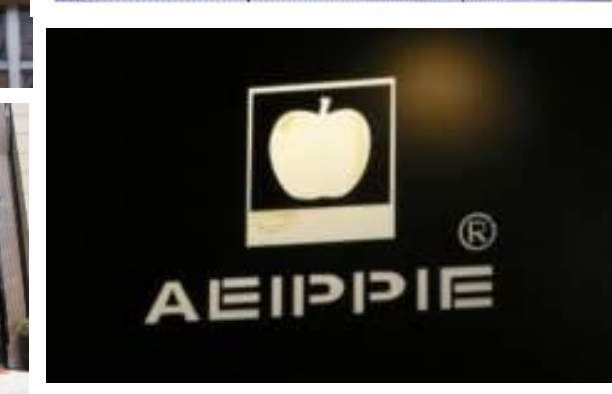
# Embracing Complexity: The Ultimate Winner-Takes-All Cycle

## The Virtuous cycle of Data



# Embracing Complexity...





# O2O - Online To Offline



**China's Big Complexity Management Advantage:**

**DATA**

**100Ms of O2O transactions daily**

**The meta-data never lies**  
(but it does speak a different language)

# Tencent's WeChat & Complexity



- Unsecured loans of up to £30,000  
App assesses a person's trustworthiness and likelihood of paying based on thousands of automatically gathered criteria:
- remaining battery-life
  - how quickly you typed your date-of-birth



# Culminating In: Social Credit System



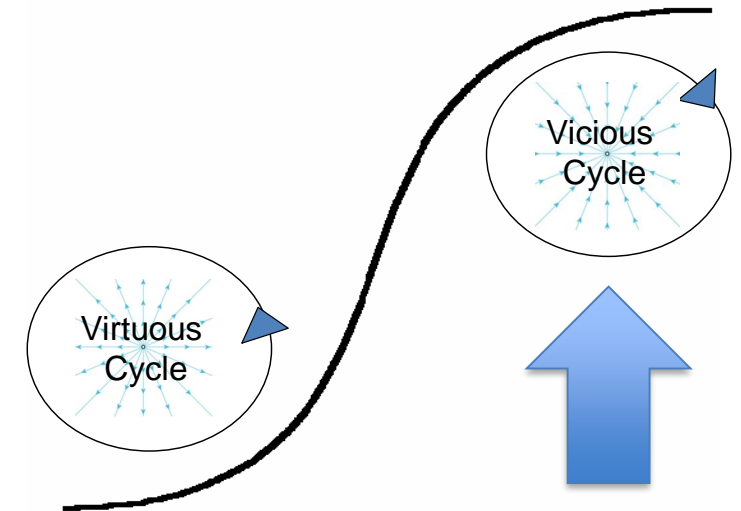
23 million 'discredited' citizens

(2018)

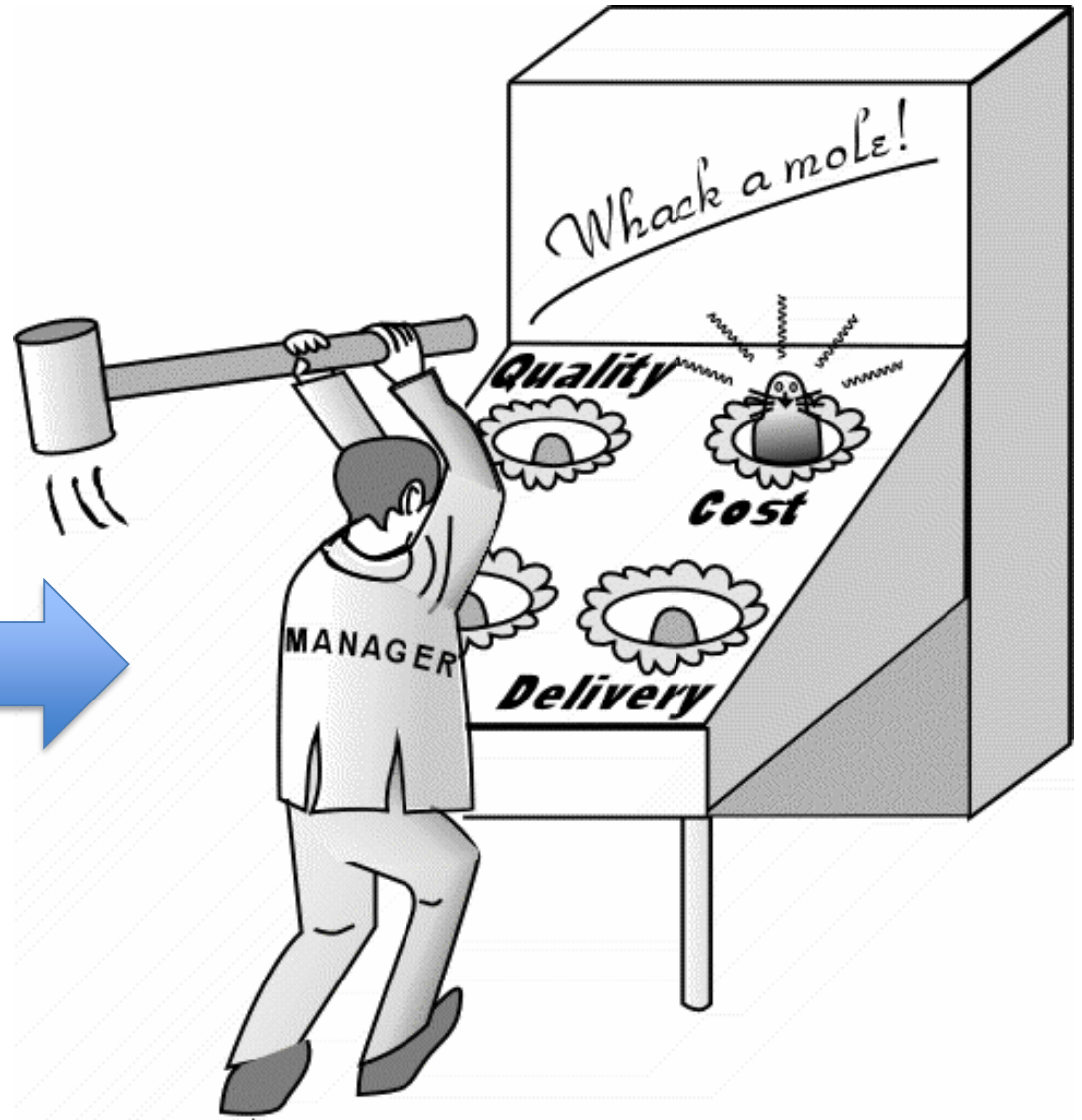
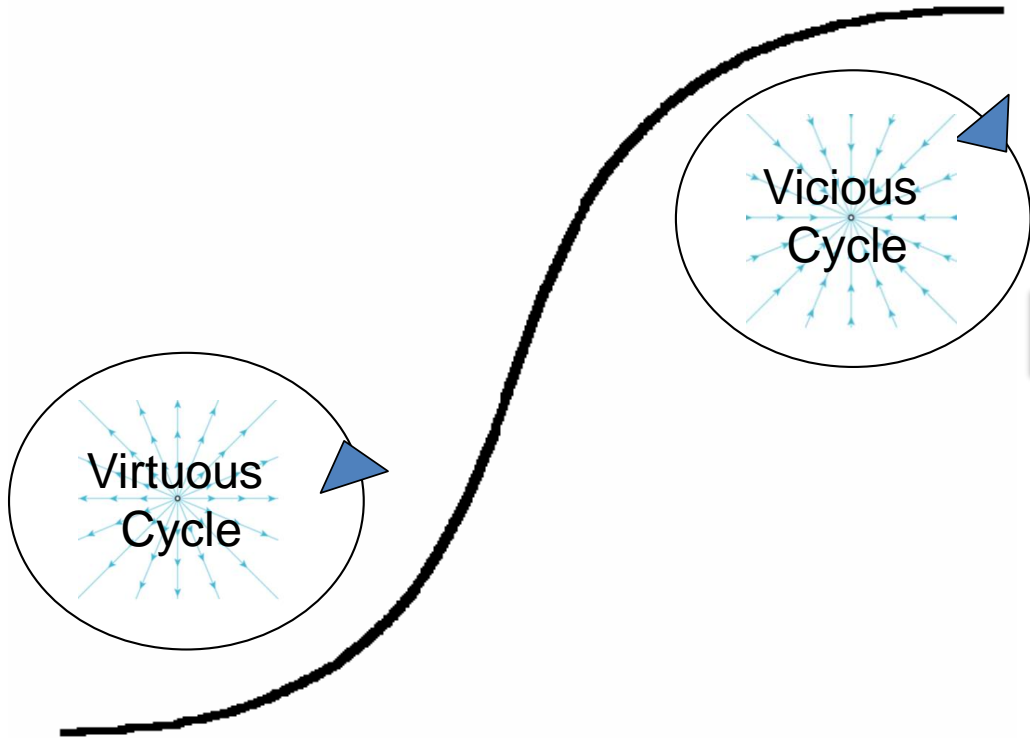
17million barred from flying

5.5million barred from rail travel

3.5M social credit tax sanctions



Most Industries Today









# Contradiction Solvers... And Not...

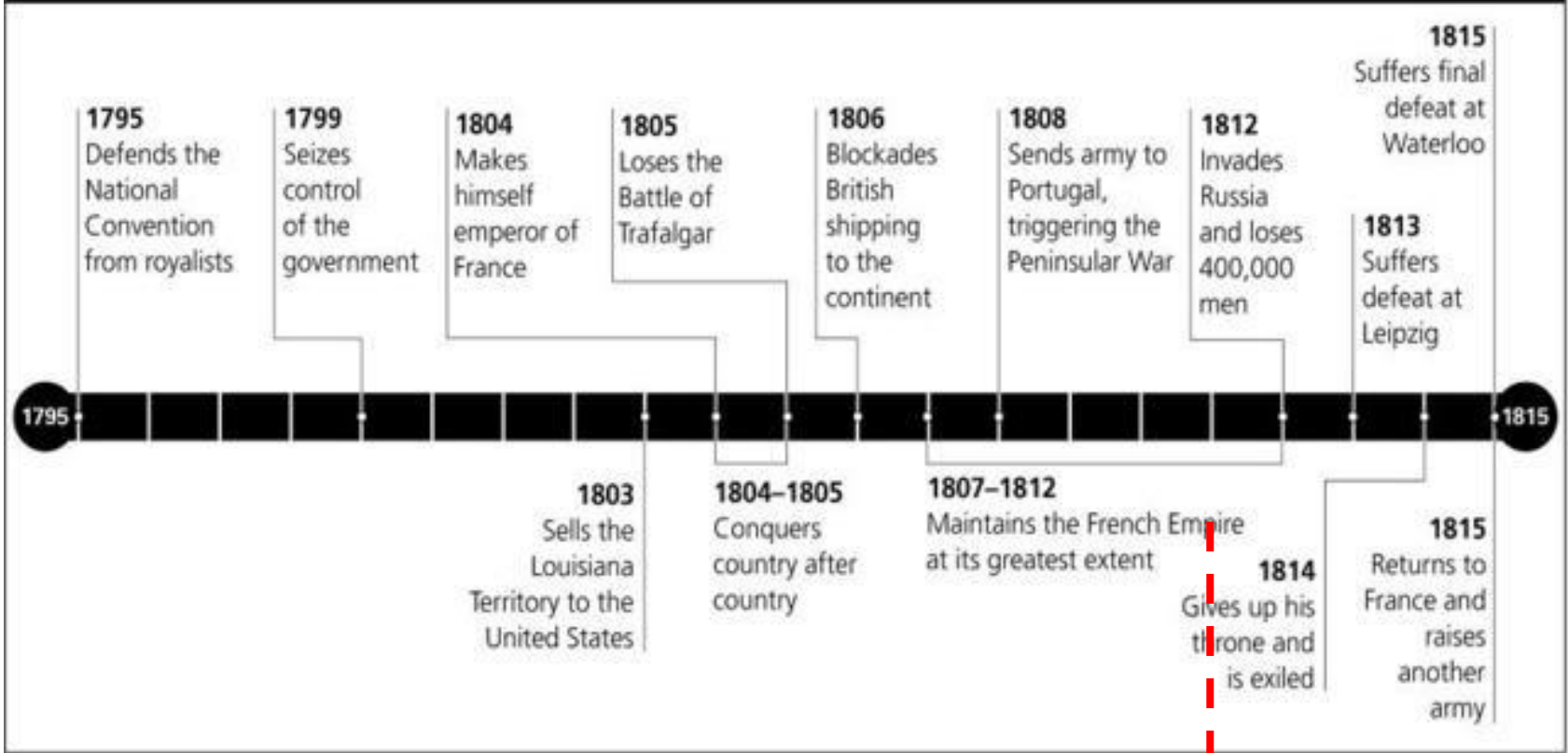


What made  
Napoleon so  
successful?...

... and then  
not?



# The Rise and Fall of Napoleon, 1795–1815



Austerlitz, Jena, Eylau, Friedland, Wagram

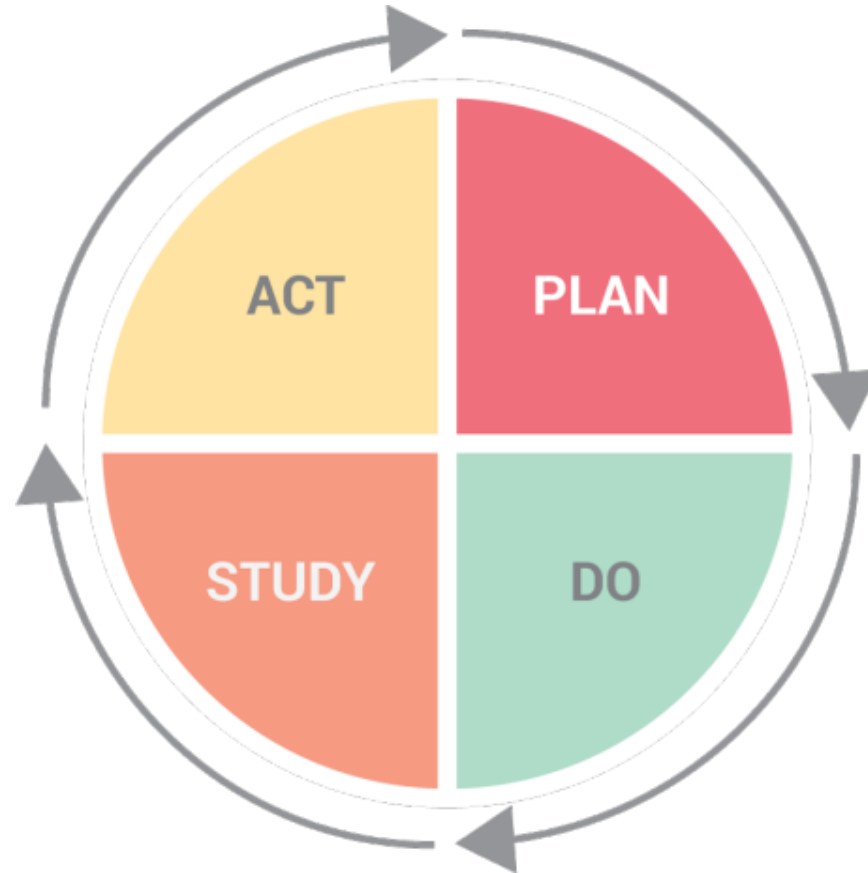
**“critical mass at the critical point”**

Hubristic Goal

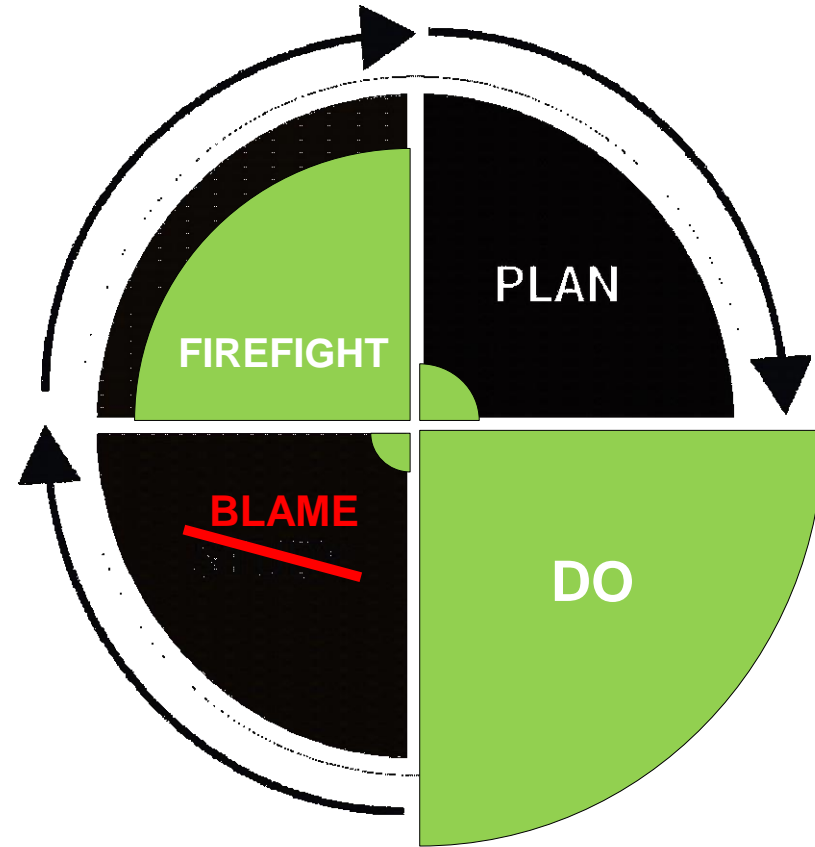


# Back To Operational Excellence...

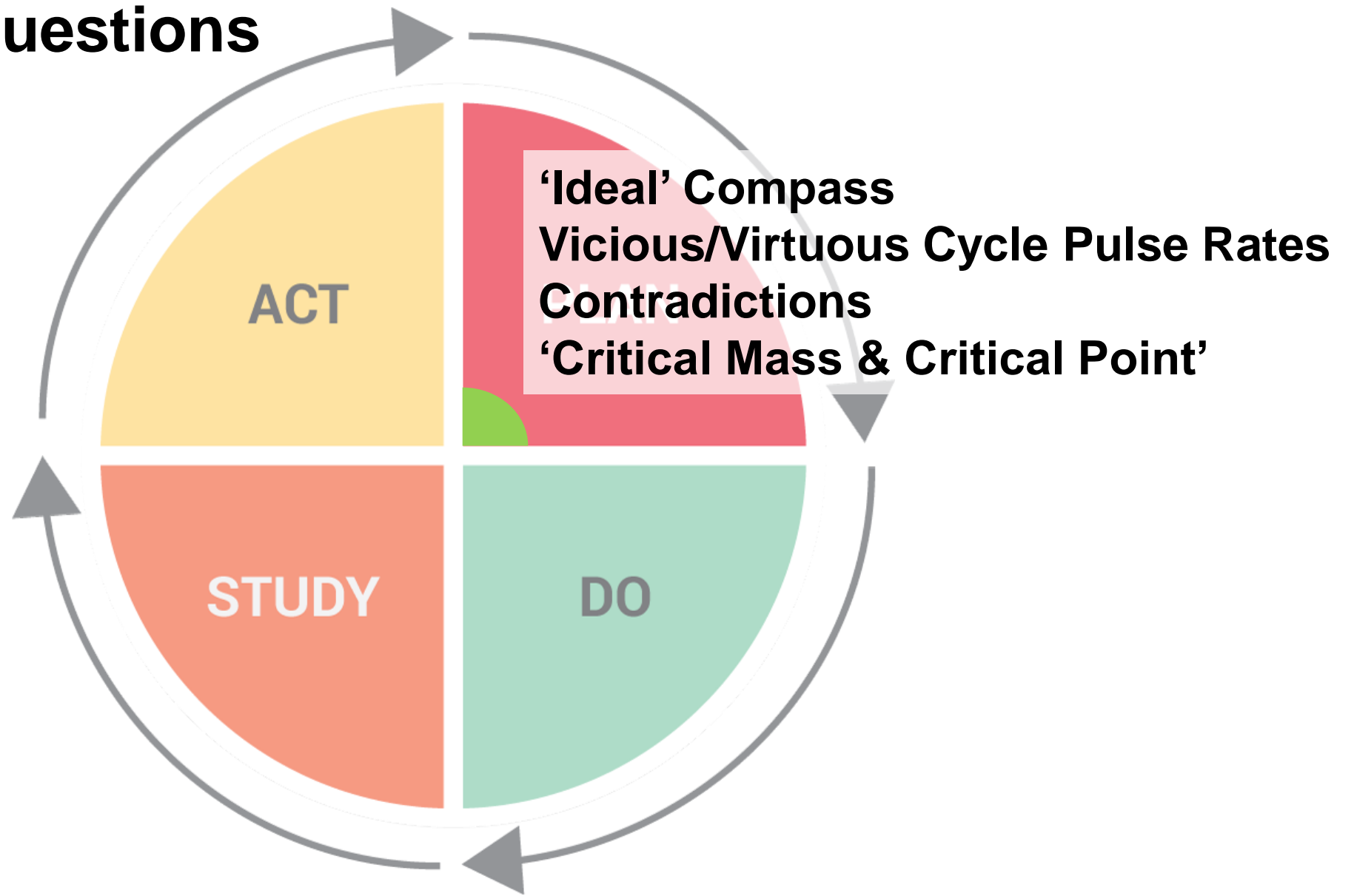
Theory:



Reality:



# Better (PM) Questions



# Where Next?

[www.trendna.com](http://www.trendna.com)



Customer  
Need

Best  
Solution

Best  
Execution



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