Systematic Innovation

e-zine

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The Systematic Innovation e-zine is a monthly, subscription only, publication. Each month will feature articles and features aimed at advancing the state of the art in TRIZ and related problem-solving methodologies.

Our guarantee to the subscriber is that the material featured in the e-zine will not be published elsewhere for a period of at least 6 months after a new issue is released.

Readers' comments and inputs are always welcome.
Send them to **darrell.mann@systematic-innovation.com**

Shadow Leadership Systems

*"Madness is something rare in individuals,
but in groups, parties, peoples, and ages it is the norm."*
Friedrich Nietzsche

I left my corporate career in 1996. Some of my friends stayed on. Some of them climbed all the way to the top of some of the greasiest poles. All of them are now retired. And all of them, without exception, eventually concluded that spending 75% or more of their working lives navigating office politics was not what they had set out to do.

Given the continuous-improvement DNA now present in almost every organisation, hobbling the boardroom with that level of inefficiency sounds, on the face of it, like madness.

And yet, in my post-corporate career, working as an outsider with senior leadership teams and boards, I have come to see it not as the exception, but as the norm.

Consistently high-performing senior leadership teams are vanishingly rare. In the history of "ever", they seem to come in handfuls: IBM under Thomas Watson, the US government under FDR, film production teams under John Ford, the Chicago Bulls under Phil Jackson, Manchester United under Sir Alex Ferguson, Liverpool under Jürgen Klopp. Different sectors, different eras – and the same uncomfortable question:

Why so few?

The usual explanations – charisma, talent, luck – don't really survive scrutiny. A more useful place to start is with a principle from systems thinking:

POSIWID. The purpose of the system is what it does.

If a senior leadership team spends 75% of its time managing politics, then politics *is not a failure mode*. It is the purpose of the system.

At this point, it's tempting to blame individuals. But systems thinking offers a more disturbing explanation. A system that reliably produces power, status, and survival for its participants has no incentive to optimise itself out of existence. In that sense, boardroom politics is not accidental. It is adaptive.

The problem is that the system we see – the one on the org chart – is not the system that is actually doing the work.

Somewhere beneath the formal structure sits another system entirely: a **shadow leadership system**. One that most of its participants are only dimly aware of, but which quietly governs behaviour, attention, and decision-making.

Robert Greene, in *The Laws of Human Nature* (Reference 1), gets remarkably close to describing this system. He identifies seven recurring "courtier" roles that tend to form beneath powerful leaders: the Intriguer, the Stirrer, the Gatekeeper, the Court Jester, the Mirrorer, the Favourite, and the less attractively named Punching Bag.

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Greene doesn't describe these roles as a system. But seven is rarely an accidental number. In systems terms, it is usually a clue.

Mapped onto the Law of System Completeness (Reference 2), these roles form a fully functioning shadow system – one that operates in parallel with, and often in opposition to, the formal organisation.
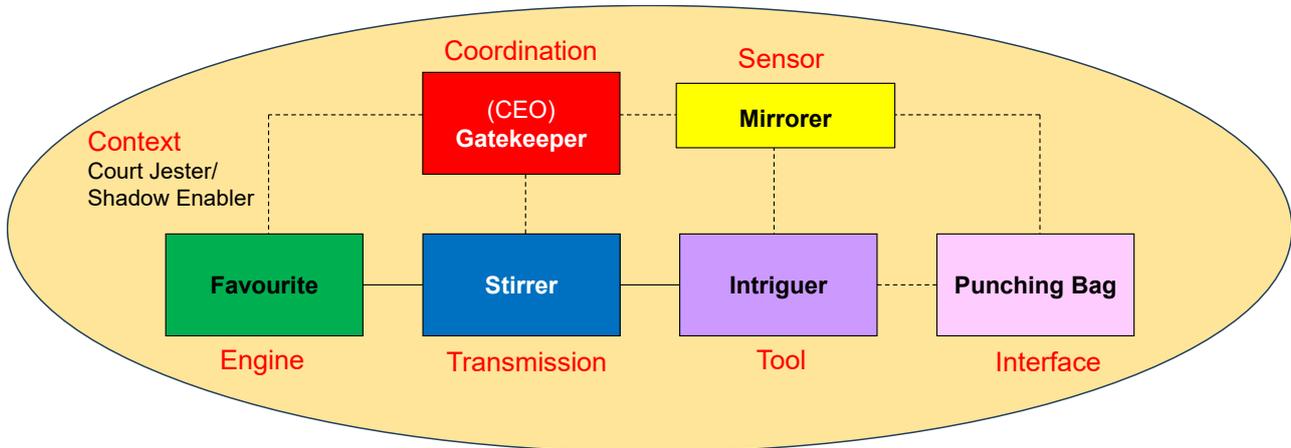
- **Intriguer** (Tool)
  Appears intensely loyal, highly competent, and relentlessly hard-working. Execution is their camouflage. Behind it sits long-term positioning and private resentment. (Alexander Haig is a classic example.)
- **Stirrer** (Transmission)
  Moves emotional signals through the system: rumours, anxieties, implied threats. Rarely senior, often socially gifted, and almost never visible on the org chart.
- **Favourite** (Engine)
  Converts proximity to the CEO into momentum. Not necessarily the smartest, but the most protected. When they move, others realign.
- **Punching Bag** (Interface)
  Absorbs collective aggression. Crucially, they are never pushed out – only kept just low enough to remind everyone else of the power structure.
- **Mirrorer** (Sensor)
  Reflects back what the leader wants to see, while quietly reading what the system will tolerate. Often the most resilient role. Frances Perkins, FDR's Secretary of Labor, is a rare benign example.
- **Gatekeeper** (Coordination)
  Controls access, information flow, and timing. Although formally this should be the CEO, in the shadow system the Gatekeeper does the real coordinating by isolating the leader from inconvenient realities.
- **Court Jester / Shadow Enabler** (Context)
  Normalises dysfunction through humour. "If we didn't laugh, we'd cry." Pressure is released, nothing changes.

None of these roles reliably map onto formal job titles. The CTO, for example, is the Engine of the *official* system but is rarely the Favourite in the shadow one. People drift into these roles not by appointment, but by emotional fit and survival instinct.

And here's the most important point: almost none of the participants are consciously aware that this shadow system exists. Or how powerful it becomes if left unchecked.

Greene briefly advises leaders to watch out for such characters. He also suggests the creation of what he calls a "Reality Group": a small, trusted circle insulated from court politics and tasked with telling the truth.

From a systems perspective, this is not a moral recommendation. It is a structural one.

Boards do not fail because they lack intelligence, experience, or good intentions. They fail because no one is explicitly responsible for seeing – and counterbalancing – the shadow system.

Which is why boards don't need more operators, more favourites, or more politically skilled survivors.

They need **1%ers**.

People who can see the shadow system *as a system*.
People who are structurally insulated from court dynamics.
People whose role is not to play the game, but to make it visible.
People who collapse the double game simply by naming it.
Every board already has a shadow system. The only real question is whether it also has a counter-system.

So, the call to action is simple. And uncomfortable.

If you are a CEO, ask your board to assess itself. Not on competence or governance compliance, but on whether it contains at least one genuine 1%er. Or whether two or more members make a 1%er Team. People whose explicit role is to surface reality, puncture political dynamics, and keep the shadow system in check.

Because the alternative is not neutrality.

It is allowing the system to continue doing exactly what it was always designed to do.

Reference

1) Greene, R. (2018). The Laws Of Human Nature, Profile Books.
2) SIEZ, (2017) *Case Study: Law Of System Completeness Hierarchies,* Issue 189, December.

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Innovation (Four Different Types)

SUPER-SYSTEM

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SUB-SYSTEM
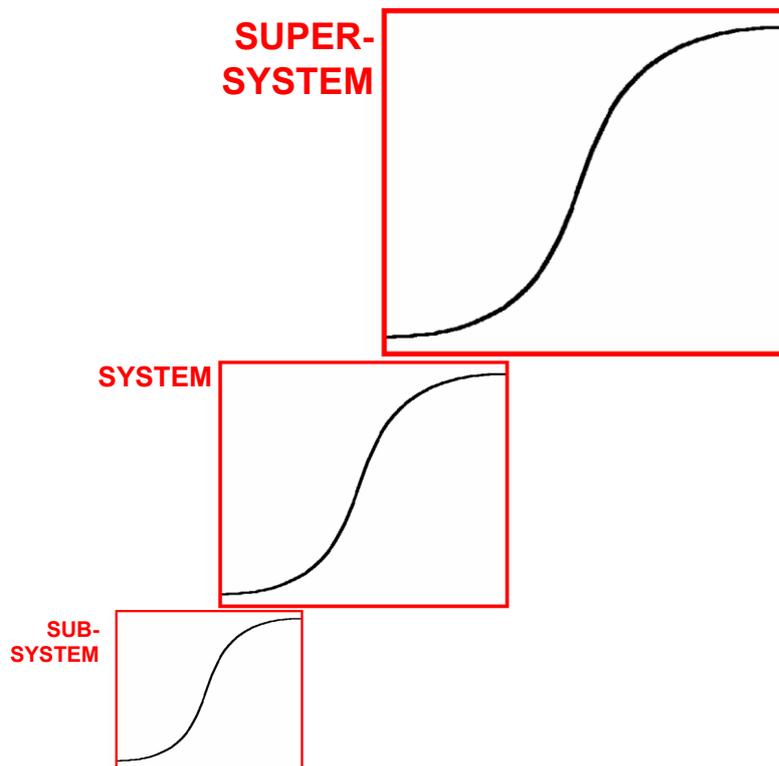
It's strategy day at MegaCorp Inc. The senior leadership team is assembled in the Board Room. The first slide is up on the screen. At the top, it says GRAPHENE. Below it: a familiar curve, climbing steeply upward.

Around the table sit four people.

The first to speak is the materials scientist.

She's animated, almost impatient. "This," she says, gesturing to the slide, "is a genuine breakthrough. A new material class. We're talking about order-of-magnitude improvements – strength, conductivity, thermal performance. This is a new S-curve altogether."

Heads nod. This is exciting. This is why innovation matters.

Next, the CMO leans forward, he's been busy working with a prospective aerospace client. "I don't disagree," he says carefully. "But in our customer's world, it's a materials substitution problem. If graphene makes fan blades lighter and stronger, great. But it's still a jet engine. Same certification regimes. Same performance metrics. It helps them climb the curve they're already on. It doesn't change their curve though."

The energy in the room dips slightly. The curve on the slide feels less dramatic now.

Then the third voice cuts in – the commercial lead.

"What worries me," she says, "is that it doesn't help our *best* customers – at least not yet. But it *does* enable products that are potentially cheaper, definitely lighter, and then frankly worse by most of their current metrics. That's exactly how we lost ground before. It's not a breakthrough to them. It's just disruptive."

The word hangs in the air. Someone shifts in their seat.

Finally, the CEO speaks.

"You're all right," he says. "And you're all talking about different things."

He pauses.

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One reason innovation discourse feels confused is that labels have multiplied faster than understanding. "Disruptive", "radical", "breakthrough", "transformational", "architectural", "platform", "adjacent", "moonshot" – all of these are describing the same underlying phenomena, just observed from different vantage points. The simplest way to restore clarity is to return to first principles, which, in the innovation world means S-curves – and more importantly, the ability to recognise that innovation happens across a hierarchy of S-curves:

- Sub-systems
- Systems
- Super-systems (industries, paradigms)

Once we do that, four *distinct* types of innovation fall out naturally.

Every product or service sits on multiple, nested S-curves:

- A braking system sits inside a vehicle
- A vehicle sits inside a mobility system
- A mobility system sits inside a societal/industrial paradigm

Most confusion arises because authors describe innovation without stating which S-curve level they're talking about.

The Four Innovation Types (From an S-Curve Perspective)

1. Transformational Innovation
(New *Super-System* S-Curve)
What it is: The creation of an entirely new *industry-level* S-curve – one that rewrites the dominant business logic, success metrics, and opportunity space.
S-curve impact:

- Ends or marginalises multiple existing industry curves
- Creates a new "rules of the game" environment
- Unlocks many future system- and sub-system innovations

Examples:

- Steam power → industrial capitalism
- Production line → mass manufacturing
- Electricity → electrified civilisation
- Digital computing → information economy

Key insight: Transformational innovation is rare, slow to be recognised, and almost always resisted… because it invalidates existing competence and power structures.

2. Breakthrough / Radical Innovation
(New *System* S-Curve via New Principle or Architecture)
What it is: A step-change in system performance enabled by a fundamentally new scientific principle, architecture, or configuration.
S-curve impact:

- Launches a new system-level S-curve
- Dramatically improves performance on existing metrics

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- Does *not* necessarily disrupt incumbents immediately

Examples:
- Lithium-ion chemistry enabling mobile computing
- Jet engines vs propellers
- mRNA platforms in medicine

Key insight: Breakthrough innovations are often mistaken for "disruptive" – but they usually *strengthen* existing leaders before threatening them.

3. Disruptive Innovation (Christensen)
(*Alternative System* S-Curve with Different Metrics)

What it is: A system-level innovation that initially performs *worse* on dominant success metrics – but introduces *new dimensions of value* that attract non-consumers or over-served users.

S-curve impact:
- Starts low on the incumbent performance curve
- Improves along a *different* trajectory
- Eventually intersects and overtakes the incumbent curve

Examples:
- Early hard disk drives
- Hydraulic backhoes
- Streaming vs physical media

Key insight: Disruption is not about superiority – it is about misalignment with incumbent value metrics. This is why smart incumbents still miss it.

4. Sustaining Innovation
(*Sub-System* jumps on an Existing System Curve)

What it is: Step-change improvements to sub-systems that allow the main system to incrementally climb further up its current S-curve.

S-curve impact:
- Improves efficiency, reliability, cost, safety
- Extends the life of an existing system
- Rarely changes market structure

Examples:
- Self-adjusting clutches
- ABS braking
- Lane-assist systems
- Better batteries *within* an existing architecture

Key insight: Sustaining innovation is where most R&D money goes – and where most organisations are most comfortable – precisely because it does *not* threaten the dominant paradigm.

Why These Four Matter (And Others Don't)
Most alternative taxonomies are:
- Re-labellings of one of these four
- Context-specific viewpoints (marketing vs technology vs strategy)
- Attempts to signal novelty rather than increase clarity

By grounding innovation types in which S-curve is being created, extended, or replaced, we get:
- Conceptual clarity
- Predictive power
- Strategic relevance

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Back to MegaCorp Inc, this is not just a graphene story. Graphene isn't special in this regard, it's just unusually clean as an example. Here are a couple of others to hopefully cement the point:

Lithium-Ion Batteries
- Breakthrough: New electrochemical architecture
- Sustaining: Better smartphone battery life
- Disruptive: EVs initially inferior to ICE on range/refuelling
- Transformational: Electrification of transport + grid re-architecture

Same battery. Four lenses.

AI (Especially Foundation Models)
- Breakthrough: New learning architectures (transformers)
- Sustaining: Better tools inside existing workflows
- Disruptive: "Good enough" automation for non-experts
- Transformational: Rewriting how knowledge work is organised

AI might actually be the *perfect* in-the-moment analogue to graphene.

The general rule is:
Technologies do not have innovation types.
Observers do.
This explains why:
- Scientists overestimate impact
- Engineers underestimate impact
- Executives talk past both
- Markets behave "irrationally"

They're all looking at *different curves*.

The Leadership Implication
The most common strategic failure is not "missing innovation". It is misclassifying it.
- Treating a disruptive threat as sustaining
- Expecting breakthrough returns from sustaining R&D
- Assigning incremental governance to transformational change
- Using Orange efficiency metrics to judge next-curve ideas

Once leaders see innovation through *nested S-curves*, they stop asking, "Is this disruptive or not?" And start asking the better question:

"Which S-curve do we need to focus on right now – and which one are we betting on next?"

Innovation type is not an intrinsic property of a technology.
The same innovation can be sustaining, disruptive, breakthrough or transformational, depending entirely on an observer's *perspective within the S-curve hierarchy*.

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Not So Funny – Insert Miracle Here
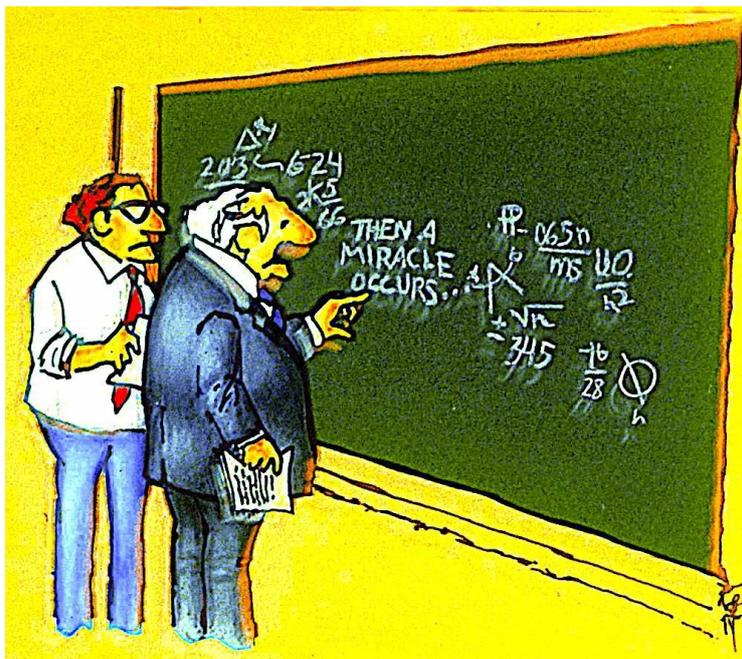
There's a famous cartoon that occasionally resurfaces on social media. Two academics stand in front of a blackboard covered in dense equations. The maths is formidable, the symbols intimidating. Halfway across the board, however, the logic jumps abruptly from complexity to certainty. The missing step is labelled simply: *"Then a miracle occurs."*
One academic turns to the other and says, "I think you should be more explicit here."
The joke lands because we've all seen this move before. Sometimes in academic papers. Often in business cases. Increasingly in strategy decks. The more complex the argument, the more tempting it becomes to quietly insert a miracle where the hard thinking ought to be.

The cartoon is usually interpreted as a critique of sloppy reasoning. Although that's often true, it undersells the problem. The real issue isn't bad logic. It's unacknowledged creativity. The miracle step isn't wrong; it's just invisible. And when it's invisible, it can't be tested, resourced, or challenged.

Literature has been quietly pointing this out for centuries.

Voltaire's *Candide* is essentially a sustained attack on a philosophical miracle. Faced with war, disease, earthquakes, and cruelty, the philosopher Pangloss insists this must be "the best of all possible worlds." The logic looks complete until you notice the missing step: *how exactly does suffering become evidence of goodness?* Voltaire refuses to supply the miracle. Instead, he piles catastrophe upon catastrophe until the gap becomes absurdly obvious.

Business has its own Panglossian miracles.

Consider the phrase "culture will fix it." The argument usually runs like this: performance is poor, incentives are misaligned, silos dominate, trust is low. We will therefore "change the culture." How? By articulating values. Once the values are clear, behaviour will follow.

Performance will improve.

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Just after the miracle occurs.

"Culture" becomes a placeholder for everything that is hard: power, fear, identity, history, and incentives. The slide looks coherent. The system underneath remains untouched.

Or take the ubiquitous hockey-stick forecast. Flat performance for years, then suddenly exponential growth. The spreadsheet is immaculate. The assumptions are silent. Somewhere between Q4 and Q1, customers behave differently, competitors stand still, and execution becomes flawless. The miracle is labelled "market adoption accelerates". Which sounds reassuring until you ask *why*.

Economics institutionalised the miracle step for decades with the phrase "assume rational actors." If individuals behave rationally, markets will optimise. If markets optimise, outcomes will be efficient. The maths works beautifully. The missing step is the inconvenient reality that humans are not, in fact, rational in the way the models require.

Behavioural economics exists largely because that miracle refused to occur on schedule. Technology culture has its own variant: "we'll fix it in software." Complex social or ethical problems are reframed as technical ones. Build a platform, scale it, and the messiness of human behaviour will somehow dissolve. Many of today's most persistent problems are the downstream consequences of yesterday's miracle steps.

What's interesting is that some authors understood this perfectly. And made the miracle the point.

Isaac Asimov's *Foundation* series is built on the idea that large populations follow predictable statistical laws. History can be forecast; society can be steered. The miracle step is that individual humans won't matter. Later in the series, Asimov introduces the Mule, a single anomalous individual who breaks the model completely. The miracle collapses, and with it the illusion of control.

In business, the most dangerous miracle of all is invoked with a single word: *innovation*. The system has plateaued. Incremental improvement no longer works. Therefore we need innovation. Once innovation happens, growth will return. The logic is neat, the language familiar… and the missing step enormous. Where does the genuinely new idea come from? How does it survive existing power structures? How is uncertainty tolerated long enough for something non-obvious to emerge?

This is where the cartoon stops being funny.

Because the miracle step is exactly where leadership, creativity, and courage are required. It's where existing metrics fail. Where past experience becomes a liability. Where systems resist change. Label it and move on, and the organisation quietly pretends the hardest part doesn't exist.

The cartoon doesn't mock miracles. It mocks our habit of pretending they aren't there.

Every meaningful advance – scientific, social, or commercial – requires a leap from the known to the unknown. The problem isn't that miracles are required. The problem is that we keep hiding them behind jargon, spreadsheets, and confident rhetoric.

Perhaps the most honest thing any strategy document could include is a box that says: *"This is the part we don't yet understand."* That would at least give the miracle a fighting chance.

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Because the problem isn't that miracles are required.

It's that we keep pretending they aren't.

Meanwhile, while that has a chance to sink in, here's a collage of some of our favourite 'insert miracle here' instruction sets. If nothing else, perfect examples of Inventive Principle 2…
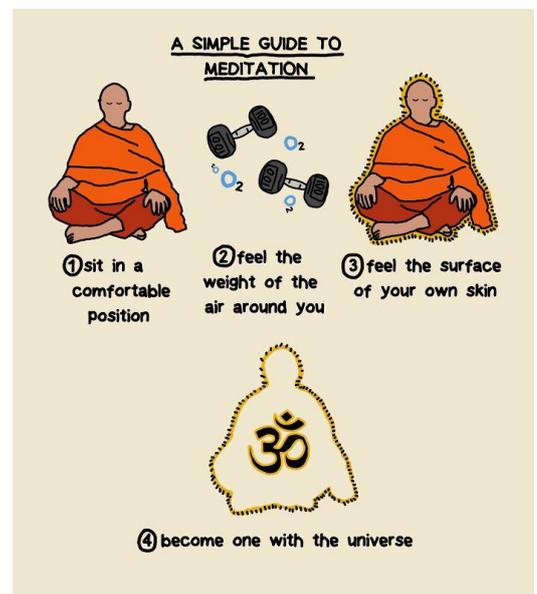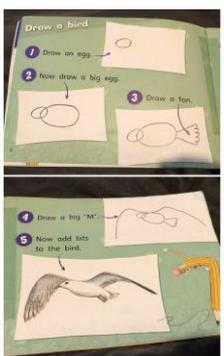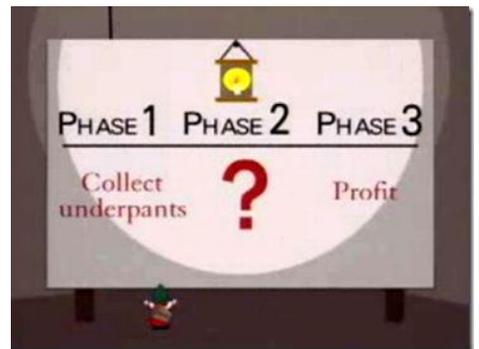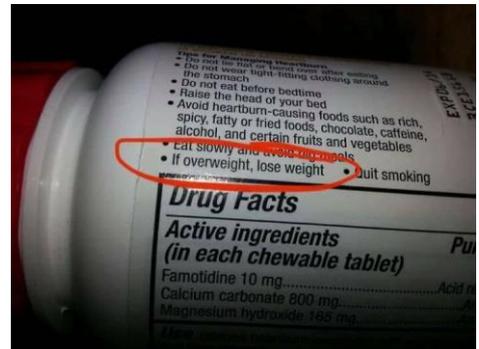
And a few, perhaps slightly more subtle examples…

ALL YOU NEED TO
START A BUSINESS
@successdiaries

LAPTOP OR PHONE + WIFI OR INTERNET = WEALTH

IF YOU WERE LUCKY ENOUGH TO BE BORN IN
THIS MOMENT OF HISTORY, AND HAVE ACCESS
TO THE INTERNET AND OWN A LAPTOP OR
A SMARTPHONE, YOU HAVE EVERYTHING YOU
NEED TO BECOME A MILLIONAIRE.

Выложить продукт на блюдо и
добавить масло по вкусу.

Eng To place a bag in a plenty of
the boiling added some salt water.
To cook on moderate fire of 15
minutes. To get a bag, having
picked up a plug for a loop
stipulated for this purpose. To
allow water to flow down. To open
a bag, having broken off it on a line
of notches. To lay out a product on
a dish and to add oil to taste.

D Zubereitung:
Inhalt eines Beutels in kochendes

SUSAN IS OUT
UNTIL
THURSDAY 8-
20-2015 DUE
TO DEATH

Hand Towel
Dispenser
Instructions
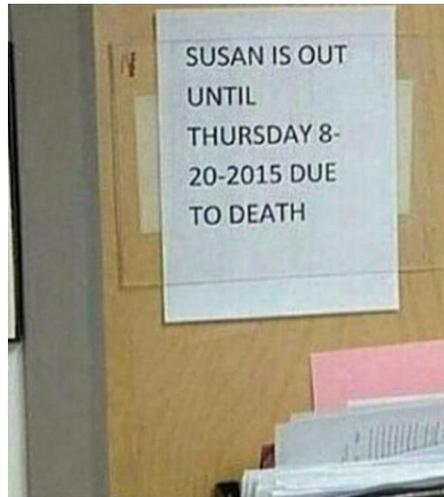
WARNING
Always wear goggles
Never use indoors or enclosed spaces
Do not take on airplanes
18+ Usage & Sale
Do not post
Don't be a dick with our products
AVERTISSEMENT
Masque obligatoire
Pour un usage en extérieur uniquement
Vente & Utilisation interdite aux mineurs
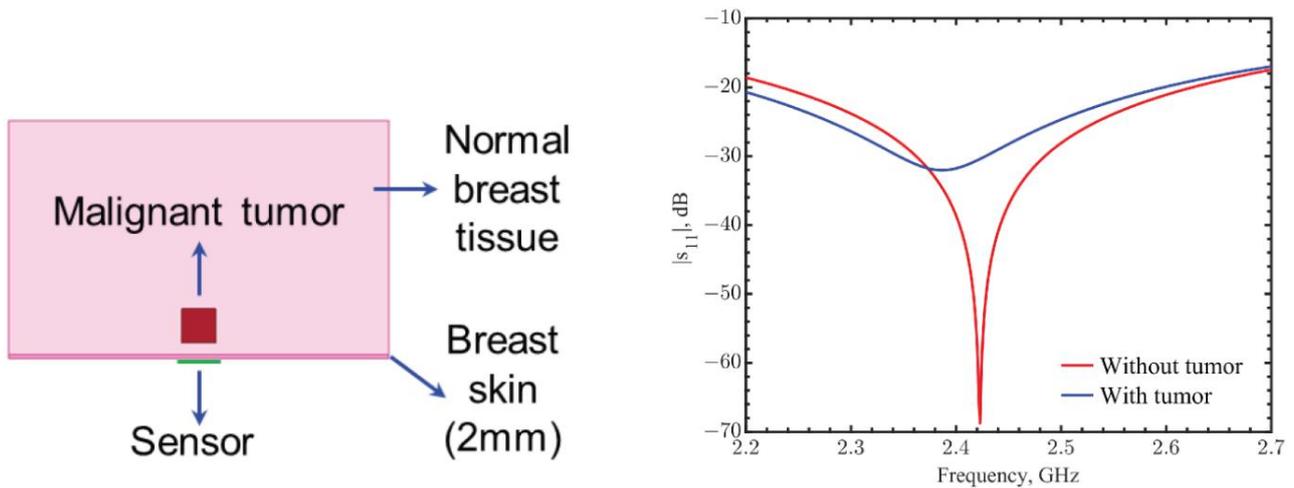Les transports par avion
post

INSTRUCTIONS
1. Detach ring from side of unit -
2. Hold unit with ring pull at the
3. Pull sharply to the side, drop

MODE D'EMPLOI
1. Détachez la goupille
sécurité
2. Tenez

1 + 2 + 3 =

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Patent of the Month – Subcutaneous Imaging

A trip to Dallas, Texas and the Southern Methodist University for our patent of the month this month. US12,543,966 was granted to a pair of inventors at the University on February 10. In a somewhat longer than normal background description, they describe the problem to be solved as follows:

Traditional non-destructive evaluation (NDE) methods, including computed tomography (CT), X-ray imaging, magnetic resonance imaging (MRI), and ultrasonic measurements, have been widely used for non-invasive cancerous tissue detection, such as breast tumour screening. However, the current instruments are bulky, expensive, and have potential risks. X-ray mammography screening is the mainstay for breast imaging, but it has been limited by discomfort, the high costs of the instruments, and a shortage of trained radiologists. The high false negative and recall rates require additional imaging and biopsies, further increasing patients' stress and financial burden. Frequent X-ray exposure may create additional risks. To increase screening accuracy, magnetic resonance imaging (MRI) has been used to provide a second modality of imaging to reduce the rate of false negatives, especially for those at high risk. The instrument costs and operation requirements are higher than those of mammography. Due to the limited instruments, potential patients need to travel. They are often unavailable in rural areas where economically disadvantaged groups which are disproportionally high-risk exist. Such inconvenience and complexity increase the possibility of behavioural delay in the potential cancer-patient population for periodic screening, which reduces the chances of identifying pre- or early-stage cancer tissues. Once the tumour is established, the possibility of cancer-cell migration and metastasis increases significantly. Metastasis dramatically reduces the patient survival rate and could be avoided if a timely diagnosis and early treatments are applied. Skin cancer screening is urgently needed in regular clinical diagnosis due to its high occurrence and large populations of patients. The Skin Cancer Foundation estimates that over 187,000 new cases of skin cancers will be diagnosed in the US in 2023. Skin cancers are roughly categorized into three cell types: basal cells, squamous cells, and melanoma cells. The first two types can be grouped into non-melanoma skin cancers, and most skin cancer occurrences are the non-melanoma type. The lesion area usually can be seen by the naked eye as its colour and shape change over time, but it is required to be further investigated if the lesion part is cancerous or benign. For example, even experienced caregivers often confuse the Seborrheic Keratosis (non-cancerous) as a Basal Cell Carcinoma lesion, which may lead to unnecessary biopsies due to suspicion of malignancy. Dermoscopy based on visual analysis is typically the primary skin cancer diagnosis. However, its resolution is limited, and accuracy has been highly variable since it mainly depends on the examiner's skill and experience, which may increase false positives or unnecessary biopsies. The unnecessary intervention can exaggerate further dermal complications such as scarring, bruising, sand infection, especially on the faces, and increase patients' stress and financial burdens. The biopsy procedure is an invasive process that can cause pain, anxiety, and

disfigurement in patients. The histopathological procedures can take several days to produce results. Typically, around 15-30 benign lesions must be biopsied to diagnose a single case of cancer. Additionally, due to tissue processing and sectioning, a maximum of only 2% samples sent for pathology examination are actually analysed. Such high costs and inconvenience add behavioural delay for regular check-ups in the potential cancer patient populations, which reduces early or pre-stage cancer identification. The possibility of metastasis and cancer cell migration increases significantly once the skin tissue becomes malignant. Metastasis reduces the survival rate of patients dramatically and can be avoided with a timely diagnosis and treatment. Thus, a more convenient, accurate, and non-invasive method with lower costs suitable for large-population skin cancer screening is needed.

Non-invasive methods, such as bioimpedance measurements, thermography, and ultrasound, suffer from low accuracy and higher costs. Nonionizing electromagnetic waves may provide a non-invasive evaluation of biological tissues due to the inherently high contrast of dielectric properties among cancerous, benign, and healthy tissues. It has been shown that cancer tumours have distinct water content, and biochemistry, such as metal concentrations, consequently causing significant changes in dielectric properties. With optics, Raman spectroscopy has been used to investigate water content and structural alterations in skin malignancy, specifically Basal Cell Carcinoma (BCC). The study revealed an increase of approximately 15% in the free (bulk) water content in malignant BCC tissues compared to normal skin tissues. Millimetre waves (30-300 GHz) have been recently utilized for assessing skin lesions and detecting tumours. Shorter wavelengths provide a higher spatial resolution, however, at the cost of a reduced penetration depth ranging from 600 µm to 1.2 mm. Imaging deeper tissues may become an issue with limited radiation powers. Nevertheless, they have been demonstrated as effective in sensing pathological changes in surface layers or outer tissue layers of excised organs. Working with millimetre waves currently may still require expensive and bulky instruments.

What is needed are novel devices, methods, and systems for rapid, in situ detection of tumours that reduced the cost and inconvenience of traveling obtain X-rays or large magnetic resonance imaging (MRI) devices. Further, what is needed is a more convenient, accurate, and non-invasive method with lower costs suitable for large-population skin cancer screening.

There are several problems needing to be addressed here. The thing needing to be improved – the ability to detect tumours – is clear. What's preventing the achievement of that goal is a combination of things – the cost and complexity of the existing equipment, the subcutaneous depth of the potential tumour, the amount power needed, the amount of time to process images to name a few. We could look each of these parameters up separately on the Contradiction Matrix, but in these types of breakthrough innovation attempt, it is often easier to bundle all the worsening parameters together. In this case, that most pragmatically means 'productivity'. In which case, here's what the Matrix has to say about how others have tackled this kind of detection-versus-productivity conflict:
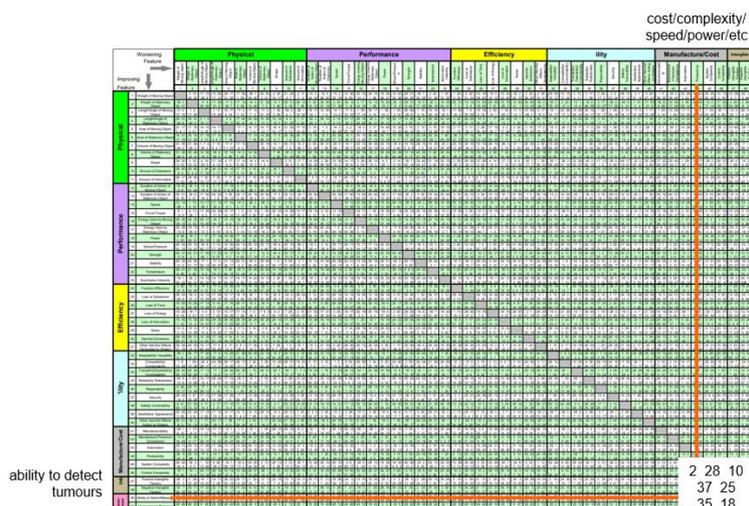
And here's how the inventors have solved the problem(s), as described in the patent's first claim:

A method for non-invasively identifying a location of a tumour comprising: providing a patient with a possible subcutaneous tumour; providing a detector comprising one or more [Principle 28, 35] *radio-frequency (RF) planar* [Principle 18] *resonant loop sensors, each sensor comprising a planar resonant loop and an element disposed within and co-planar with a loop formed by the planar resonant loop; creating a first localization map of resonant frequencies of an area including the possible tumour using the detector; and creating a* [Principle 37] *second localization map of |s.sub.11| reflection coefficients of the area including the possible tumour using the detector.*

This feels like an important breakthrough opportunity that could potentially benefit millions of patients and save a lot of money for healthcare providers. The patent application went through the Examiner evaluation quite quickly. Here's hoping the development team manage to get it to market swiftly and efficiently…

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Best of the Month – Rapid Mass Engagement
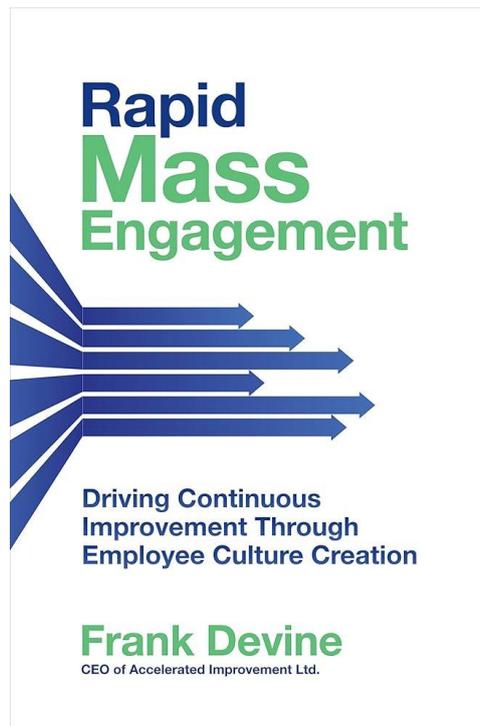
In 2023, the annual Gallup Q12 employee engagement survey showed that 77% of the world's employees were not engaged in their work. In 2024, the number had further slipped to 79%. That 2% difference cost the global economy ~$438 billion in lost productivity. The figures for 2025 are not yet published, but in light of the rise of generative-AI, are unlikely to see the downward trend reversing.

For me, the most bizarre aspect of these depressing numbers is that almost every employer on the planet has also been diligently working away to strip out waste from their organisations and to make them more lean. Massive amounts of work to minimise inventory, reduce unnecessary motion, waiting time, over-production, over-processing and defects and all the time the waste associated with treating people like cogs is swept under the rug. One might hope that someone might have noticed these kinds of rug-covered elephant (or gorilla if that's your preferred metaphor) paradoxes.

Fortunately, someone did. Enter Frank Devine and his book Rapid Mass Engagement which came out in 2023. I had the pleasure of meeting Frank many years ago on the Lean MSc programme we both taught different parts of the curriculum. Some SIEZ readers may recognise his name from the recent DangerMouth podcast Frank kindly agreed to join. Anyone that listened to that conversation – I think the longest episode ever – will know that he has a lifetime of stories and knows how to tell them in a way that connects. Rapid Mass Engagement is written in the same style. Reading it is like listening to Frank speak.

The book is written around a method, process, call it what you will, for dealing with elephants under rugs. Specifically, per the title, how to get everyone in an enterprise engaged with their work, and to do it in a manner that takes days and weeks rather than the typical leadership-driven 'culture change' programme that might take years before the engagement dial begins to show any signs of movement, and most likely will die a sad and lonely death within six months of its fireworks-and-chocolate-fountains origins. The RME process, in other words, is all about resolving a contradiction. Or, more appropriately a

trilemma. It is relatively easy to engage a person if we take our time doing it. We can engage even more people if we take even more time. But what do we do when we need to engage everyone in a very short space of time? In terms of the Business version of the Contradiction Matrix, what we're talking about here is a trilemma between Engagement, Trust and (because RME primarily focuses on the 'do-ers' in manufacture and service sectors) Production Time. And, at the risk of reducing Frank's thirty-plus years of developing and validating the process, RME solves the trilemma through a combination of flipping a traditionally top-down engagement process into one that is bottom-up, creation of a 'higher purpose' and worker-defined 'behavioural standards' and a sea-change rethinking of leadership and coaching that eliminates the enormous variation in leadership outcomes. On that latter front, the idea of variation-reduction can, at first blush, sound like a direction that serves to make organisations more codified and hence less resilient to outside change forces. In the RME process, however, it is about Frank's observation that much leadership education focuses on creating a level of knowledgeful-elitism that can easily be perceived by workers as aloofness at best and downright rude at worst. 'If you are a leader and you walk past an employee in a corridor without acknowledging the employee's existence as a human being, what shadow do you think you have created?' In this context, seeking less variation in getting the ABC's of human nature right is something of a no-brainer. Albeit a no-brainer that, now more than ever, apparently needs to be called out.

Then there's RME's recognition and understanding of complex systems. At the core of the RME process is the Cathedral Higher Purpose Model. The job of this Model is to create leadership that 'moves the dial' and helps the organisation facilitate and sustain a high-performance culture. Here's what that model looks like when mapped onto the TRIZ Law Of System Completeness:
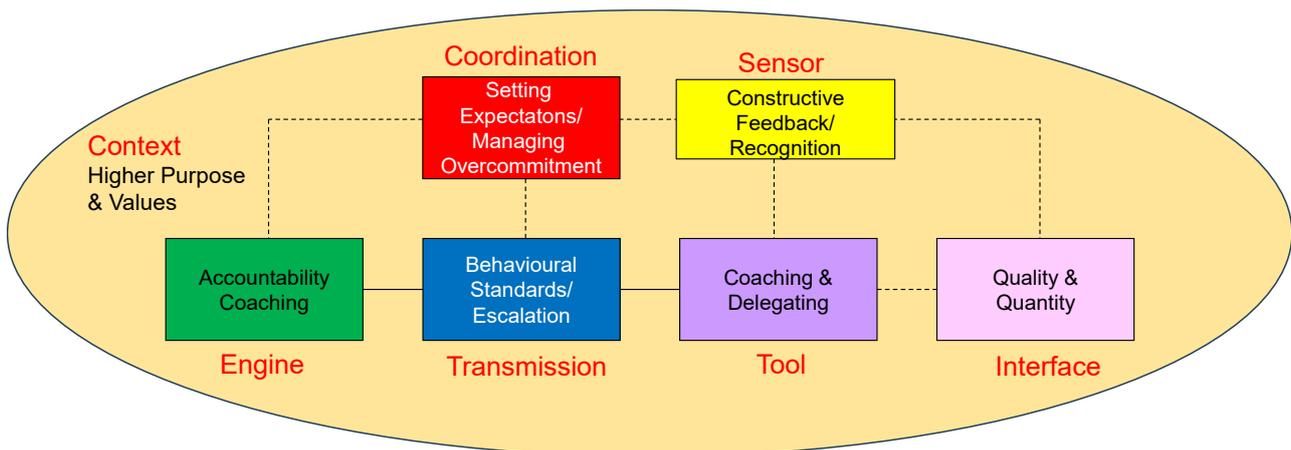
Overall, then, RME is essentially the playbook that allows organisations to make a step-change advance in their Operational Excellence Capability. Specifically, a step change that allows the organisation to transition from being Simple/Complicated to one that acknowledges and embraces the innate complexities of any system containing humans. Even more specifically, in the context of the Operational Excellence Capability Maturity Model (OECMM – SIEZ Issue 228, March 2021), it is the near-perfect playbook for enabling organisations to evolve from Level 3 to Level 4. It is a domain that not many books – or organisations for that matter – have attempted to cover. Never mind succeeded with. Taking into account the thirty-plus years of development and the hundreds of successful RME implementations Frank colourfully describes (or has described for him through customer testimonials), the book is, as far as I can tell, the only one that has tangible evidence that the process works, that the world of complex systems doesn't have

to be abstract or convoluted, that humans – as anyone that has hosted a kid's party will know – are innately capable of thriving in complexity.

Key to achieving RME deployment success, ultimately, (it's 'insert miracle here' moment if you like) is driven by the capabilities of the external and internal facilitators tasked with the implementation. Here's the effective facilitator trait-menu developed by one of Frank's clients, that he was given permission to reproduce:

- Have immense desire to learn
- Have genuine interest in and desire for others to learn and reach their potential
- Show appreciation for the efforts of others
- Are willing, always, to take initiative to make things better
- Show a strong drive for Continuous Improvement as demonstrated by actions at work or outside of work
- Show courage in defending people or groups when they are being criticised behind their backs
- Lead by example so they can take the training out of the classroom and make it a reality at work
- Maintain a positive spirit when things don't go well

And, on the flip-side, my favourite quote of the book, *'Cognitive diversity matters but has its limits, so gently and gradually more robustly challenge, and if every effort fails, remove from your organisation the humour-bypassed, risk-averse, glum, statistically illiterate, catastrophising, high-maintenance experts on what can't be done.'*

The effective facilitators, in other words, are rather similar to 1%ers.

If that then sounds like a pretty big ask, we can begin to make life easier RWE-deployment-wise by realising that, back to the kid's party thought, all the fine, necessary work of F.W. Taylor and the armada of 'Scientific Management' academics that followed him was about simplifying a fundamentally complex world to enable the journey from OECMM Level 1 to Level 3 to happen. And that getting to Levels 4 and 5 demands that we stop simplifying, stop looking at MBA lecture notes, and start embracing our natural abilities to handle complex situations.
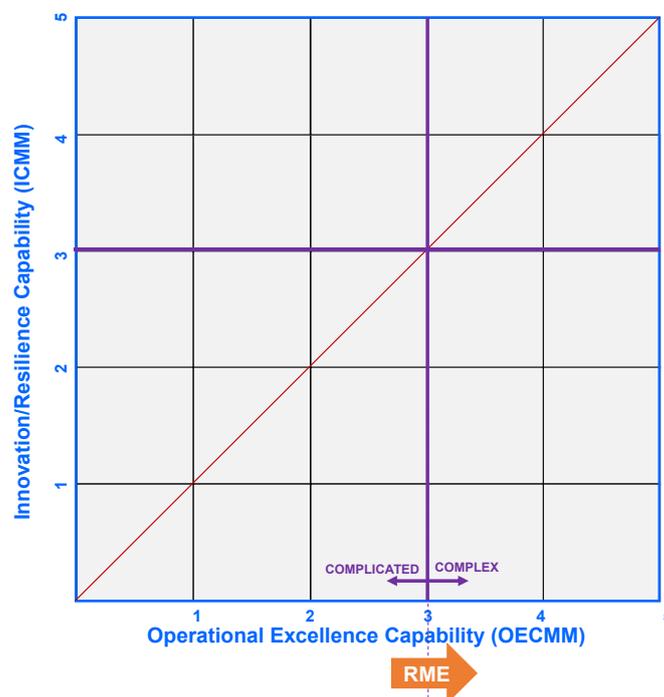
At the end of the day, having organisations better able to deal with the complexities of their Operations makes it much easier for the leadership team to build the corresponding Innovation Capabilities. The red diagonal line on the above graph moving from bottom-left to top-right in effect being the ideal trajectory for ensuring the future resilience of any enterprise.

Wow In Music – Helter Skelter
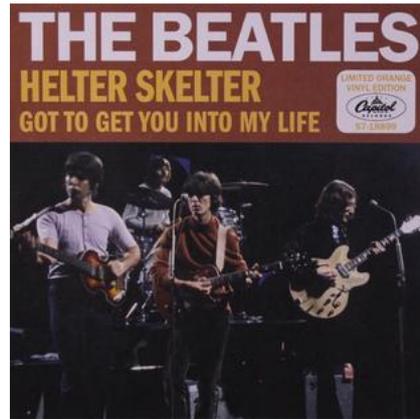
Disorder as Innovation.

When Paul McCartney set out to write Helter Skelter in 1968, his goal was not subtlety. He had read an interview in which Pete Townshend described a new Who track as the loudest, most raucous thing they'd ever recorded – "really wild," as Townshend put it. McCartney's response was characteristically competitive and mischievous: we can do louder, messier, and more extreme than that. The result was Helter Skelter, recorded during the sessions for the Beatles' self-titled 1968 release – better known as the White Album – and now widely credited as one of the earliest blueprints for heavy metal. As well as one of the best loved Beatles songs.

At the time, the Beatles were already fragmenting stylistically and psychologically. The White Album is famously eclectic, but Helter Skelter stands out as something genuinely (Principle38) violent in tone. Where earlier rock aggression still clung to blues polish, this track revels in abrasion (Principle 22). It sounds less like a song seeking resolution and more like a machine pushed deliberately beyond safe operating limits.

Structurally, Helter Skelter is deceptively simple. The song revolves around a driving, distorted guitar riff in E, supported by a relentless, almost primitive drum pattern. The verses are (Principle 16) loose and (Principle 14) circular, refusing the tidy verse–chorus dynamics of most pop songwriting. Instead, the track lurches forward in waves, building tension not through harmonic sophistication but through sheer physical insistence.

The "wow" moments come from this refusal to behave. Guitars distort into noise. Rhythms wobble. Vocals abandon melody in favour of raw expression. McCartney's singing is not expressive in the traditional sense – it is exhaustive. By the five-and-a-half-minute mark of the twelve-minute 'Take 2' version eventually released in the Beatles Anthology series, an extreme version of his already legendary Little Richard scream (at 5:28) sounds less like performance and more like (Principle 38) collapse. It is the sound of a song tearing itself apart from the inside.

What makes this even more remarkable is what we didn't get to hear. During the sessions, the Beatles recorded a version of Helter Skelter that reportedly ran for 27 minutes – a sprawling, chaotic endurance test that pushed musicians and engineers alike to breaking point. Even the released 12-minute version (later edited down further for the album) feels excessive by late-1960s standards. This was not radio-friendly provocation; it was an experiment in extremity.

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In retrospect, Helter Skelter feels less like the invention of heavy metal as a genre and more like the invention of an attitude: loudness as aesthetic, distortion as expressive force, chaos as deliberate choice. It cleared space for Black Sabbath, Led Zeppelin, punk, noise rock – and countless other forms of musical rebellion that followed.

And yet, for all its brutality, Helter Skelter remained tethered to its time. Which is why its most radical reinvention didn't come from metal at all, but from punk.

Siouxsie and the Banshees' version of Helter Skelter, released on their 1978 debut album The Scream, doesn't try to outdo the Beatles on volume or length. Instead, it strips the song down and reassembles it with icy precision. The guitars are angular, the rhythm taut and hypnotic, the menace controlled rather than explosive. Where McCartney's version spirals, Siouxsie's stalks.

The defining (Principle 38 again) "wow" moment comes with a single lyrical intervention. In the line "you may be a lover, but you ain't no dancer," Siouxsie adds one word – the 'f' word – and in doing so detonates the song's meaning. The phrase becomes confrontational, sexual, and political. It shifts the track from masculine bravado to gendered challenge, from chaos to critique. One word turns a proto-metal rant into a punk manifesto.

That reinvention owes much to the band's original drummer, Kenny Morris, whose (Principle 2) minimal, tom-tom driven style gave early Banshees recordings their relentless tension. Morris, who sadly passed away this month, understood that power doesn't always come from excess. Sometimes it comes from restraint – from leaving just enough space for discomfort to breathe.

Helter Skelter endures not because it was loud, but because it broke a rule that still matters: that music must behave. From McCartney's deliberate disorder to Siouxsie's razor-sharp defiance, it remains a reminder that innovation often begins by pushing a system past the point where it feels safe – and listening carefully to what happens next.

Kenny Morris, RIP

Investments – Unsinkable Metal
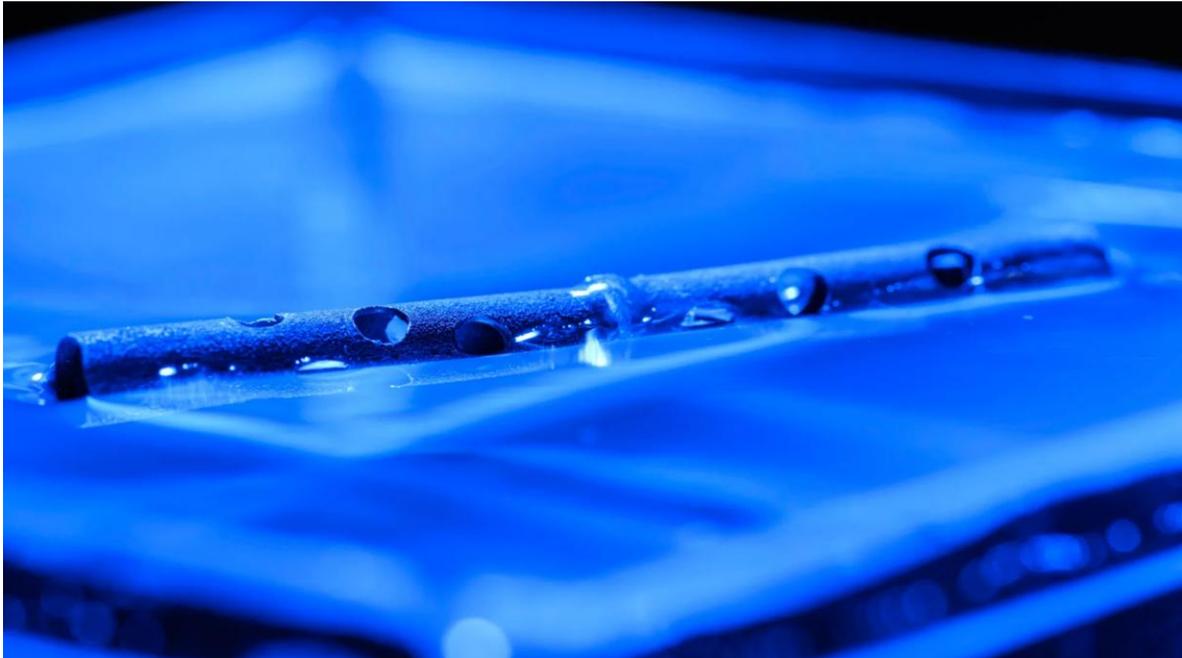
More than a century after the *Titanic*, the dream of "unsinkable ships" still captures the imagination. Last month, researchers at the University of Rochester reported a materials science breakthrough that takes a *significant step* toward that century-old ideal. Not by reinventing buoyancy, but by solving a deeply embedded contradiction in how we think about metals and water.

Conventional naval architecture is built around a simple physical law: solid objects float because they displace enough water to support their mass. We make ships hollow so they encase air and stay afloat, but if those hollow spaces fill with water, buoyancy is lost.

Here's the contradiction: To make metallic structures strong and load-bearing, we minimise volume that can trap air, but to make them unsinkable, we must maximise trapped air. Ordinary metal is heavy and hydrophilic (it likes water). Hollowing it out helps with buoyancy, but once water enters, it quickly neutralises that effect. Until now, achieving both *strength* and *damage-resistant buoyancy* in a metal structure has seemed impossible. This is where the new work becomes interesting.

Super-hydrophobicity: Make Water Reluctant, Not the Structure
The Rochester team's insight was to focus not on the geometry of the object alone, but on how water *interacts with the surface*. By etching the inside of ordinary aluminium (Principle 31) tubes with (Principle 3) microscopic and nanoscale pits, engineers created a super-hydrophobic interior, a surface so water-repellent that it strongly resists wetting.

Super-hydrophobic or low surface energy surfaces will no doubt be familiar to SIEZ readers, largely through the myriad examples found in nature: the *lotus leaf*, certain insects' bodies, and even *diving bell spiders* trap air bubbles because water cannot adhere to the surface. These natural systems carry air with them underwater or build floating micro-cocoons that resist flooding.

In the Rochester tubes, the textured metal does something similar:

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- When submerged, a stable pocket of trapped air stays inside the tube
- Water is *repelled* rather than filling the space
- Even if the tube is severely damaged, punctured, or filled with holes, the air remains trapped and the structure stays buoyant.

In effect, the metal becomes *metaphorically "unsinkable."*

This technique resolves the underlying engineering contradiction by flipping the design priorities:

1. Mantle the interior with water-repelling topology – microscopic structure traps air layers (often called a *plastron* in surface science), creating a persistent air pocket that *prevents wetting*.
2. Use air as a structural component
   Rather than treating air as something to be excluded, (Principle 22) the design treats air as part of the buoyant *system*. Trapped air *becomes integral* to performance.
3. Accept and absorb (Principle 22 again) damage rather than avoid it – traditional ships are designed to *withstand* hull breaches; these tubes are designed to *remain buoyant even when breached.*

This is a powerful TRIZ-like shift: instead of preventing water from entering via strength and seals, you make water irrelevant by ensuring it *cannot adhere or displace the trapped air even in damaged states*.

The immediate implication is intriguing: long lifetimes of buoyancy regardless of puncture or submersion suggests truly resilient floating platforms, rafts, or even next-generation marine vessels. Multiple such tubes could be linked into rafts or larger platforms with stability even in rough conditions.

There's also a secondary implication worth noting: bridging materials and systems design. Rather than solving a problem by *adding more redundancy* (thicker hulls, more compartments), this approach solves it by altering the *fundamental interaction* between water and structure. And it suggests a further class of innovation: when the environment itself becomes a (Principle 22) collaborator rather than an adversary – super-hydrophobic metal doesn't "fight water," it *utilises air and surface physics* to make water irrelevant. This opens avenues not just for maritime engineering but for energy harvesting (wave platforms), resilient infrastructure, and perhaps even disaster-proof components in unpredictable environments.

Of course, the classic sceptics will note (as online discussions from earlier iterations of similar technology have pointed out) that upscaling from laboratory demonstration to full-size ship remains nontrivial, and that Archimedes' principle ultimately governs buoyancy. We cannot escape physics by coating alone. (Surface area effects scale differently than volume effects.) However, the core insight stands: contradictions in system design can be solved by shifting frames rather than adding brute strength.

The dream of an "unsinkable ship" may yet be realised. Not by thicker plates or bigger pumps, but by smarter interfaces. In technology, as in life, the biggest breakthroughs often come when we stop resisting the environment and start *co-designing with it.*

Read more: Tianshu Xu, Zhibing Zhan, Yichen Deng, Mohamed Akeel Faris, Subhash C. Singh, Chunlei Guo. Geometry-Enabled Recoverable Floating Superhydrophobic Metallic Tubes. Advanced Functional Materials, 2026; DOI: 10.1002/adfm.202526033

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Generational Cycles – Shadow Generations

Robert Greene, in *The Laws of Human Nature*, notes that generations follow recurring cycles, each shaped by collective experience and societal context. Further building on the way in which we built on Greene's shadow work in the opening article of this issue of the ezine, Green also hints at a "shadow" for each generation – a version of the archetype that emerges under stress. Sadly, he chooses not to elaborate on what those generational shadows might look like, so we thought we'd explore them here.

The whole idea of generational archetype shadows is an intriguing insight. What Greene captures intuitively mirrors the Strauss & Howe generational archetypes, yet adds a psychological lens: beyond visible traits, each generation carries a shadow that can silently reshape institutions, influence healthcare behaviours, and drive otherwise "irrational" conflict.

The Four Archetypes: Visible and Shadow Traits
Here are the four Strauss & Howe identified archetypes defined in the context of where each of the cohorts is at this point in history:

(Wise) Boomer Prophets
Visible:
- Immortality / "Peter Pan" complex
- Don't want to be reminded of age
- Active and frustrated by ill-health
- Blind to ageing process
- Deeply traumatised by first serious illness
- "Wise elder," much experience
- Travel is important
- Arrogant / opinionated
- Disappointed with younger generations
- Live-to-work

Shadow:
- Denial of limits; magical thinking about health and relevance
- Hostility toward messengers of reality
- Rage at the body; sense of betrayal by biology
- Strategic denial; refusal to plan for transition
- Oscillation between invincibility and helplessness
- Unchallengeable authority; lived experience elevated above evidence
- Restlessness; compulsive motion to avoid reflection
- Moral absolutism; intolerance of ambiguity
- Contempt for younger generations disguised as concern
- Terror of irrelevance or stillness

Summary: The Boomer shadow is not selfishness but *entitlement to meaning*: the belief that having carried the vision once grants permanent exemption from decline, doubt, or replacement.

(Pragmatic + Tough) Gen X Nomads
Visible:
- The most conflicted generation
- Sceptical / critical

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- Independent / individualist; anti-society / anti-political
- Takes responsibility
- Family is important
- Not selling out
- "How dare you try to label me"
- Safety is important
- Routine and simplicity useful
- Efficient (tangible benefits important)
- Luxury but understated
- Steadiness (no big changes)
- Live to work

Shadow:

- Permanently ambivalent; unable to commit
- Cynical; assumes bad faith
- Emotionally unavailable; socially detached
- Refuses help; carries silent resentment
- Overprotective; emotionally guarded
- Moral superiority; contempt for compromise
- Identity refusal; reactive contrarianism
- Risk-averse to the point of stagnation
- Rigidity; resistance to necessary change
- Transactional relationships; impatience with ambiguity
- Status denial paired with quiet envy
- Inertia disguised as realism
- Work as refuge; emotional avoidance through productivity

Summary: The Nomad shadow is not selfishness, but *withdrawal*: a generation that learned to survive alone and sometimes forgets how to re-engage.

(Heroic) Millennial Heroes
Visible:

- "Heroic" lens on everything
- "I am the best, I am different"
- Networker (Facebook, Instagram, etc.)
- Work to live but work hard if motivated
- Quarter-life crisis
- High expectations
- Prepared to take risks
- Highly protected, especially from failure
- If successful: I'm the hero; if not: I want someone to blame
- Open-minded, flexible
- No learning curve; impatient
- Love positive feedback

Shadow:

- Grandiosity; constant narrative inflation of personal significance
- Fragile exceptionalism; hypersensitivity to critique
- Performative connection; validation-seeking
- Conditional commitment; disengagement when meaning fades
- Chronic identity instability; fear of "wrong" choices
- Entitlement to outcomes without tolerance for delay
- Recklessness when upside is visible; paralysis when downside is personal
- Low resilience; difficulty metabolising setbacks

- Externalisation of failure; grievance narratives
- Lack of conviction; values shift with social reward
- Contempt for mastery; frustration with gradual competence-building
- Dependency on affirmation; collapse under neutral or negative signals

Summary: The Millennial shadow is not laziness or narcissism, but *fragility*: a generation raised to change the world that struggles when the world resists being changed.

(Suffocated + Sensitive) Gen Z Artists

Visible:
- Suffocated (helicopter parents)
- Raised during a crisis – isolated from it, fearful of it
- Thin-skinned / vulnerable / delicate
- "OrKids" (controlling parents)
- High theoretical knowledge, few practical life-skills
- Reflectors of society / observers
- Creative (but constrained)
- Pressured / stressed / sickly
- Difficult teenage years / escape from family nest
- Patient, loyal, respectful, disciplined
- Duty, honour, country / patriotic

Shadow:
- Learned helplessness; fear of acting without permission
- Catastrophic imagination; expectation of system failure
- Hyper-reactivity; emotional overwhelm from ordinary stressors
- Decision paralysis; avoidance of irreversible choices
- Low self-efficacy; dependence on guidance structures
- Passivity; commentary replacing participation
- Self-censorship; fear of visibility or standing out
- Psychosomatic distress; identity organised around fragility
- Delayed individuation; prolonged adolescence
- Over-compliance; reluctance to challenge authority
- Submission to structure; safety over freedom

Summary: The Gen Z shadow is not weakness, but *over-protection*: a generation trained to stay safe in systems that quietly discourage agency.

Why Institutions Trigger Shadow Selves

At this point it should be clear that generational shadow traits are not personality flaws. They are defensive distortions, activated when an environment threatens the thing each archetype is unconsciously trying to protect.

Which raises the next question: Why do modern institutions seem so good at triggering those shadows simultaneously?

The short answer is that most institutions were designed for *stability*, not *psychological safety across archetypes*. They unintentionally press on exactly the pressure points that activate shadow behaviour.

Here's how this happens:

Institutional Design vs Archetypal Threat
Boomer Prophets – Shadow Triggered by Loss of Moral Authority

Institutions trigger Boomer shadows when they:

- Introduce metrics that challenge experience
- Elevate younger voices without ritualised deference
- Emphasise succession, transition, or "fresh thinking"

What Boomers experience is not change, but *de-legitimisation.*

The result:
- Moral absolutism
- Opinion hardening
- Gatekeeping disguised as stewardship

This is where "wisdom" quietly turns into obstruction.

Gen X Nomads – Shadow Triggered by Hypocrisy and Bureaucracy

Institutions trigger Gen X shadows when they:
- Make grand promises but fail operationally
- Add process without visible benefit
- Demand loyalty without reciprocity

Nomads don't rebel loudly. They *withdraw*.

The result:
- Cynicism replacing engagement
- Quiet workarounds
- Politics conducted through absence, not confrontation

This is why Gen X is often *present* but not *invested*.

Millennial Heroes – Shadow Triggered by Stalled Purpose

Institutions trigger Millennial shadows when they:
- Talk about purpose but reward short-termism
- Preach inclusion while maintaining old power structures
- Offer responsibility without real agency

Heroes interpret this as *moral betrayal*.

The result:
- Performative alignment
- Blame-seeking
- Emotional escalation without strategic follow-through

This is where passion turns into grievance.

Gen Z Artists — Shadow Triggered by Psychological Insecurity

Institutions trigger Gen Z shadows when they:
- Expose them to conflict without containment
- Demand visibility without safety
- Expect agency without scaffolding

Unlike the other archetypes, Artists do not fight or withdraw, they *internalise*.

The result:
- Anxiety
- Over-compliance
- Silent disengagement

Which is why the Artist shadow feels different: it doesn't destabilise the institution immediately, it hollows it out from within.

Irrational Politics?

From the outside, all of this looks chaotic:
- Entrenched opinions
- Passive resistance
- Moral grandstanding

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- Emotional fragility

But from the inside, every behaviour is *defensive and coherent*.

Institutions don't create irrational people, they create conditions that force rational people into irrational defence.

Once shadow systems take over:

- Decisions are no longer about outcomes
- Meetings become theatres of identity protection
- Politics becomes a substitute for progress

Which loops us directly back to Greene's insight and the opening article on shadow systems in leadership teams.

Why the Artist Shadow Matters Most Now

There is one final, critical asymmetry.

When Prophet, Nomad, or Hero shadows dominate, institutions become loud, polarised, and political. When Artist shadows dominate, institutions become:

- Risk-averse
- Creativity-poor
- Quietly brittle

By the time anyone notices, the damage is already structural.

This matters because Gen Z is not just entering institutions, they are absorbing the consequences of unresolved shadow dynamics created by the other three generations.

And this is why generational conflict feels so irrational: people are not defending their values, they are defending themselves from environments that threaten what those values were built to protect.

The Full Pattern: What Each Generation Protects

Viewed together, the visible and shadow sides reveal a simple underlying logic:

Archetype	Visible Drive	Shadow Emergence	Core Thing They Defend
Prophets	Meaning / vision	Entitlement to moral authority	Meaning
Nomads	Autonomy / self-reliance	Withdrawal / cynicism	Autonomy
Heroes	Purpose / achievement	Fragility / grievance	Purpose
Artists	Safety / structure	Over-protection / passivity	Safety

Generational conflict feels irrational because people aren't defending their values – they are defending themselves from environments that threaten what those values were built to protect.

Closing Thought

Understanding shadow traits is not about blame. It's about seeing the invisible forces that shape decision-making, politics, and collaboration inside organisations. By recognising the defensive distortions of each archetype, leaders can design institutions, teams, and communication strategies that *activate strengths rather than shadows* – reducing friction, improving trust, and unlocking latent generational potential.

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Biology – Great Grey Owl (*Strix nebulosa*)

To hunt successfully in winter, the great grey owl must locate prey precisely, but vision is unreliable because prey is often hidden under deep snow and low light. Most predators solve this by *changing behaviour* (don't hunt, switch prey, hunt in packs). The great grey owl solves it by changing the sensing system itself. They've evolved to detect, localise, and strike prey that is:

- Completely invisible
- Up to ~50 cm under snow
- Moving intermittently
- Producing only faint, high-frequency rustling sounds

At the system level, the owl needs to detect prey with high precision, but cannot rely on direct observation or predictable conditions. Rather than trying to "see through snow," has evolved to reframe the environment as an acoustic medium utilising the snow as an assisting intermediary (Principle 24 – or 22/13) that dampens irrelevant noise. Here's what the overall contradiction looks like when mapped onto the Contradiction Matrix:
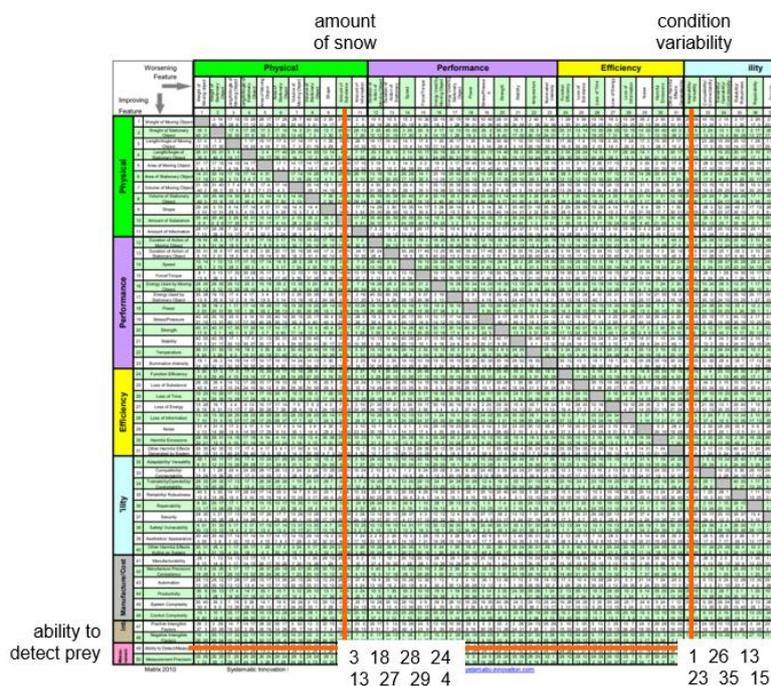
And here's the rest of the story, where the owl's head as evolved to become a precision acoustic instrument:

1. (Principle 4) Asymmetric ears: solving the 3-D localisation problem
As we've discussed previously, owls in general (Issue 14), various other lifeforms and humans (Issue 283) use asymmetry in order to identify where sounds are coming from. The great grey owl goes a step further, having one ear is slightly higher than the other, and also angled differently. Together, this creates vertical sound timing differences (not just left–right, but up–down) and minute phase and intensity differences across frequencies.

2. Facial disc as an adaptive acoustic antenna
The great grey owl's iconic round face isn't for show. The stiff feathers around the face form a parabolic reflector that funnels sound toward the ear openings. Different feather densities (Principle 3) then handle different frequencies and (Principle 15) muscles subtly adjust disc shape in response to sound source. Together this allows the owl to amplify faint noises, filter background noise (wind, snow movement) and emphasise prey-specific frequencies

3. Frequency selection: hearing what others can't
Voles moving under snow produce high-frequency rustling, and short, irregular sound bursts. Characteristics great grey owls are tuned to those (Principle 18/19) frequencies with extremely low detection thresholds. The facial muscles, then, allow dynamisation of what the owl is able to focus on, such that, when there isn't 50cm of snow, they can still detect prey.

4. Brain–body integration: sound and striking without vision
Here's the truly extraordinary part. The owl can lock onto an acoustic target, calculate depth through snow, and execute a strike without ever seeing the prey. When it dives, its eyes often close just before impact and its talons penetrate snow at a calculated angle. This is only possible because the owl has been able to construct a (Principle 26) neural map that links sound localisation directly to motor control with minimal reliance on visual confirmation

5. Structural amplification rather than energy expenditure
Importantly, the owl does *not* solve the problem by louder calls, more movement or consuming more metabolic energy. Instead, it uses its (Principle 35) large head (disproportionate to body size), light but stiff feather structures, and (Principle 25) passive acoustic geometry. Resulting in an extreme capability at low marginal cost.

The deeper contradiction solved
This is a classic system boundary shift: other predators treat snow as a barrier, whereas the great grey owl treats it as part of the sensing system. Thus illustrating a pattern we see again and again in nature: extraordinary capability rarely comes from "more power", but rather from re-architecting the system. Especially the *interfaces* between sensing, interpretation, and action.

Make sure to check out Rich Hoeg's rather lovely website (https://www.365daysofbirds.com/2018/02/05/great-gray-owl-snow-impact/) for images like these:

Rich Hoeg (365DaysOfBirds.Com)

Rich Hoeg (365DaysOfBirds.Com)

Short Thort

"TRIZ is the worst form of problem-solving method… except for all the others."
Darrell Mann

When things start to go wrong, people instinctively look around for solutions. The catch is that "looking around" almost always means searching for solutions that already exist.

We can see this today as confidence in Capitalism begins to fray. Those without lived memory of previous experiments reach for familiar alternatives – Communism, Socialism, etc – mistaking historical failure for forgotten potential. The problem, however, isn't that we've chosen the *wrong* existing system.

The problem is that any system that has reached the top of its maturity curve has, by definition, exhausted its known solutions.

At that point, improvement no longer comes from selection. It comes from creation.

When a system plateaus, the next step cannot be found by comparison with the past. It requires a Hero's Journey: venturing beyond precedent, confronting as-yet-undefined Ordeals, and returning with something genuinely new.

Progress, in other words, does not come from choosing better answers.
It comes from learning how to ask questions no one has had to ask before.

Which is why TRIZ, like democracy, survives its critics: not because it offers the right answers, but because it teaches us how to create answers where none yet exist.

News

TRIZ Expert 2027
Well, it's a long way away, but Robert Adunka has already announced the dates for next year's TRIZ Expert Day event in Germany. The theme for the event – 'the Matrix is dead, long live the Matrix' – means Darrell gets to go along and talk about 'Matrix 4.0'. February 18 and 19 are the dates for your diary. Check out the TRIZ Mastery Hub for more details.

USA
It's been a while, but it looks like the acceleration of interest in the 1%ers book means Darrell will be heading over to join Shana in the US for a number of promotional and client engagement activities. We haven't pinned down the precise dates of locations yet, but

most likely sometime between Easter and the end of May. If you want Darrell, Shana or both to come and do something with your organisation during that time window, get in touch with either of them directly.

Athens
Talking of travel, Darrell is also in the process of finalising a long overdue visit to Greece to do more SI workshops. This time around focusing on senior leadership teams and innovation strategy in our strange new AI-assisted/AI-driven/AI-disrupted world. 2026 already feels like the fastest year in history… we were originally planning sessions in March or April, but it's now looking like the sessions will take place in May. More details here as we get them, but same as for the above US trip, if anyone is interested in getting hold of Darrell during the visit, the earlier you let him know, the easier it will be to coordinate diaries and make something happen.

Lean
Having taught for many years on the UK's principle Lean MSc programmes, he's been invited to talk to the alumni network at their online event on the afternoon of 17 April. The precise topic still to be decided, but inevitably the words Lean, Innovation, AI, Ethics and BANI will be hovering somewhere around the title. Link for anyone interested in joining the session should be available in time for next month's SIEZ.

Podcasts
Intrepid explorers that might have chanced upon the new the1-percenters.com website will noticed that we've started a new weekly '1%ers: How New Things Get Done' podcast. The idea is that each week we take a deep 1%er-like dive into real life case studies and topical news events. At the same time, DangerMouth has also been busy convincing smarter-than-us guests to come and join us for a conversation and looks like it is also going to average an episode a week.

New Projects
This month's new projects from around the Network:
> Finance – Investment Appraisal Dashboards
> Process – AI Disruption Project
> FMCG – GenerationDNA Project
> Conglomerate – Innovation Culture Support
> Electronics – Innovation-For-Marketers Workshops
> Utilities – Innovation Project Support
> Sport – TrenDNA Project

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