



Sir Ewen Waterman Oration

Disruptive innovations – a natural history...

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Overview

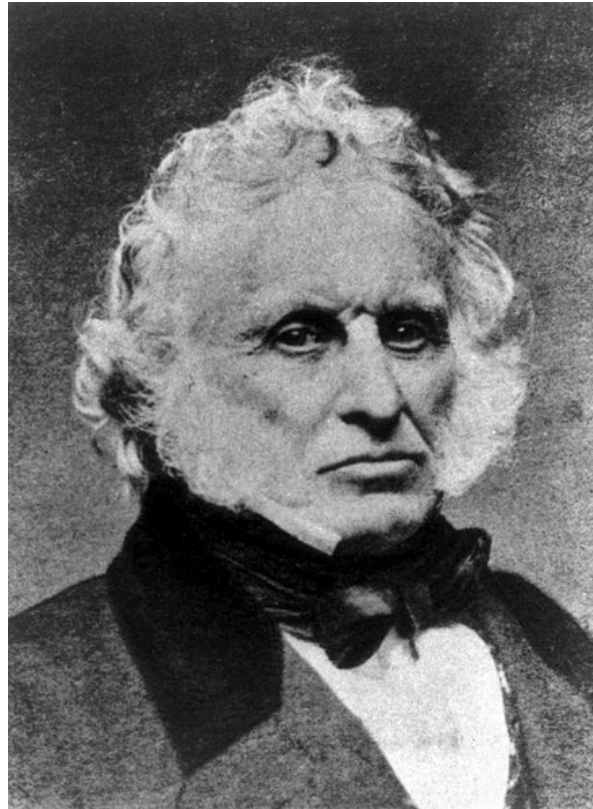
Consider the natural history of disruptive innovations

Explore why 'good businesses fail' ...

Consider the implications for Higher Education and Healthcare.

Introduce concepts and approaches that might provide insights, opportunities or solutions

Along the way...



...introduce...



...redeem...



...caution...

What is an innovation...?



... a transformational idea...



... a useful idea...



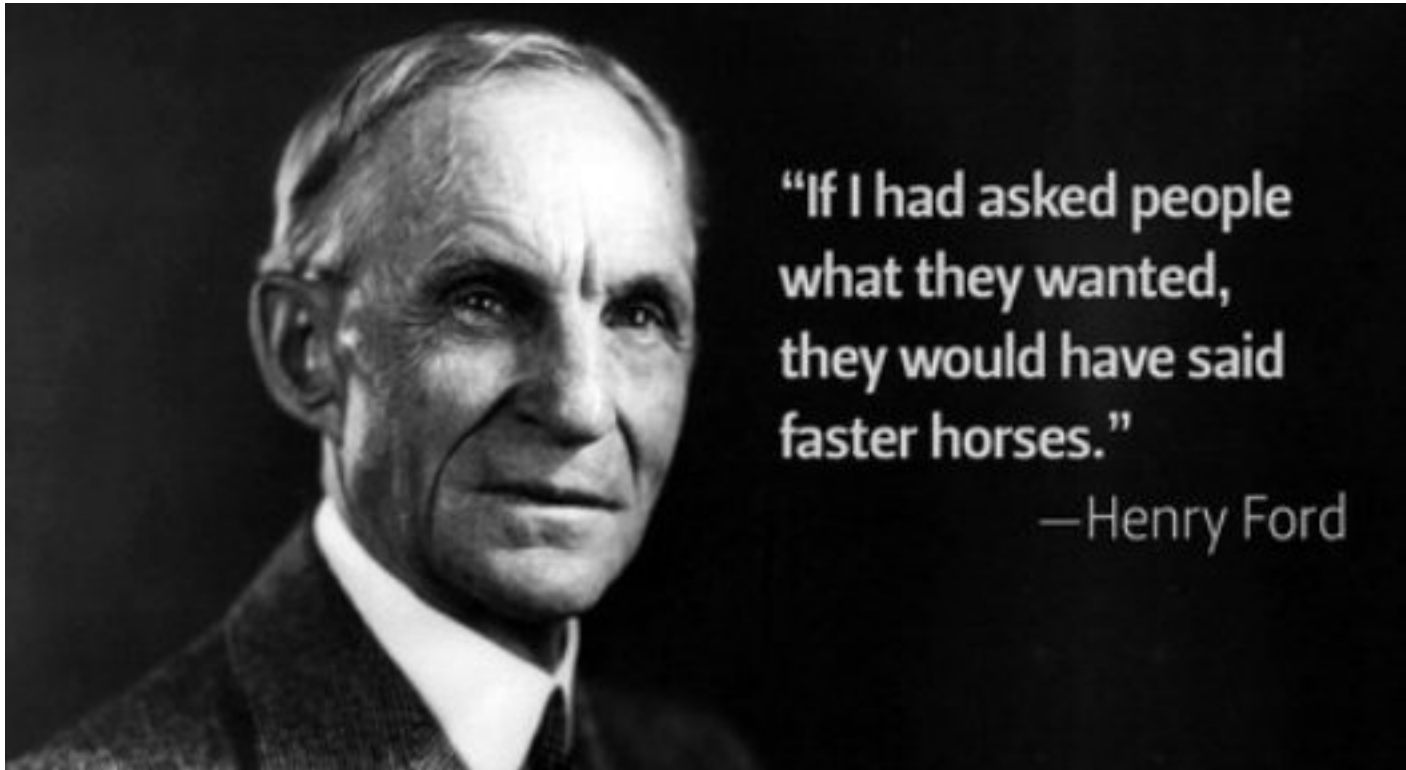
...with actual value...



...affordance, context and utility...



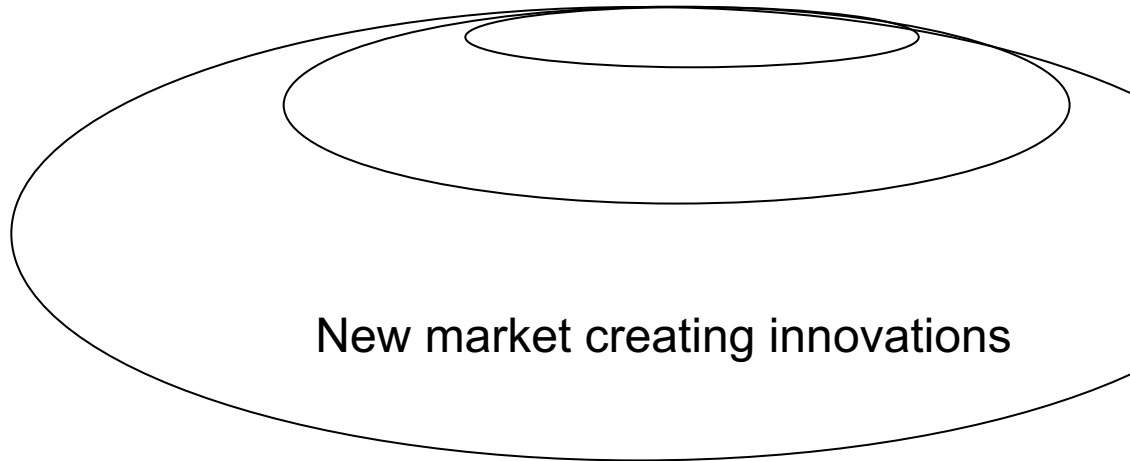
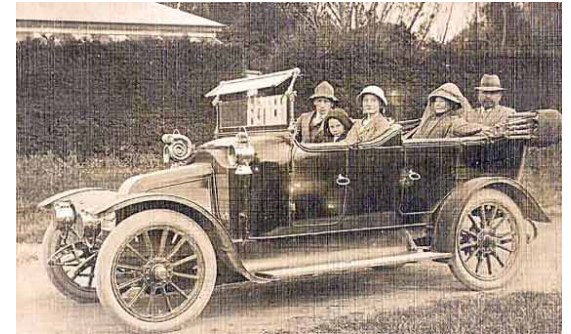
...innovators...



“If I had asked people
what they wanted,
they would have said
faster horses.”

—Henry Ford

...address unmet demand, need and want...
...developing and successfully implementing new
solutions and ideas



New market creating innovations

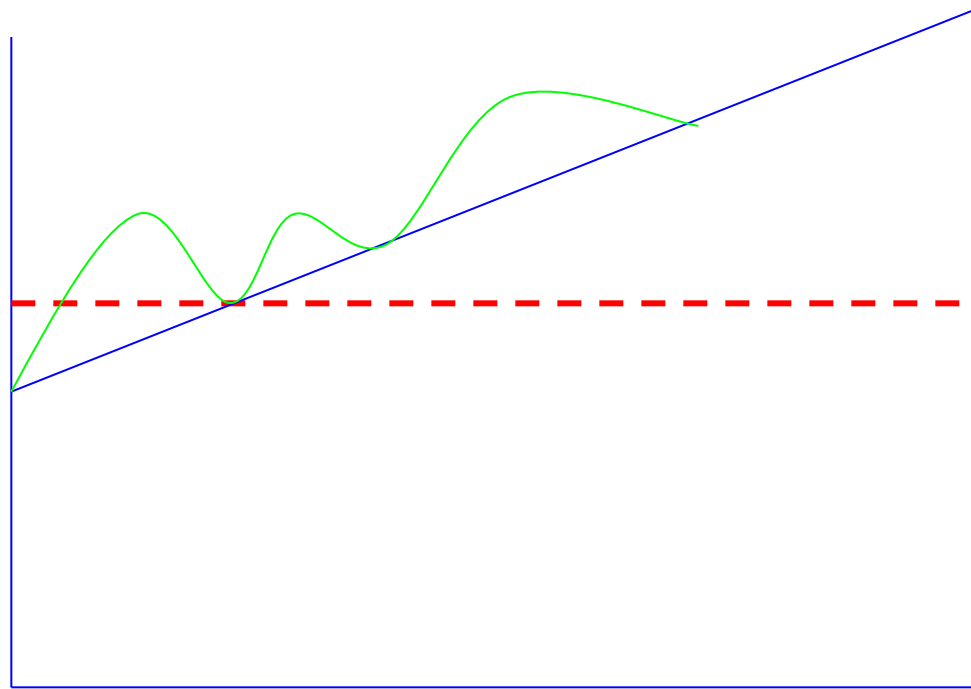


...other examples...





Incremental Improvements...



...and disruptive innovations...



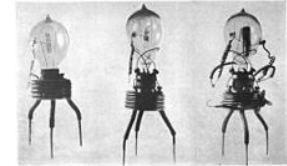
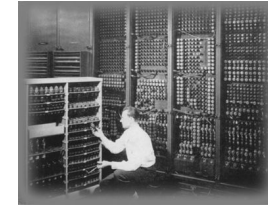
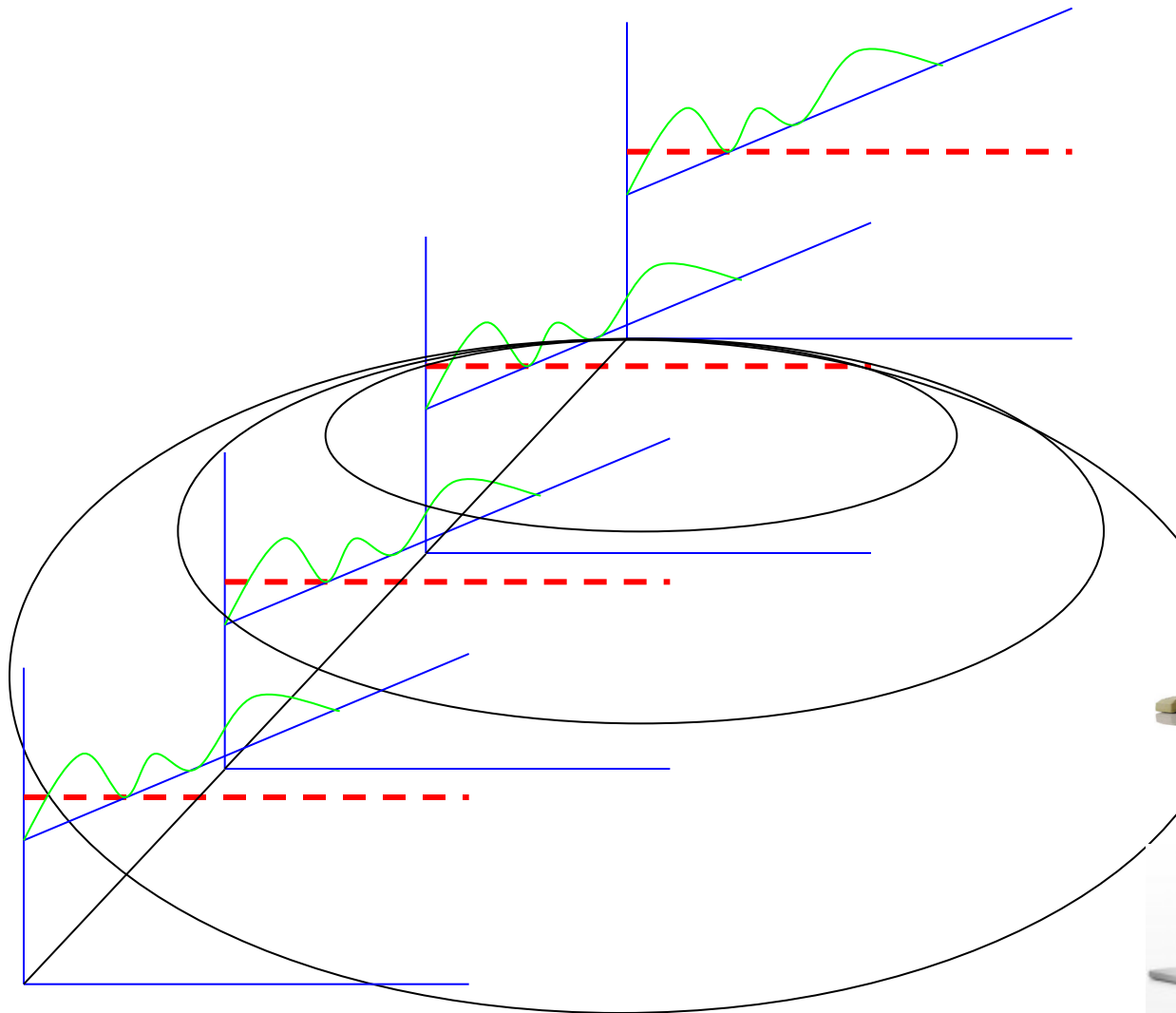
...continuing disruptive innovations...



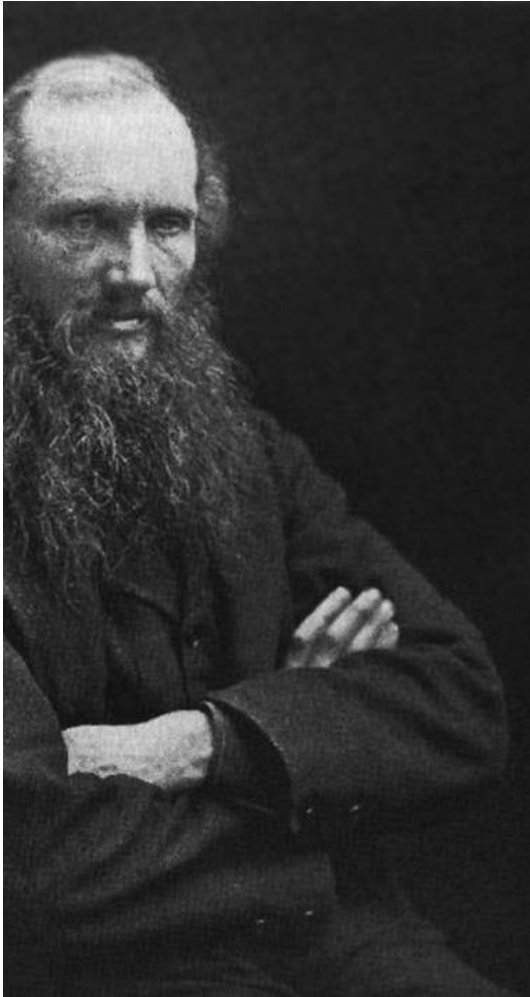


...introduce...

Theory of disruptive innovation, wealth and market creation



Everybody is a critic...



**Heavier-than-air
flying machines
are impossible.**

Lord Kelvin



...redeem...

The transformational leader's dilemma...



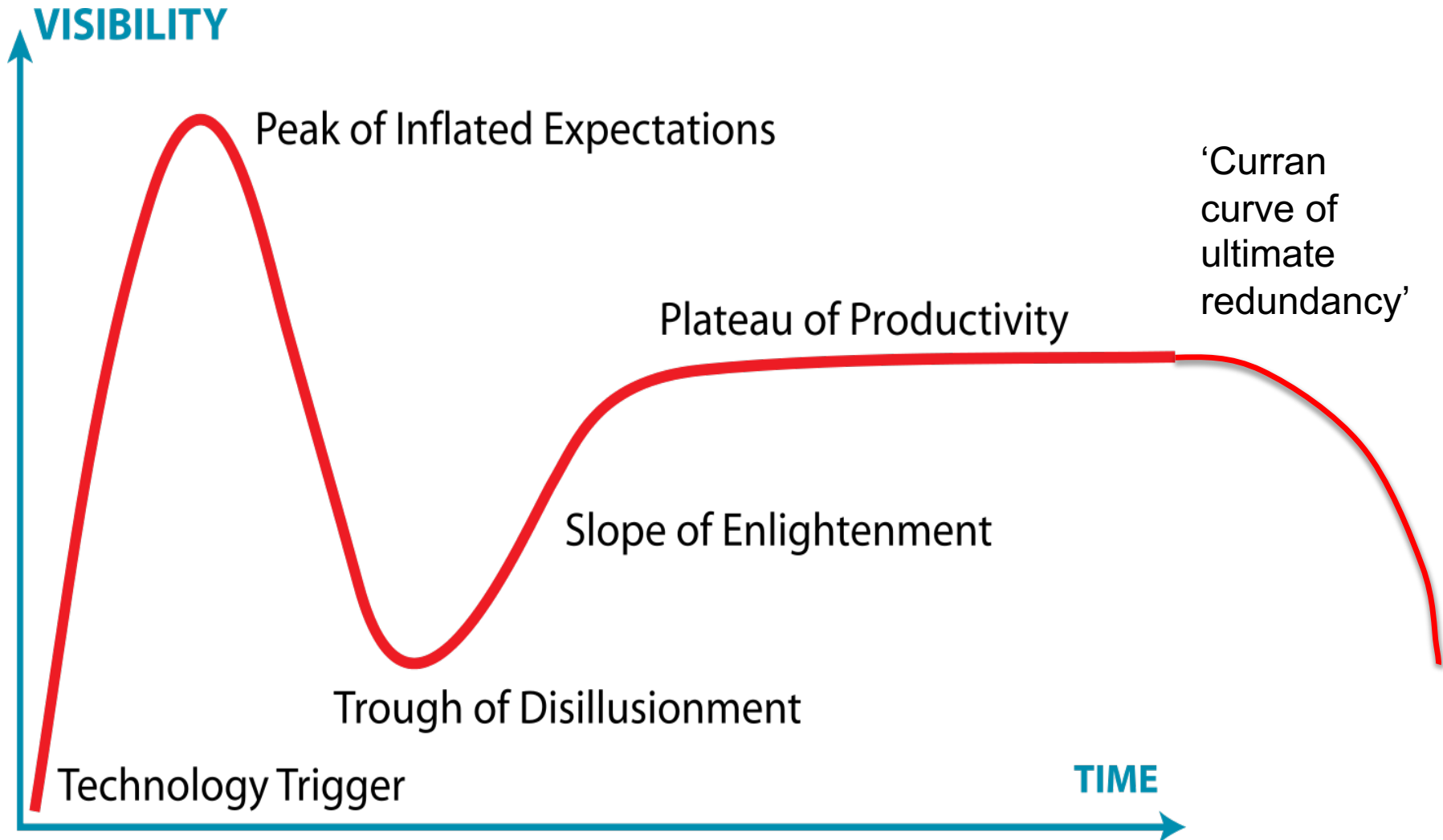
“There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a **new order** of things.

For the reformer has **enemies in all those who profit by the old order**,
and **only lukewarm defenders in all those who would profit by the new order.**”



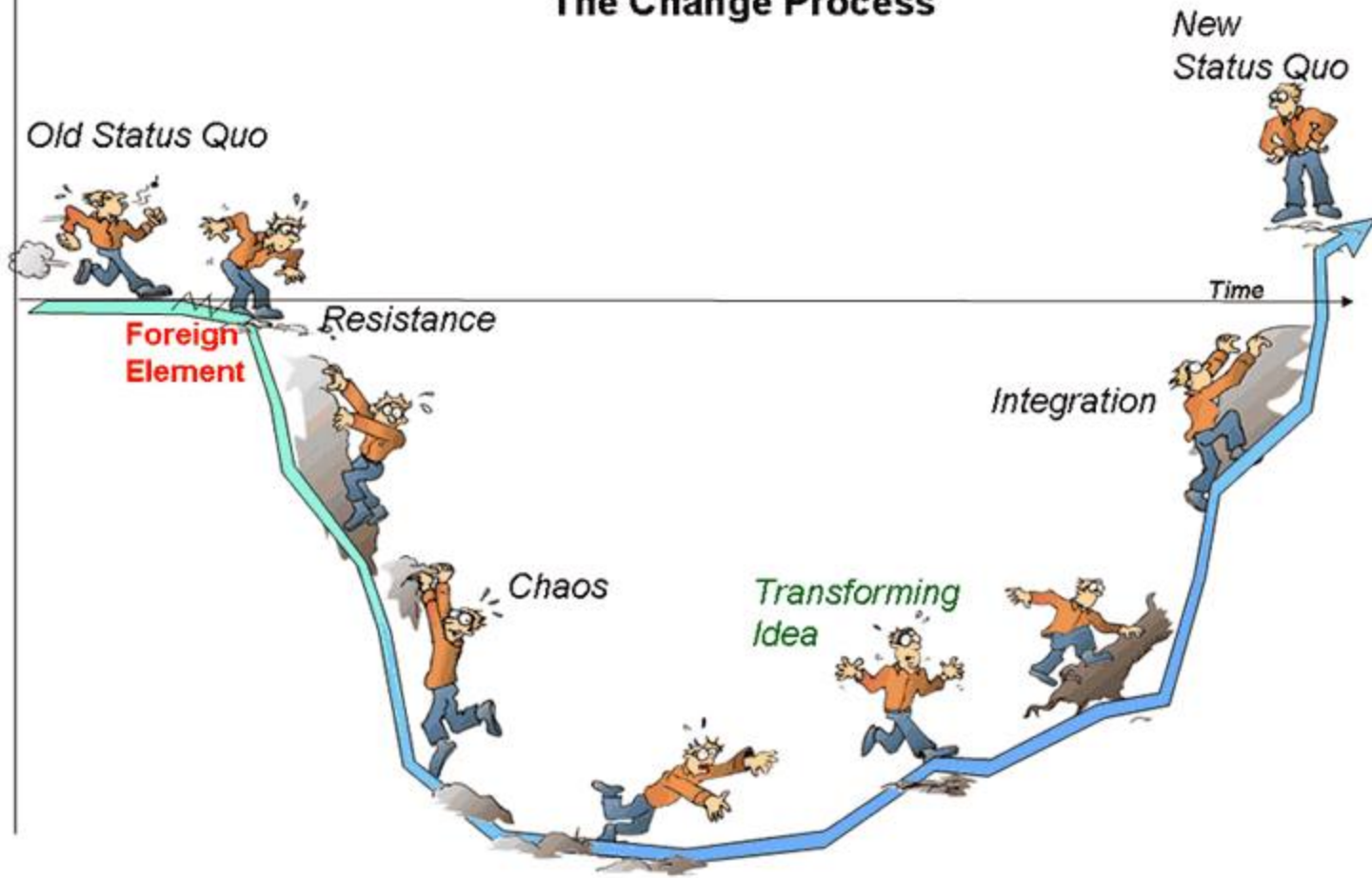
Niccolo Machiavelli, 1469- 1527

Gartner Hype Curve

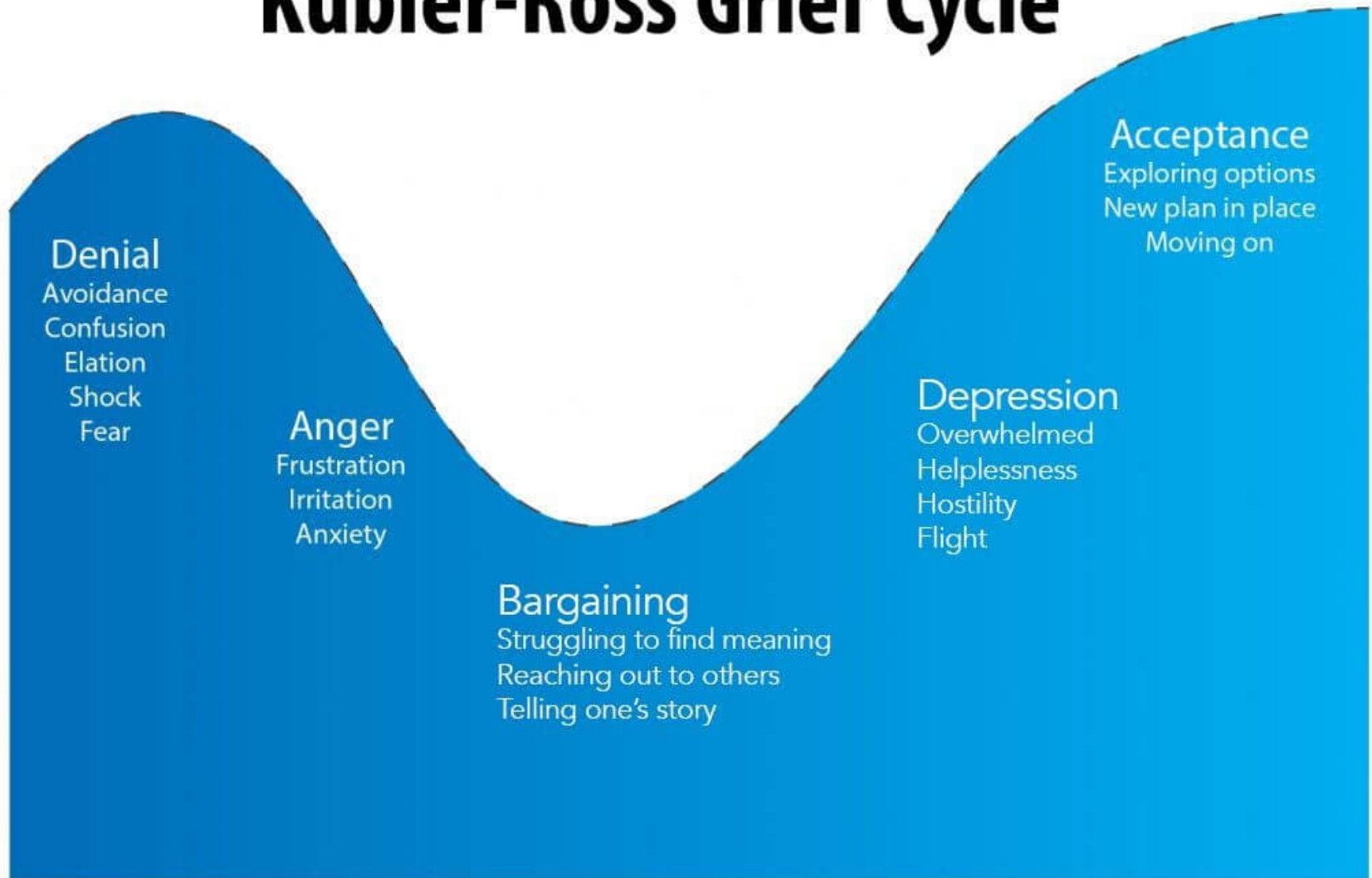


Performance

The Change Process



Kübler-Ross Grief Cycle



Information and
Communication

Emotional
Support

Guidance and
Direction

**Change is inevitable.
Change is constant.**

Benjamin Disraeli

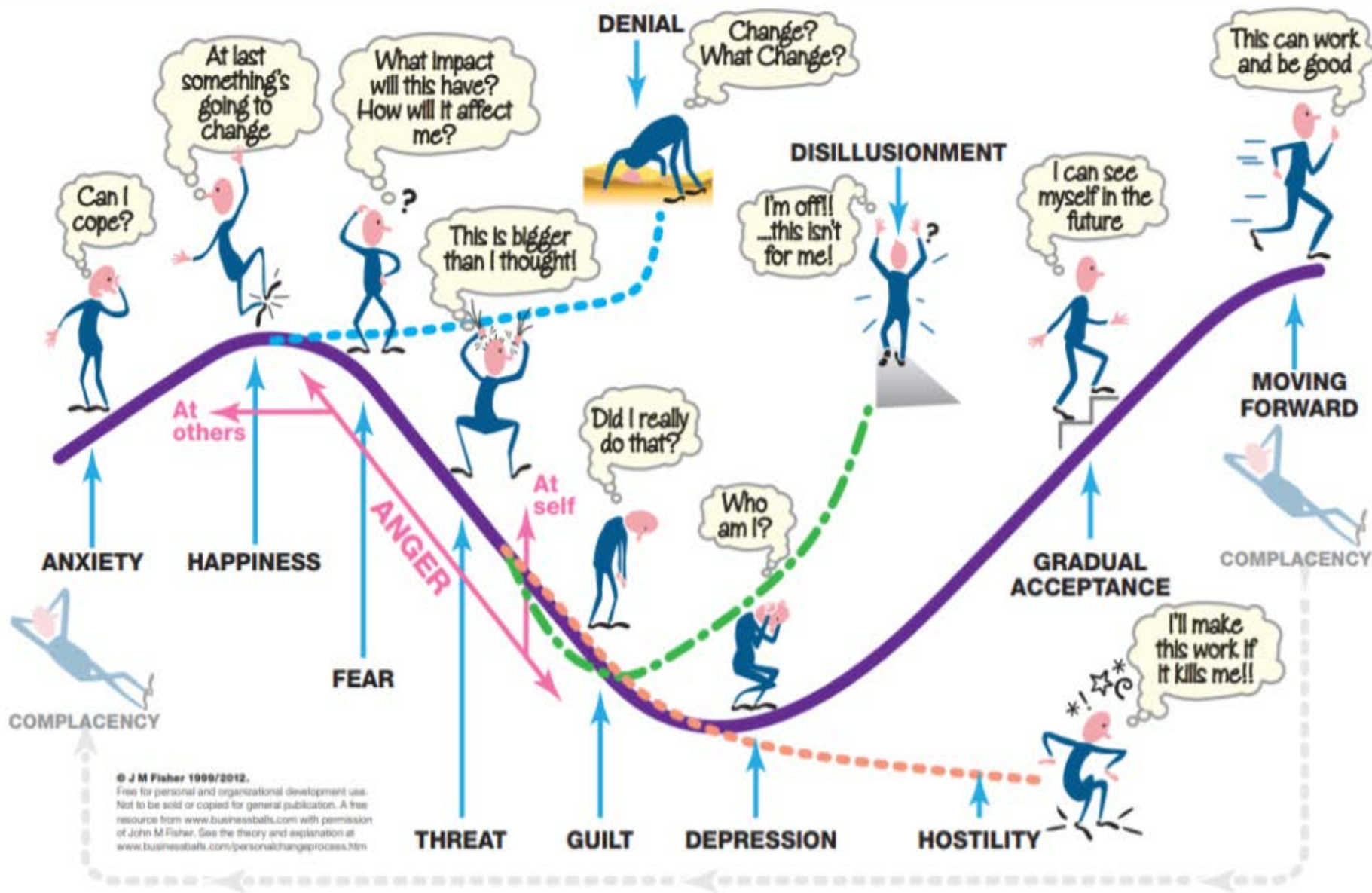
 quoteLand

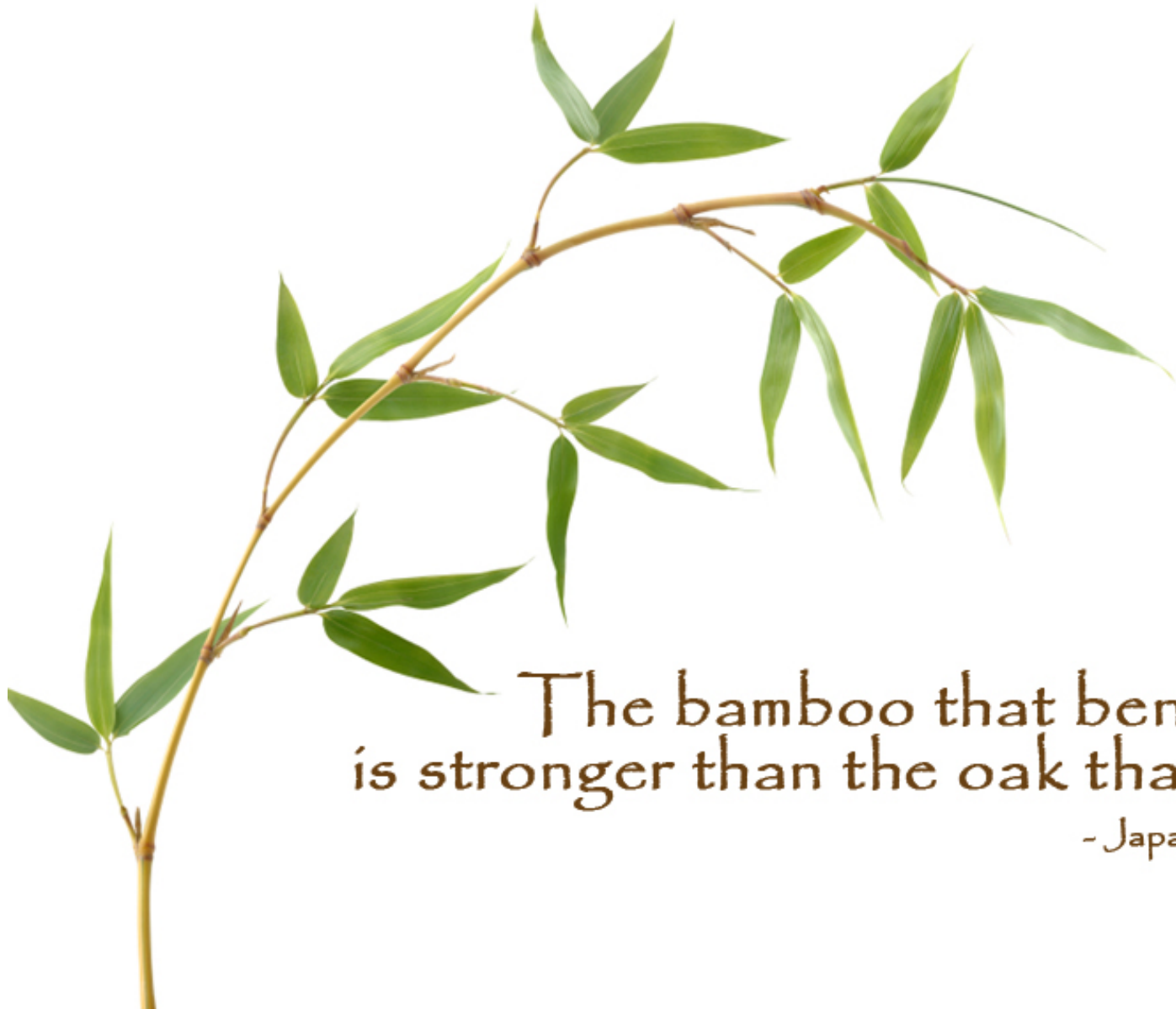




The Process of Transition - John Fisher, 2012

(Fisher's Personal Transition Curve)

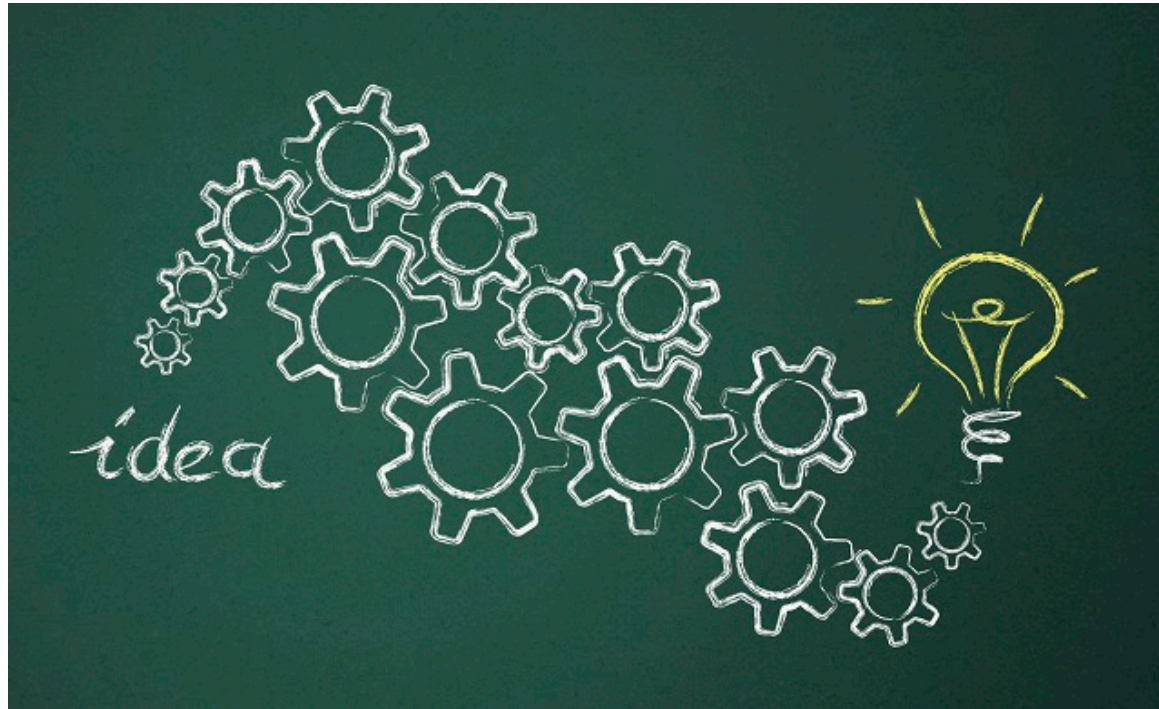




The bamboo that bends
is stronger than the oak that resists.

- Japanese Proverb

Types of innovation...



Old innovations...



New innovations



3 Ways of generating value or wealth



Make or produce
things

‘Focused Factory’



Enable or share things

‘Value-adding network’



Solve things

‘Solution Shop’

Types of innovations

Sustaining or incremental process innovations - quality improvement

Technological innovations – new capacity or capabilities

Business model innovations – new funding/finance models

Frugal innovations – more cost-effective, limited scope

Regulatory or standards reform – ‘Goldilocks’s bureaucracy’

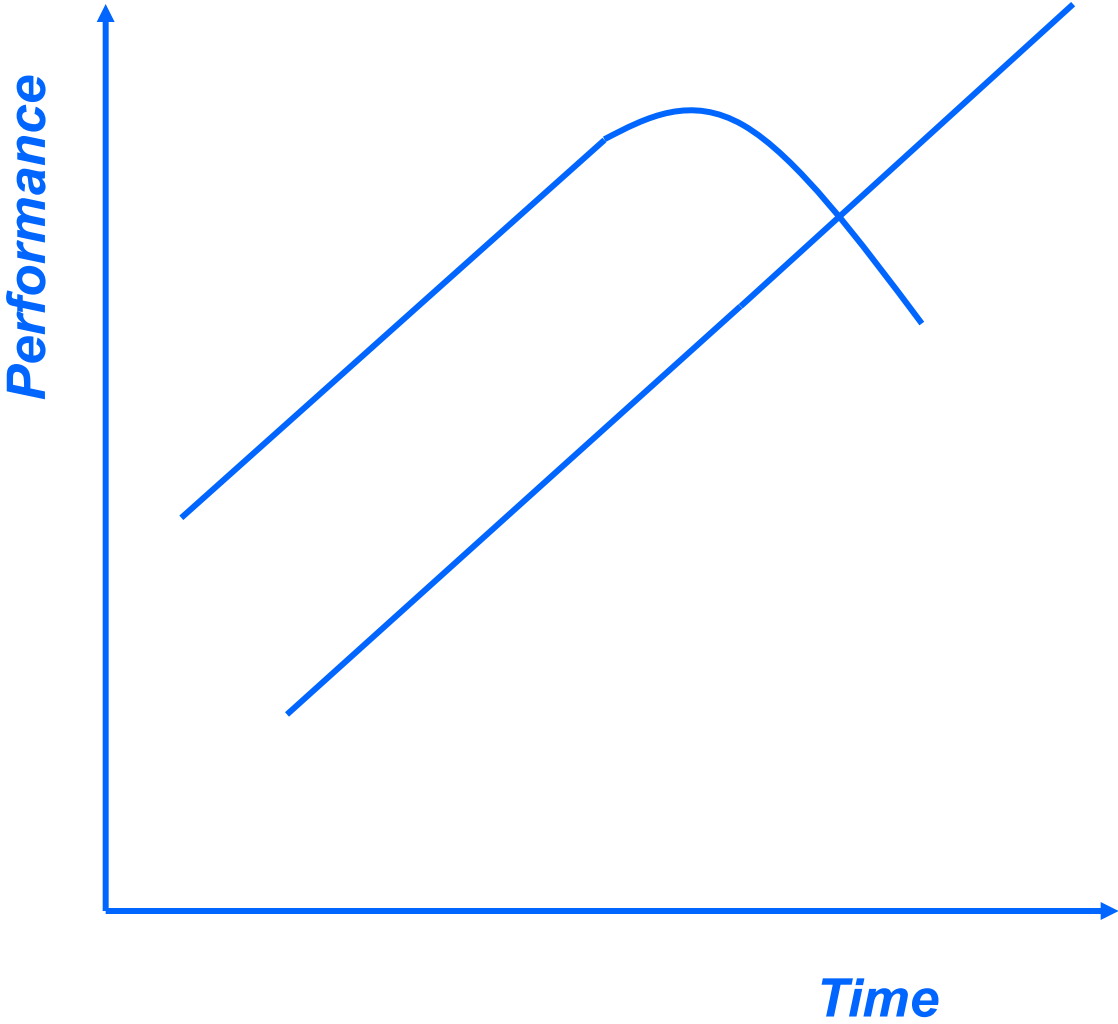
Behavioural innovations – personal/collective changes in behaviour

Transformational vs transactional – cultural/leadership changes

Sustaining or Incremental innovations



Technological innovations



Business model innovations



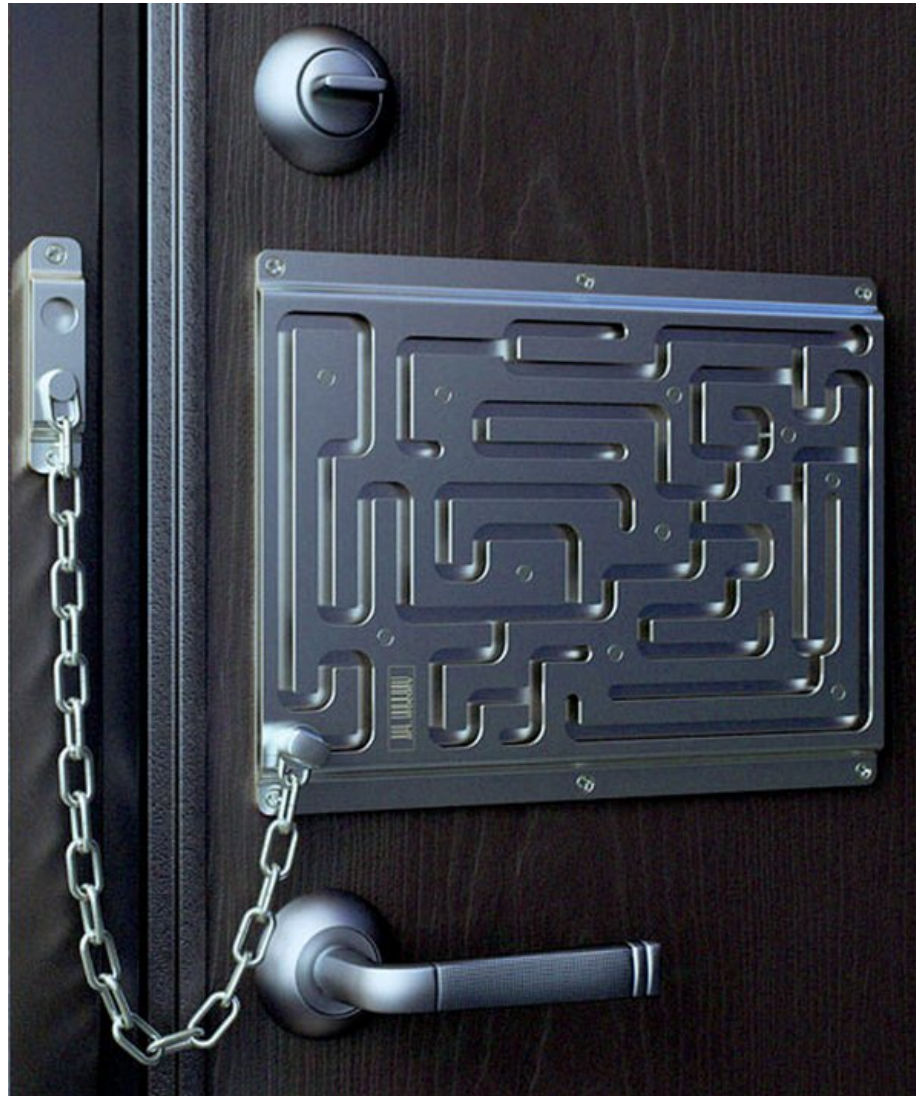
amazon



Frugal innovations...



Avoid over-engineering solutions...



Behavioural innovations

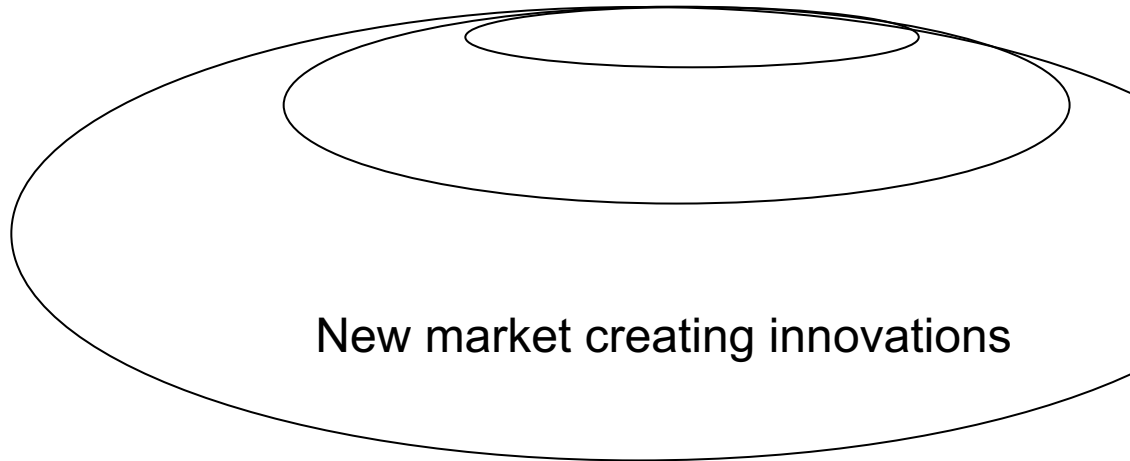
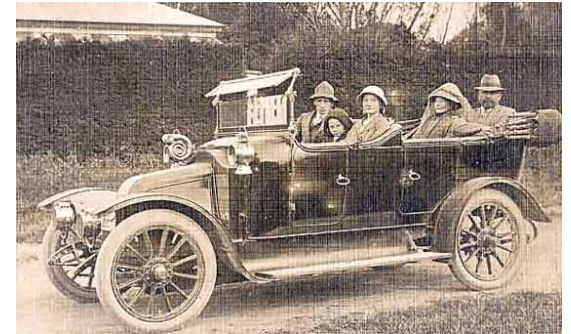


Optimism/pessimism





Natural history of innovations...



New market creating innovations



Natural History of innovations

Initial centralisation

Discovery

Simplification

Standardisation

Efficiency

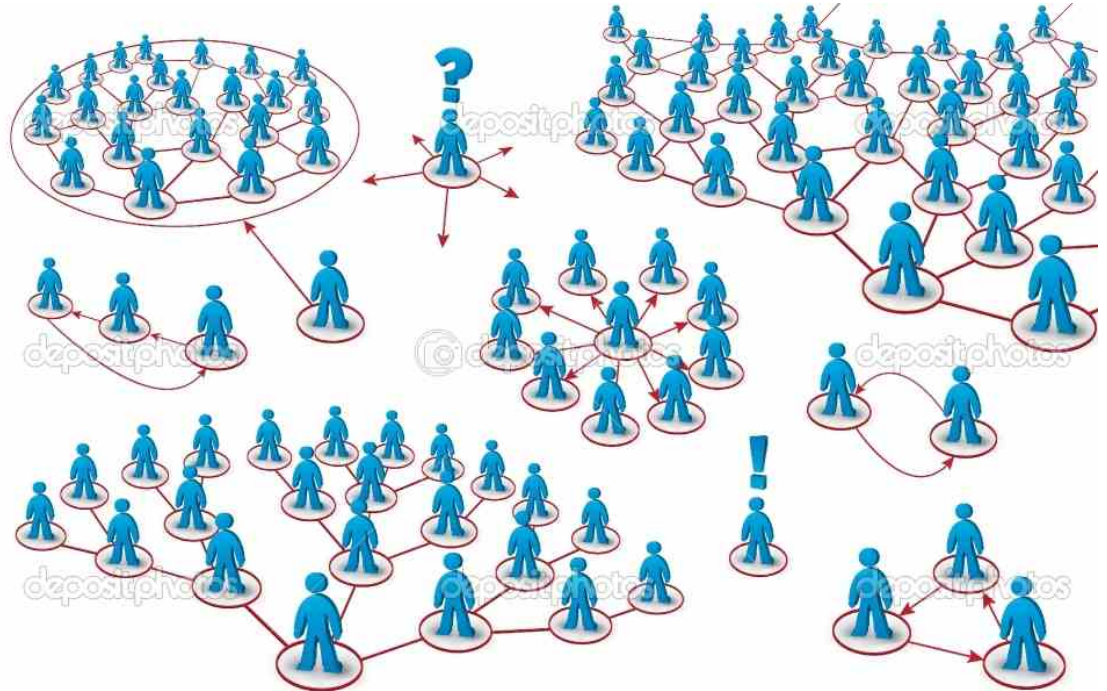
Commoditisation

Later decentralisation

Widening access

Future disruption

Enduring uncertainty and conceptual instability



What makes a transformational leader?



An ability to adapt and cultivate change...

Openness and curiosity

Associational thinking

Subject matter expertise

Pattern recognition

Intrinsic motivation

Courage to innovate

Pursuit of excellence





Innovators - skills and capabilities

Challenging the status quo

- Observing
- Questioning
- Thinking
- Networking
- Disruptive

Taking and managing risks

Behavioural Skills

- Communication
- Collaborative
- Entrepreneurial





EST^d 1806

TUDOR
ICE COMPANY

A chilly lesson from history...??













Kelvinator, Frigidaire, Electrolux...



...the moral of this chilly tale?



Never mistake the ACTIVITY...



...for the **VALUE** proposition



So how might we apply this insight to healthcare?



...and Higher Education...

Never value teaching over learning!



...or education over the capability so created

Patients value...

...kind, capable, compassionate clinicians



Employers value ...

... clinicians who work safely and effectively in teams



...lead and improve clinical services

Professionals value...

...being valued...



...being given the support, time and resources to do the many facets to their jobs as well as they possibly can...

Public value...?

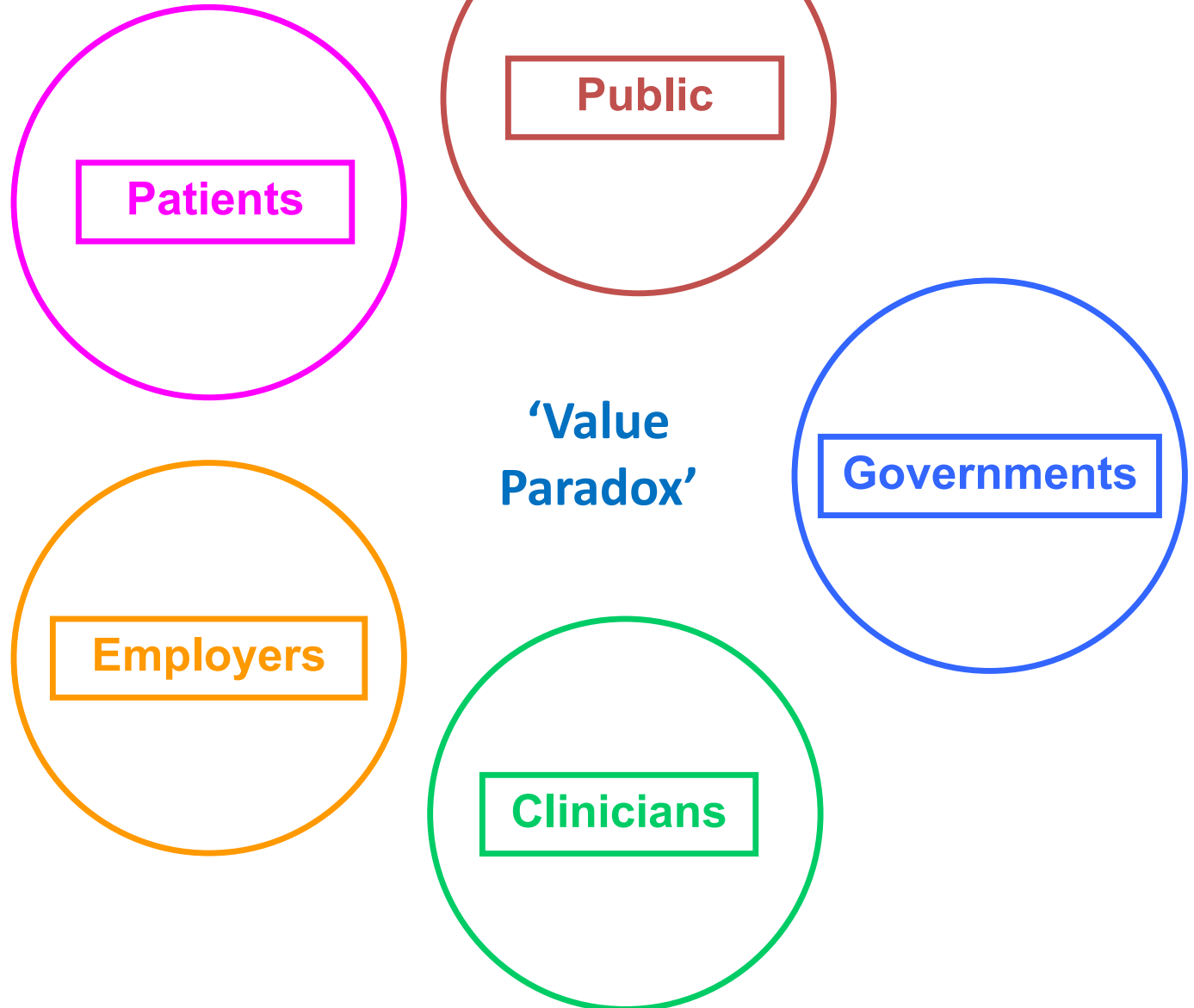


Governments value...

...safe, accountable, cost effective healthcare



What should we 'Value'...



Beware iceman thinking...



So beware cognitive biases...



Data and judgement...



W Edward Deming

"In God we trust,
all others bring data."

Beware incomplete understanding and over-simplification of complex systems...







Meaningful Metrics – The wisdom of McNamara's Fallacy

The first step is to measure whatever can be easily measured.

This is OK as far as it goes.



McNamara's Fallacy

The second step is to disregard that which can't be easily measured or to give it an arbitrary quantitative value.

This is artificial and misleading.



McNamara's Fallacy

The third step is to presume that what can't be measured easily really isn't important.

This is blindness.



McNamara's Fallacy

The fourth step is to say that what can't be easily measured really doesn't exist.

This is suicide.



‘...We start out with aim of making the important measurable but usually only make the measurable important... ‘

On data and measurement ...

'If you torture the data long enough , it will confess to anything'

Ronald Coase 1910-2013





Current healthcare challenges...

Performance

Safety

Quality

Resources

Productivity

Culture

Leadership



Current Higher Education challenges...

Performance

Safety

Quality

Resources

Productivity

Culture

Leadership

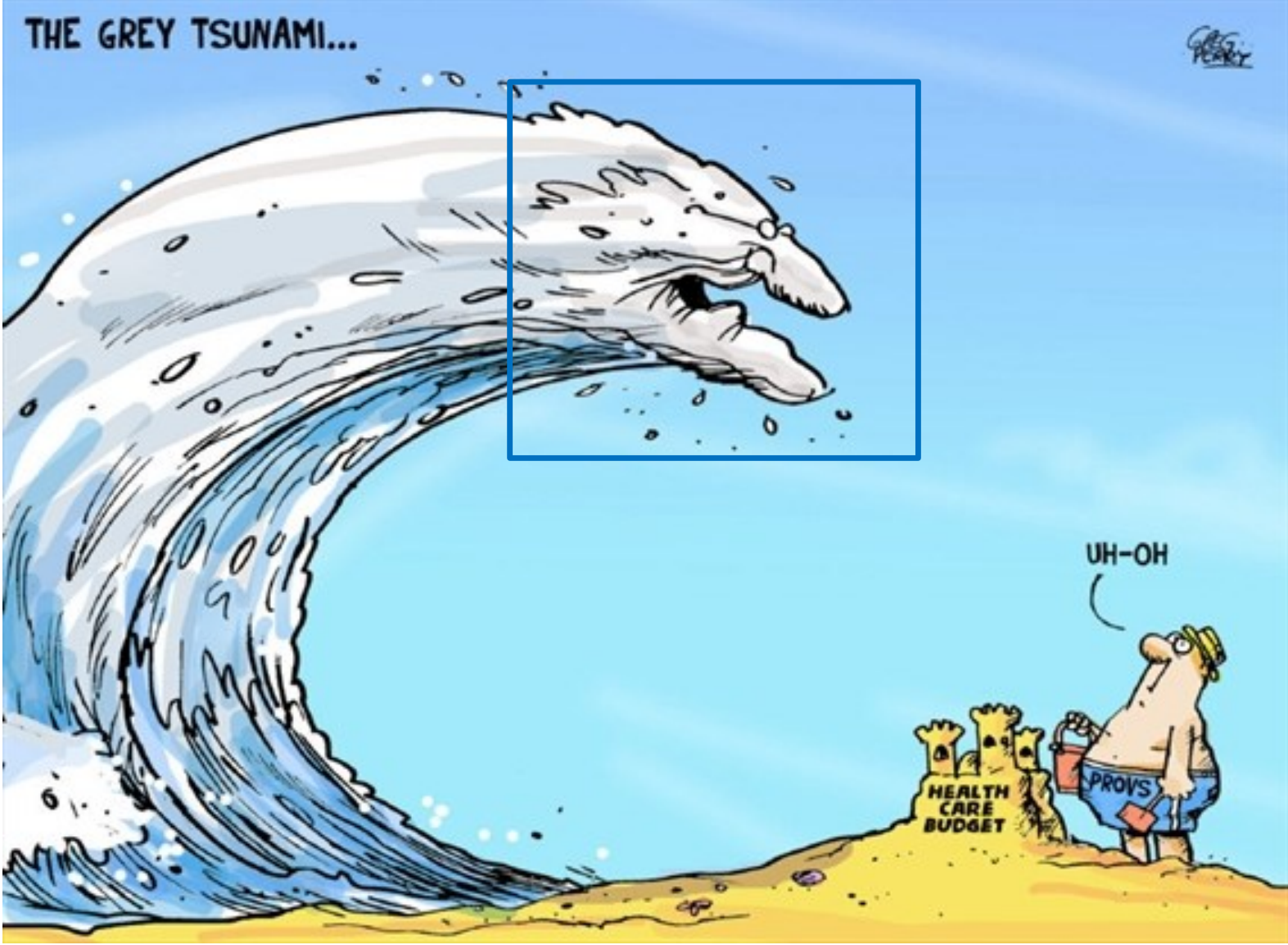


Healthcare challenges

- Complexity healthcare system
- Lack of system integration/coherence
- Capacity and capability
- Individualised needs and wants of patients
- Workforce issues
- Complexity of disease and healthcare treatments



'Grey tsunami'



Challenges in Numbers - service

1 in 3

150

12,458...

67,000...

ICD11...



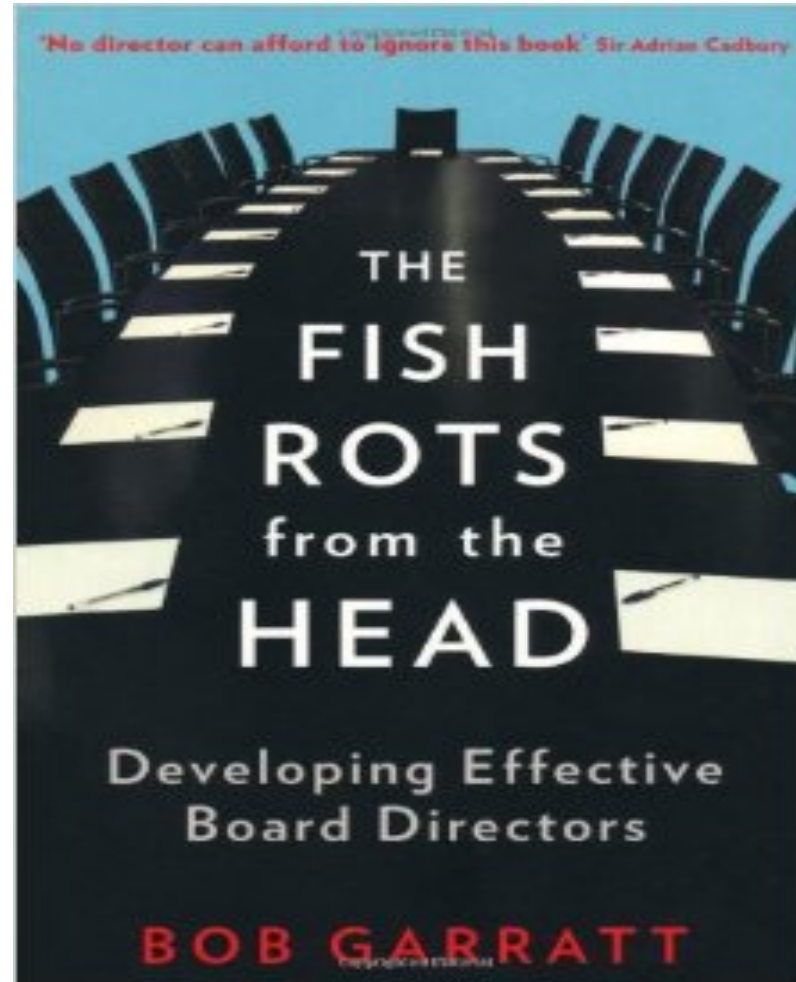






Importance of leadership...

Performance
Behaviour
Language
Culture
Trust



Transactional leadership...?



...process-orientated leadership

Nature and Language of Transactional Leadership...

- Hierarchy
- Command control
- Edict/order
- Explicit goals
- Targets
- Products
- Delivery
- Closed loop
- Rational
- Evidence/data
- Metrics
- Process
- Tariff
- KPIs
- PIDs
- Milestones
- Outputs
- Contracts
- Performance Mx
- Quality improvement
- Compliance...



Transactional leadership...

- Pros...



- Cons...



'Transactional' Approaches to problem solving

A finite game...

Closed loop

Closed economy

Success/fail

Win/lose

Penalty/reward





You	0	4	0
Trioki	0	5	0

18:48







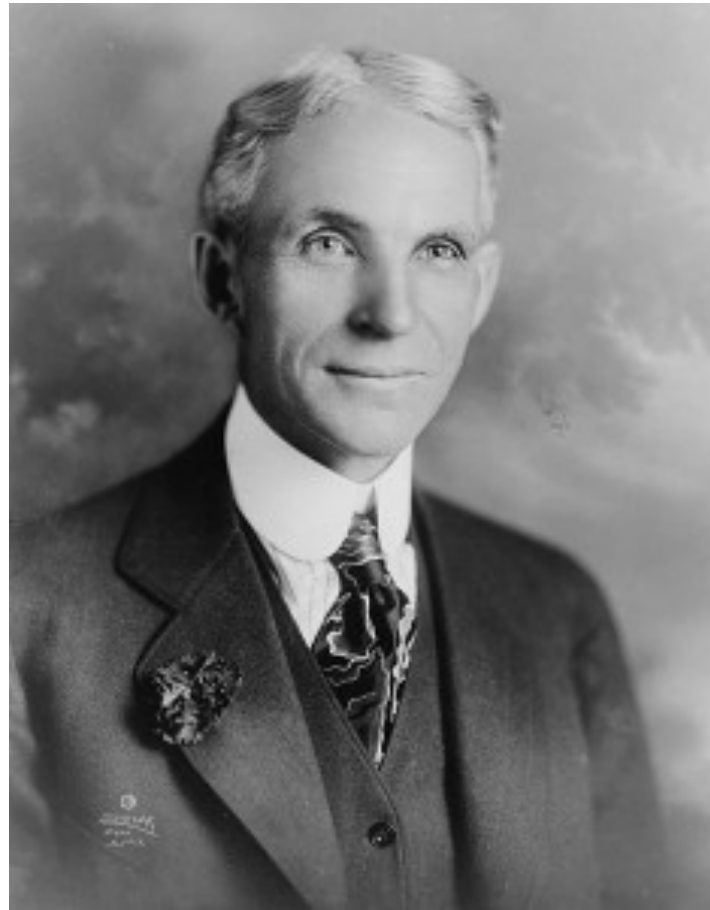
Frescoball

- Infinite game
- Enduring
- No winners/losers
- No definite endpoint

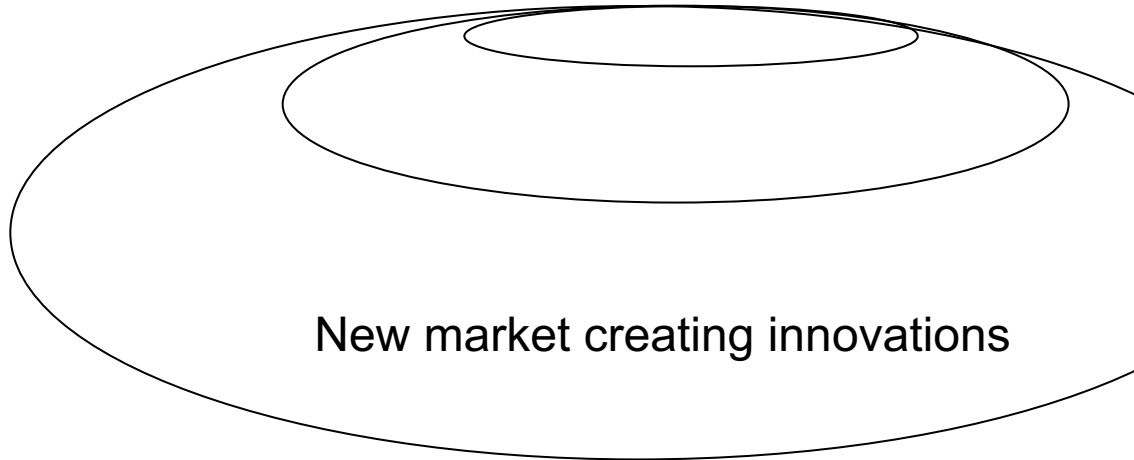
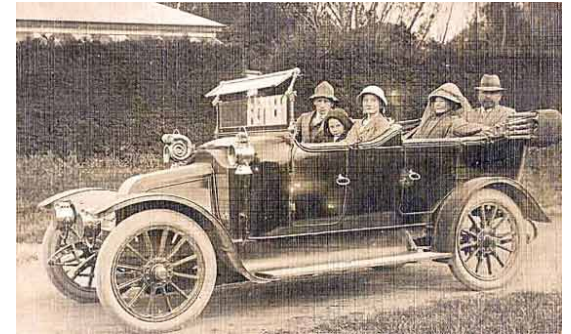


...transformational leaders...

...have different ambitions...



Unmet demand, need and want ... develop new solutions by successfully implementing new ideas



New market creating innovations

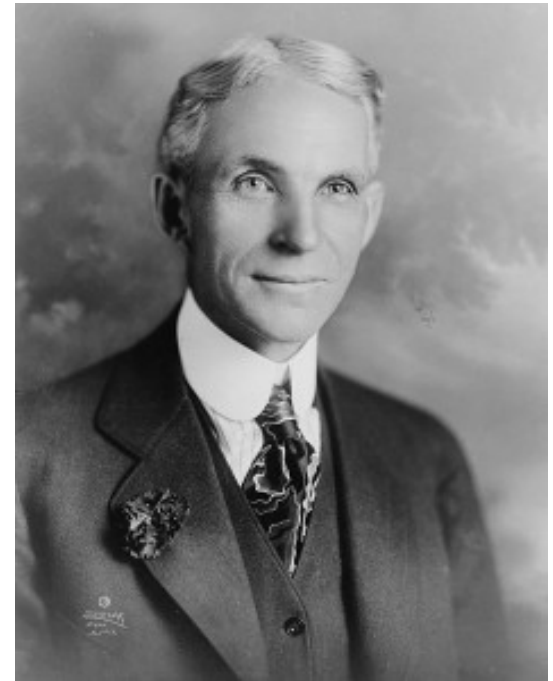


Quality improvement - Production line



Transformational leaders...

- Enable change...
- Inspire and catalyse change...
- Promote reform...
- Liberate people...
- ...and ideas
- Progressive agenda
- Promote innovation
- Challenge the status quo...
- Successfully lead change



Transactional - Technical/Process-orientated	Transformational - Adaptive
Solution is clear	Problem requires learning
Problem is clear	Solution requires learning
Knowledge, skills, capabilities reside in the organization	May need to learn new skills or approaches
Work often sits with authority	Work is distributed, matrix, with stakeholders
Generally linear - cause and effect	Non-linear, complex and unpredictable
We've done it before... safe/same	Ambiguity/novel situations or scenarios
Success is usual, completion, resolution, finite or definite	Success is making progress – may never be solved
No change in values, beliefs, loyalties or priorities necessary	Values, beliefs, loyalties or priorities may need to shift



Understand the nature and nurture of innovations...



Any innovation starts with a creative spark



Phase 1 ...intuitive, creative idea...



Phase 2

...rational exploration

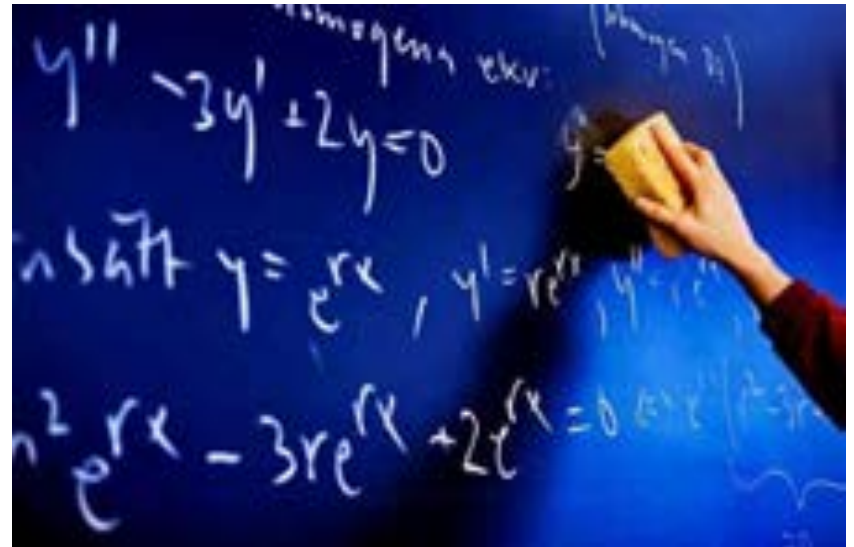
...experimentation



Phase 3

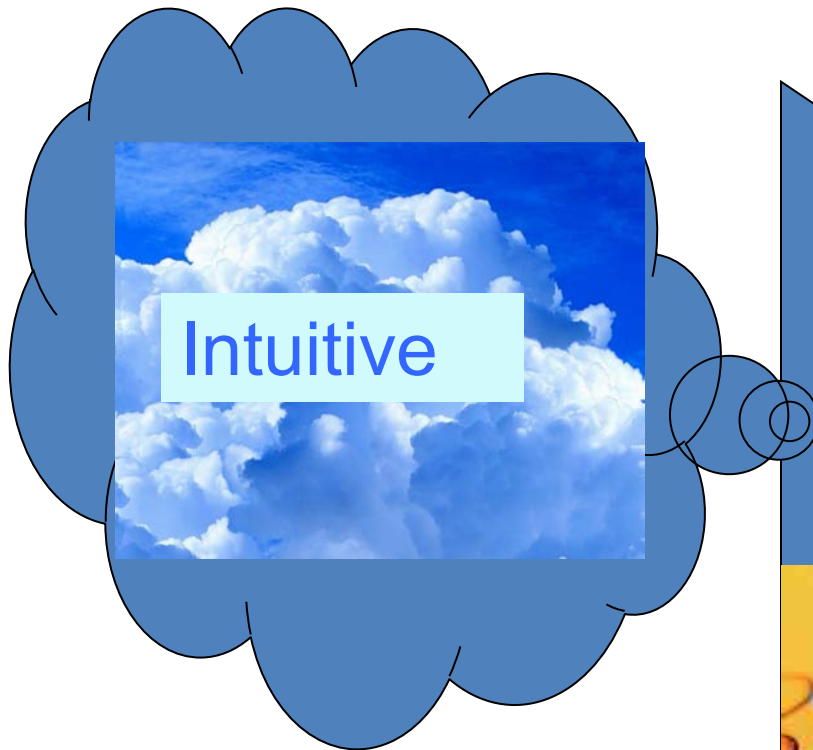
...precision, codification

...principles and rules



'The cloudy wedge' of innovation

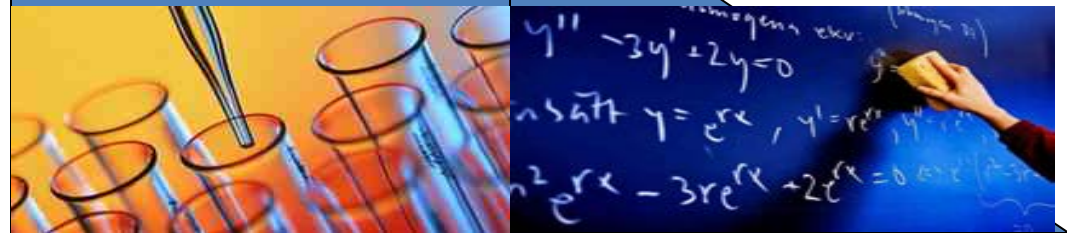
Realm of Art and the imagination



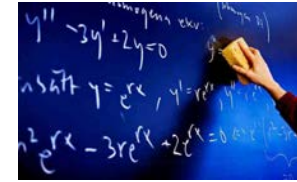
Realm of Science and industry

Rational

Precision



Evolution of an innovation



Intuitive

Imagination
Creativity
Understanding
Hunch
Leaps of faith
Wonder
Thought
Myth
Fantasy

‘What if...?’

SPECULATIVE

Rational

Describe
Theorise
Hypothesise
Test
Understand
Refinement
Data & Metrics
Analysis
Retest

‘How do we
explain this...?’

EXPLORATIVE

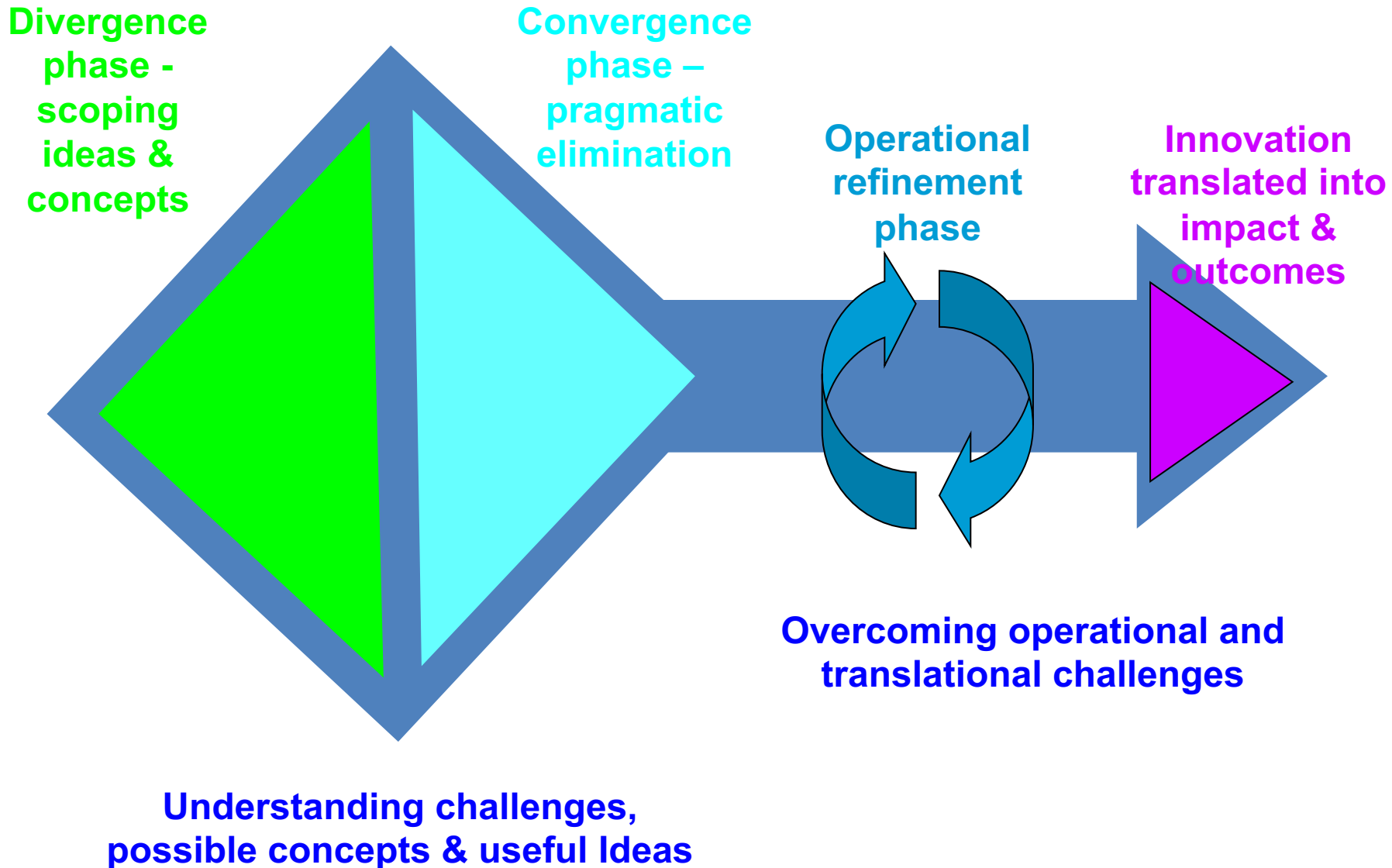
Precision

Clarification
Codification
Rules
Commodification
Systematise
Measurements
Data & Metrics
Instruments
Prediction

‘If we do this then
that will happen...?’

PREDICTIVE

'The Diamond Arrow' - process of innovation



Concepts supporting Professional Excellence

'The Cube'

'The Curve'

'The Fan'

'The Layers'

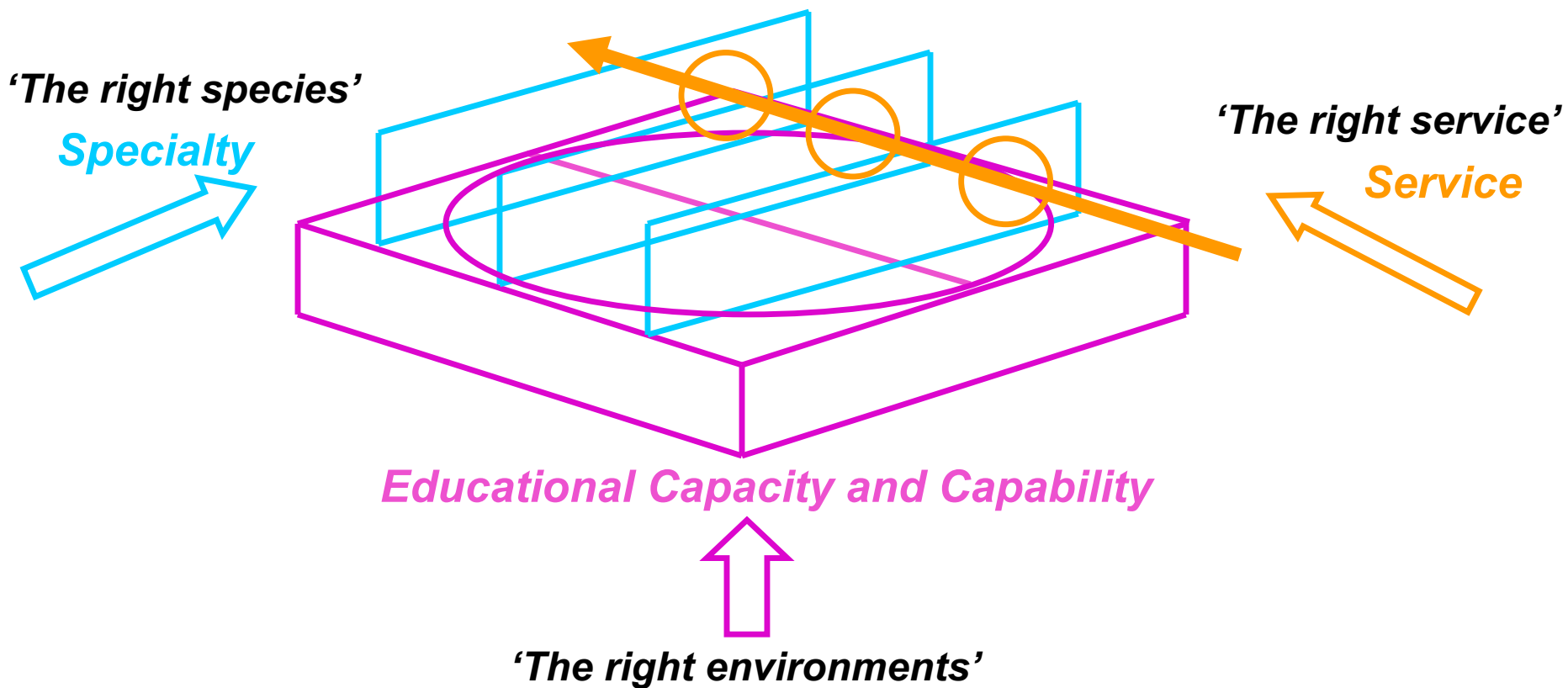
'The Triangle'

'The Polygon'

'The Parabola'



The cube - Understand the ecosystem...



Concepts supporting Professional Excellence

'The Cube'

'The Curve'

'The Fan'

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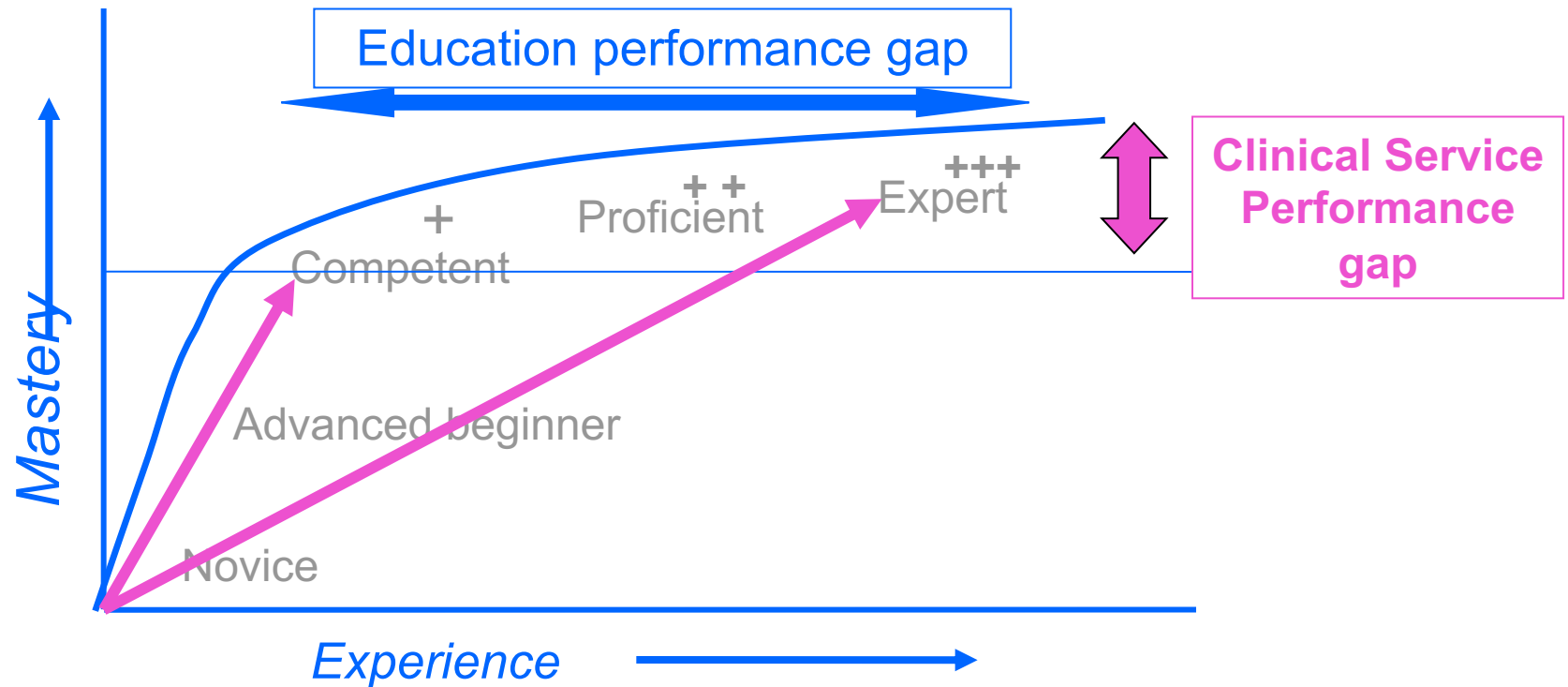
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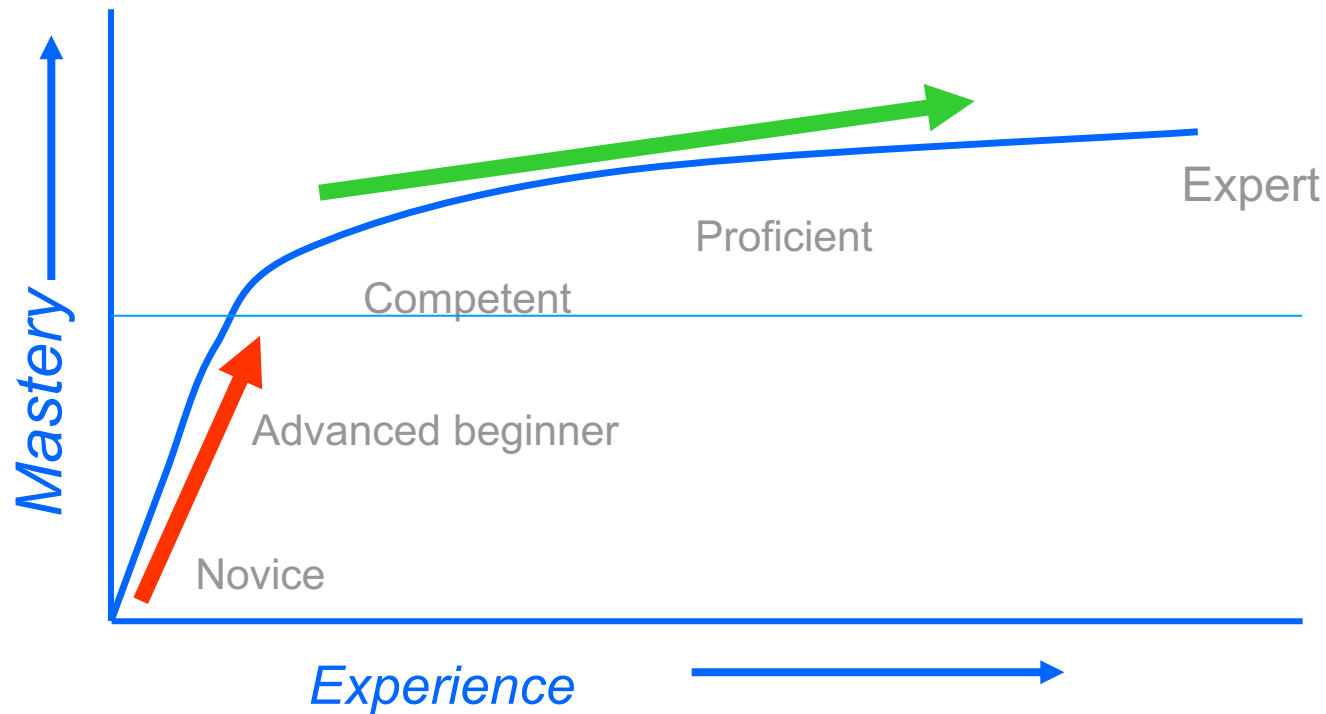


'The curve' - A trajectory for professional excellence



Curran after Dreyfus and Dreyfus

'The Curve' - From good to great...



Concepts supporting Professional Excellence

'The Cube'

'The Curve'

'The Fan'

'The Layers'

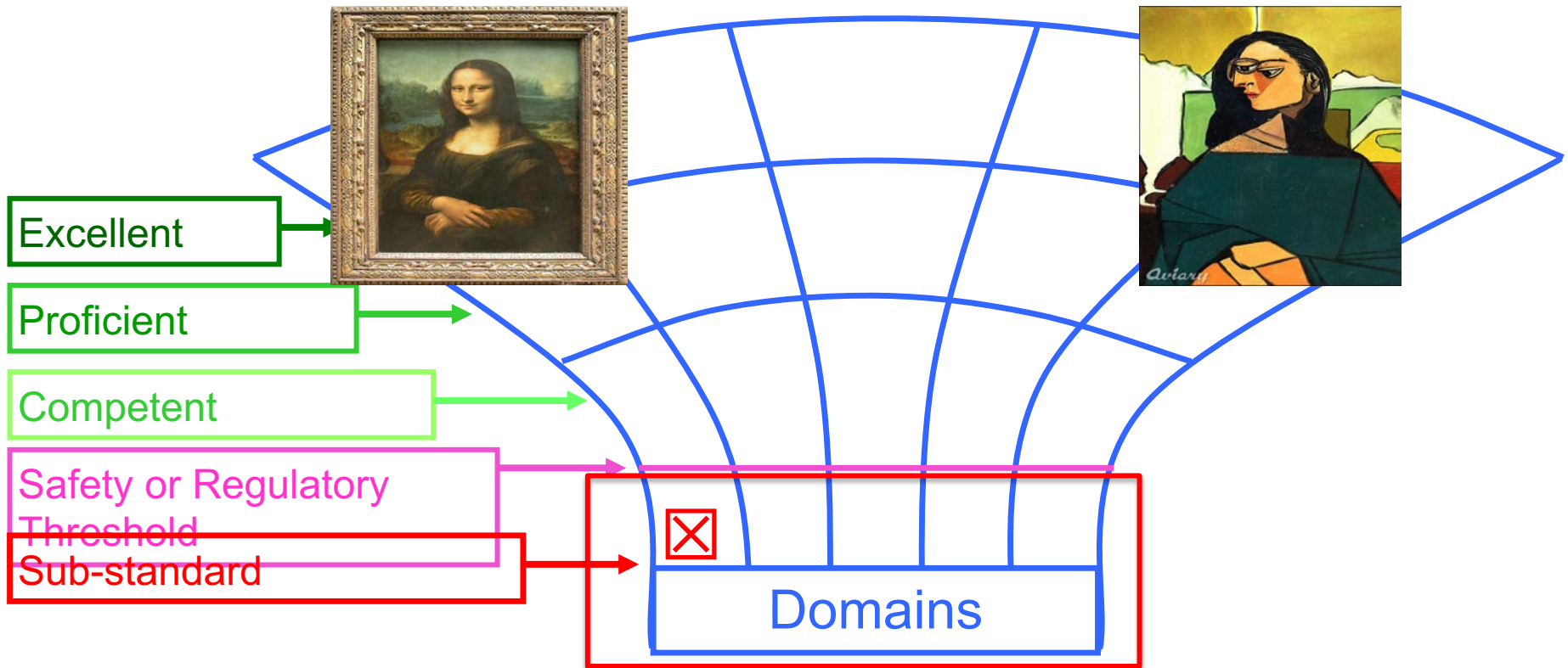
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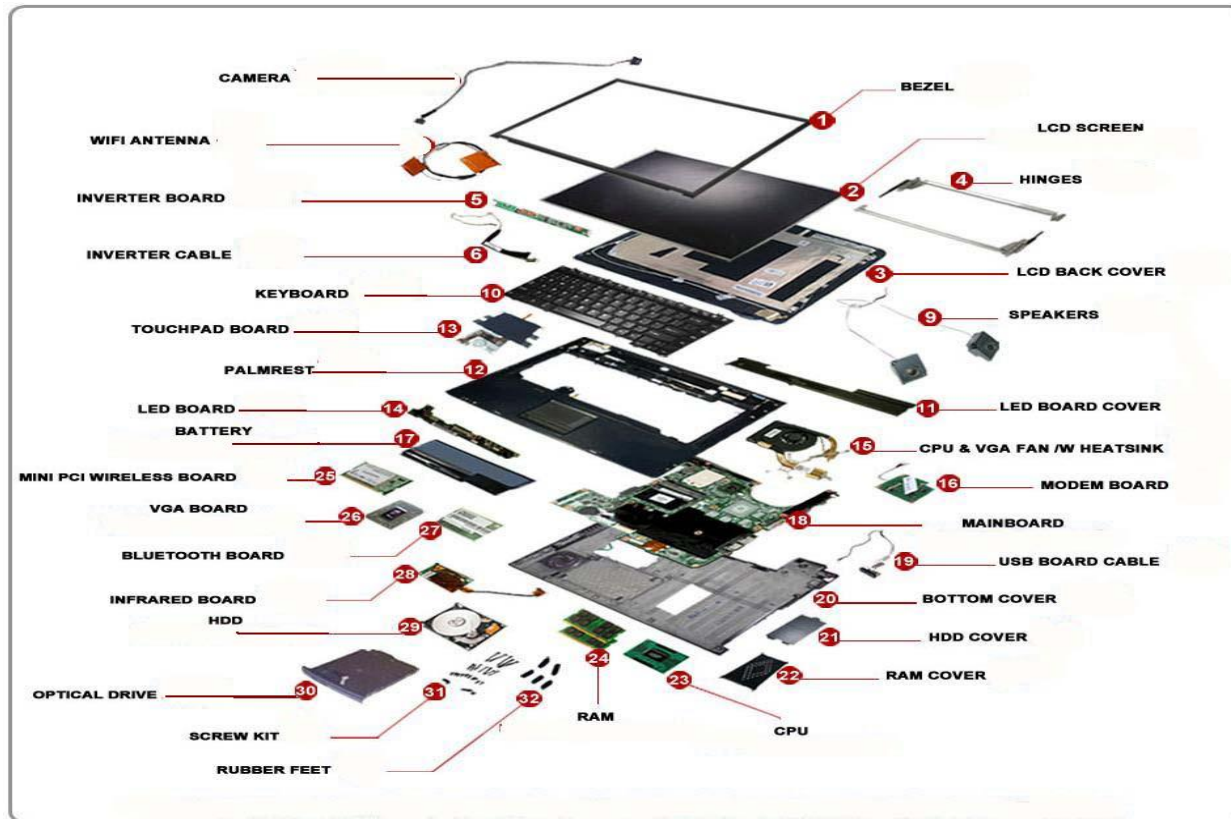
'The Parabola'



'The Fan' – valuing excellence, promoting innovation



...dangers of Competency-based training...



Whole integrated package...



Doing the right thing first time...





Doing the right thing first time...



...highly cost effective

‘Training to excellence’

- Appropriate use of simulation
- Graded, properly supervised clinical exposure...
- (J Barsuk et al)

... highly cost effective

... safer for all concerned and



People value capable, excellent professionals...



Concepts supporting Professional Excellence

'The Cube'

'The Curve'

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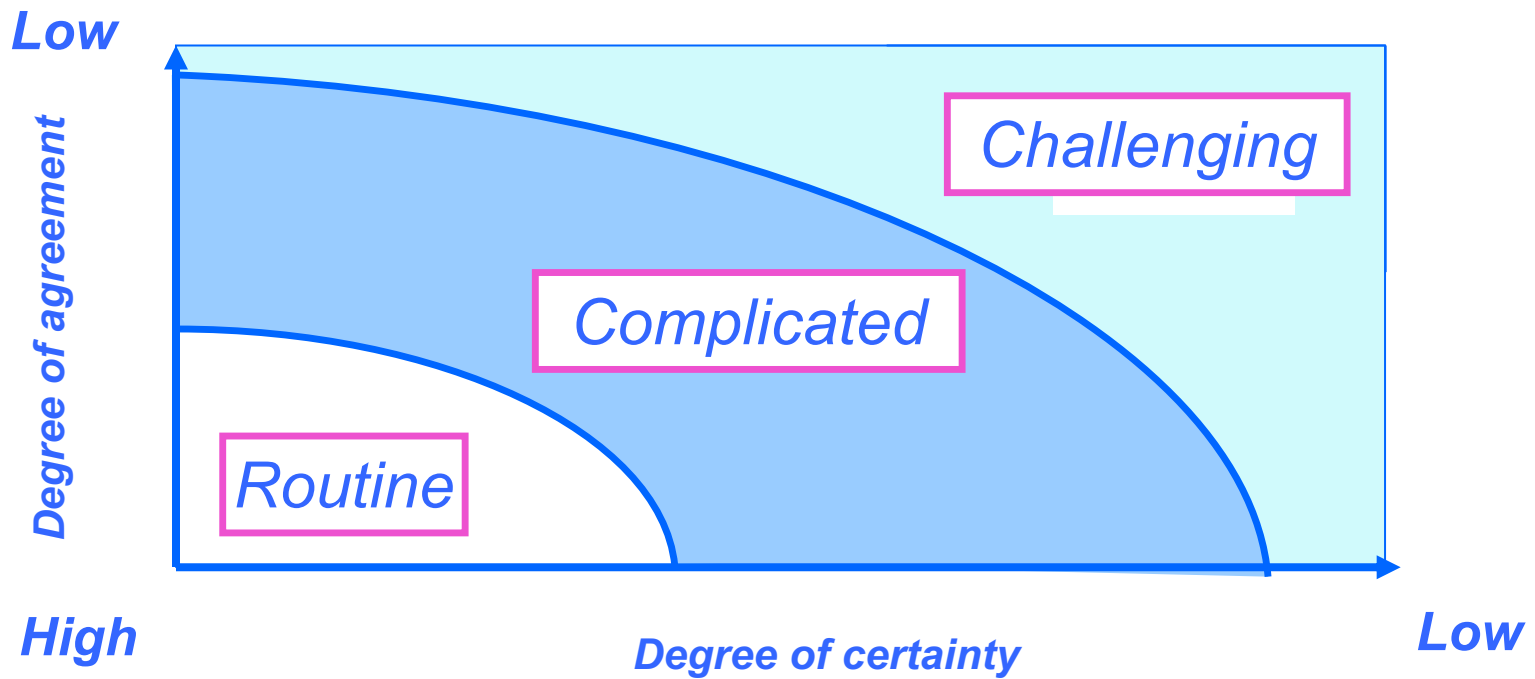


A capable, expert professional...

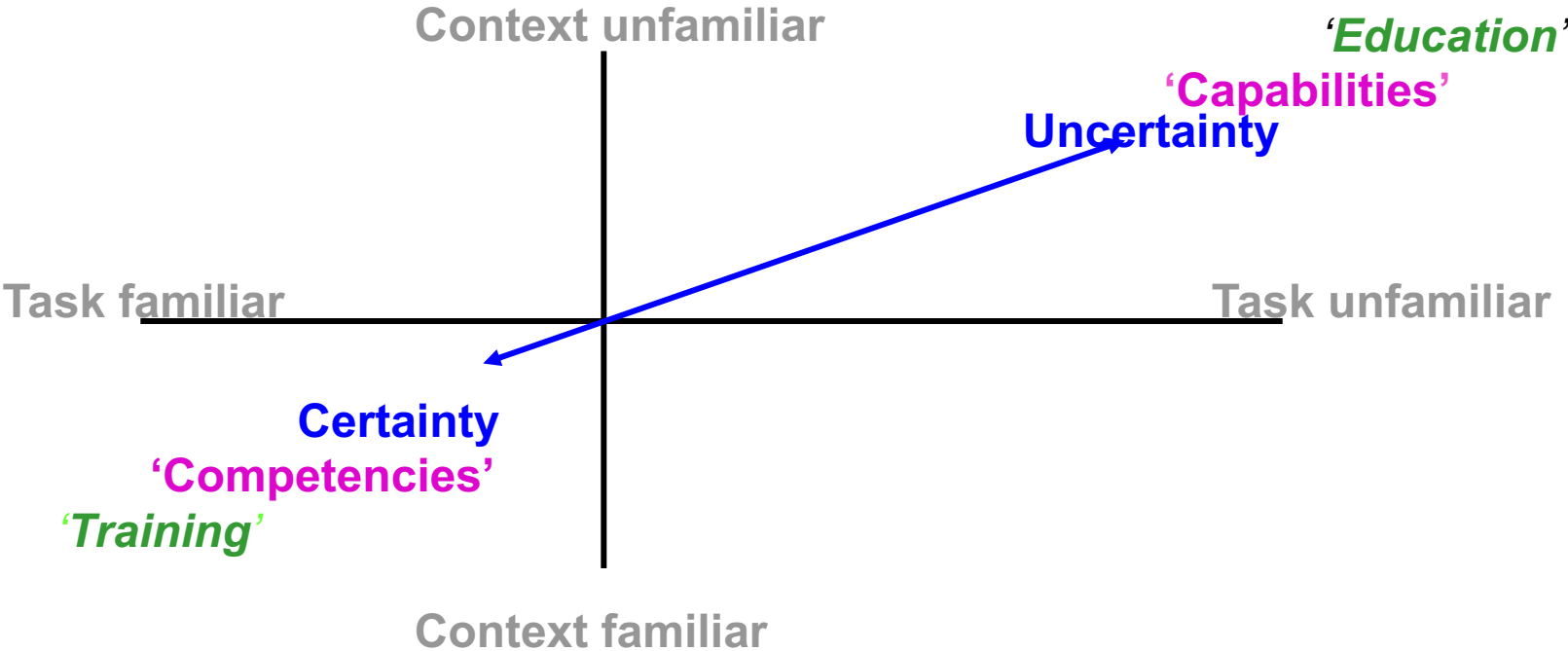


**...manages
uncertainty, complexity
or chaos!**

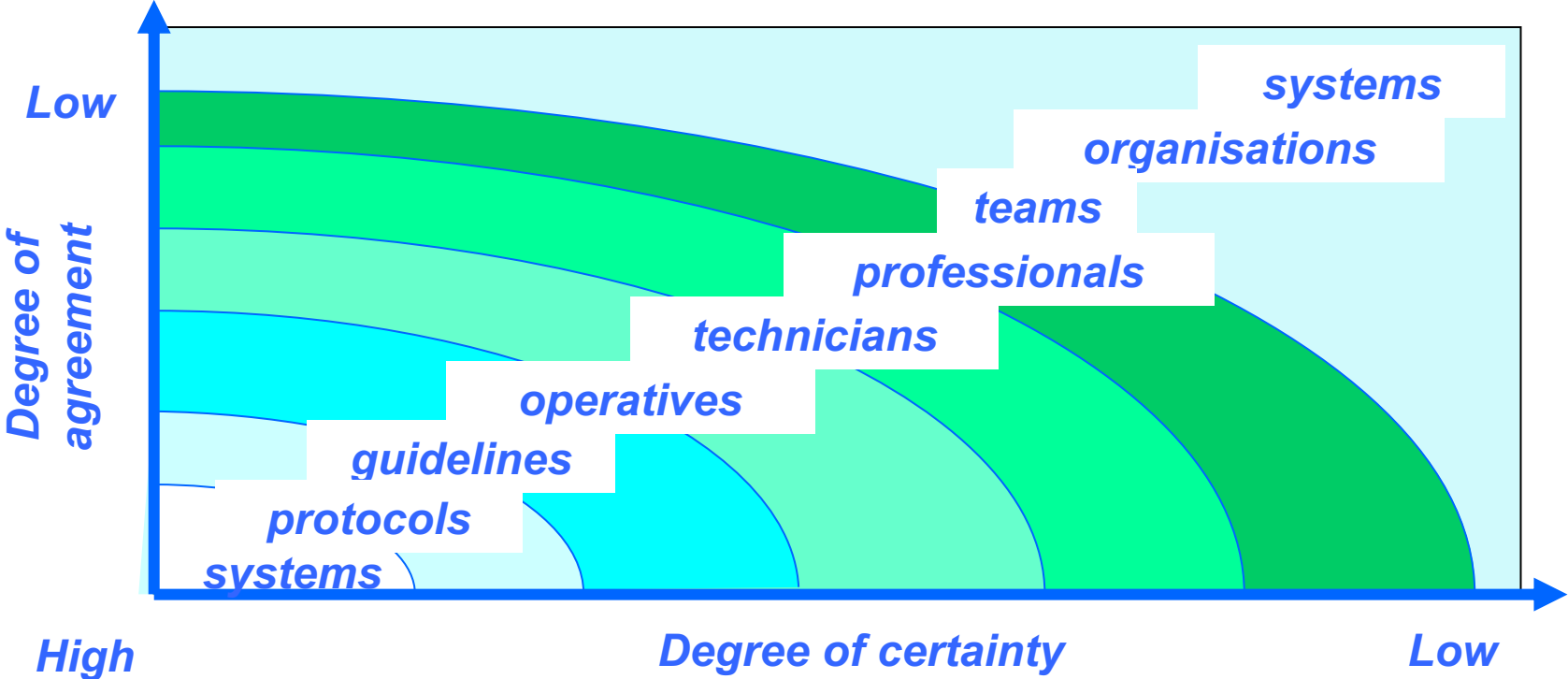
Complexity, chaos and the professional



Developing capabilities far beyond competence



Work distribution vs challenge of work



Concepts supporting Professional Excellence

'The Cube'

'The Curve'

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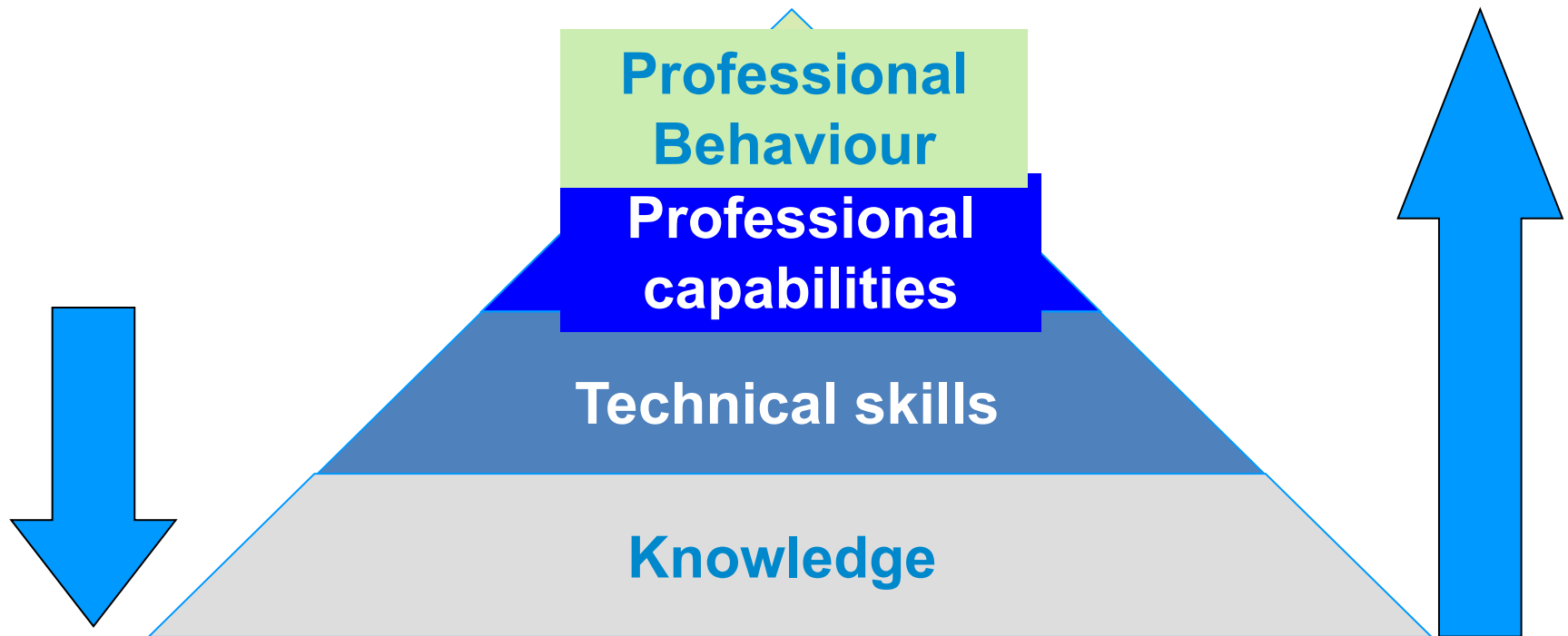
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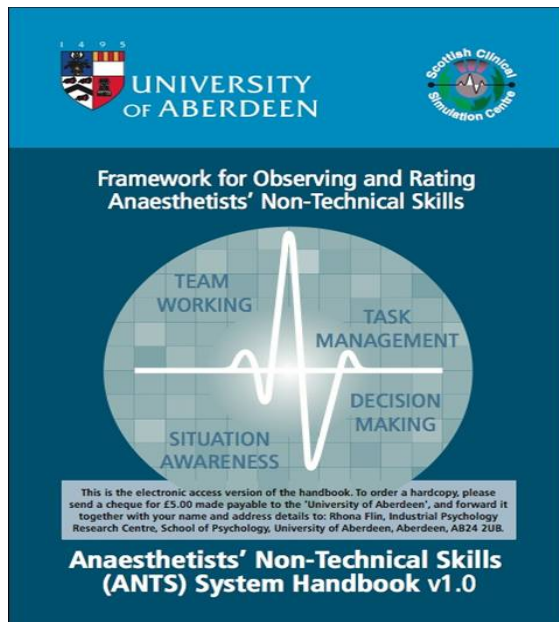
'The Parabola'



'The Triangle' - Domains of Professional Excellence



Professional capabilities or Non-technical Skills



Effective team working

Task management

Decision making

Situational awareness

R Flynn et al

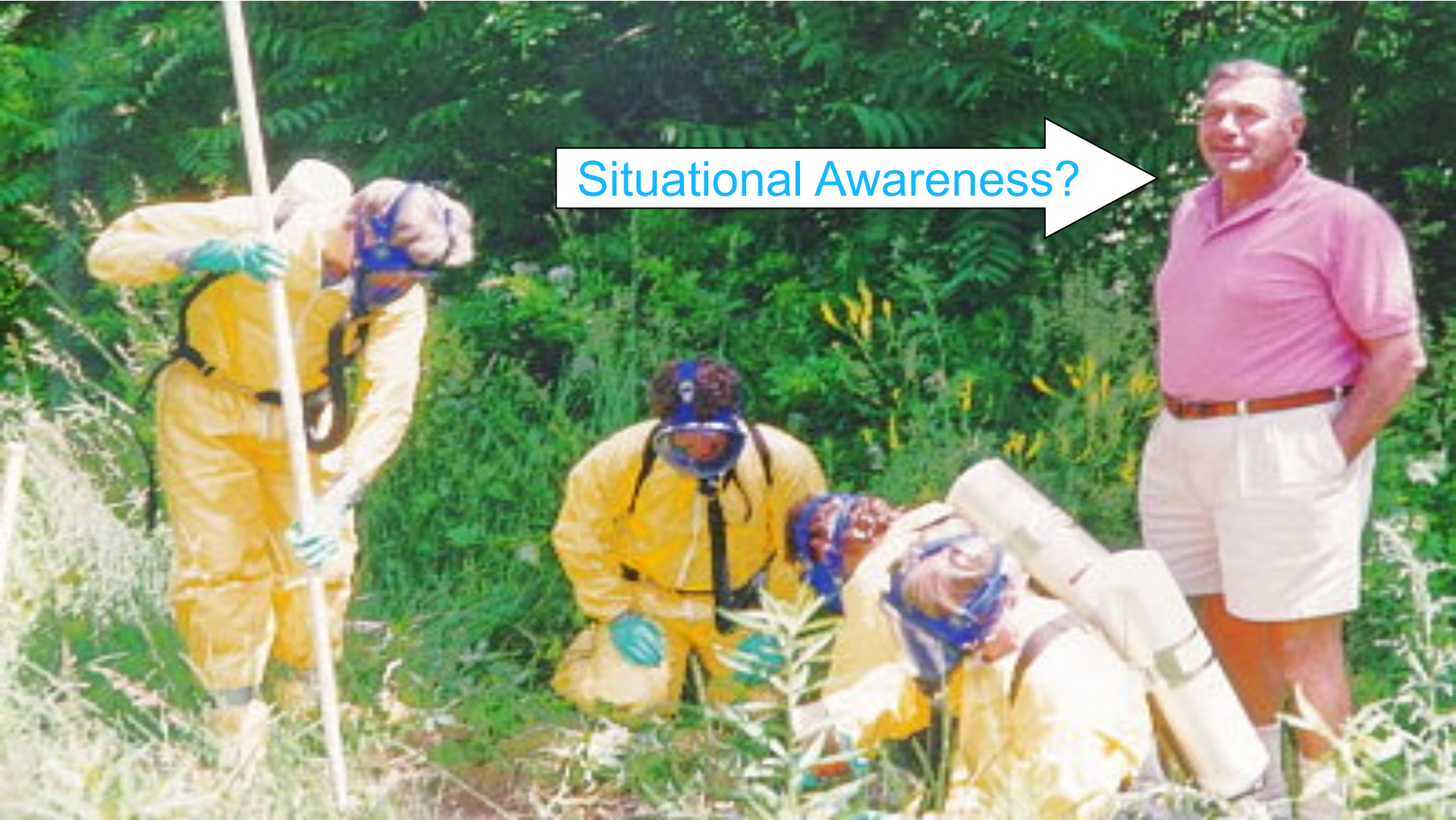


Effective team?

Outcome focused

Good risk management?

Risk identification and mitigation?



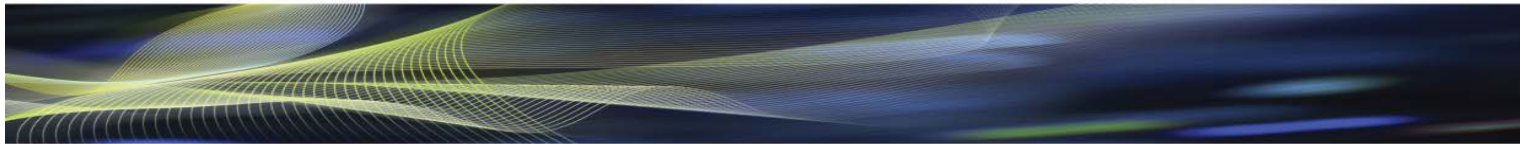
Situational Awareness?

Patient Safety and Human Factors

STeLI

NHS
London

London Deanery



Crisis Resource Management Key Points

- 1) Know the environment
- 2) Anticipate and plan
- 3) Call for help early
- 4) Exercise leadership and followership
- 5) Distribute the workload
- 6) Mobilise all available resources
- 7) Communicate effectively
- 8) Use all available information
- 9) Prevent and manage fixation errors
- 10) Cross (double) check
- 11) Use cognitive aids
- 12) Re-evaluate repeatedly
- 13) Use good teamwork
- 14) Allocate attention wisely
- 15) Set priorities dynamically

www.steli.londondeanery.ac.uk

(from Rall M, Gaba, DM: Human Resources and Patient Safety in Miller, 6th ed, 2005)

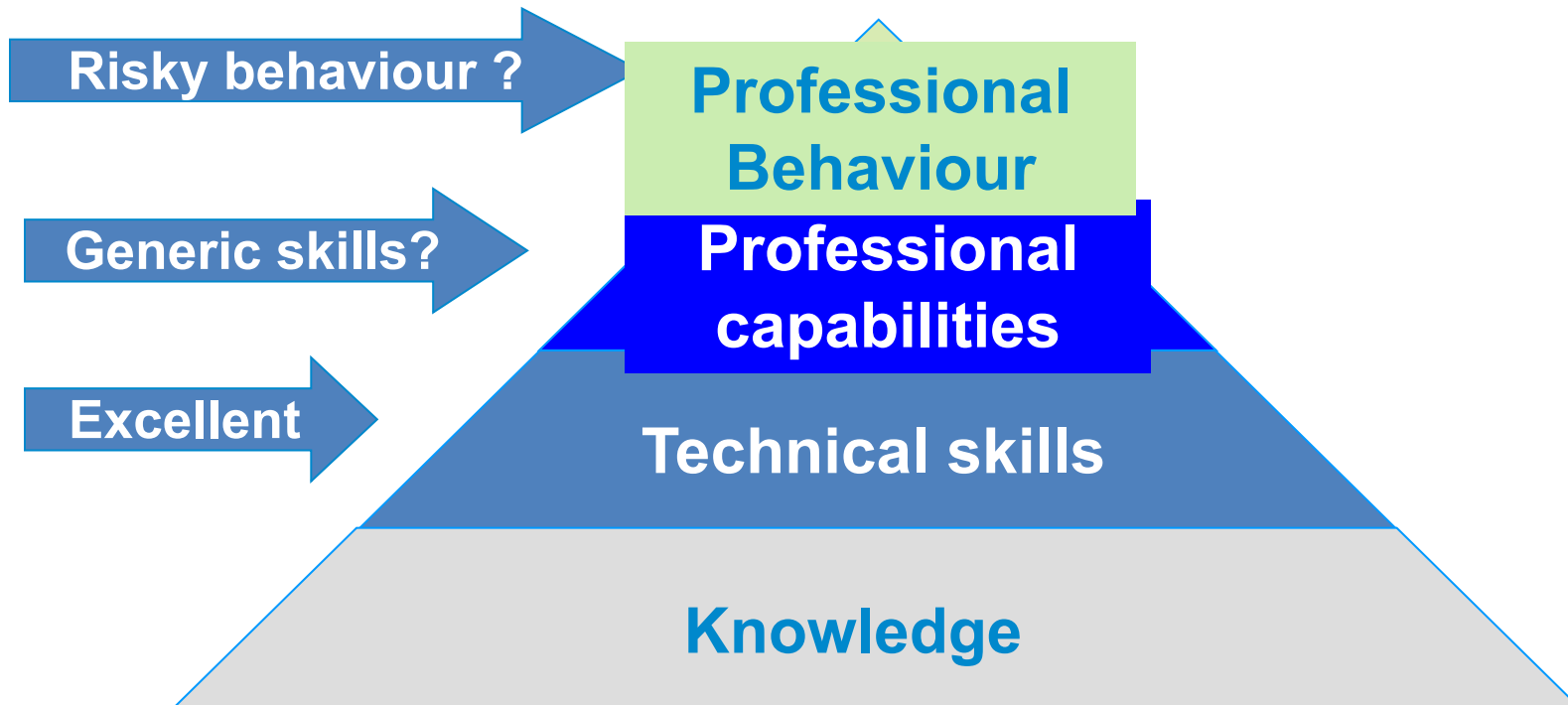
‘Anticipate and plan’...

...’Doors to automatic and cross check’

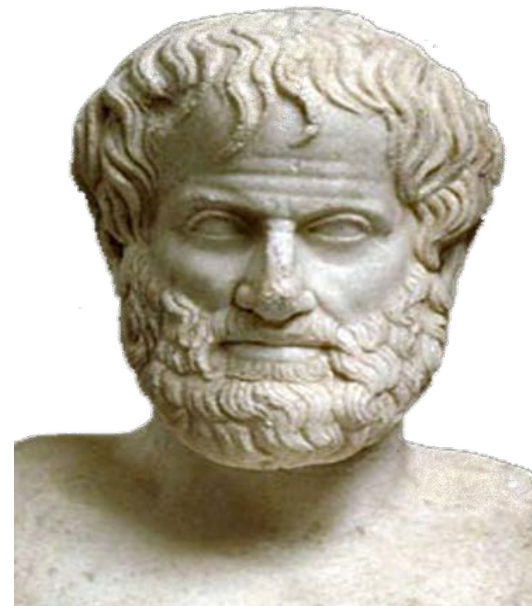




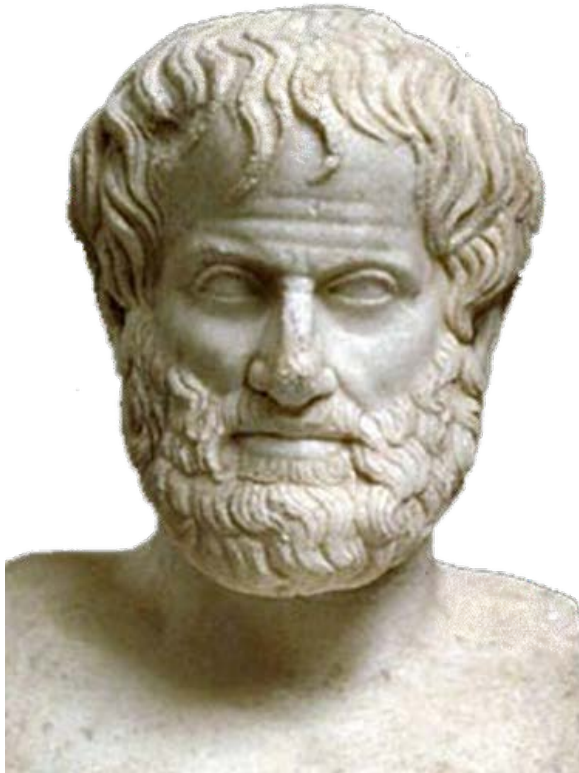
Domains of Professional Practice



The Ancients valued virtues...



...Promoted excellence...



We are what we repeatedly do. Excellence, then, is not an act, but a habit

Aristotle 384-322 BCE

...Wisdom...



*“By three methods we may learn wisdom:
First, by reflection, which is noblest;
Second, by imitation, which is easiest;
and third by experience, which is the bitterest.”*

Confucius 551-479BC

What virtues should we value...?



Dee Hock on professional qualities

Promote first on the basis of **integrity**;

second, **motivation**

third, **capacity**

fourth, **understanding**

fifth, **knowledge** and

last and least **experience**.

Because...

Without **integrity**, motivation is **dangerous**

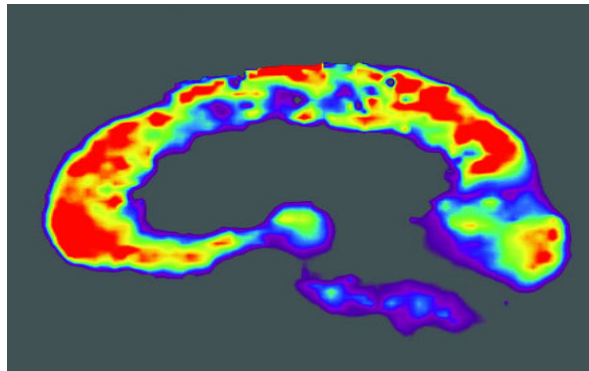
without **motivation**, capacity is **impotent**

without **capacity**, understanding is **limited**

without **understanding**, knowledge is **meaningless**

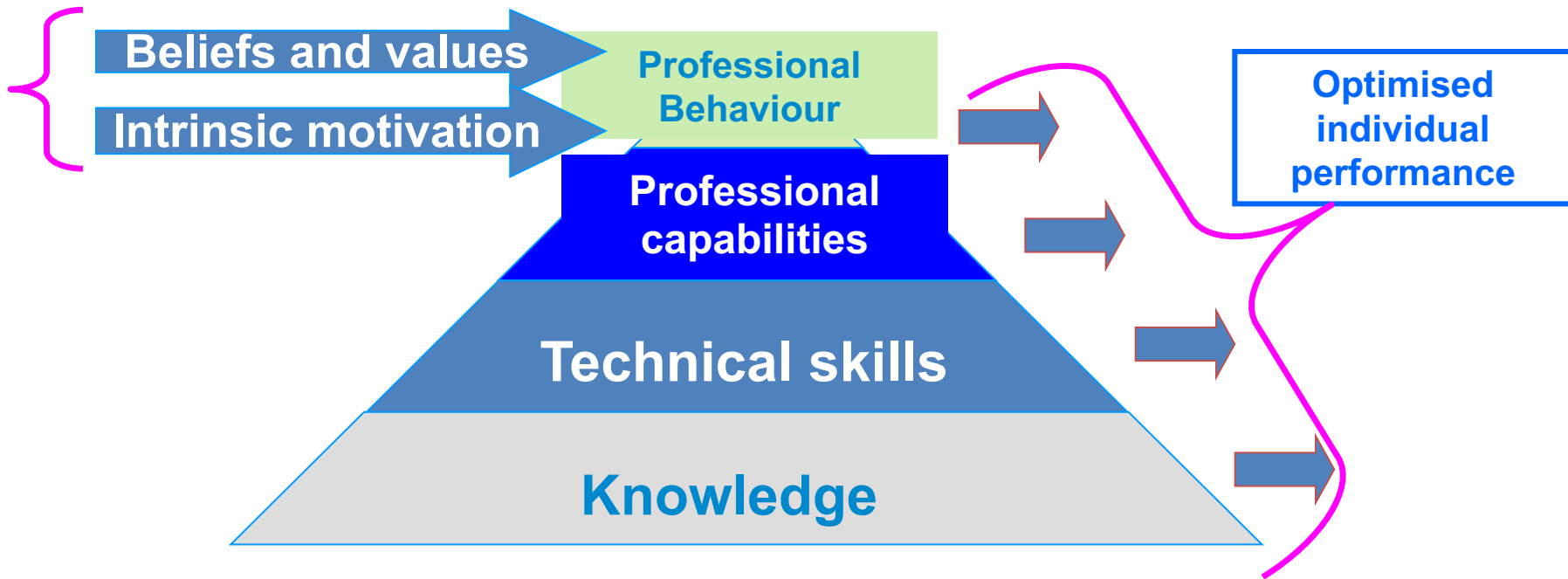
without **knowledge**, experience is **blind**

Beliefs and values underpin human behaviours...

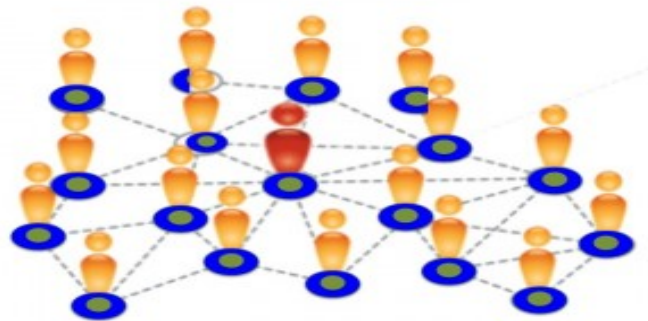


Beliefs beget behaviours

The Triangle – Cognitive Domains of Professional Practice



Fractals – scalable qualities



Human qualities are scalable and contagious

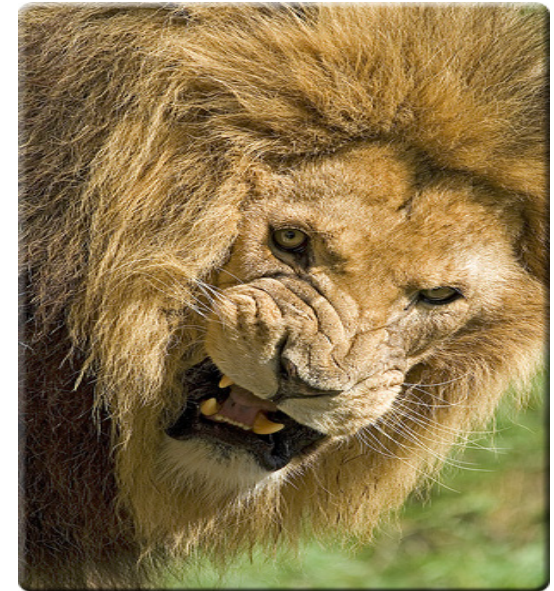


Individual
behaviour

Team performance

Organisational
culture

System
coherence



Behaviour breeds behaviour

Both good...

... and bad!

Concepts supporting Professional Excellence

'The Cube'

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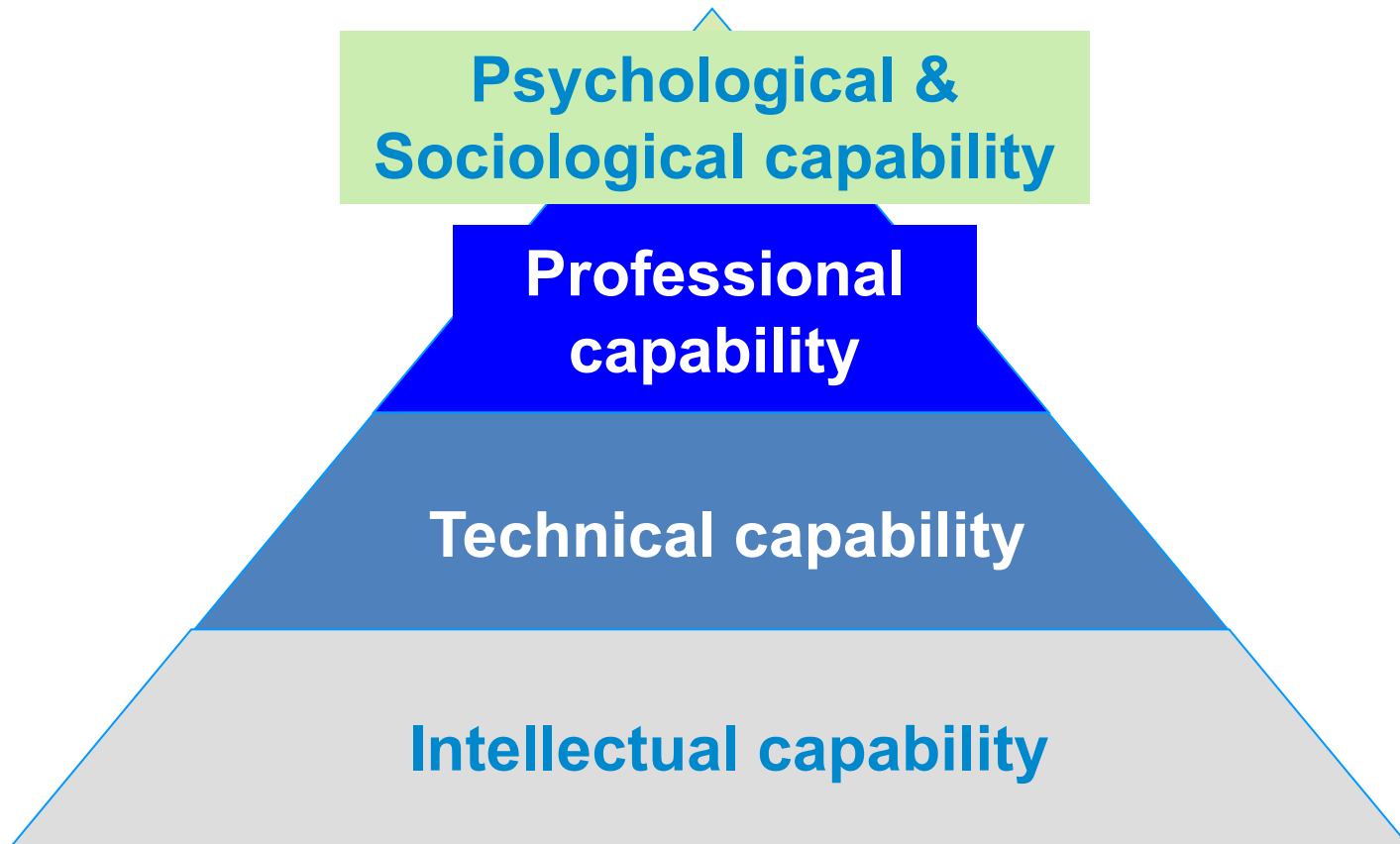
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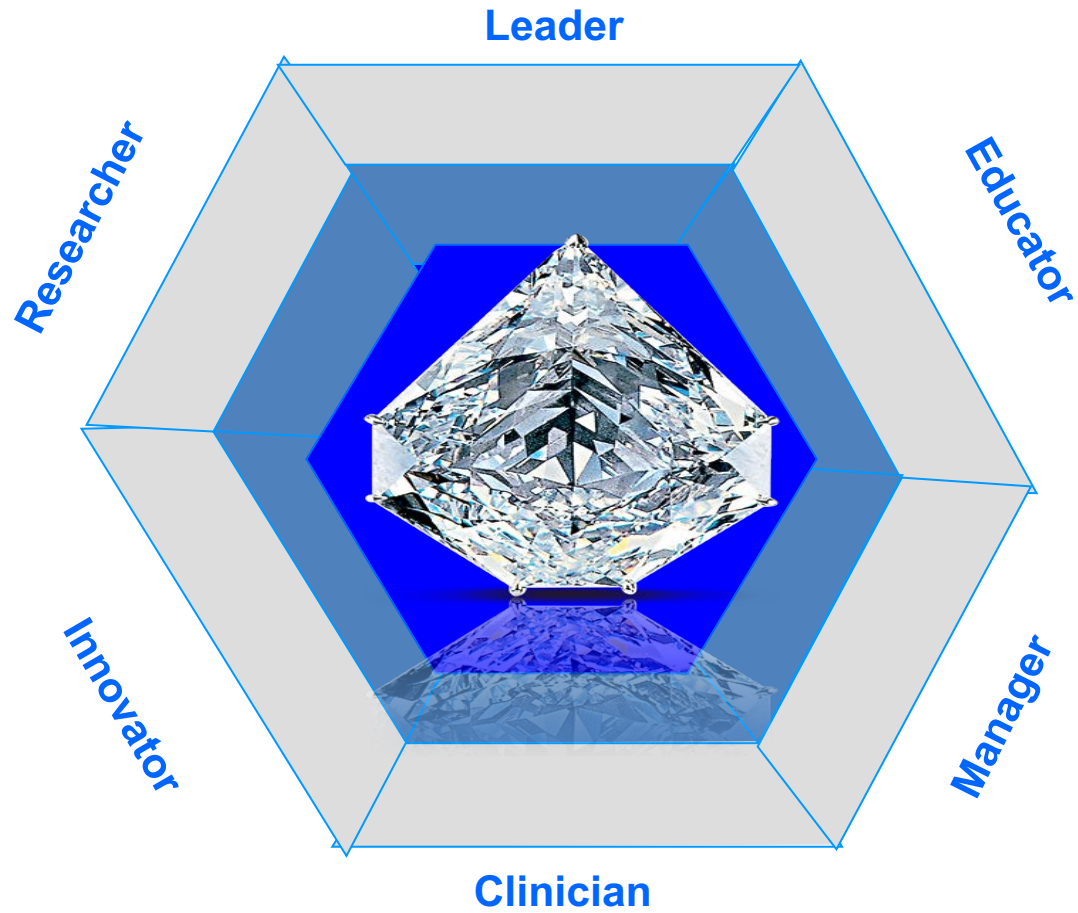
'The Parabola'



‘The Triangle’ - Domains of Professional Practice



The Polygon of Roles



Generic professional capabilities...



Professionals are highly flexible, adaptable and



... with many exceptional qualities

...they are rarely flawless

Common types of FTP concerns

FIGURE 37: What are the most common types of allegation investigated by employers and the GMC?

TYPES OF ALLEGATION	Number of cases investigated			% investigated by the GMC
	Total	Referred to employers to investigate	Investigated by the GMC	
Criminality	1,196	8	1,188	99%
Health	899	34	865	96%
Acting honestly and fairly	3,972	988	2,984	75%
Working with colleagues	1,106	271	835	76%
Professional performance	2,766	736	2,030	73%
Safety and quality systems	526	178	348	66%
Clinical competence	8,176	3,840	4,336	53%
Communication and respect for patients	5,216	3,057	2,159	41%
Unspecified*	1,986	49	1,937	

SOMEPC GMC, 2014

Turning to the 'Dark Side'



Concepts supporting Professional Excellence

'The Cube'

'The Curve'

'The Fan'

'The Layers'

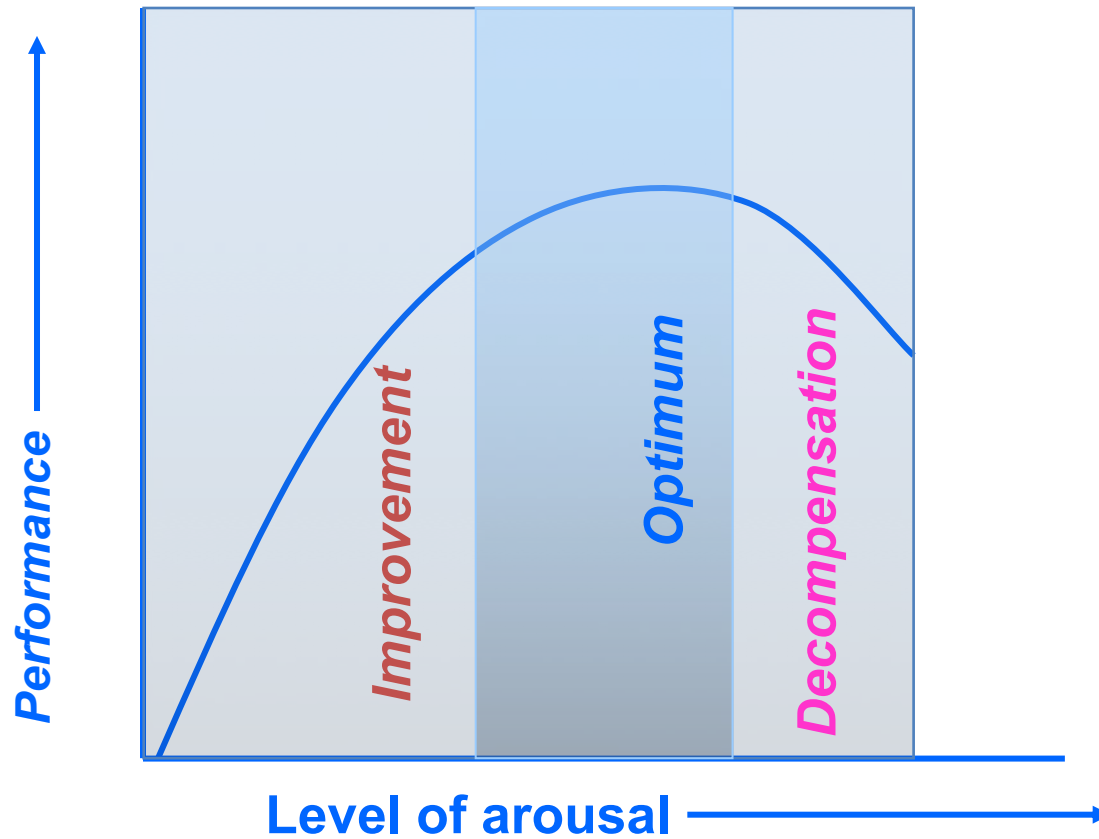
'The Triangle'

'The Polygon'

'The Parabola'



'The Parabola' – The 'dark side' of performance



On strengths becoming weaknesses...

Independent

Withdrawn

Gregarious

Inappropriate

Diligent

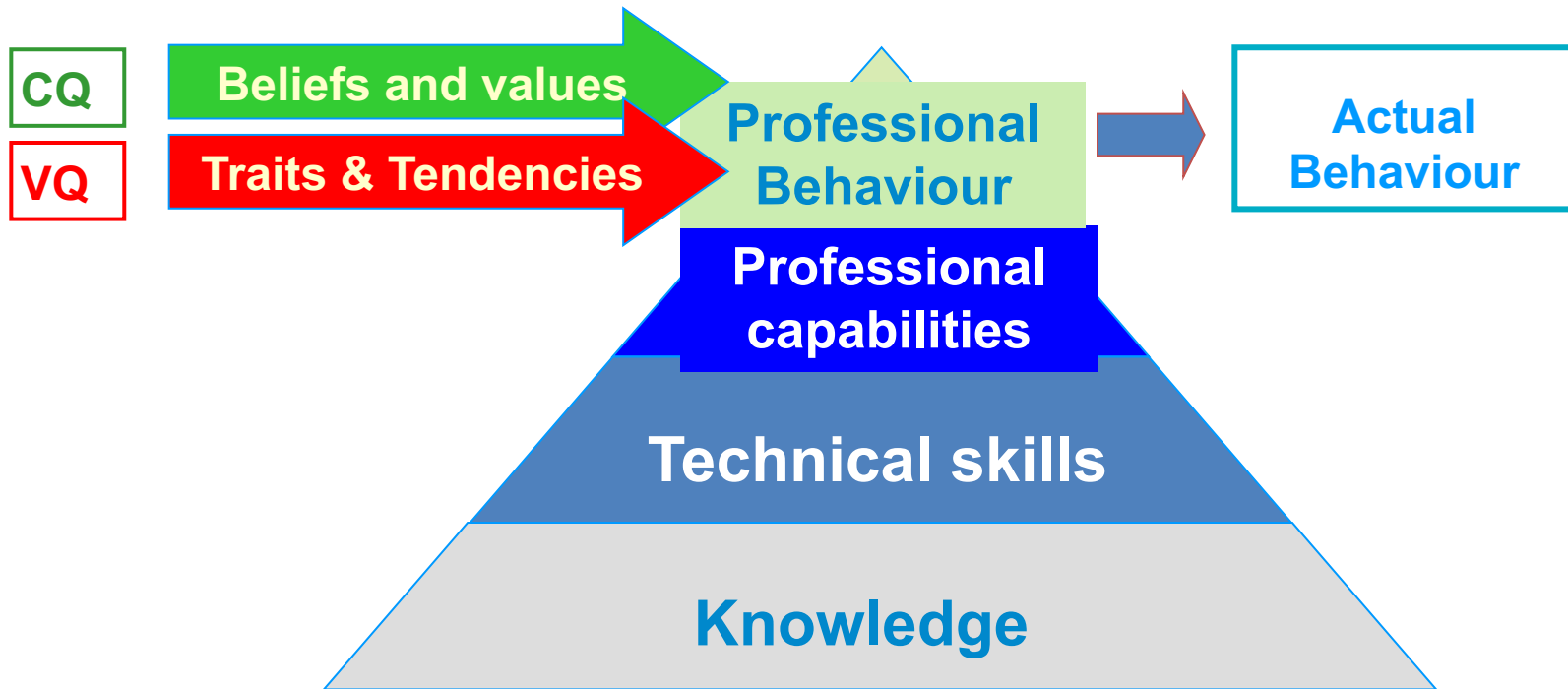
Obsessive

Confident

Arrogant



'Visceral intelligence' vs 'cognitive intelligence'



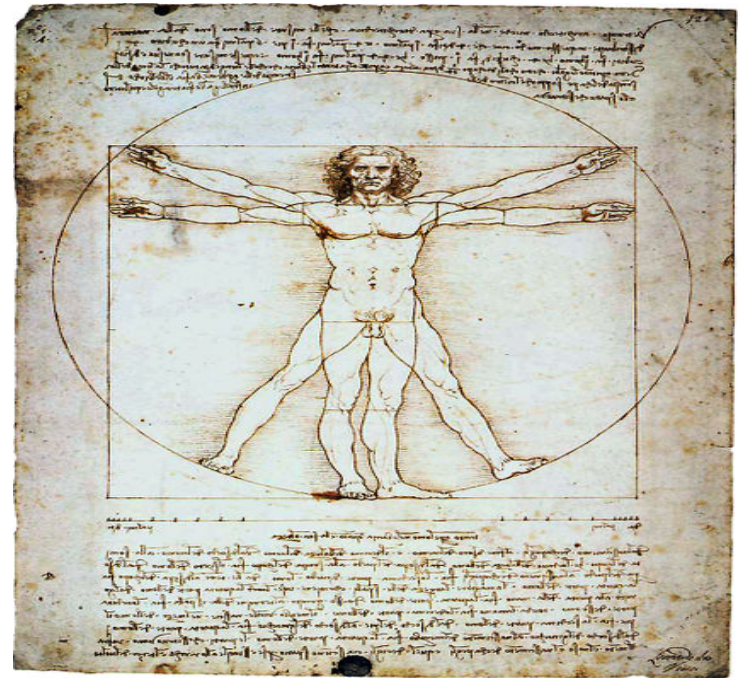


How do we achieve this professional excellence...

...aspire to excellence...

...an intolerance of mediocrity

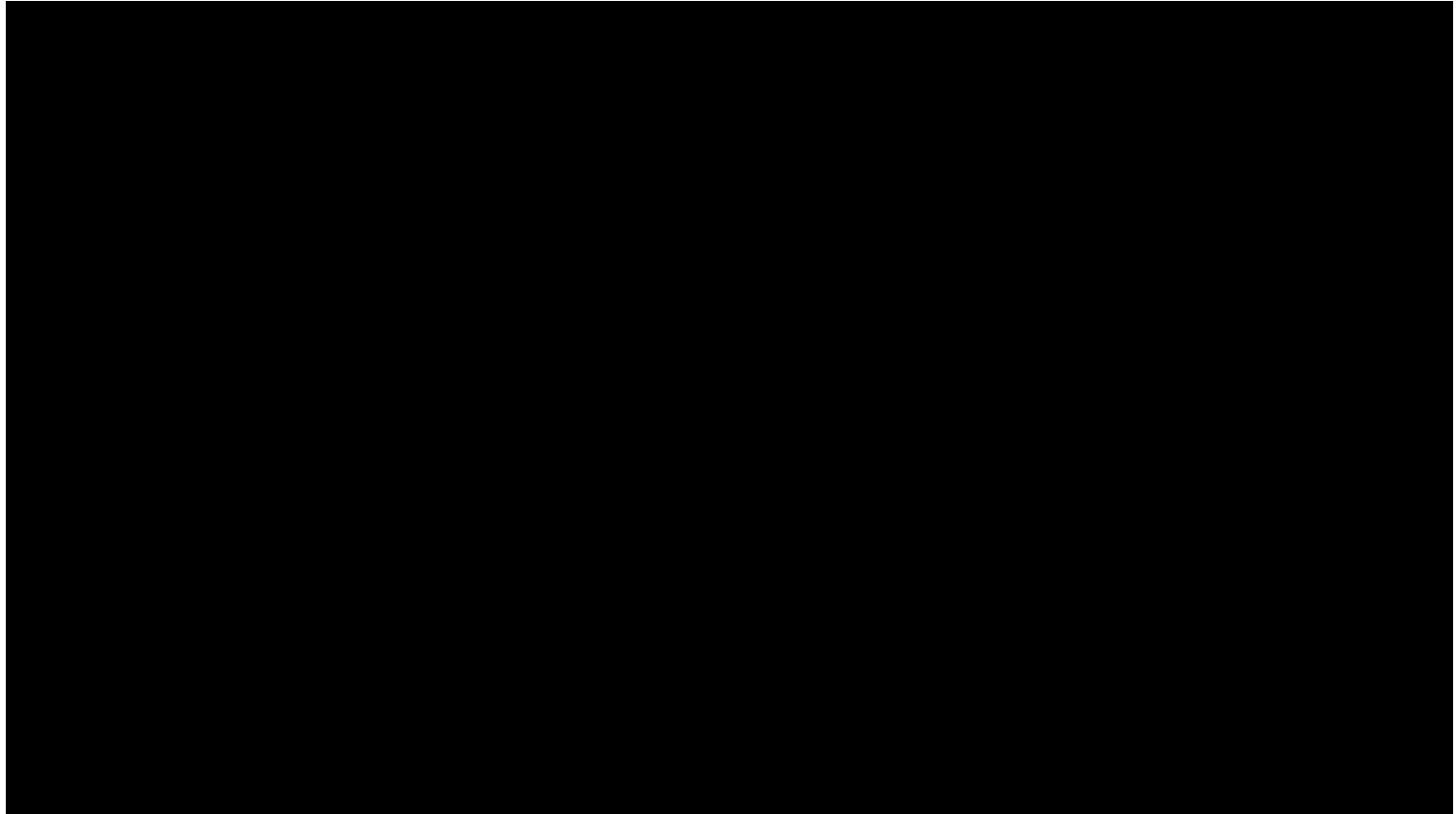
...education a strategic imperative



So how do we nurture such professional excellence...



Better workplace education is key...



Better communication is key...



Better educators...



至誠至聖與兩間
功化同流

表師世萬



先覺先知為萬古
倫常立極

Better feedback...



Better behaviour...





...importance of leadership...



...beware intentions...

Better behaved leaders...



...and followers...

Virtuous professional role models are key...



Integrity

Humility

Compassion

Kindness

Openness

Capability

Wisdom

Curiosity

Diligence

Resilience

Mindfulness

Thoughtfulness

...virtuous and ethical professional identity

...to better learning...



...promoting bespoke or adaptive learning...



..because one size clearly doesn't fit all!

Better measurement...



Better assessment...



Better judgement...



Better leadership....?



Better team working...



...in a relentless pursuit of excellence...



Never mistake the ACTIVITY...



...for the value proposition...



'If you think education is expensive try ignorance'

Derek Bok, President of Harvard



