

Systematic Innovation

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e-zine

Issue 288 March 2026

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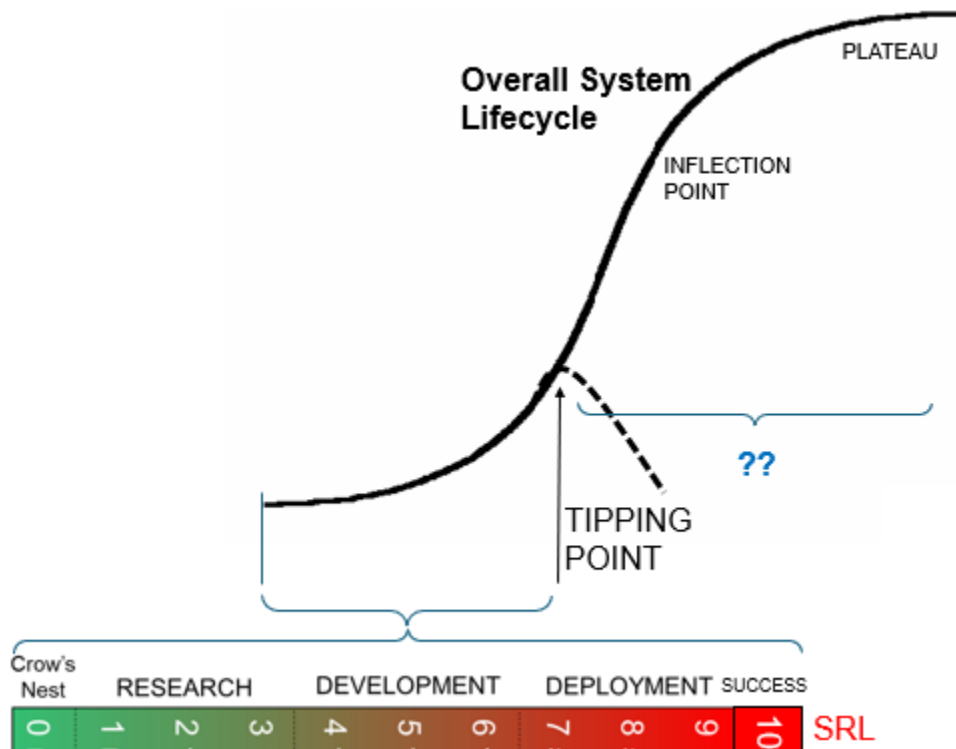
The Systematic Innovation e-zine is a monthly, subscription only, publication. Each month will feature articles and features aimed at advancing the state of the art in TRIZ and related problem-solving methodologies.

Our guarantee to the subscriber is that the material featured in the e-zine will not be published elsewhere for a period of at least 6 months after a new issue is released.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

After the Tipping Point: What Are 1%ers For?



The System Readiness Level (SRL) index (Reference 1) was designed to answer a very specific question: *when is a new system ready to succeed at scale?*

SRL takes an innovation team to the Tipping Point (Reference 2) on the maturity S-curve – the point at which uncertainty has been retired, system-level contradictions resolved, the system has demonstrated that it can survive contact with the real world, redundant old knowledge has been recognised and retired, and the operations design has been validated. There is a repeatable 'recipe'. The project is now beginning to make money and so, at that point, success (as far as the innovation team is concerned) has been achieved. In principle, the system can now be wholly handed over to Operations.

This SRL0-10 journey is the primary domain of the 1%ers and the NEPTUNE framework.

But that raises an uncomfortable question.

Is there still a role for 1%ers after the Tipping Point has been passed?

And if there is, is it really the best use of such scarce capability?

The Obvious Answer – and the Real One

The obvious answer is *yes*. In many ways, the defining characteristic of a genuine 1%er is that they are comfortable operating in both Innovation and Operations worlds. Most experienced 1%ers will have taken multiple systems all the way up the S-curve and lived with the consequences on the other side.

But the *real* answer depends on the Innovation Capability Maturity (ICMM) (Reference 3) of the organisation. In enterprises with high capability, Operations teams are often able to

absorb and stabilise post-Tipping-Point systems with minimal ongoing support. In organisations with low capability – which is still the norm – removing 1%ers too early almost guarantees value leakage, brittleness, or slow decline disguised as “business as usual”.

The mistake is to assume that post-Tipping-Point work is simply *less important* innovation work. It isn't. It is different work, requiring the same quality of thinking applied in a different direction.

In practice, there are three post-Tipping-Point jobs that still require 1%er involvement.

1. WatchTower: Seeing What Operations Can't

Once a system is running successfully, Operations naturally turns inward: efficiency, reliability, cost, throughput. That focus is necessary – and also dangerously blinding. The WatchTower role exists to maintain external awareness:

- Emerging customer need shifts
- Competitor moves and cooptation opportunities
- Sub-system(“sustaining) innovation opportunities (“someone, somewhere, has already solved your problem”)
- Changes in industry pulse-rate and regulatory tone
- Early signals of pivot points before they become crises

This is not strategy in the PowerPoint sense. It is *situational sensing*. Most Operations functions are neither designed nor incentivised to do this well. 1%ers are.

2. Troubleshooter: Trading Efficiency for Resilience (Consciously)

At best, humans are “two-nines” reliable. Meaning that for every hundred opportunities to make a mistake, things will go well on ninety-nine occasions, but one will not work out so well. The standard Operations response to this fact is to eliminate or automate as much human involvement as possible – shifting work into the Red world of standardisation, repetition, and control.

This works. And it always comes with a hidden cost.

Efficiency kills resilience.

Highly automated systems are superb at doing exactly what they were designed to do – until conditions change. Great production lines can become liabilities if they cannot be reprogrammed, repurposed, or taught to adapt themselves.

The current wave of AI adoption makes this trade-off sharper, not softer. Replacing humans with AI for mundane tasks delivers short-term cost savings, provided leadership understands that these savings are purchased with reduced long-term adaptability. Only 1%ers reliably see – and can resolve – these contradictions.

There is a second paradox here. AI systems learn from mistakes, but ultra-reliable systems (ten-or-more-nines) generate too few failures for learning to continue. This is where the Troubleshooter enters: applying structured models (such as CERTAIN (Reference 4)) to engineer reliability deliberately rather than hoping learning will continue organically.

This role also includes classic “sweat the assets” work. In FMCG especially, production lines are often built to make one thing very efficiently. When R&D wants something new, the default response is to build a new line. The 1%er flips the logic: manufacturing defines what's possible; R&D designs within those constraints. Same assets. More optionality.

The 1%er troubleshooter skillset is also helpful when the uncomfortable s-curve inflection point inevitably happens. Pre-inflection point, sales are growing; post-inflection point the law of diminishing returns kicks in. Not that the practices and incentives for the Sales team recognise that awkward fundamental. Even the best salesperson starts missing their quarterly targets, frustration increases, rules start getting ‘bent’ and over-selling begins. Again short-term expediency comes at a price. This time it is long-term alienation of customers. Customers used to be the *raison d’être* of the business. Post-inflection point, Sales increasingly gets sucked into thinking that margins are more important. 1%er thinking is required to, firstly recognise when this stage of the maturity curve is approaching, and secondly, to start re-configuring the system to manage and eliminate the short-versus-long term contradictions. Give Sales less of the wrong creativity skills and more of the right ones.

3. Stopper: Managing Decline Without Pretending It Isn’t Happening

Eventually, every system reaches the top of its S-curve. At that point it may continue as a cash cow for years – but decline has already begun. Decline is not failure; it is simply the emergence of a *new system*. One that now needs to be managed deliberately. This may involve:

- Preparing for transition to the next S-curve already under development
- Gradual de-commissioning
- Capability extraction
- Or intentional retirement

Operations are structurally bad at this. Its incentives reward continuation, not graceful exit. The Stop role requires the same thinking that created the system in the first place – now applied to ending it well.

The Uncomfortable Truth About (Red World) Operations

Throughout all post-Tipping-Point work, the dominant Operations philosophy remains Taylorism: simplify, standardise, reduce cost, increase efficiency.

Even when people talk about “networks”, “agile”, or “self-managing teams”, the underlying assumption rarely changes.

Here is the point that is almost always missed: If there are humans in the system, the system is not simple. It is complex.

Ignoring this doesn’t make it go away. It just pushes the mess into informal workarounds, politics, burnout, and brittleness.

On the Cardiff/Buckingham Lean MSc programme I used to teach, aside from brief mentions during my innovation week, there is almost no mention of human psychology. Humans are messy. Messy is inefficient. And so, once an operational design has been codified, the economically “rational” move appears to be removing the humans altogether. We can see where this leads. In parts of China, new manufacturing systems run with almost no humans in sight. Everyone else will either follow – or make a much harder shift: towards economic models that explicitly value complexity, adaptability, and meaning.

That transition, too, is post-Tipping-Point work.

And it is work for 1%ers.

References

- 1) SIEZ, 'From Signal to Scale: Why Leaders Need a New Readiness Lens', Issue 286, Janaury 2026.
- 2) Gladwell, M., 'The Tipping Point: How Little Things Can Make A Big Difference', Little, Brown & Company, 2000.
- 3) Mann, D.L., 'Innovation Capability Maturity Model: An Introduction', IFR Press, 2012.
- 4) SIEZ, 'The Seven CERTAIN Troubleshooting Principles', Issue 261, December 2023.

The Things Everyone Does And The Things That Matter

I've been working recently with a group of fast-track future leaders in a multinational corporation. As part of the programme, each participant had to prepare an individual pitch, which was assessed by their peers against three criteria:

- A) Presentation capability
- B) Wow-factor
- C) "Would I want to know more about this person?"

The overall score was calculated as $A \times B \times C$.

After everyone had presented, we reviewed both the scores and the scoring algorithm. The group was then asked a simple question: what would be the best strategy for maximising your score?

The obvious answer – which every group arrived at independently – was that during preparation, equal attention should be paid to all three criteria. After all, they were known in advance and carried equal weight in the calculation. On the face of it, this is a perfectly rational conclusion.

Unfortunately, it's also wrong.

What none of the groups had noticed was that one of the three criteria was dramatically easier to achieve than the other two.

Presentation capability – timing, structure, clarity, visual hygiene, confidence – was something everyone in the cohort had already been trained to do well. Unsurprisingly, almost everyone scored highly on criterion A. Scores of 9 or 10 were the norm.

The other two criteria were very different. "Wow-factor" was abstract and hard to pin down. "Would I want to know more about this person?" required empathy, insight, and human connection, and was therefore even harder to think about. As a result, most participants didn't think about them, and consequently scored 1s or 2s on criteria B and C.

Do the maths.

A typical score ended up looking like $10 \times 2 \times 1 = 20$, out of a theoretical maximum of 1,000.

Now consider a different strategy. Imagine someone who delivered a merely competent presentation – a 5 rather than a 10 – but who invested serious thought in offering a genuine insight and connecting with the audience as people. That person might score $5 \times 5 \times 5 = 125$.

In other words, a (technically) 'worse' presentation produced an exponentially better result.

Had the participants anticipated this distribution in advance, the optimal preparation strategy would have been obvious: spend less time polishing what everyone else will get right anyway, and far more time on the dimensions that are rare, difficult, and poorly understood.

It gets more interesting.

The day after the presentations, very little of the technical prowess of the presentations remains in the listeners' memory. Everyone's slides blur together. Timing, structure, and visual polish evaporate. What lingers are moments of surprise and traces of human connection.

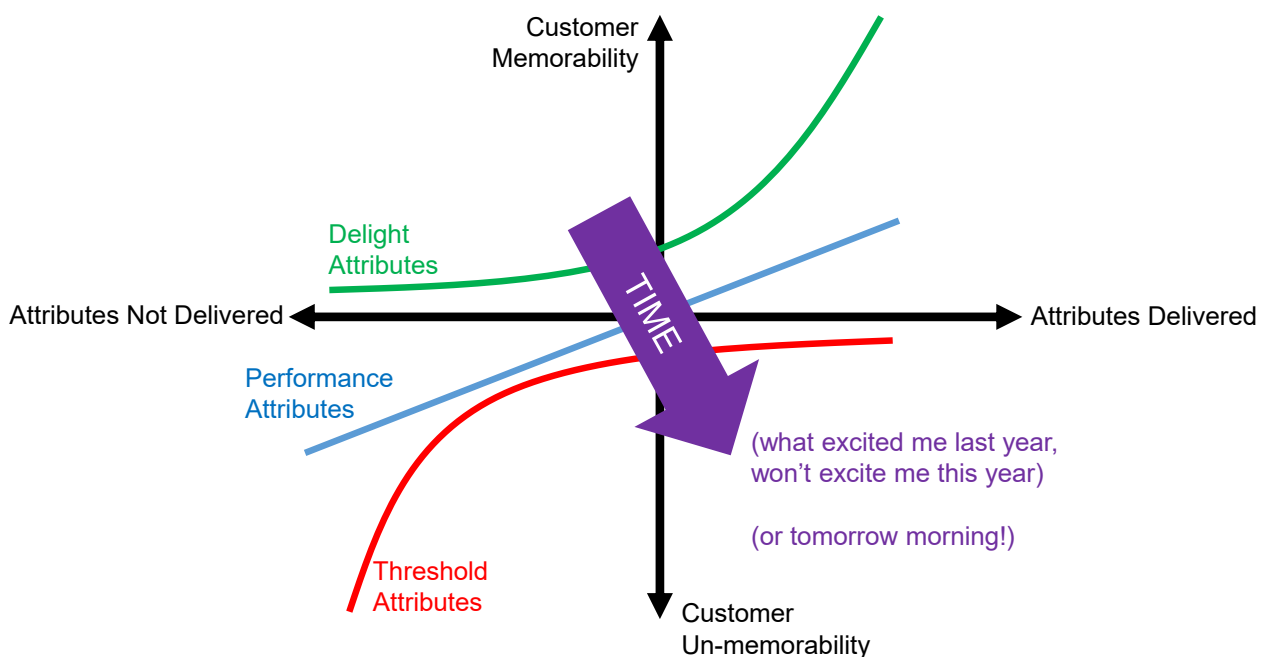
At that point, the effective scoring algorithm is no longer $A \times B \times C$, but something closer to $B \times B \times C$.

A day later, even that distinction fades. What remains is a single, blunt question: was there anything memorable about this person at all? The algorithm collapses to $B \times B \times B$.

Everyone's score drops – but not evenly.

Those who relied on presentation competence see their scores asymptotically approach zero. The person who invested in insight and resonance retains their advantage. Over time, the gap widens rather than narrows.

What this group had rediscovered, without realising it, is the Kano model (Reference 1).



Kano tells us that some attributes are simply the price of entry. Their absence causes dissatisfaction, but their presence creates no advantage. Once everyone has them, they stop differentiating altogether. These are the things everyone does.

Other attributes – harder to define and harder to engineer – create disproportionate value precisely because they are unexpected. They surprise, they delight, and crucially, they are remembered.

Presentation capability in the pitch session context turned out to be a hygiene factor. Wow-factor and human resonance were delighters.

Seen this way, Kano is not just a model of customer satisfaction. It is a model of human judgement and memory. Over time, must-have attributes decay to zero value, while delighters compound.

This is why so many organisations over-invest in polishing basics long after those basics have stopped mattering. It's why marketing messages converge, why pitches blur together, and why competence alone rarely produces leadership.

And it's why Kano remains one of the most quietly powerful pieces of thinking in business – not because it tells us what to improve, but because it forces us to ask a far harder question:

Which of the things we're working on will anyone still remember tomorrow?

Reference

- 1) Noriaki Kano et al. (1984), 'Attractive Quality and Must-Be Quality', Journal of the Japanese Society for Quality Control.

Not So Funny – The CEO Authenticity Curve (or: Why Leaders Should Occasionally Eat Their Own Burgers)

At the beginning of this month, Chris Kempczinski became the latest corporate leader to discover that the internet has two favourite hobbies:

1. Watching executives try to be relatable
2. Turning those attempts into memes

The occasion was a promotional video for McDonald's's new Big Arch burger, in which Kempczinski enthusiastically explained the product: "Two quarter-pound patties, a delicious Big Arch sauce... lettuce, crispy onions and pickles."

So far, so normal.

Then came the tasting moment.

Kempczinski declared: "I love this product. It is so good." ...before taking what social media rapidly concluded was the smallest bite ever taken by a human being eating a burger.



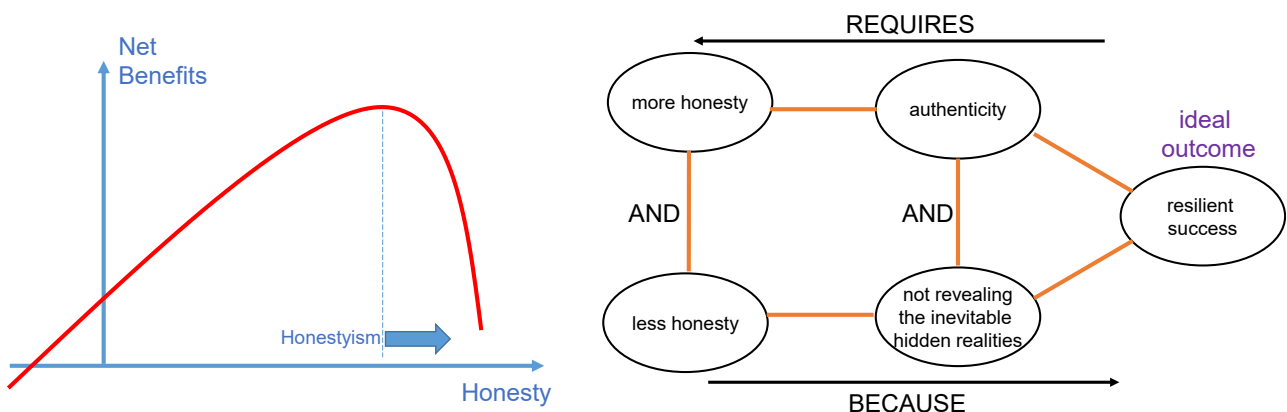
The internet response was swift and merciless:

- "He looks scared of it."
- "His aura screams kale salad."
- "This man has never eaten McDonald's before in his life."

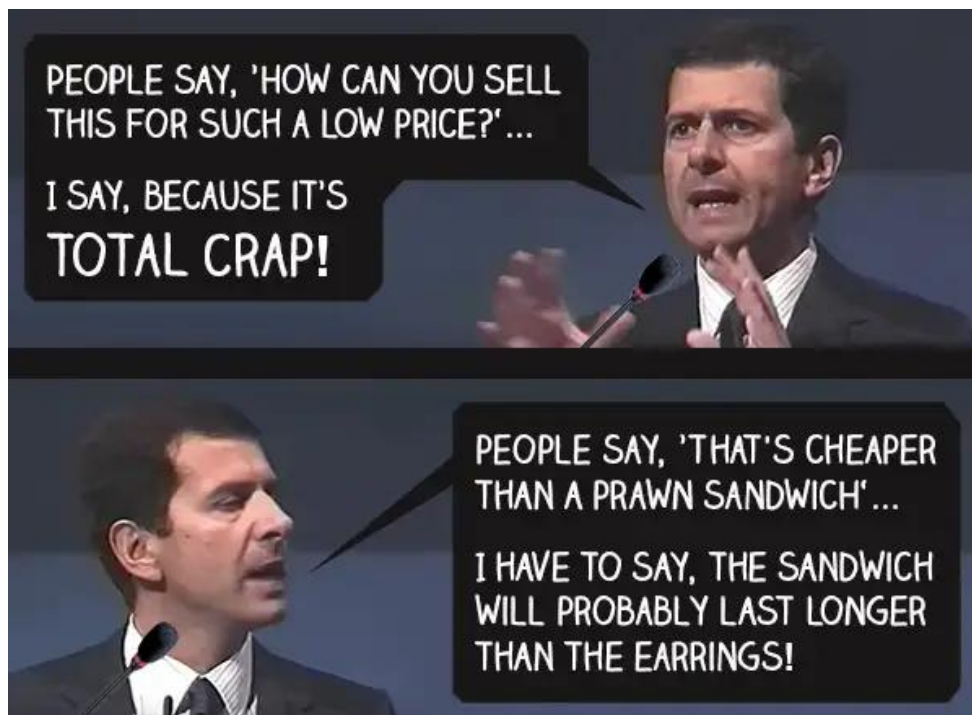
Within hours the clip had become the latest entry in the long tradition of corporate authenticity accidents.

Kempczinski's, hmm, 'error of judgement' perhaps serves to highlight an ever-present Goldilocks Curve. The CEO Authenticity Goldilocks Curve. Leadership communication seems to operate on a simple but dangerous rule:

Too little honesty and people don't believe you.
 Too much honesty and people wish you hadn't said anything.
 Somewhere in the middle lies the Goldilocks zone.



Kempczinski's lack of authenticity sits over on the left-hand side of the Curve. Over on the other side sits what is probably still the most iconic example of too-much honesty (at least if you live in the UK), the so-called 'Ratner Incident' from 1991. Still the gold standard of corporate self-destruction by honesty. During a speech to industry big-wigs, company CEO, Gerald Ratner joked that one of his jewellery products was so cheap because it was, "total crap." Within days the company (then Ratners Group) lost half a billion pounds in value. Lesson learned: don't insult your own products.



Kempczinski's video nightmare is likely going to become the Ratner analogue. When leaders sound too corporate, audiences sense it instantly. Humans are excellent authenticity detectors. We subconsciously look for signals like:

- Do you actually use the product?
- Do you sound like a human?
- Did you just call food a "product"?

The moment the language becomes overly scripted, credibility evaporates. And if the visual cues contradict the message (e.g. CEO praising burger while nibbling it like radioactive material) the internet moves in for the kill.

The Hidden Leadership Rule

The real rule is surprisingly simple: You don't have to love your product. But you do have to look like you've met it before.

From a systems perspective, leaders operate inside a very narrow signalling window. Stakeholders want simultaneously contradictory things:

- Authenticity
- Professionalism
- Honesty
- Confidence
- Enthusiasm
- Restraint

Push too far in any direction and the system reacts.

Which is why the safest strategy for any executive filming a promotional video is probably this:

Take a normal-sized bite.

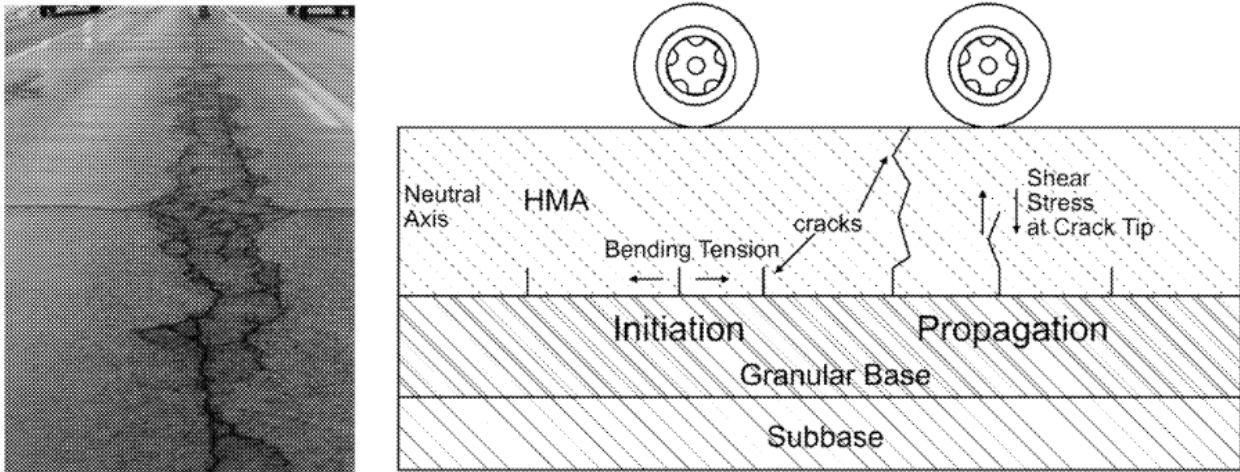
Preferably one that actually removes some burger.



Of course, the good news for Chris Kempczinski is that internet ridicule follows a very predictable scientific principle. Let's call it the Internet Meme Half-Life Law. Just like radioactive materials, the public attention around any online embarrassment decays over time. I can feel a research programme coming on... we might be coming back to this Goldilocks Curve again in the future...

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Patent of the Month – Fatigue-Resistant Flexible Road Structure



Bug bears. Anyone that knows me will know that one of my least favourite things in life is built-in obsolescence. Designing and building things that are deliberately going to fail and therefore require expensive repair, maintenance and replacement. The problem is even more annoying when it comes to infrastructure, because here not only do we have to keep paying for stuff, but we get the double penalty of having to suffer all the time and inconvenience during the inevitable repair and replacement work. Roads are probably the worst of the worst because the industry, in my experience, has zero interest in fixing designs they know will keep them in repeat business forever. All of which is to say that this month's patent of the month is unlikely to ever see the light of practical day if industry incumbents have any say. That said, at the very least, US 12,565,739, granted to a quartet of inventors at the Nano and Advanced Materials Institute in Hong Kong on March 3, might help offer a modicum of evidence to the government officials that keep the gleefully incompetent construction industry incumbents living in luxury that there is a better way.

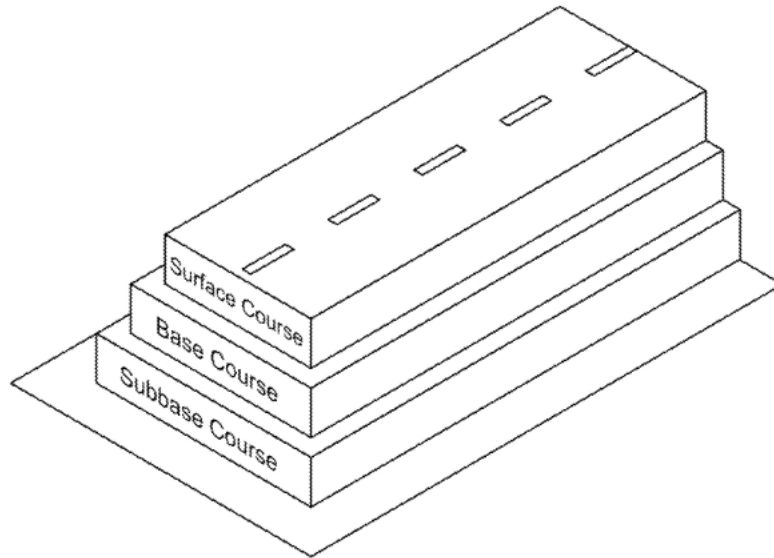
Here's the background description found in the patent document:

Each year there are large quantities of abandoned waste vehicle tyres that can be difficult or hazardous to process. Waste tyres are typically stacked in large piles in waste recycling yards in suburban or rural areas, causing environmental and hygiene problems due to the highly durable and non-biodegradable rubber in the tires. The recycling of tyre rubber is necessary in order to reduce the amount of tyre waste. Rubber has been used in asphalt materials, typically in surface layers of pavement systems, for several decades. When used in surface layers, it can improve the skid resistance and durability of asphalt mixtures while reusing the waste tyres...

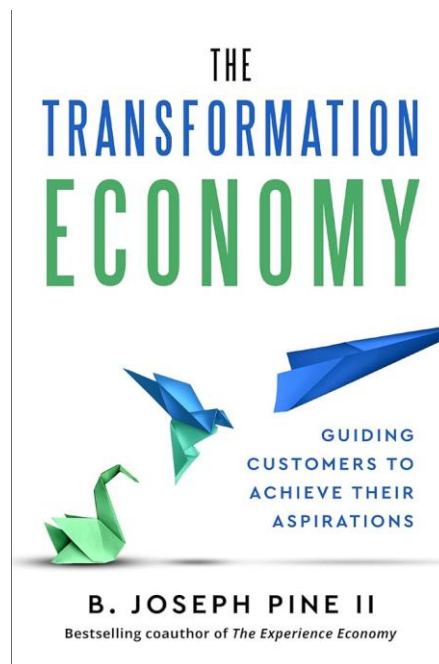
...Material fatigue is an important contributing factor to the life of a pavements system. Fatigue leads to surface cracks as seen in [figure above – a common sight on all roads]. Fatigue cracking is typically caused by a bottom-up support issue. For example, as seen in [adjacent drawing] bending tension in an upper asphalt layer can lead to cracks that propagate to the upper surface of the pavement system. Additionally, rutting may result from accumulated surface deformation caused by repeated wear due to traffic. Fatigue cracking and rutting may be caused, in part, due to a weakened base layer or sub-base layer. Both rutting and fatigue cracking require expensive repairs that can involve stripping and repaving of the top pavement system layers or even the replacement of entire sections of a road.

Meanwhile, looking at the horrendous state of the roads near where I live, I think I might send a copy of this patent to my local councillors. Let's think about repairing the roads one last time rather than every Spring.

And, finally, the main drawing on the front sheet of the patent document, showing the (Principle 3) layering structure of the new solution. Hard-soft-hard rules!



Best of the Month – The Transformation Economy



In 1999, B. Joseph Pine II and James H. Gilmore published a book that quietly changed how many organisations thought about value creation: *The Experience Economy*. Their central insight was simple but powerful. Economies evolve through predictable stages:

Commodities → Products → Services → Experiences

Coffee beans become packaged coffee. Packaged coffee becomes café service. And eventually the café becomes something else entirely... an experience people willingly pay a premium for.

The book became a classic of modern business thinking.

But even then Pine and Gilmore hinted that the story wasn't finished. In the final chapter they suggested a further – final – step in the pattern: *The Transformation Economy*. Now, with the publication of the book of the same name, Pine returns to that idea and argues that the next great shift in business has already begun, and in some sectors passed a tipping point.

The Next Step in the Value Ladder

The logic of the transformation economy is an extension of the earlier stages.

Commodity: Raw materials

Product: Manufactured goods

Service: Activities performed for the customer

Experience: Memorable events staged for the customer

Transformation: Lasting change achieved for the customer (now renamed 'aspirant' in the book)

Experiences are memorable.

Transformations are meaningful (Pine talks about the idea 'I was X, I'm now Y' as a meaningful symbol of the language aspirants will use to denote that a transformation has occurred in their life).

An experience might entertain you for an evening.

A transformation changes who you are.

Think of fitness programmes that genuinely improve health, education that truly changes a career trajectory, or coaching that reshapes how someone thinks about their life or work. Or, thinking closer to home, an organisation helps ensure that clients successfully conclude their innovation projects, as opposed to the 98% of innovation projects that end up in the 'failed' category.

In this new stage, in other words, the value delivered by the provider is not the event or activity itself. It is the outcome for the customer.

The Responsibility Shift

For years I've found the transformation concept particularly compelling because it represents a fundamental transfer of responsibility. In most traditional business models, responsibility sits with the customer. You buy a product and hope it works. You hire a consultant and hope their advice helps. Transformation flips that logic. The customer specifies the outcome they want. The provider takes responsibility for achieving it.

In other words, instead of selling products or services, organisations begin selling success.

It's a subtle but profound change.

And it is exactly the kind of step-change we would expect when a system jumps from one S-curve to another.

One of the interesting aspects of the new book is Pine's explanation for why it took so long to arrive. The transformation economy concept was first hinted at more than two decades ago. But Pine argues that he wanted to wait until there was enough evidence that the model was real. That caution is understandable. Predicting the next economic stage is easy. Demonstrating that it has actually begun is much harder.

Yet there is another reason why the timing of this book feels particularly interesting right now. Because something else has appeared on the scene.

Enter Generative AI.

The rise of generative AI may turn out to be the missing enabler that makes transformation-based business models scalable. Until recently, delivering genuine transformation was difficult because it requires deep personalisation. Providers had to understand each customer's goals, context, constraints and behaviour patterns. That level of insight was expensive. Now, with large language models and AI agents capable of analysing vast quantities of information, organisations can begin to design services that are far more tailored to the individual.

The economics of personal transformation are suddenly changing.

AI can analyse scenarios, test possibilities, and help providers design pathways that maximise the probability of success. Human experts remain crucial, but increasingly as guides, mentors and interpreters, rather than the sole source of knowledge.

Seen through this lens, Pine's transformation economy begins to look less like a distant idea and more like an emerging design pattern.

Healthcare shifting from treatment to measurable wellness outcomes.

Education shifting from teaching content to achieving capability.

Consulting shifting from advice to guaranteed results.

In each case the same shift occurs: from delivering activities to delivering outcomes.

For readers interested in innovation patterns, the transformation economy also fits neatly into a broader evolutionary story. Each stage in the commodity-to-transformation ladder, as we've been saying ever since the Experience Economy book was published, represents a new value S-curve.

Commodities compete on price.

Products compete on features.

Services compete on convenience.

Experiences compete on emotion.

Transformations compete on personal change.

Seen this way, Pine's new book is not simply describing a new market trend. It is identifying the next rung on the long ladder of value creation.

If the experience economy asked the question, "How do we make this moment memorable?"

The transformation economy asks a more ambitious one: "How do we make the customer better?"

And with the arrival of powerful AI tools capable of understanding individuals at unprecedented scale, that question may finally have an answerable business model behind it. Which makes The Transformation Economy feel less like a retrospective explanation... and more like a map of where the next wave of innovation is heading, and how generative AI, rather than becoming a job-destroyer, enables millions of new transformation economy jobs...

...providing we remember the Stan Hustad quote featured in the book: "If a business doesn't help people flourish, it's a racket."

Wow In Music – Crime Of The Century



I can't think of a better example of a band making a sea-change album than Supertramp's third album, *Crime of the Century*. It is one of rock's greatest "glow-ups." Between 1971 and 1974, Supertramp went from a failing prog-rock outfit with two commercially dead albums to creating a sonic masterpiece that remains an audiophile benchmark today.

The shift wasn't just luck; it was a total "reboot" of the band's DNA. Here are the factors that turned *Crime of the Century* into such a watershed moment.

1. The "Clean Slate" Lineup

After the failure of *Indelibly Stamped*, the band essentially dissolved, leaving only the core songwriting duo of Rick Davies and Roger Hodgson. They spent months auditioning new members, eventually finding the "classic" lineup:

- Dougie Thomson (Bass): Provided a solid, melodic foundation.
- Bob Siebenberg (Drums): A drummer with a "heavy but steady" American feel.
- John Helliwell (Saxophone/Woodwinds): Added the jazz-inflected textures that became the band's signature.

This new group wasn't just more talented; they were more cohesive. The first two albums felt like a band searching for an identity; *Crime* felt like a band that had found its soul.

2. The Ken Scott Influence

The importance of producer Ken Scott cannot be overstated. Fresh off working with David Bowie (*Hunky Dory*, *Ziggy Stardust*) and The Beatles, Scott brought a level of discipline and sonic perfectionism the band lacked.

- The "Sound": Scott helped create the ultra-clean, high-fidelity production that made the album a staple for testing Hi-Fi systems.
- The Wurlitzer: He helped foreground the Wurlitzer electric piano, running it through various effects to create that distinctive "Supertramp bark" heard on "Dreamer" and "Bloody Well Right."

3. Structural Songwriting (Davies vs. Hodgson)

On the first two albums, the songwriting was often aimless or overly "jam-heavy."

For *Crime*, Davies and Hodgson began to lean into their (Principle 37) healthy-competition "Lennon-McCartney" dynamic – Rick Davies brought the bluesy, cynical, and gritty edge (e.g., "Rudy," "Asylum"), and Roger Hodgson brought the spiritual, melodic, and pop-

sensible side (e.g., "Dreamer," "Hide in Your Shell"). As quoted by Roger Hodgson in a 2014 interview, 'I think that both Rick and I did the same thing on that album, wearing our hearts on our sleeves as it were, and that probably is a large part of the reason why it resonates with people so much'. This heart-on-sleeve (Principle 12) yin-yang tension created a balanced listening experience that appealed to both the "art-rock" crowd and the burgeoning FM radio pop audience.

4. The Thematic Pivot

While the first two albums meandered through folk and psych-rock tropes, *Crime of the Century* focused on (Principle 6) universal themes of alienation, mental health, and the crushing weight of the education system.

- It wasn't announced as a "concept album," but, as the billboards of the time stated, it is 'a startling vision of sanity in an insane world', where, according to me at least – the first six songs are about an individual's (Rudy!) struggle against an insane system, and the last two that (Principle 7) zoom out to describe the insanity-generating global system. In many ways, I would say it was a more insightful look at insanity than Pink Floyd's *Dark Side Of The Moon*, released the previous year. The whole album felt cinematic.
- The transition from "School" (with its haunting harmonica and (Principle 38) playground screams) into "Bloody Well Right" set a tone of suburban angst that resonated deeply with listeners of the post-Dark-Side mid-70s.

5. A Massive Financial Gamble

The band's benefactor, Dutch millionaire Stanley August Miesegaes (who had funded the first two failures), agreed to clear their debts and support one last "make or break" project. Without this financial safety net, the band likely would have broken up in 1972. The record company, in true early 70s fashion, played along with the "one last shot" idea and chipped in by paying for the band to (Principle 2) isolate themselves from the outside world... and so the band retreated to Southcombe Lodge in Somerset for three months to do nothing but rehearse. This "pressure cooker" environment forced them to refine every note before they even entered the studio. The project was existential.

Comparison at a Glance

Feature	<i>Supertramp / Indelibly Stamped Crime of the Century</i>	
Direction	Scattered (Folk, Psych, Blues)	Focused (Art-Rock, Sophisti-pop)
Production	Thin, standard early-70s	Lush, wide dynamic range, cinematic
Key Instrument	Acoustic guitar / Organ	Wurlitzer Electric Piano
Thematic Focus	Vague lyrics	Isolation, madness, and society

We don't often feature whole albums in this Wow in Music part of the ezine, but I think *Crime of the Century* as a whole succeeds primarily in these five elements. Rather than try and zoom-in to look at the many mini-wows within all eight of the songs on the album, let's just focus on the rather stunning, stage-setting opener...

"School" is the ultimate tone-setter for the album, a masterclass in (Principle 12) tension and release. It contains several "wow" moments that proved Supertramp had finally mastered cinematic storytelling.

- The "Lonesome" Harmonica Intro: The album begins with a haunting, distant harmonica played by Rick Davies. It signals an ominous atmosphere far removed from their earlier, more standard rock tracks.
- The (Principle 38) Playground Scream: After the refrain "you're coming along," the song dissolves into the sounds of children playing. The "wow" moment occurs when a sharp girl's scream acts as the precise cue for the full band to slam into the track.

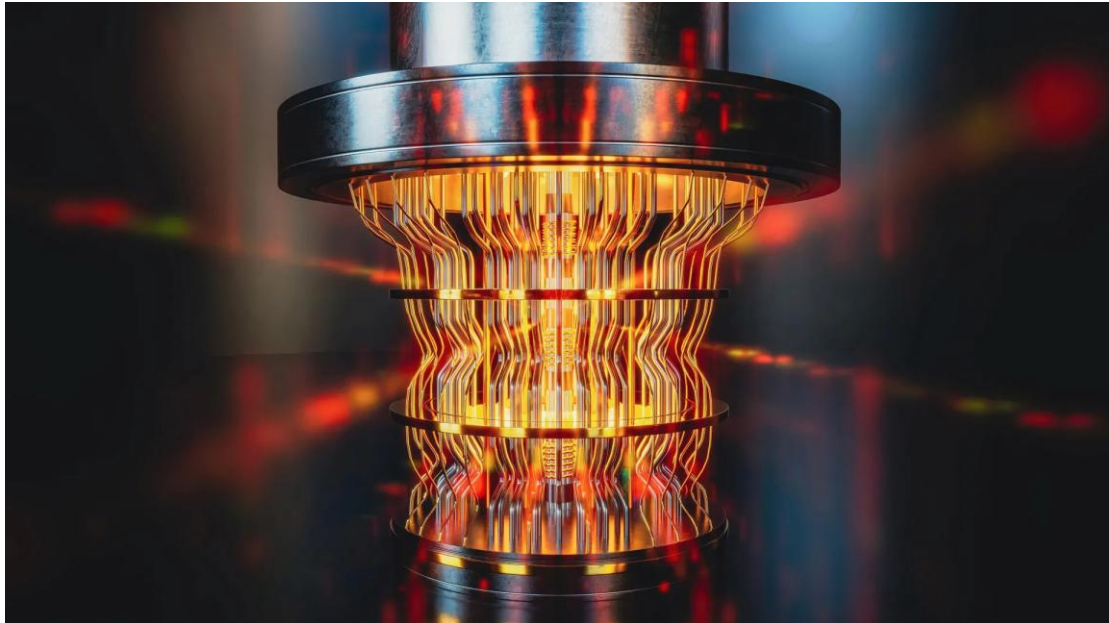
Roger Hodgson noted this scream captures the dual nature of school: is it a sound of fun, or the horror of what's to come?

- The "Religious Experience" Piano Solo: Rick Davies delivers a bright, percussive piano lead that fans often describe as a "religious experience". It shifts from a delicate jazz-fusion feel into an aggressive, building climax that mirrors the frustration of the lyrics.
- The acoustic/electric unison: in a subtle piece of "sonic magic," the piano solo actually features a standard acoustic grand piano and a Wurlitzer playing the same parts in (Principle 16) near-perfect unison, panned to different sides to create a massive, unique texture. That Wurlitzer sound became the band's secret sauce. The "Supertramp bark" was no accident. It was the result of a specific collaboration between the band and producer Ken Scott. Firstly, the "Leslie" effect: to get that (Principle 18) shimmering, organ-like movement, the Wurlitzer was often run through a Leslie speaker cabinet (a rotating speaker usually reserved for Hammond organs) giving the electric piano its (Principle 19) "swirling" quality; layering and compression: Ken Scott used heavy compression to make the Wurlitzer's "reeds" (the metal plates inside) sound more aggressive and percussive, allowing it to cut through the mix like a lead guitar; unison doubling (especially on later tracks like "Dreamer," the band didn't just use one Wurlitzer; they layered multiple takes with slight variations to create a wall of sound that felt thick and "expensive".
- Ken Scott's drum production for the album is a masterclass in "dry" precision that makes every hit feel like it's occurring inches from your ears. While earlier albums had muddy, distant percussion, School signalled a new, soon to become iconic "bone-dry" aesthetic punch. One achieved by Scott and drummer Bob Siebenberg focusing on (Principle 2) extreme isolation and damping. Firstly, the "Dead" Room where drums were recorded in very small, acoustically "dead" booths to prevent room reverb from washing out the details. Then physical damping, famously using heavy damping on the drum heads, sometimes even taping cigarette packs to the snare, to eliminate overtones and create a short, percussive "thud" rather than a ringing "boom." And then thirdly, one of Scott's "secret weapons" was placing microphones (Principle 13) inside the drums. For the bass drum, he would often remove the front head (or use a special internal cradle) to get the mic right next to the beater for maximum "click" and attack. In "School," the drum production creates a visceral "wow" through dynamic contrast – the first kick: after the long, ambient harmonica and piano intro, the first kick drum hit is intentionally loud and "dry," startling the listener with its sudden physical presence. Then the snare crack – during the aggressive piano solo, the snare isn't just a background timekeeper; it's mixed to be as prominent as a lead instrument. Every "crack" feels intentional, pushing the tension of the song to its breaking point. Then the (Principle 31) "space" between hits: Because the drums are so dry, the *silence* between the hits is absolute. This creates a rhythmic "breathing" effect that makes the song feel much larger than a standard rock track.

This meticulously engineered drum sound became the foundation for the entire "Supertramp sound," allowing them to be both a prog-rock band and a radio-friendly pop act simultaneously. The band went on to make four more really good albums before Roger Hodgson's departure in 1983, including the global smash that was Breakfast In America, in 1979 (interestingly, both the title track and hit single, The Logical Song were written by Hodgson during the Crime of the Century preparations). Ask a hundred Supertramp fans for their favourite album by the band, though, and ninety-eight of them are going to opt for Crime Of The Century. It was a sea-change for the band and, looking back from today, a sea-change for popular music.

Investments – Turning the Quantum Dial

Or: Why the Next Computing Revolution May Depend on Getting Chemistry “Just Right”



Every so often a scientific breakthrough appears that doesn't immediately create a new industry but quietly reveals the mechanism by which one might eventually be built. A recent discovery in quantum materials research looks like exactly this kind of advance. Researchers at the University Of Chicago have demonstrated that by carefully adjusting the ratio of two elements – tellurium and selenium – inside an ultra-thin crystalline film, they can induce a rare and highly sought-after state known as topological superconductivity. This exotic quantum state is widely regarded as one of the most promising routes toward stable quantum computing devices.

On the surface this might sound like just another incremental materials science advance. In reality, it represents something far more important: the discovery of a control dial. And once a system has a dial, innovation tends to accelerate.

The Quantum Goldilocks Problem

The key challenge in producing useful quantum materials lies in a deep contradiction. Quantum states require electrons to interact strongly with one another. Without sufficient interaction, the exotic behaviours needed for advanced quantum devices never emerge. But too much interaction creates the opposite problem. Electrons become trapped and immobile, destroying the electrical properties required for a working device.

In simple terms:

- Too weak and nothing interesting happens
- Too strong and nothing works
- Just right and... new physics emerges

This is a classic Goldilocks curve.

The innovation step-change often happens not at the extremes, but at a critical tipping-point that, once found, triggers a non-linear response from the system. What the Chicago researchers discovered is that such a tipping point can be controlled by adjusting chemical composition. By tuning the relative amounts of tellurium and selenium in a thin film, the material can be moved smoothly between different quantum regimes until the desired

state appears. Instead of choosing between strong or weak electron interactions, the system allows both. In precisely the right proportion.

From Discovery to Engineering

Historically, advanced materials have often been discovered rather than designed. Researchers would find a promising compound and then spend decades trying to understand and reproduce its properties. This new work suggests a different future. Rather than hunting for rare materials that happen to exhibit useful quantum properties, scientists may increasingly be able to engineer those properties directly by tuning key parameters.

The important step-change here is not the specific material. It is the discovery that chemical composition can serve as a reliable tuning mechanism. In effect, the researchers have identified a design variable. And design variables are what turn science into engineering.

The Three Stages of Investment

Breakthrough technologies tend to follow a familiar pattern before they become investable industries.

Stage 1 – Scientific Breakthrough (Today)

At present, this discovery sits firmly in the scientific domain:

- A controllable quantum state has been demonstrated
- The key control parameter has been identified
- Thin-film fabrication methods have been proven

At this stage the work is primarily of interest to physicists and materials scientists. Direct investment opportunities are limited. But the foundations are now visible.

Stage 2 – Platform Development (Next 5–10 Years)

The next phase is likely to focus on turning the discovery into a usable platform.

Likely developments include:

- Integration into experimental quantum devices
- Prototype qubits based on topological superconductors
- Improved thin-film fabrication methods
- Standardised materials processes

This stage often produces the first specialised suppliers and niche technology companies. The industry is not yet mature. But the direction of travel becomes clearer.

Stage 3 – Industrial Scaling (10–20 Years)

If topological superconductors fulfil their promise, a third stage becomes possible.

Potential industries could include:

- Quantum materials manufacturing
- Specialist deposition equipment
- Cryogenic-compatible electronics
- Quantum device fabrication

At this point the “dial” discovered in the laboratory becomes an industrial control variable. And that is typically when investment opportunities begin to multiply.

The Real Breakthrough

It is tempting to view this development simply as the discovery of a new quantum material. But the real significance lies elsewhere. The researchers did not just find a material. They discovered the dial.

Once a system has a dial – something that allows performance to be tuned continuously rather than discovered by chance – innovation tends to accelerate dramatically.

Transistors required voltage control.

Lasers required wavelength tuning.

Semiconductors required doping control.

Quantum materials may require composition tuning.

Investors should watch closely. Because when the dial becomes industrialised, the industry usually follows.

Read more about the University of Chicago research here:

Haoran Lin, Christopher L. Jacobs, Chenhui Yan, Gillian M. Nolan, Gabriele Berruto, Patrick Singleton, Khanh Duy Nguyen, Yunhe Bai, Qiang Gao, Xianxin Wu, Chao-Xing Liu, Gangbin Yan, Suin Choi, Chong Liu, Nathan P. Guisinger, Pinshane Y. Huang, Subhasish Mandal, Shuolong Yang. A topological superconductor tuned by electronic correlations. Nature Communications, 2025; 17 (1) DOI: 10.1038/s41467-025-67957-1

Generational Cycles – Shadow Generations II

In last month's generations article, we explored the idea of shadow characteristics of each of the four archetypes. The focus then was on each of the archetypes in their respective present-day stages. We thought it might be interesting to expand that to make a shadow equivalent of each of the four archetypes at each of the four key stages of life.

Here's what that looks like, comparing the visible (Strauss & Howe defined) characteristics with their shadow parallels:

Boomer Prophets

Life Stage	Visible	Shadow
0–20 (Growing-up)	Indulged	Entitled
21–40 (Parenting)	Narcissistic	Dogmatic
41–60 (Power)	Moralistic	Obstructive
61+ (Indirect power)	Wise	Sanctimonious

Logic:

- “Entitled” captures over-inflated expectations of recognition and reward.
- “Dogmatic” distorts confident identity into inflexibility.
- “Obstructive” is when moral authority hardens into a veto on change.
- “Sanctimonious” is wisdom turned rigid and judgmental.

Gen X Nomads

Life Stage	Visible	Shadow
0–20 (Growing-up)	Abandoned	Withdrawn
21–40 (Parenting)	Alienated	Cynical
41–60 (Power)	Pragmatic	Hardened
61+ (Indirect power)	Tough	Isolated

Logic:

- “Withdrawn” reflects early disengagement from unsupportive systems.
- “Cynical” emerges as mistrust solidifies under adult pressures.
- “Hardened” takes pragmatic skills into inflexible problem-solving.
- “Isolated” is autonomy over-extended, eroding collaboration.

Millennial Heroes

Life Stage	Visible	Shadow
0–20 (Growing-up)	Protected	Fragile
21–40 (Parenting)	Heroic	Performative
41–60 (Power)	Hubristic	Reckless
61+ (Indirect power)	Powerful	Entitled

Logic:

- “Fragile” captures dependency and low resilience.
- “Performative” reflects overemphasis on image/validation.

- “Reckless” is risk-taking untempered by consequence.
- “Entitled” is assuming influence guarantees correctness.

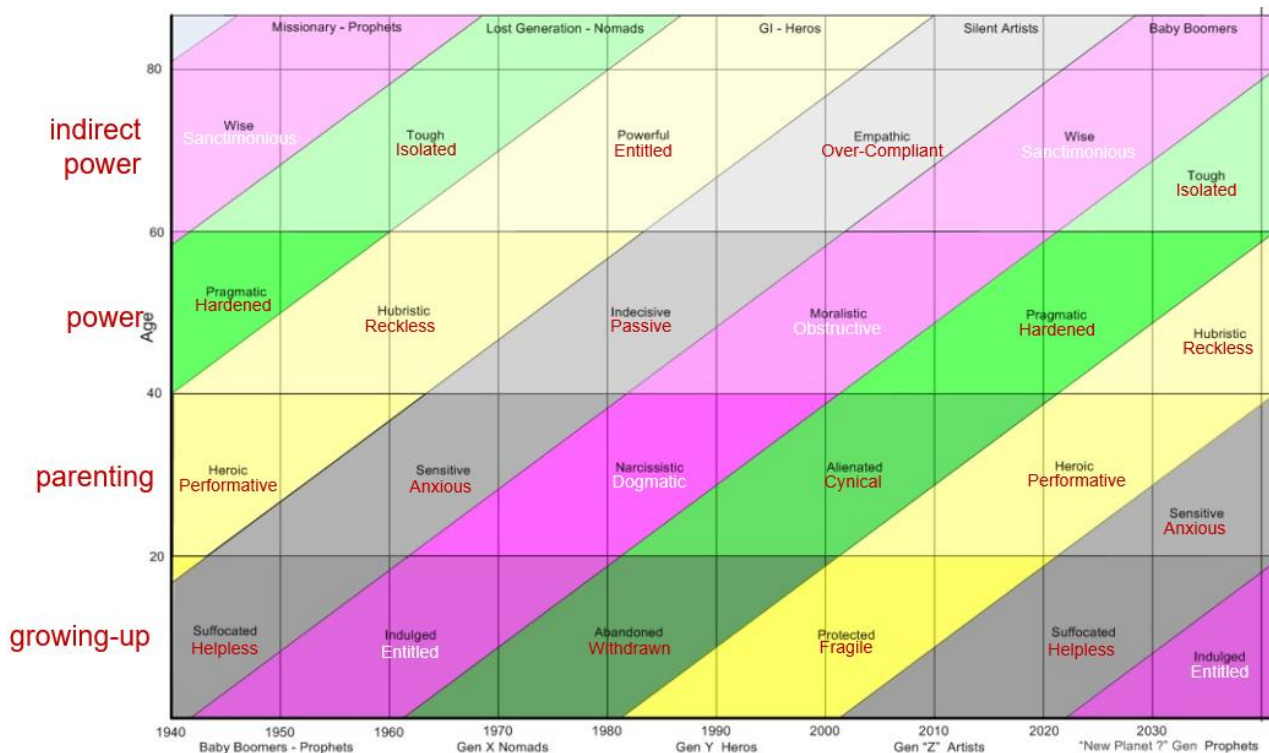
Gen Z Artists

Life Stage	Visible	Shadow
0–20 (Growing-up)	Suffocated	Helpless
21–40 (Parenting)	Sensitive	Anxious
41–60 (Power)	Indecisive	Passive
61+ (Indirect power)	Empathic	Over-compliant

Logic:

- “Helpless” captures the result of over-protection.
- “Anxious” reflects internalised stress and threat anticipation.
- “Passive” is caution and fear of decision amplified into inaction.
- “Over-compliant” is empathy distorted into subservience or over-adjustment.

And here, our new favourite cheat-sheet graphic, is what the visible/(shadow) summary looks like when added onto the classic generations map:



For some reason, I like ‘Sanctimonious’ as a better descriptor of Donald Trump than I do ‘Wise’... although, in fairness, he has been wise enough to win two elections. Maybe it’s the second victory that’s allowed the Shadow-side Trump to emerge?

More seriously, our shadow side tends to become much more visible when we’re under stress, threat, or are feeling ill. When someone is sick, the traits they usually moderate – patience, confidence, pragmatism – can recede, leaving the defensive distortions of their archetype on display. This explains why even minor healthcare encounters often feel charged with irrationality or conflict: people are not acting ‘out of character’, they are defending the core things their generation is wired to protect.

Biology – Dipper



At first glance, the dipper looks unremarkable: a small, dark, compact songbird hopping along the edge of a stream. Then it does something that no songbird is supposed to do. It walks straight into fast-flowing water, disappears beneath the surface, and begins feeding on the riverbed.

This behaviour makes the dipper one of the most specialised birds in the world, and one of the clearest examples in nature of how multiple emerging contradictions can be resolved not by a single trick, but by a coherent system.

Let's start with the core problem: the dipper's ecological niche is fast-flowing, cold, oxygen-rich streams. These environments are rich in food but hostile to almost everything else: turbulent, visually chaotic, acoustically loud, and energetically expensive. The core contradiction is obvious: the dipper must be light enough to fly, yet heavy and stable enough to function underwater in a strong current. Rather than choosing one world or the other, the dipper evolved to operate *fluently in both*. That ecological niche immediately creates three further contradictions to be addressed.

Contradiction 1: Seeing in Two Incompatible Worlds

Air and water behave very differently optically. Vision systems optimised for one usually perform poorly in the other. Yet the dipper hunts visually both above and below the surface. To resolve this, it evolved a flexible visual system capable of effectively switching between both. First, a (Principle 32) transparent nictitating membrane – the bird's (Principle 24) third eyelid – acts like a built-in dive mask, protecting the eye while maintaining clarity underwater. Next, the lens of the eye is (Principle 35) flexible and alters shape according to the changing refractive conditions between above and below water, allowing the bird to track prey against a refracting, moving background.

The solution is not exquisite underwater vision; it's *good-enough* vision combined with the ability to get very close to prey. This is the first hint that the dipper's system is not about excellence in isolation, but balance across the whole.

Contradiction 2: Getting Down, Staying Down, and Feeding Before Floating Up

Most birds avoid water because buoyancy works against them. Hollow bones, air-filled plumage, and large wings are wonderful for flight, but disastrous underwater. The dipper solves this by leaning into gravity. Compared to other songbirds, it has:

- (Principle 35) denser bones
- A much higher (Principle 35 again) haemoglobin concentration in the blood that allows it to (Principle 10) breath out before going underwater in order to reduce buoyancy
- (Principle 10 again) a (Principle 40) oily coating the bird preens onto its feathers to prevent air-bubbles from getting caught up in its body, again to reduce buoyancy
- rather than swimming, the dipper walks along the riverbed, using (Principle 22) rocks as anchors, and exploiting (Principle 12) boundary layers where current speed is lower, and moves (Principle 22 again) across the flow rather than fighting it head-on.

The key insight here is subtle but profound: the dipper doesn't overpower the river, it navigates its *structure*. Short dives, rapid feeding, and immediate resurfacing keep energy costs manageable. Again, no miracle. Just a system that turns a hostile environment into a usable one.

Contradiction 3: Being Visible to Prey but Invisible to Predators

Once the dipper resurfaces and perches near the stream, it faces a new problem. Against fast-moving water, a stationary bird stands out sharply. Visibility is a liability.

This is where the dipper's characteristic bobbing or "dipping" behaviour enters the story. While often discussed as courtship or territorial signalling – which it certainly is – the rhythmic up-and-down motion allows signals to other dippers in a noisy environment where sound travels poorly, but then, perhaps best of all, the (Principle 19) dipping behaviour also serves a camouflage function. By moving in a way that echoes the constant motion of flowing water, the dipper breaks up its visual outline, reducing contrast against a dynamic background. In effect, it becomes harder to detect, not by hiding, but by *matching the environment's rhythm*.

Here's what those three contradictions look like when mapped onto the Contradiction Matrix:



The Coherent Whole

Taken individually, none of these adaptations would be enough. Together, they form a tightly integrated system in which each solution compensates for the compromises of the others.

The dipper doesn't solve its challenges sequentially or independently. It solves them simultaneously, by aligning vision, mass, movement, behaviour, and environment into a single operating logic.

The dipper solves the contradiction of being both a bird and an aquatic forager by abandoning swimming altogether, instead evolving a system that allows it to see, sink, walk, and hunt on the riverbed while remaining fully airborne minutes later.

It is not a miracle.

It's what happens when a system evolves to work *with* reality rather than against it.

Read more: https://www.researchgate.net/profile/Steve-Ormerod/publication/254559374_The_Dippers/links/00b495344322b36ffa000000/The-Dippers.pdf

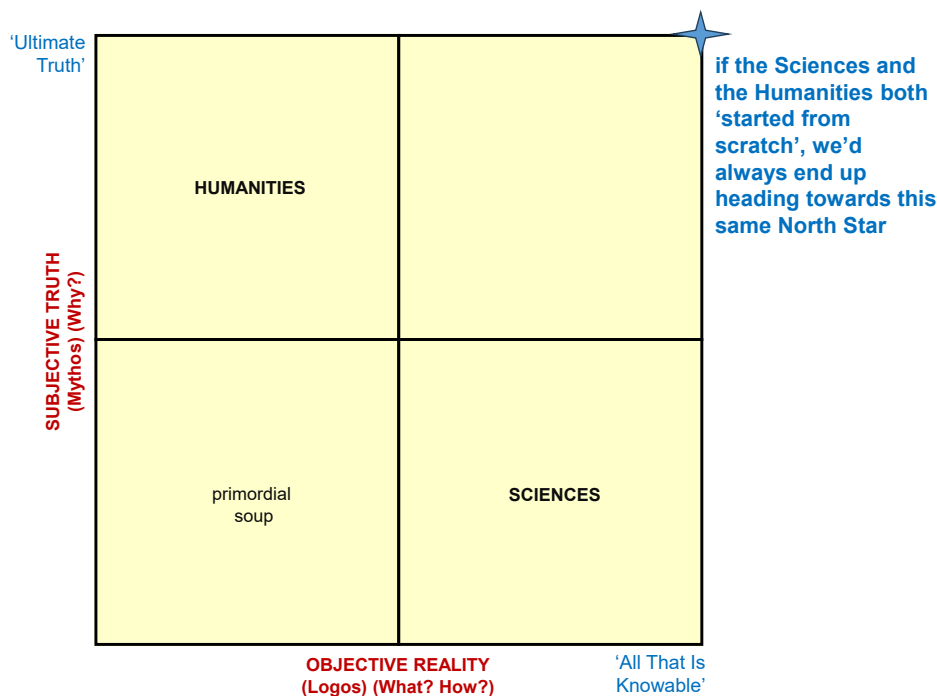
Short Thort

In a famous exchange with Stephen Colbert on *The Late Show*, comedian, Ricky Gervais laid out a thought experiment to illustrate why he views science as fundamentally more "real" or "reliable" than religious dogma. Gervais posited a scenario in which every book, record, and scrap of knowledge on Earth is suddenly wiped out. If humanity started over from scratch, he argued the following would happen:

1. **Science would return exactly as it is:** Thousands of years later, even if the names were different, the results would be the same. New scientists would discover that H₂O is water, they would rediscover the laws of gravity, and they would re-calculate the speed of light. These are *objective realities* about the universe that exist independently of human belief.
2. **Religion would be gone forever:** Gervais argued that religious texts are products of specific cultures, eras, and personal visions. If the Bible, the Quran, or the Torah were destroyed, they would never be rewritten the same way. New religions might emerge with different gods, different myths, and different rules, because they are *subjective constructs*.

At first blush, the argument sounded solid, and, on the night, it certainly managed to silence Colbert into nodding approval. The problem comes when we step back to think about the validity of the argument. Science, the exact same as literature, is full of noise. If we started again, we might end up with different names and characters. A different Newton, a different Shakespeare. Hydrogen and oxygen might have different labels, in the same way that Macbeth or Hamlet or might have different labels. But just as scientists would re-discover that 'water' is made up of two of 'hydrogens' and one 'oxygen', authors would re-discover a tragic Hamlet-like character that reveals a universal truth 'inaction and the search for perfect certainty can be as destructive as the original crime itself'.

Perhaps, ultimately, the only differences between Science and the Humanities are how much noise and inertia we must eliminate before we uncover the useful signal?



News

TRIZ Conferences

October seems to be the month each of the myriad conference organisers seems to have converged on. Not sure whether that's a good thing or a way to force authors and participants into some unfortunate political choices. Anyway, for what its worth, here are the choices:

International Business TRIZ Association – 8-9th, online

TRIZ'Fest 2026 ('MATRIZ') – 13-15th and 17-18th, Tianjin & Jinzhou, China

International TRIZ Conference ('MATRIZ Official') – 15-18th, online

European TRIZ Association – 21-23rd, Tunisia

Breaking from the pack is ever-rebellious, ICSI, which is scheduled to take place in Hsinchu, Taiwan from 17-19th July.

Subject to getting papers accepted by the referees, Darrell is probably going to stay at home and offer something for IBTA and ITC...

Copenhagen

...definitely not staying home, Darrell has been invited to do his usual Systematic Innovation EMBA weekend session at DTU in September (24-26th). Contact him directly if you want to meet up while he's in town.

Podcasts

It's been another busy month recording new episodes of both DangerMouth and the 1%er podcasts. The latter has settled on a regular weekly pulse-rate of new and past case studies, while DangerMouth has upped its game insofar as we're getting some increasingly big-hitters to come and talk to. We hit a new peak at the end of this month when we have a conversation with Joe Pine – author of this month's Book of the Month – on the Transformation Economy. It should be available during the first week of April. Be there or be square.

New Projects

This month's new projects from around the Network:

Telcom – SI Workshop Series

Telcom – AI Implementation Strategy Project

FMCG – TrendDNA Project

NGO – Investment Appraisal Project

Government – Generations Project

Conglomerate – AI Strategy Project

Advertising – AI-Sparked Creativity Project

Electronics – Everythink Workshop

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