Agile in a Highly Regulated Industry

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A Little History…

My goals for this presentation:

- Share ways that Quality Assurance managers can enable guide highly-regulated organizations...

- ... so that they that can adapt to highly volitile and highly complex markets...

- ...through the adoption of adaptive management practices sitting astride...

- ...the Agile Values and Principles

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WHAT IS AGILE?

Agile Is...

Values

Principles

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A Process Methodology

Less Disciplined Than Traditional Management

WHAT IS QUALITY?

What is quality?

What makes a product a quality product?

Zero defects

Elegant coding

Low development costs

High performance

Lots of features

Rapid development

Conforms to requirements

User friendly

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Quality

~~"Beauty~~ in things exists merely in the mind which contemplates them."

David Hume, Essays Moral and Political, 1742

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Who cares about these definitions

Elegant coding

Zero defects

Low development costs

High performance

Lots of features

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A hard truth about quality …

More quality for one person may mean less quality for another

So, whose opinion of quality is to count when making decisions?

Is this a quality car?

Ford Pinto

Development Specification: The car was not to weigh an ounce over 2,000 pounds and not cost a cent over $2,000.
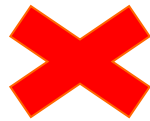
What determines quality?

Conforms to requirements ✔ Per the engineers at Ford

Passenger safety ✖ Drivers and National Highway Traffic Safety Administration

Meets design and manufacturing constraints ✔ Ford engineering

Positive ROI ✔ Finance department

Meets cost constraints ✔ Management

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Should we fix the problem?

BENEFITS & COSTS ANALYSIS

Excerpt: Ford Inter Office Memo, September 18, 1973

BENEFITS

180 burn deaths	$200,000 per death	$36,000,000
180 serious burn injuries	$67,000 per injury	$12,060,000
2,100 burned vehicles	$700 per vehicle	$1,470,000
		$49.5 Million

COSTS

11,000,000 cars	$11 per car	$121,000,000
1,500,000 light trucks	$11 per truck	$16,500,000
		$137.5 Million

Cost-Benefit Analysis

Cost to fix exceeds assumed benefits. Spending $11 per car to fix the problem wasn't sound financially.

Points to Ponder

- Is conformance to requirements enough? Was the Pinto a quality car as it conformed to all the requirements for a Pinto?

- If I requested a Pinto and you developed a Cadillac is the result a quality product?

- Whose opinion is paramount when determining quality in your particular situation?

Points to Ponder

- Is shipping your product a business decision or a quality decision?

- Is testing a mechanism to assess risk of product shipment or a mechanism to find "all" of the defects?

- Is it OK if management doesn't give you more time to find more defects? After all aren't they paying you to do the job they want done (i.e., what they find valuable about your work)?

What is and isn't Quality

Quality is not:

- Implementing all requirements pre-specified in a requirements document

- Ensuring consistency with older products

- Degree of excellence

Quality is: Fitness for business purpose

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Process Compliance ≠ Quality Product

Process Compliance ≠ Regulatory Compliance

Implications for Highly Regulated Industries

Do you Grok?

Grok

[grok] Slang.
verb (used with object)
1. to understand thoroughly and intuitively.

verb (used without object)
2. to communicate sympathetically.

Origin: coined by Robert A. Heinlein in the science-fiction novel Stranger in a Strange Land (1961)

Dictionary.com Unabridged
Based on the Random House Dictionary, © Random House, Inc. 2013.

Do you Grok?

Grok

"Grok means to understand so thoroughly that the observer becomes a part of the observed—to merge, blend, intermarry, lose identity in group experience. It means almost everything that we mean by religion, philosophy, and science—and it means as little to us (because of our Earthling assumptions) as color means to a blind man."

Heinlein, Robert A. (1987-05-15). Stranger in a Strange Land (Remembering Tomorrow) (Kindle Location 4057). Ace. Kindle Edition.

PROBLEM #1:

MIDDLE MANAGEMENT BUDGET GAMES CAUSED BY THE UNKNOWN UNKNOWNS OF REGULATORY COMPLIANCE

Problem #1: Solution Ideas

- Long Lived Teams of 5-9 people

- Use metrics to estimate
  - Velocity/Throughput
  - Automated Test Coverage of Code
  - Automated Builds and Deployments
  - SLA's on type of work

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Problem #1: Solution Ideas

- Use metrics to estimate
  - Velocity/Throughput
  - Automated Test Coverage of Code
  - Automated Builds and Deployments
  - SLA's on type of work

Problem #1: Solution Ideas

- Use short 2-4 week iterations and buffers NOT padding to deal with uncertainty
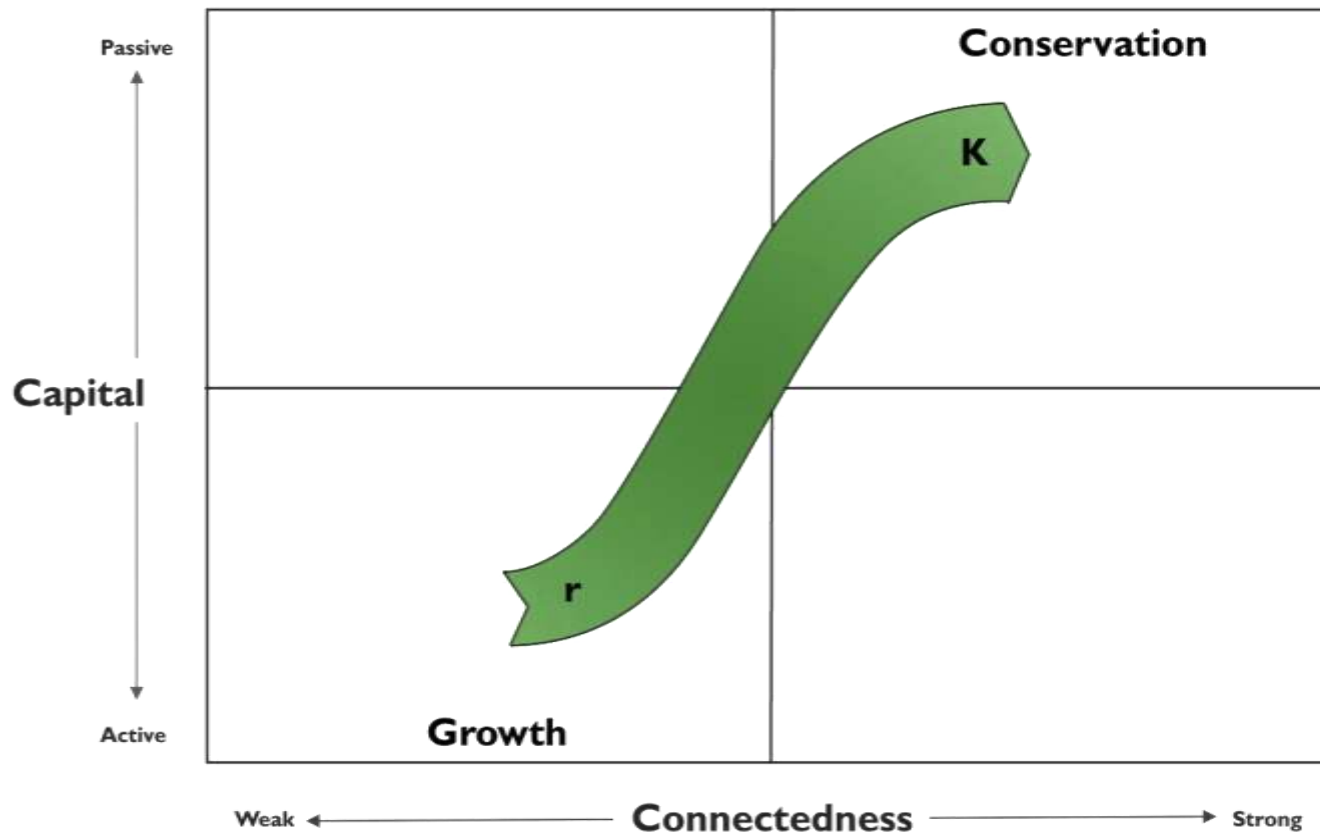
Problem #1: Solution Ideas

- Use 18 month running quarterly budget estimates: dump the annual budget cycle everywhere except for the shareholders.

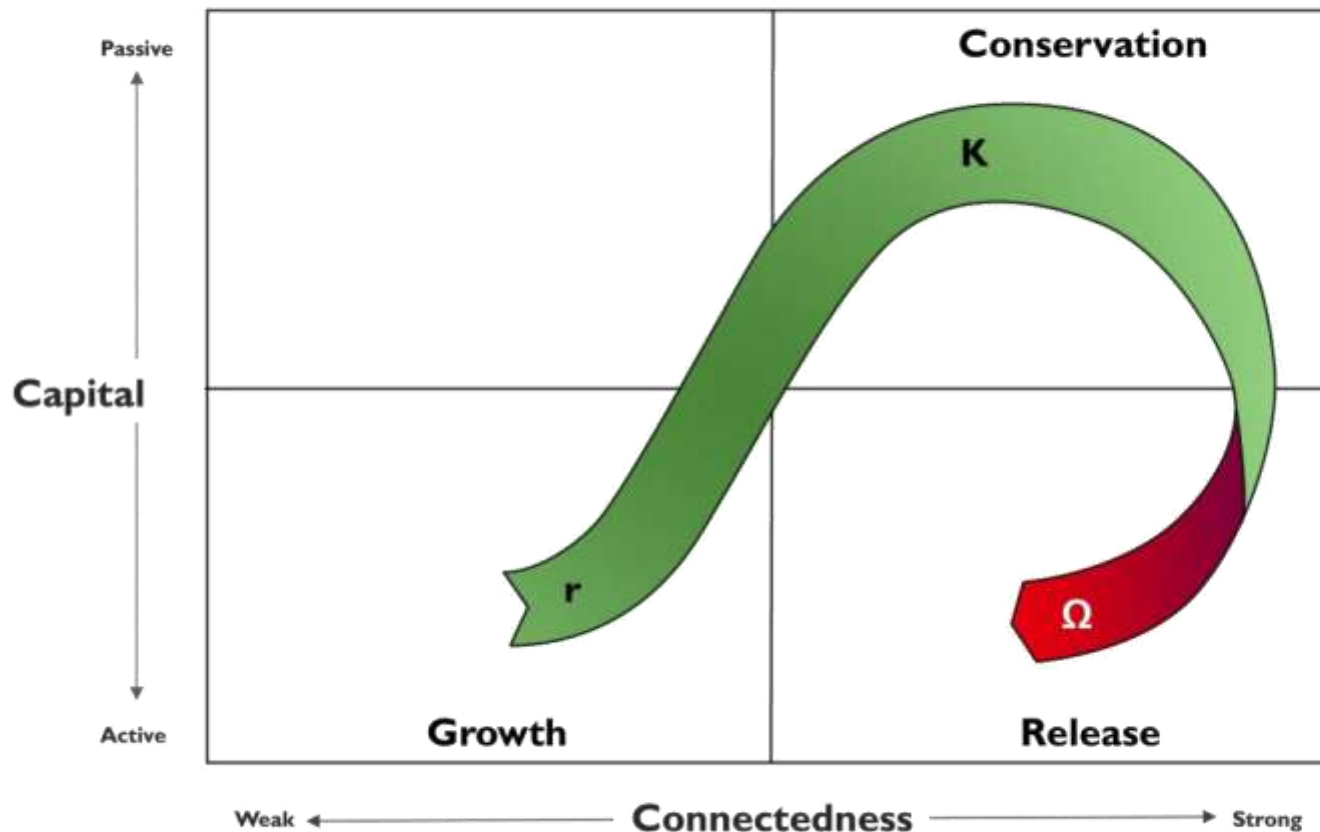# DECISION MAKING BIAS IN LEADERSHIP CAUSED BY REGULATORY COMPLIANCE WORRIES
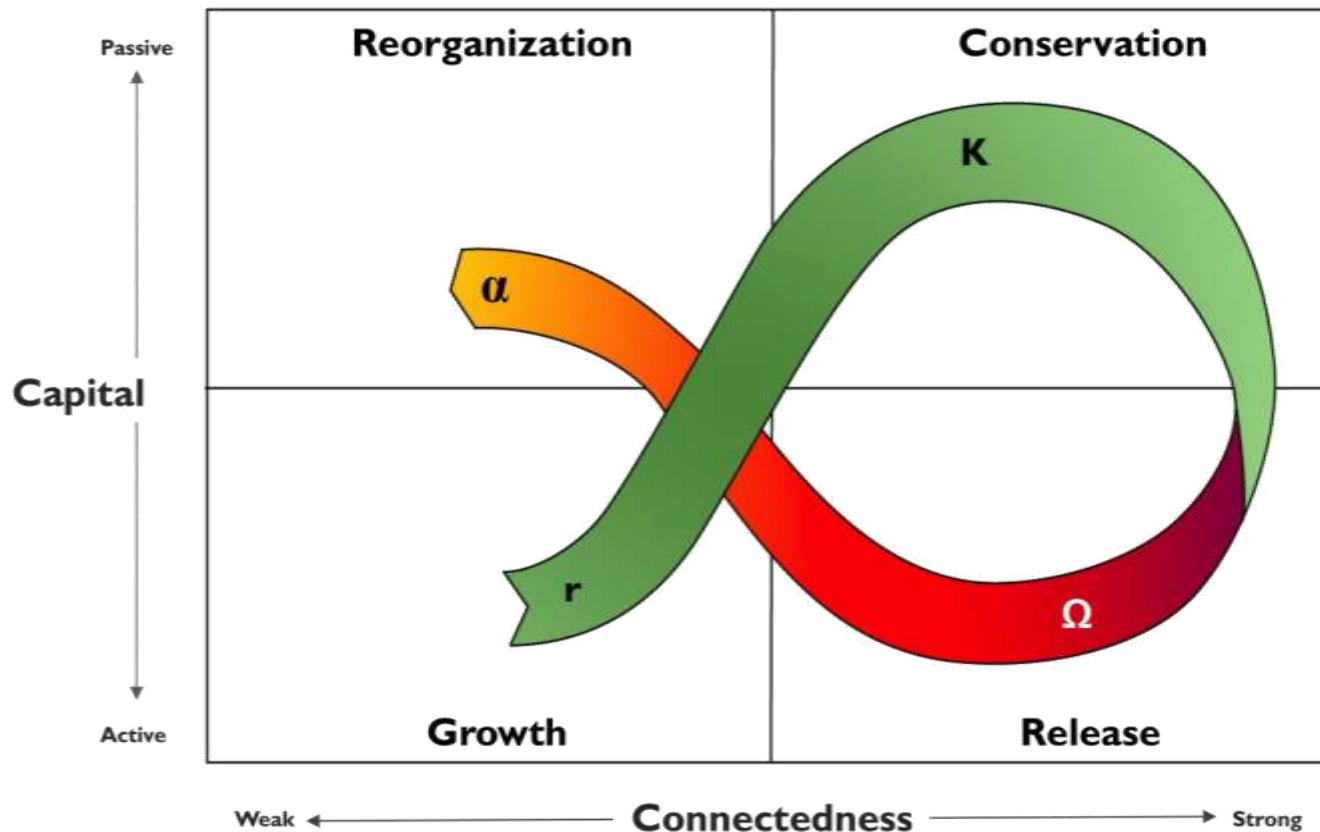
Problem #2: Solution Ideas

Cycle of adaptive change

Source: Holling, 1987

Problem #2: Solution Ideas

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Problem #2: Solution Ideas

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Problem #2: Solution Ideas

Cycle of adaptive change

	Passive
Complex	**Simple**
Cause and Effect are only coherent in retrospect and do not repeat	Cause and effect relations repeatable, perceivable and predictable
Probe-Sense-Respond	Sense-Categorize-Respond

Capital

Cause and effect separated over time and space	No cause and effect relationships perceivable
Sense-Analyze-Respond	Act-Sense-Respond
Complicated	**Chaotic**

Active

Weak ← **Connectedness** → Strong

Source: Holling, 1987

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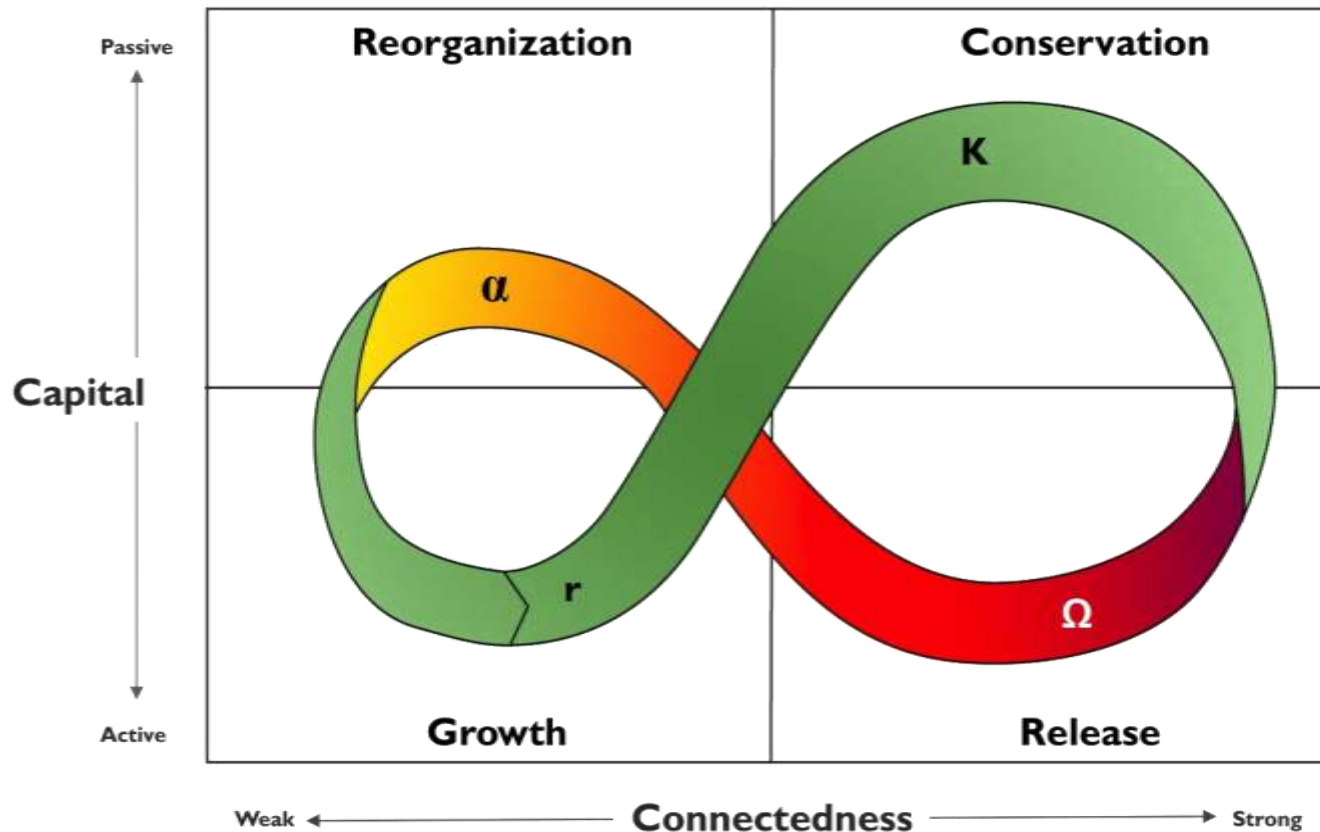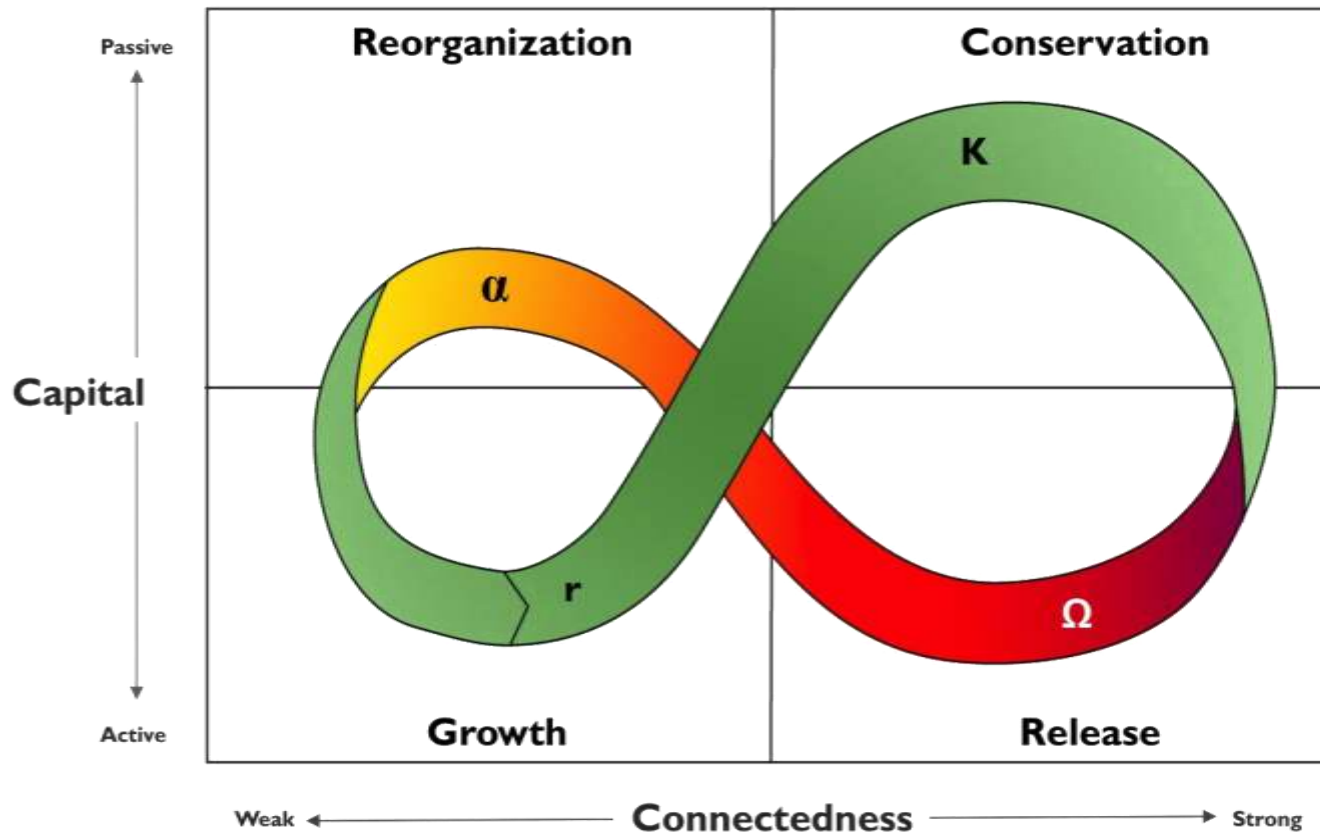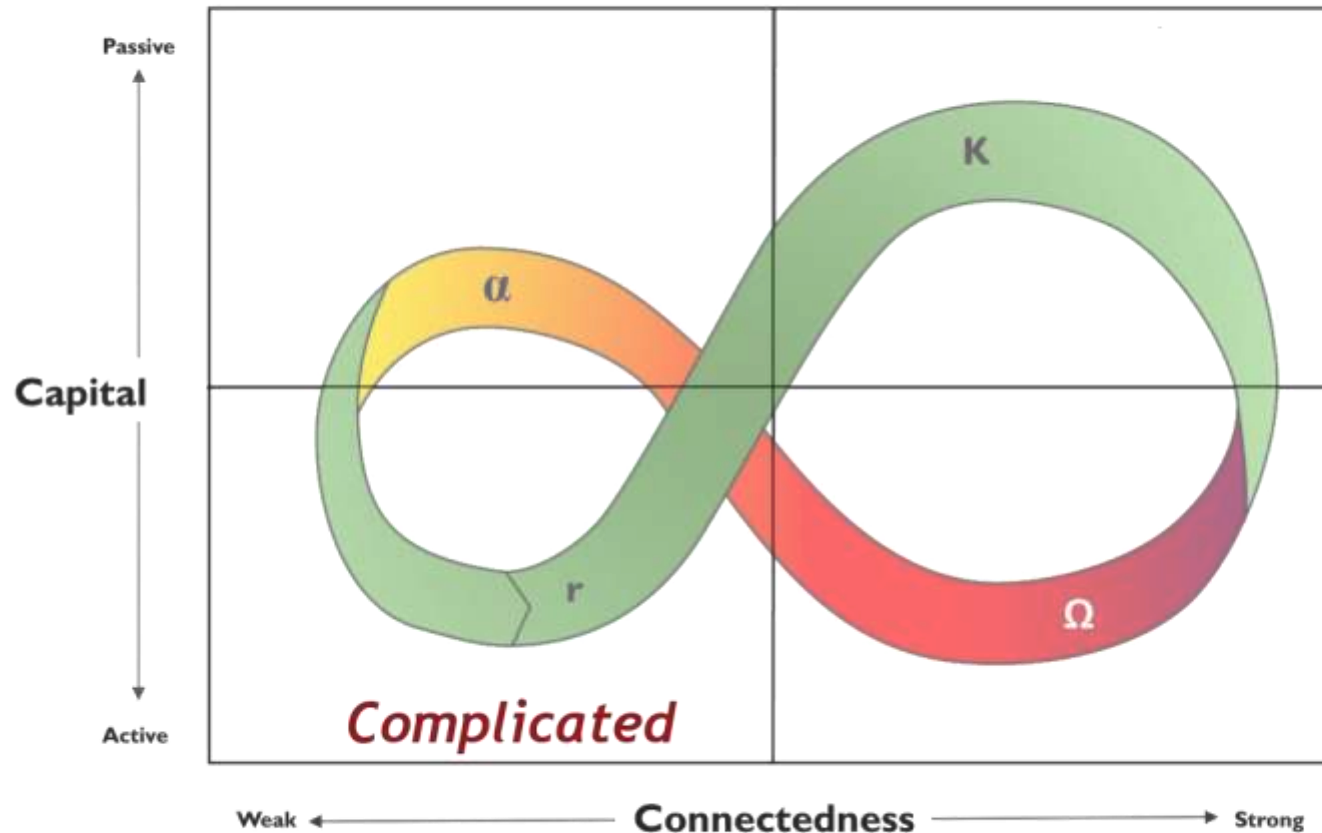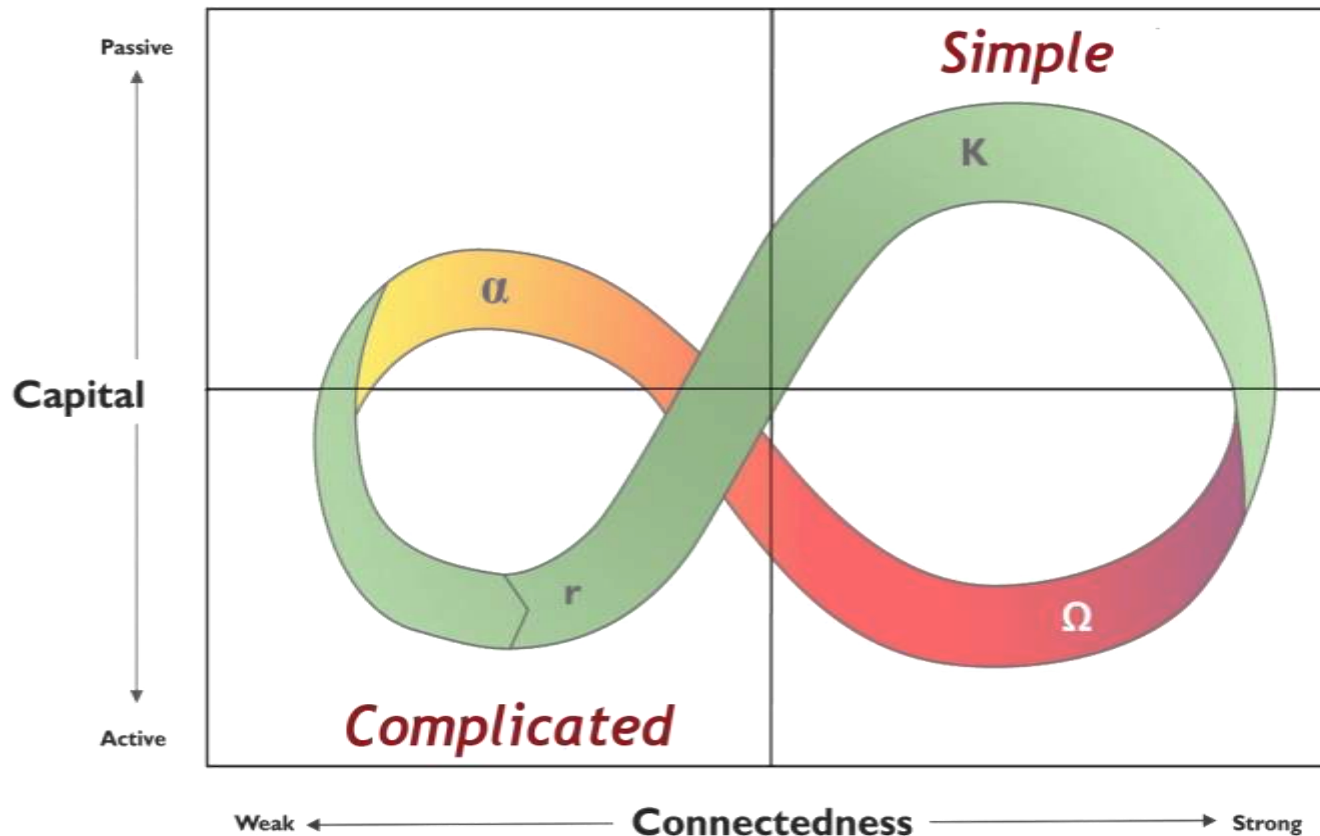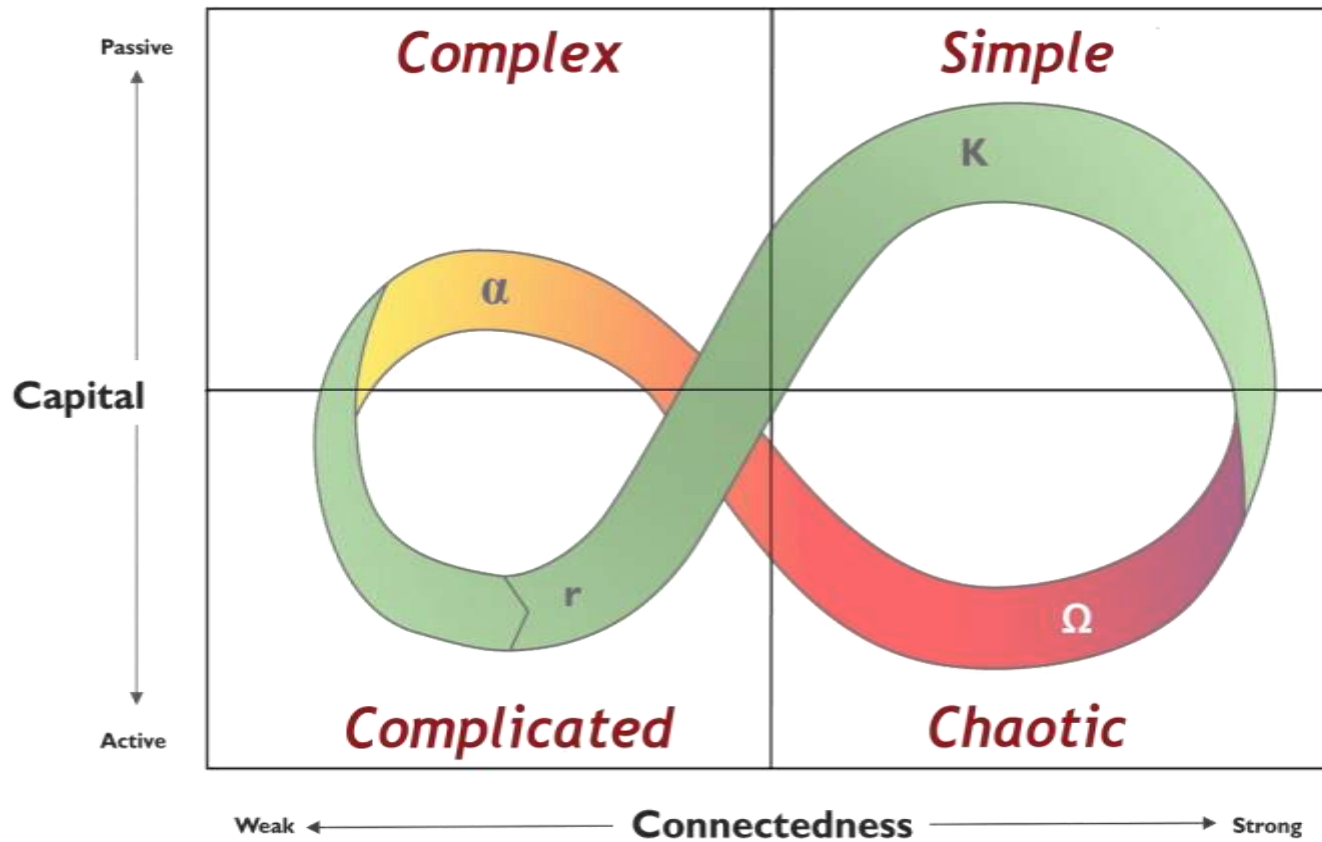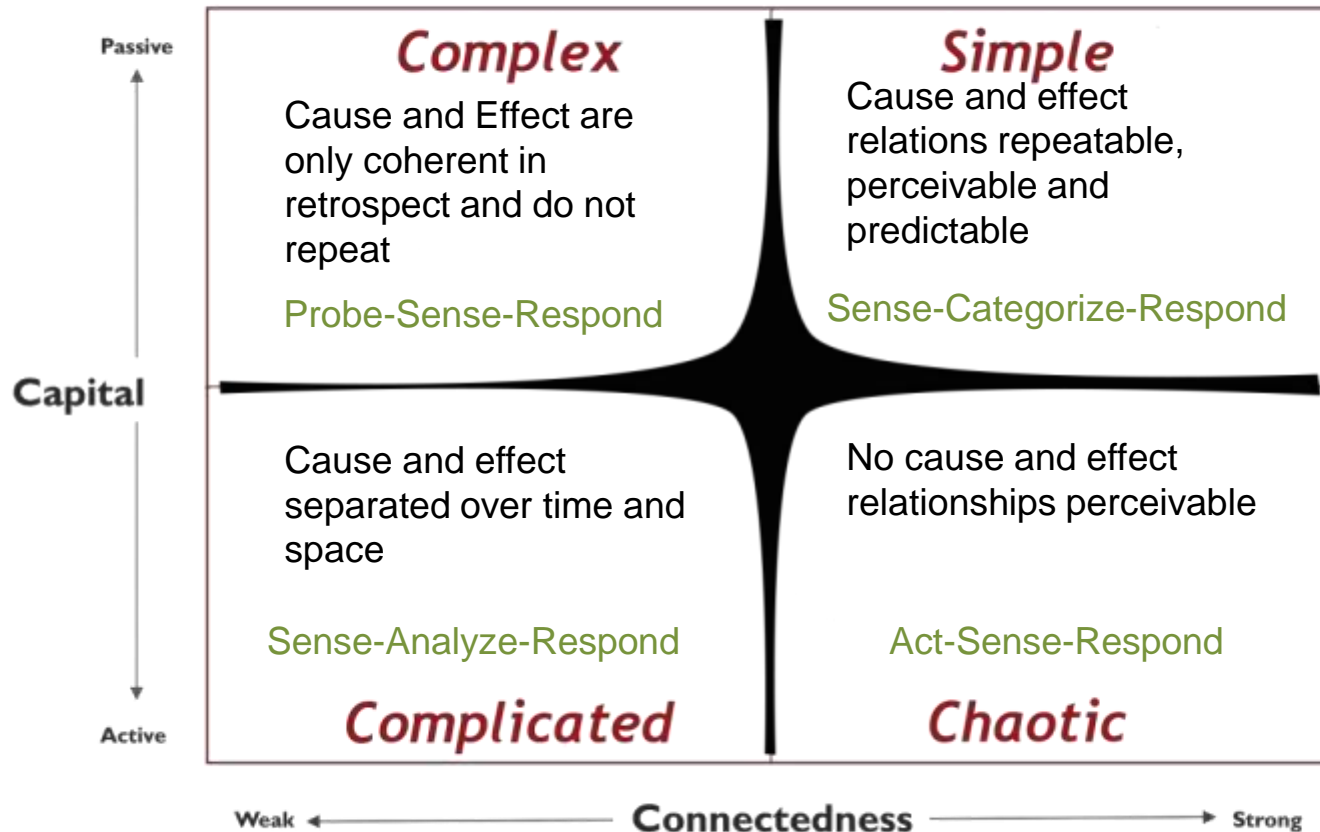
PROBLEM #3:

NOT UNDERSTANDING THE EFFECTS OF OUTSOURCING THE WRONG THINGS

The Outsourcing Dilemma

- Outsourcing is demoralizing to employees
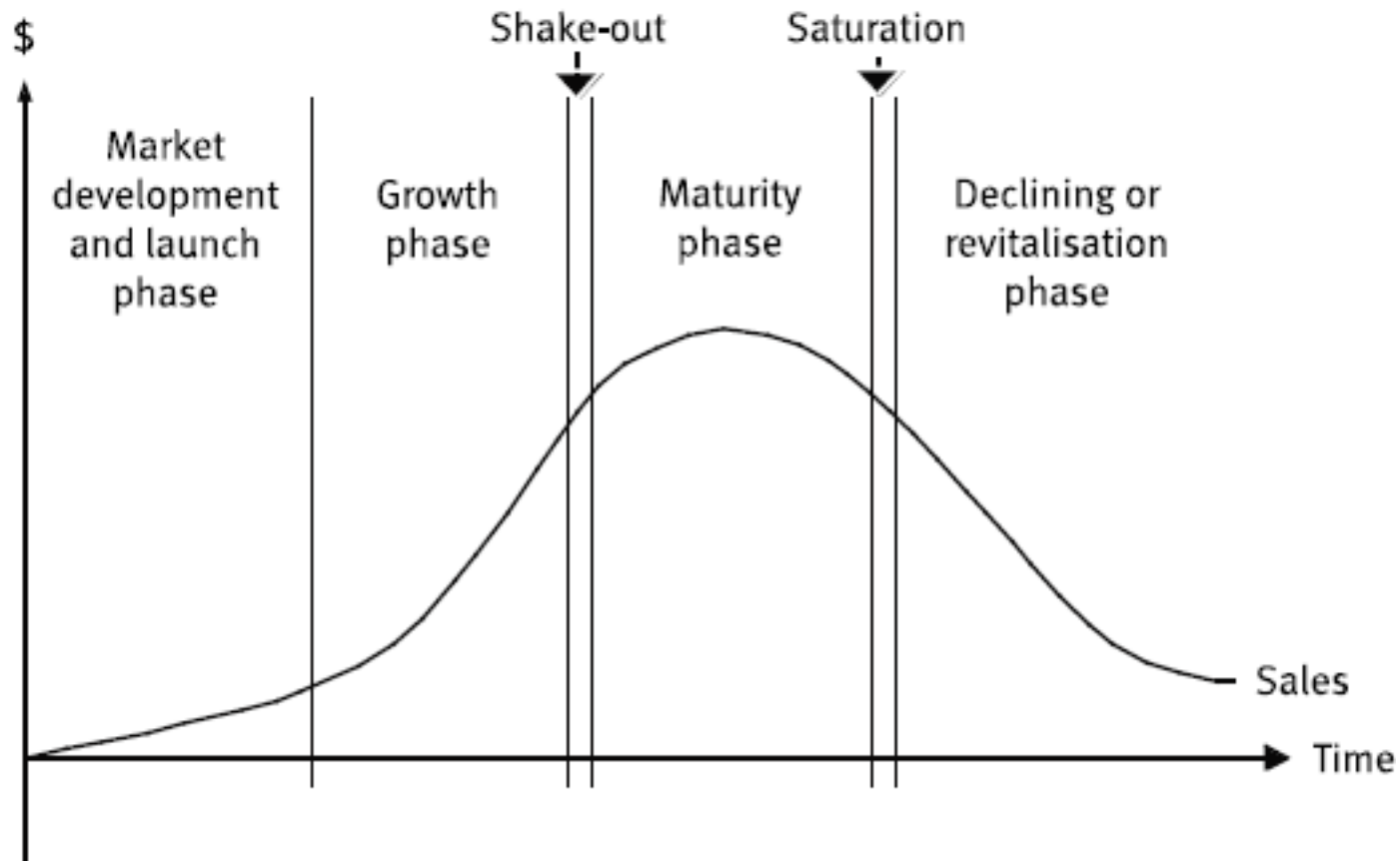- Good for dealing with "rebooting" a group of people: outsource-downsize-insource (of EVIL REPUTATION)
- Mix of employees and contractors never "gels" and becomes a high-performance team

Where are you in the product lifecycle?

Problem #3: Solution Ideas

$

Shake-out   Saturation

Market development and launch phase

Growth phase

Maturity phase

Declining or revitalisation phase

Sales

Time

Use Internal Employees

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Problem #3: Solution Ideas

$ — Market development and launch phase | Growth phase | Shakeout | Maturity phase | Saturation | Declining or revitalisation phase — Sales — Time
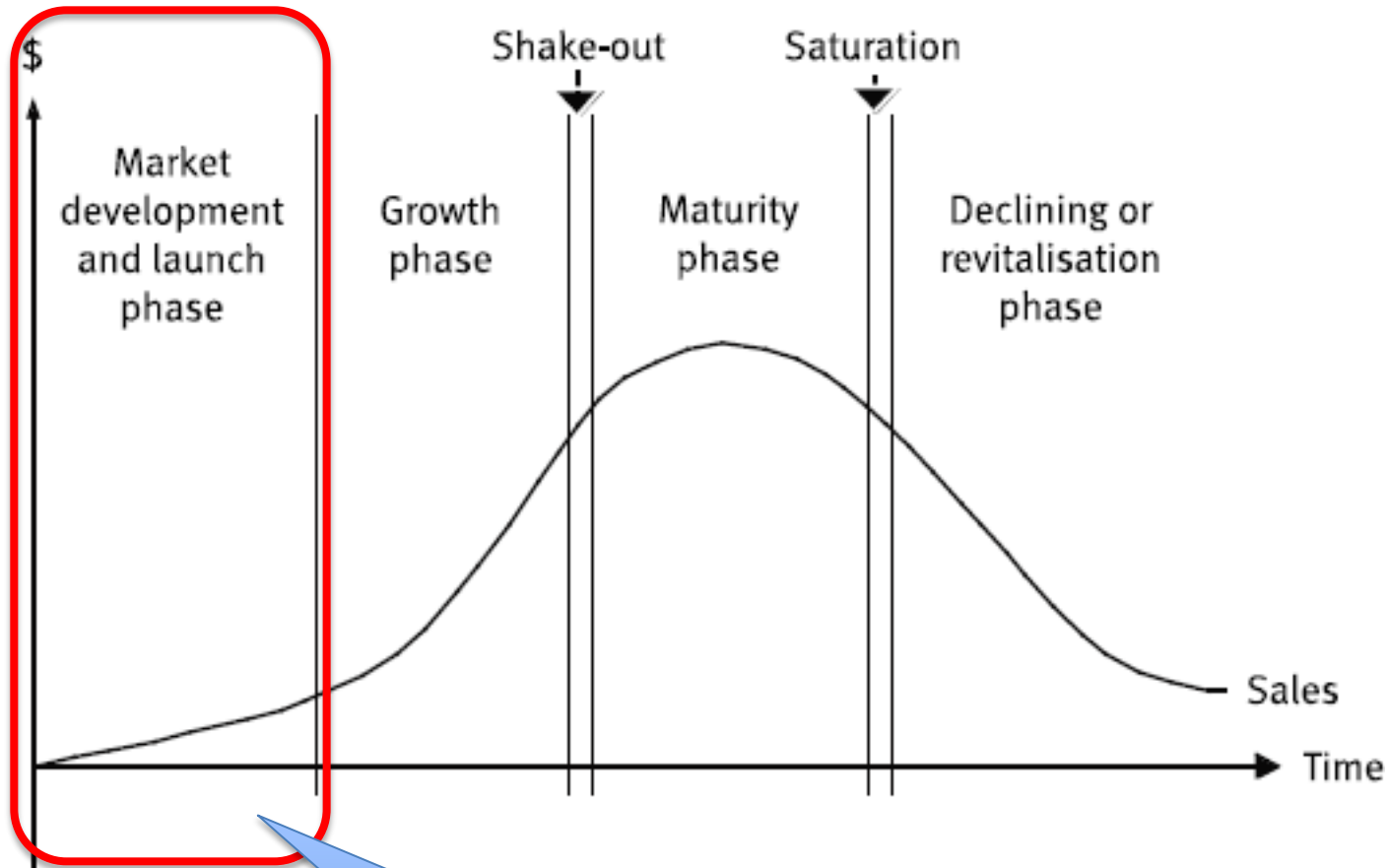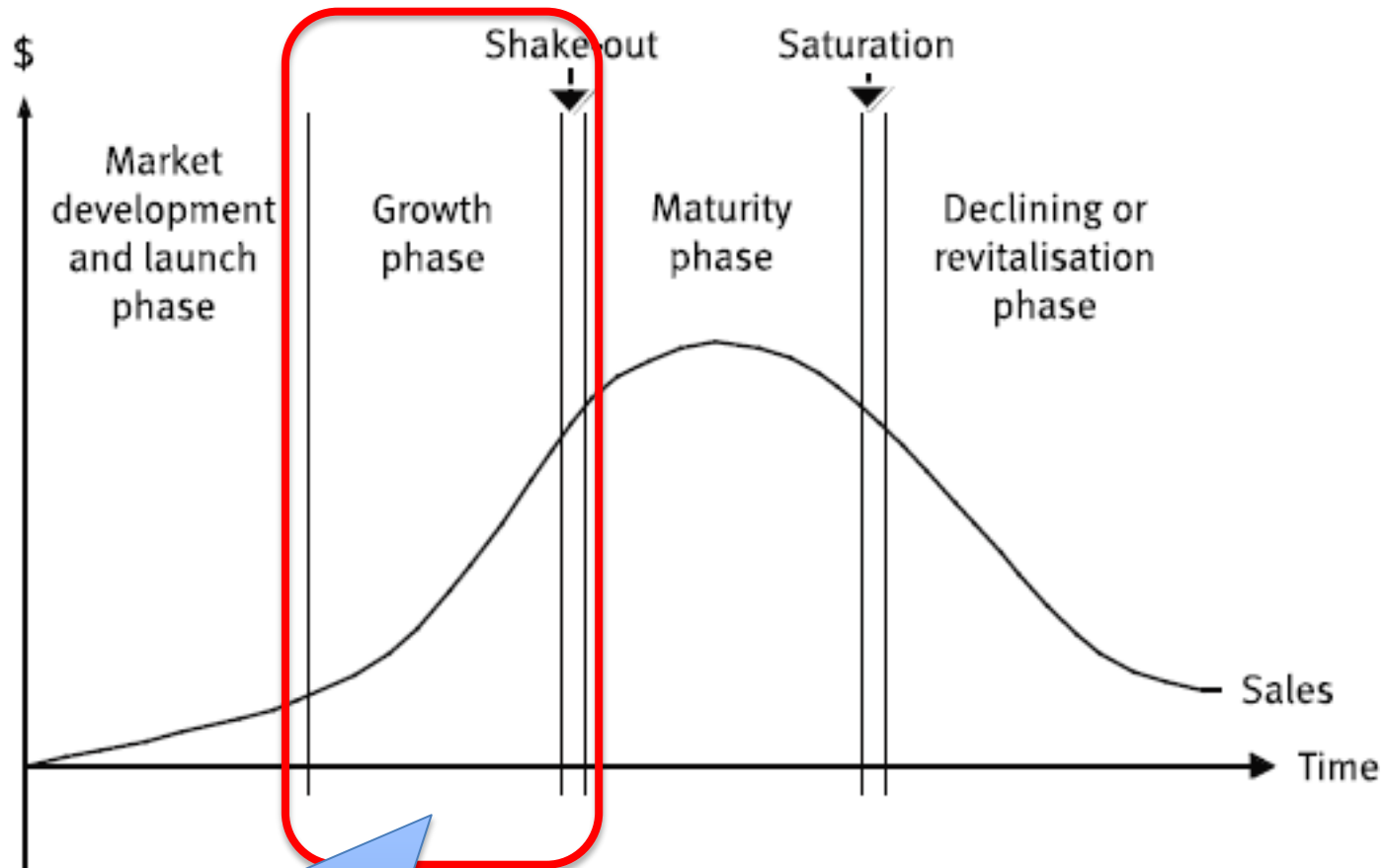
Use combination of Internal Employees and Contractors

Problem #3: Solution Ideas

Problem #3: Solution Ideas

Problem #3: Solution Ideas

- Team Size Matters: 5-9 people per team

- Collocated teams work best: Non-collocated teams aren't teams

- Globally/Nearshore distributed teams must be self-contained autonomous units: no developer here and testing there.

PROBLEM #4:

ALLOWING PROCESS LANGUAGE IN REGULATIONS TO CAUSE A FOCUS ON QUALITY PROCESSES

Problem #4: Solution Ideas

- Focus on the intent of the language.
  - What controls are required?
  - What ideas about the controls can be harvested by the people doing the work?

    (The Rufus Scenario!)

PROBLEM #5:

REGULATORY COMPLIANCE AS AN EXCUSE (WE CAN'T CHANGE BECAUSE "WE WOULD BE NON-COMPLIANT")

COMMITMENT

Success is largely a matter of hanging on after others have let go.

FunnyDemotivationalPosters.com

Problem #5: Solution Ideas

Enrollment: Commitment

Enrollment: Commitment vs. Compliance

Source: "The Fifth Discipline", Senge

Enrollment Levels

Committed: Wants it, will make it happen, creating/changing "laws"

Enrolled: Wants it, will do anything "within spirit of the law"

Genuine Compliance: Sees the benefits. Follow "Letter of the law"

Formal Compliance: Sees benefits in general. Does what's expected

Grudging Compliance: Does not see the benefits, but does what has to

Noncompliance: Does not see benefits, does not do it

Apathy: No interest nor energy

Greater Power of Self Organization

Source: "The Fifth Discipline", Senge

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Enrollment Exercise

Committed: Wants it, will make it happen, creating/changing "laws"

The speed limit is 55 on most highways.

Enrolled: Wants it, will do whatever "within spirit of the law"

Always drive under 55.

Genuine Compliance: Sees and believes in the benefits. "Letter of the law"

Follow the limit exactly.

Formal Compliance: Sees the benefits in general. Does what's expected

Sometimes overshoot by a few mph.

Grudging Compliance: Does not see the benefits, but does what has to

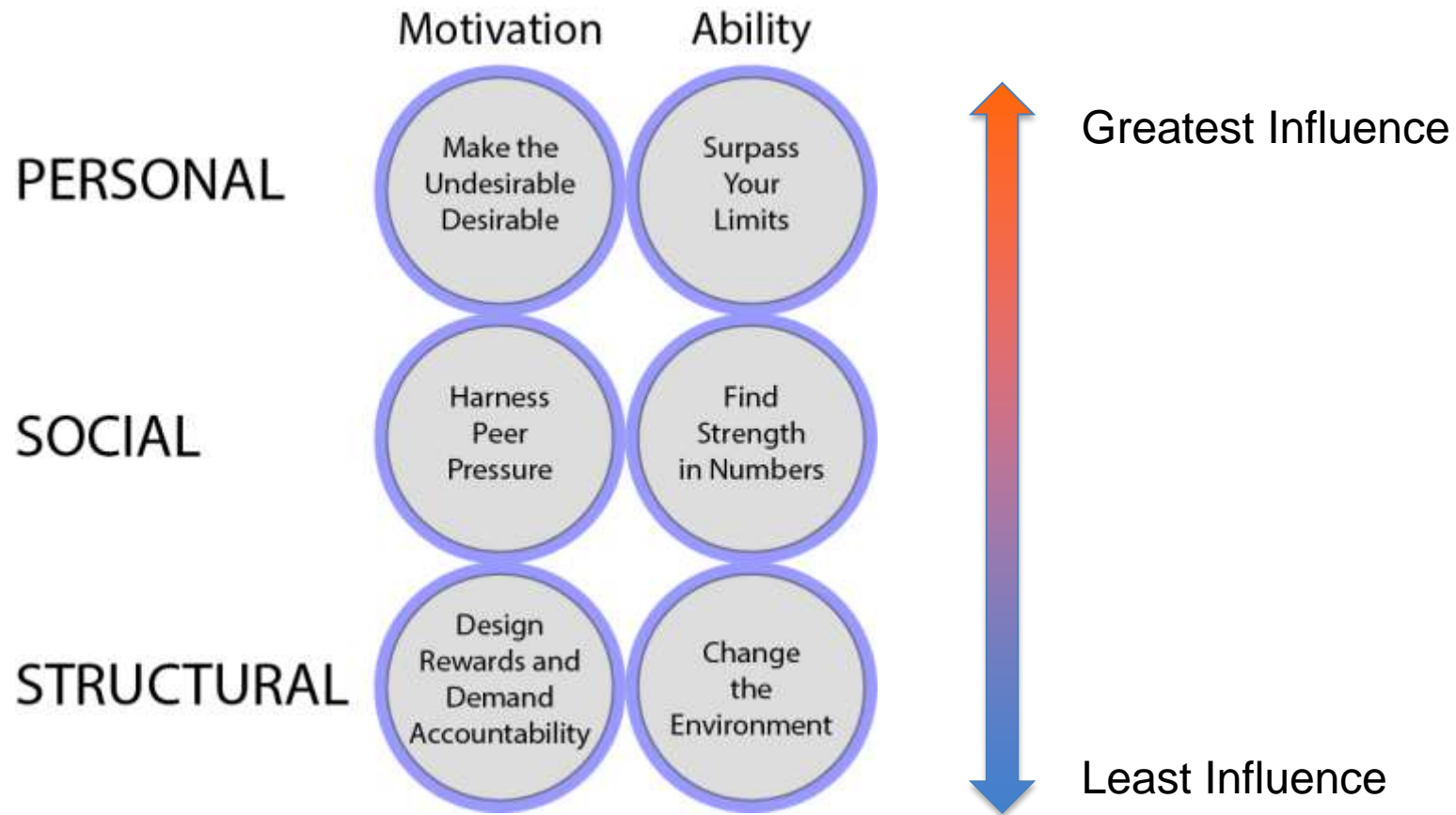Sometimes overshoot, complain a lot.

Noncompliance: Does not see benefits, does not do it

Gun it. Outrun the cops.

Apathy: No interest nor energy.

Drive?

Source: "The Fifth Discipline", Senge

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Influence Model

	Motivation	Ability
PERSONAL	Make the Undesirable Desirable	Surpass Your Limits
SOCIAL	Harness Peer Pressure	Find Strength in Numbers
STRUCTURAL	Design Rewards and Demand Accountability	Change the Environment

Greatest Influence

Least Influence

Source: Patterson, Kerry; Grenny, Joseph; David Maxfield; Ron McMillan; Al Switzler (2007-08-22). Influencer: The Power to Change Anything (p. 79). McGraw-Hill. Kindle Edition.

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Problem #5: Solution Ideas

- Focus on a culture of volunteerism and responsibility
  - Give the team the Vision
  - Ask the team for creative solutions
- Use the Influence Model for designing Structures for Support to encourage and reinforce volunteerism and responsibility

COMMITMENT

Success is largely a matter of hanging on after others have let go.

FunnyDemotivationalPosters.com

PROBLEM #6: REGULATORY COMPLIANCE STUNTS SUSTAINABLE INNOVATION

Where does Innovation come from?

Where does Innovation come from?

Problem #6: Solution Ideas

- Understand the difference between sustaining innovation and disruptive innovation

- Leave room in your governance and compliance structures for both

- Don't accidently create Waterfall-by-Default governance stage-gates: use Agile Stage Gates

- Create reward structures that reward sustaining innovation, continuous improvements and regulatory compliance that simultaneously punishes deviation from Agile Values and Principles

SUMMARY

Summary

- Operating in a Highly Regulated Industry often causes many unintended consequences leaving organizations ill-equipped to navigate exponential increases in complexity of doing business in the Global Marketplace

- Adopting Agile Values and Principles along with Agile and Adaptive Management Practices equips managers with the foundation to deal with exponential increases in competitiveness while removing many of the unintentional side-effects of being highly-regulated.

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