Systematic Innovation

e-zine

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In this month's issue:

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Our guarantee to the subscriber is that the material featured in the e-zine will not be published elsewhere for a period of at least 6 months after a new issue is released.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

Going Around The Loop Twice

One of our most oft used phrases is, ‘go around the loop once and you’ll create a good solution, go around twice and you’ll make it much stronger’. The loop we’re referring to is about a problem definition-solution generation cycle. The reason we find ourselves using the phrase usually involves a problem solving team that has just conceived what they think is ‘the solution’. It’s amazing how quickly solvers become protective of their solutions. It may not be going too far to suggest they become analogous to our offspring. One aspect of our apparently cruel desire to kill a team’s precious new solution is an attempt to keep them out of their comfort zone for as long as possible. Another aspect is about trying to get the team to see the world from the eyes of their competitors. Competitors have every desire to kill your precious solution, and replace it with your own. Whatever the reason, it continues to be very difficult to get people to go around the loop again. That being the case, we started to think, why not just put ourselves in the position of a competitor, go find a ‘good’ solution – someone that’s been around the loop once already – and then go around the second loop they couldn’t bring themselves to do. In other words, a more devious version of ‘someone, somewhere already solved your problem’: ‘someone, somewhere already went around the loop the first time for you’.

The other big advantage of this approach is that the world is full of people that went around the loop once and came up with some pretty cool ideas. We decided to try and demonstrate the ‘going around twice’ idea by randomly selecting a couple of those pretty cool ideas and seeing what we could come up with:

First up is a Red Dot prize-winning (already a good sign!) design from a team of South Korean students. A quick look at the concept sketches for their ‘Easy to Put Shelf’ is likely to reveal one of those lovely, ‘oh my goodness, why didn’t I think of that?’ moments. In other words, the team found a good problem that nearly all of us have experienced at some point or other, but have never committed the energy to solving. Figure 1 illustrates the basic idea…

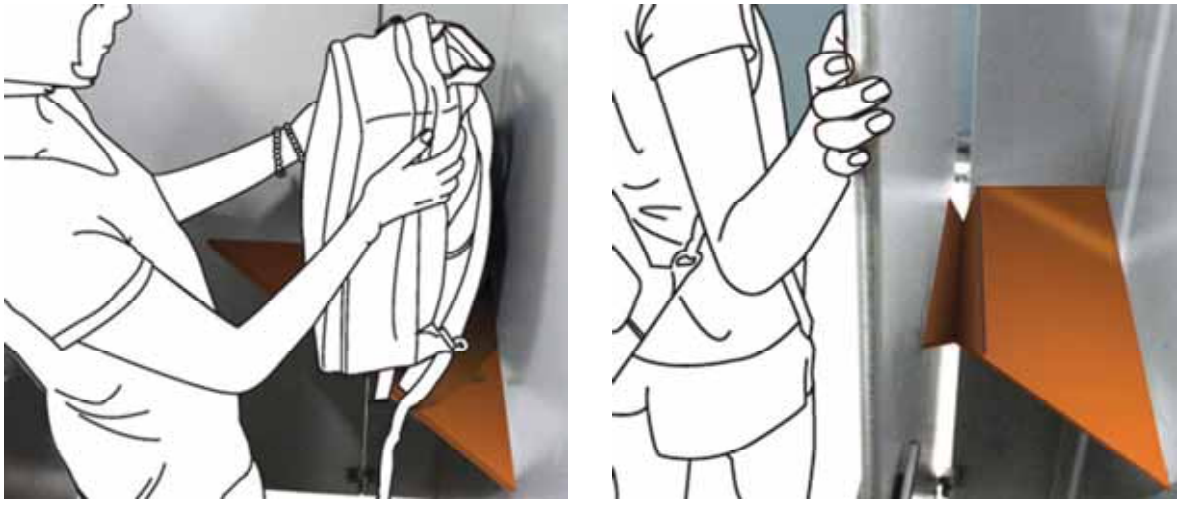


Figure 1: Easy To Put Shelf Concept Design

The generously sized ledge is adaptable and space-efficient and intended to supplement the coat hook on the back of the cubicle door in a public convenience, enabling users to

set down items that cannot be hung. The design consists of a triangular perch made from polyurethane that's separated into three sections so that it can fold in two places. It's installed against the public restroom door and the dividing wall and it's capable of collapsing when you open the door and it flattens once more once you've shut it. The Easy to Put Shelf is designed to be ‘perfect for placing your phone, bag or your coffee down during a trip to the toilet’.

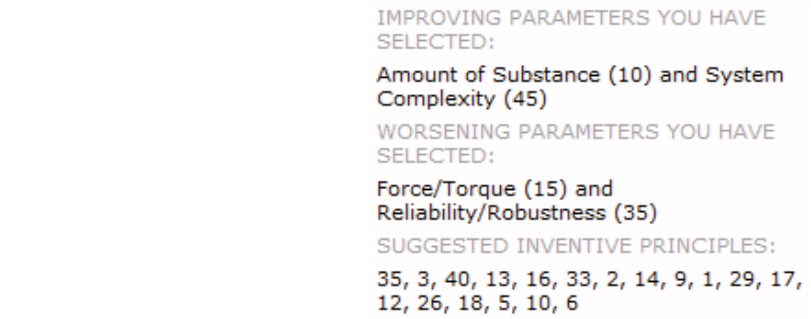
It is, we suggest, a typical example of a ‘good’ design: elegant but unlikely to make it all the way to commercial success.

Why not?

A very good question when we start thinking about the start of the second loop: if the most significant method of innovating is solving contradictions, a pretty good loop starter is to work out what the next contradiction is…

We could spend a lot of time agonizing over the question, but very often in these kinds of situation, the maxim ‘first problem is best problem’ tends to hold true. The first thing that struck us when we thought about why we wouldn’t buy such a solution is that, as the owner of the toilet cubicle, the design looks like it uses a lot more material than it needs from a purely structural sense and, worse, it seems like it will require some careful alignment during installation in order to provide a stable platform. And, building on this, if the cubicle moves or distorts over time, what was in alignment is likely to come out of alignment.

Here’s how we decided to map this cluster of conflicts onto the Contradiction Matrix:



All of which very quickly lead us to the idea of (Principle 35c, ‘increase the degree of flexibility’) making the ‘shelf’ into a hammock with one end attached to the side wall of the cubicle; the other to the door. Much cheaper; self-adjusting; self-levelling; easy to fit; no sticking if the joints get blocked; no possibility of trapped fingers; same support function because all of the loads are carried by the closed door. Simple.

Another good place to look for good ideas that usually aren’t all the way yet is Kickstarter or other equivalent crowd-funding websites. We particularly liked the Plumen 002, a new low-energy light bulb designed for ‘both form and function’. The name 'Plumen' may sound familiar as design studio Hulger named its first designer, low-energy light bulb the Plumen 001. Unlike the first Plumen, the 002 has less twists and turns and gives off a much softer light (Figure 2).

The new bulb uses the energy of a 7W bulb but gives off the light of a 30W incandescent bulb. The push for form to complement function comes from Hulger's vision that the Plumen 002 would be best used without shades. Fluorescent and LED light bulbs provide

light and don't use as much energy as incandescent bulbs, but they aren't nearly as easy on the eyes as Hulger's newest design. The company has taken its bulb to Kickstarter in search of $20,000 of funding.

Figure 2: Plumen 002 Light-Bulb

The ‘why not?’ question seems a little more difficult to answer for this one. We ended up showing the concept to a bunch of people in order to listen to what they had to say and to try and unravel the potential problems with the design. In the end, we concluded that the most significant ‘next’ issue with the Plumen 002 is that, in peoples’ minds lightbulbs are disposable items, and this perception doesn’t fit with the idea of the bulb being a thing of beauty: it’s difficult to throw away beautiful things!

The fact that low energy lightbulbs inherently last a lot longer than the traditional incandescent bulbs most likely means that the bulb will actually last as long as the lamp unit into which it is fitted, so the problem is a perceptual one rather than one that exists in reality. But, as we know from all of our TrenDNA work, perception is the thing that drives behaviour: merely thinking the beautiful bulb will fail and need replacing, will mean I’m far less likely to purchase it in the first place.

Here’s how we decided to best map that contradiction onto the Contradiction Matrix:

IMPROVING PARAMETERS YOU HAVE SELECTED:

Negative Intangibles (48)

WORSENING PARAMETERS YOU HAVE SELECTED:

Aesthetics/Appearance (39)

SUGGESTED INVENTIVE PRINCIPLES:

13, 10, 3, 24, 17, 18

Principle 13 seemed to offer a good insight this time around. Specifically, turn the system around the other way: stop selling a ‘lightbulb’ and start selling ‘a light’. The rationale for this goes something like this: most people buying a replacement bulb are going to put the

new bulb into an existing light fitting, which has most likely already got a shade that performs the aesthetic function, so this can't be the target market. If people don't like disposing of beautiful things, sell them something – a lamp – that they're buying as a permanent feature in their home. If it helps, include a message or label somewhere on the product saying 'no more lightbulb replacement ever' to reinforce the permanence attribute. The product itself is fine (although a self-cleaning feature might be nice, especially if it lasts forever!); the second loop this time seems to point much more towards a business innovation.

So?

The overall point: if you don't 'go around the loop a second time', the person that comes after you – your boss or, worse, your customer – certainly will. Far better that you do it before they get their chance…

…and if you can't bear that thought, your best bet is starting your next design project from the point where someone else has already done the first circuit around the loop for you. Starting with an 'award winner' or popular crowd-funded project idea is probably as good as you need to be.

In so many words, going around the loop a second time is exactly the same idea as 'staying one contradiction ahead' of the competition. Or, in this case, everyone else.

Trilemmas Part 3 – Breaking Iron Triangles

And so we finally arrive at the third part in our occasional series of articles about three-way contradictions, the first two parts being in Issues 92 and 121 of this ezine. The basic idea this time around is to present the findings of our research into the relative abilities of the 40 Inventive Principles to genuinely break what are often also known as triple constraints or 'iron triangles'.

By way of introduction to the research, we need to spend a moment or two defining what we mean when we use the word 'break'. In the ideal, it should be interpreted to mean that the trilemma or iron triangle is completely eliminated. More practically, it should be interpreted as the creation of a 'solution' that delivers a step-change advance in the direction of the ideal solution. Figure 1 represents an attempt to try and illustrate what this means.

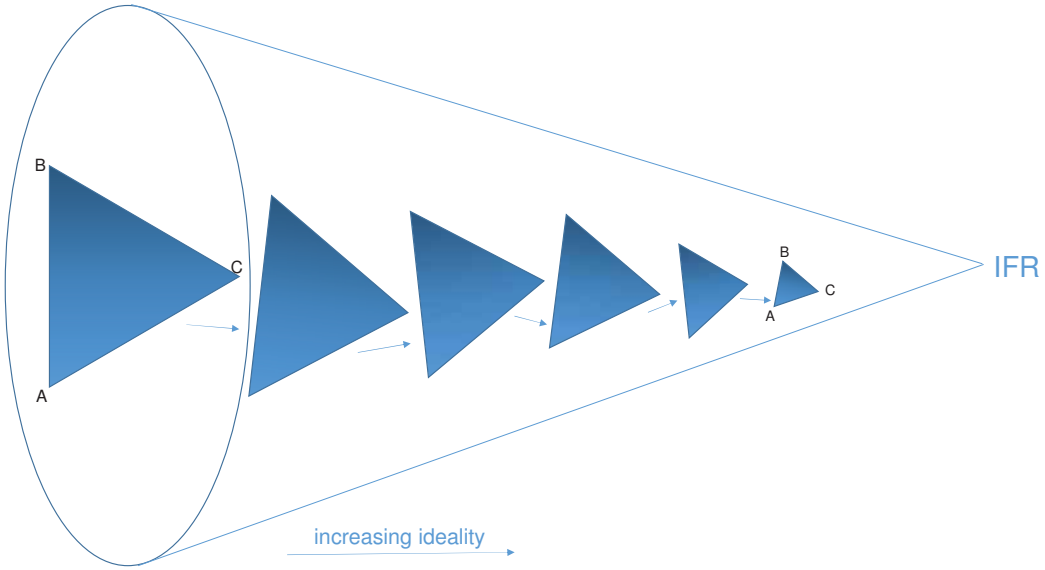


Figure 1: Step-Change Advances Resulting From Trilemma-Breaking

The triangle, ABC, on the left hand side of the figure is intended to represent a trilemma in which A, B and C are the three things in conflict with one another – cost, quality, schedule in the case of the classic project management trilemma for example, or cost, quality, access in the case of healthcare. Were we able to deliver the Ideal Final Result solution to this trilemma, we'd find ourselves over on the far right of the cone shown in the figure. The idea behind the intermediate triangles between the big one on the left and the invisibly small, 'disappeared' one at the IFR on the right is that they represent step-change solutions in which, while the basic trilemma still exists, it is less severe and the overall system has noticeably become more ideal.

Contrast this image with the more traditional view about solving (dilemma) contradictions between just two parameter. We might, for example, successfully 'solve' the conflict between A and B, and yet still not find ourselves any closer to the IFR because we have made C substantially worse. One way of defining genuine step-change in our definition might thus be that at least one of A, B or C has improved while none of the other two parameters has become worse. Or, if we're really wishing to push the definition – per the

way we've tried to draw each adjacent triangle in Figure 1 – genuine step-change is when all three of A, B and C are more ideal after the jump than they were before it.

So, as promised in Part 2 of the series, let's have a look at one or two examples where we can see this kind of all-three-iron-tirangle-parameters-improve 'genuine step-change'…

eBay

eBay is in the buyer-seller connection business, a world in which the primary iron triangle parameters are the amount of choice offered to a buyer, the price they have to pay for the goods and services they wish to purchase, and the reliability/'trustworthiness' of the seller. When eBay first appeared, by making the jump from the physical to the virtual world (Principle 28, Mechanics Substitution), they immediately helped potential purchasers to access an unprecedented amount of choice. At the same time, because the virtual environment allowed any potential sell with a computer to participate, it increased the level of competition and therefore helped buyers to secure a lower cost (purchase price plus the cost of the time taken to locate the desired goods) than would otherwise have been possible. Going virtual solved a choice-price conflict, but it did nothing to improve the third side of the iron triangle, trust: the eye-to-eye contact between seller and buyer that fundamentally exists during a physical-world transaction was gone. Improvement of this third element only happened once eBay had created their self-organising (Principle 25) feedback system: suddenly, because their rating is visible to everyone else, both buyers and sellers have a very strong incentive to build and maintain a good reputation. All backed up (Principle 11) now, of course, with eBay's guarantee, just in case. Figure 2 summarises the overall step-change in a trilemma, that, while it still exists, is now one in which all three parameters are more ideal than they were before the solution existed.

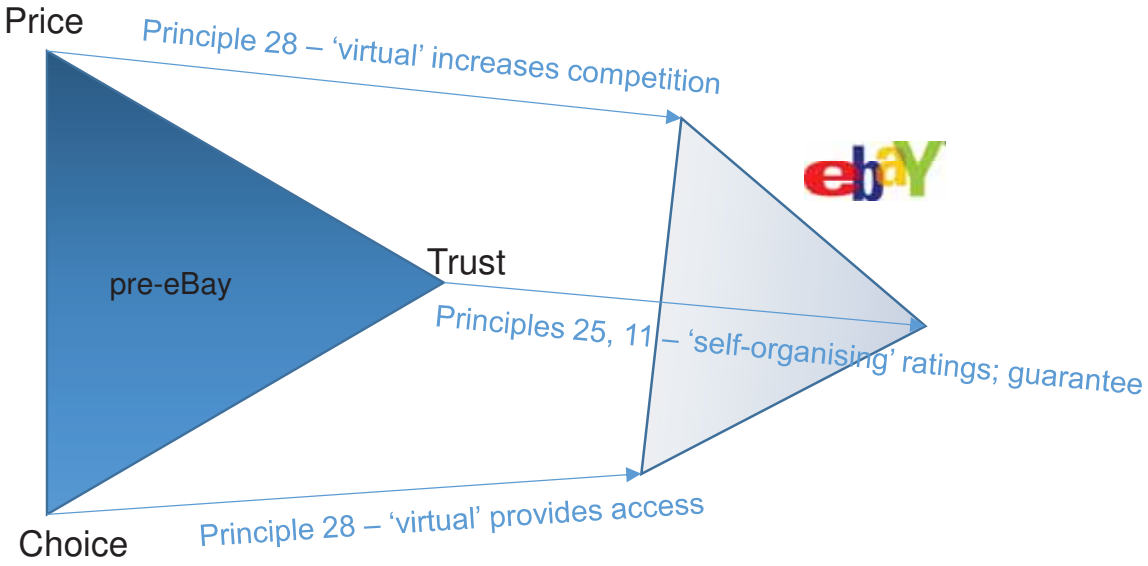


Figure 2: eBay Trilemma Solution

Mobile Telephony

A good indication that a trilemma has been solved is that the large majority of customers make the shift from one solution to another. The fact that mobile phones now outnumber landline phones, and that many people have now made the shift to not having a landline phone at all (or maybe, in developing nations for example) never did have a landline, is a pretty good indication that wireless is a fundamentally more ideal solution than passing

signals along expensive copper wires. This shift from wired to wireless represents another straightforward ('obvious') illustration of a Principle 28, 'Mechanics Substitution' conflict resolution. The immediate benefit of this jump, of course, was that the user was no longer restricted to having to sit next to a fixed copper connection point. Accessibility, in other words, was massively increased. But, at least when cellular technology first appeared, the other two sides of the basic communication iron-triangle – price and quality – were both considerably impaired. Because the capital cost of setting up wireless stations, however, is fundamentally lower than the cost of laying miles and miles of copper wire, it doesn't take long to eliminate the cost problem, and so the (Principle 28) shift from wire to wireless may be seen as a solution to the cost-versus-access conflict. Principle 28 solved a dilemma, but as anyone frustrated by dropped calls and corrupted data will tell you, wireless wasn't the solution to the quality side of the trilemma. That problem had to be solved by other means. Specifically, that has required the use of cunning combinations of capacity sharing algorithms, capacity sharing between different telecom companies, and, most recently, sharing bandwidth with other variable capacity wireless transmission channels such as radio or TV. Figure 3 summarises the overall trilemma-step-change solutions we can now see:

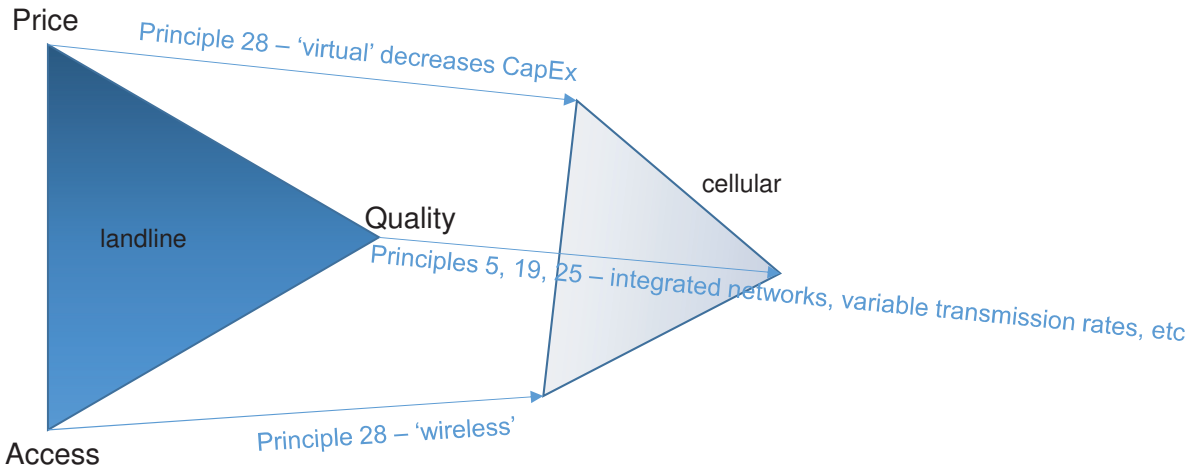


Figure 3: Mobile Telephony Trilemma Step-Change Solutions

LED Traffic Lighting

Another revolution in recent years has involved the light source used in things like traffic lights and other road signals. Over the space of what feels like just a few months, nearly all of the incandescent bulb solutions have been replaced by LEDs. Again, when this kind of rapid switch takes place, it is a good indication that the rationale for a customer to change to the new solution comes from a very easy calculation. Figure 4 illustrates the basic lighting trilemma and how the LED has been able to achieve its incredibly rapid dominance of the sector. First up, the shift from incandescent (e.g. halogen gas with a tungsten filament) to the all-electronic LED represent yet another clear illustration of Principle 28 in action. By avoiding heating of a metal element to several thousand degrees, there was an immediate increase in both life and efficiency. The only problem was that the early LEDs were nowhere near bright enough for the traffic lighting role. It was only when material changes (Principle 35) and appropriate interface layer (Principles 5 and, more recently, 33) solutions appeared that LED producers were able to create cheap, long-life, efficient and brighter solutions:

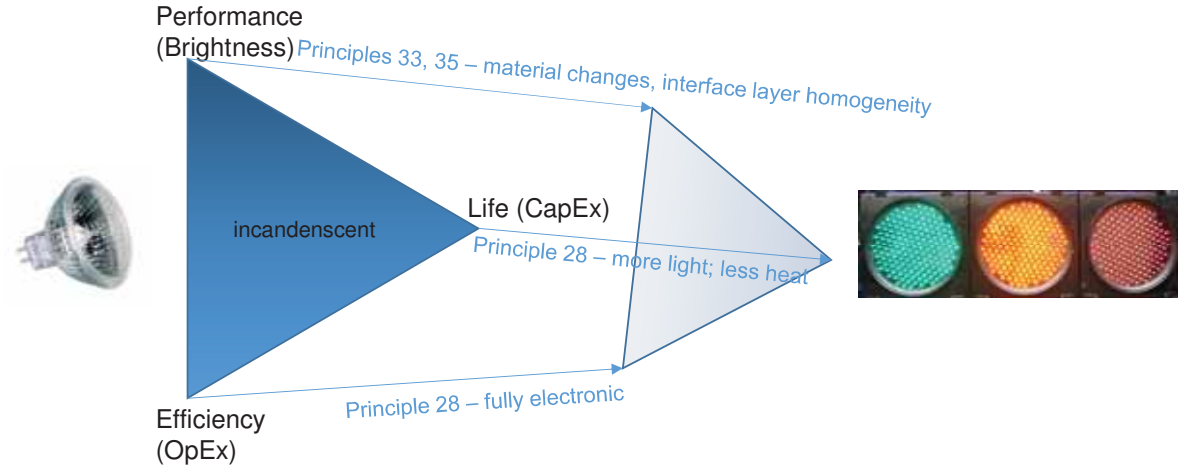


Figure 4: LED Traffic Signalling Trilemma Step-Change Solutions

So?

The fact that all three of the solutions presented here illustrate industry-shifting cases should tell us something about the importance of addressing and challenging iron-triangle problems: the logic here is easy to see: give a customer a 2-out-of-3 dilemma–solving solution and their decision to go with it or not still comes down to them having to make some kind of trade-off. Whereas if 'everything' is better than it was before, the decision to go with the new solution is much, much easier to justify.

Over the course of the last few years, as we've been slowly accumulating trilemma-solving examples and mapping the solutions to the Inventive Principles, we have identified – as introduced in the Part 2 article – a number of heuristics. We now have sufficient data to be able to take that story a step further by presenting the image shown in Figure 5:

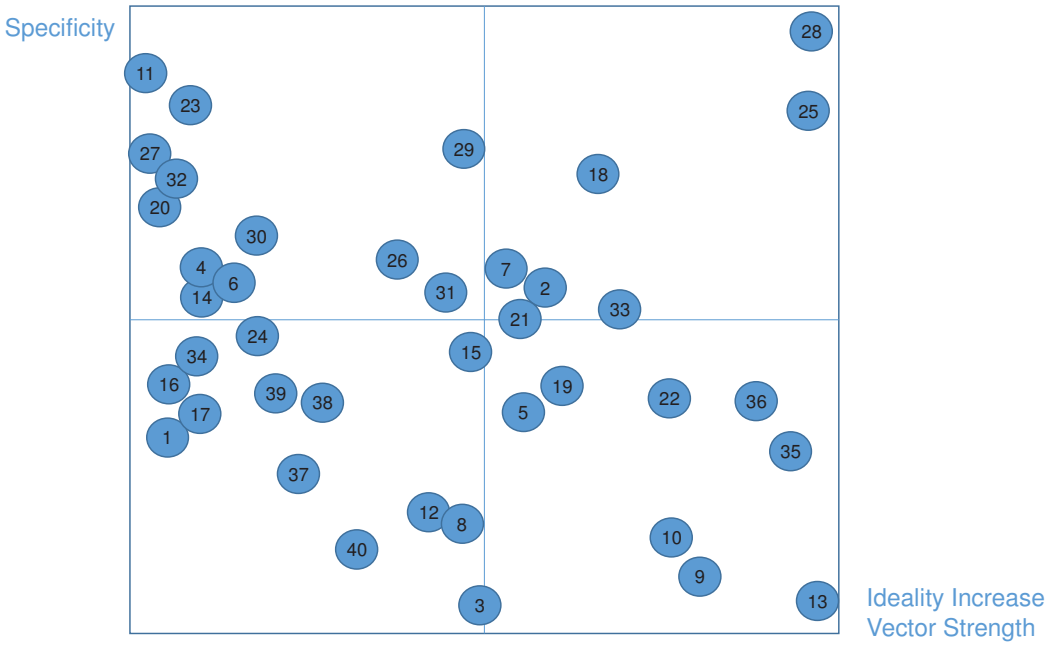


Figure 5: Strength-Versus-Specificity Of Trilemma-Solving Inventive Principles

What the picture shows is a graph with each of the 40 Inventive Principles mapped relative to two axes:
Ideality Increase Vector Strength – or, 'how far is the use of that Principle going to shift the system towards the IFR. The 'stronger' the vector, the bigger the step-change.
Specificity – or, 'how easy is it to interpret the Principle to generate new solution directions?' Some Principles are quite specific ('add feedback') and therefore easy to translate into specific solutions, whereas others are quite abstract ('make a homogenous thing non-homogenous') and are therefore more difficult to use effectively.

The idea behind the picture, per just about any 2x2 matrix, is the closer we are to the top right hand corner of the graph, the better things are: the ideal Principle has the potential to deliver a big jump towards IFR and is specific enough to be easy to use.

Per our examples, and as it turns out a highly generalizable finding, Principles 28 and 25 stand-out from the other 38 as ones that are both specific ('stop doing it mechanically', 'get it to organize itself') and capable of delivering very large shifts. Perhaps with the addition of Principle 18 (largely due to good old ultrasound!), these Principles seem to be doing a different job to the other ones. Overall, looking at the graph, it looks like there are three basic clusters of Principles:

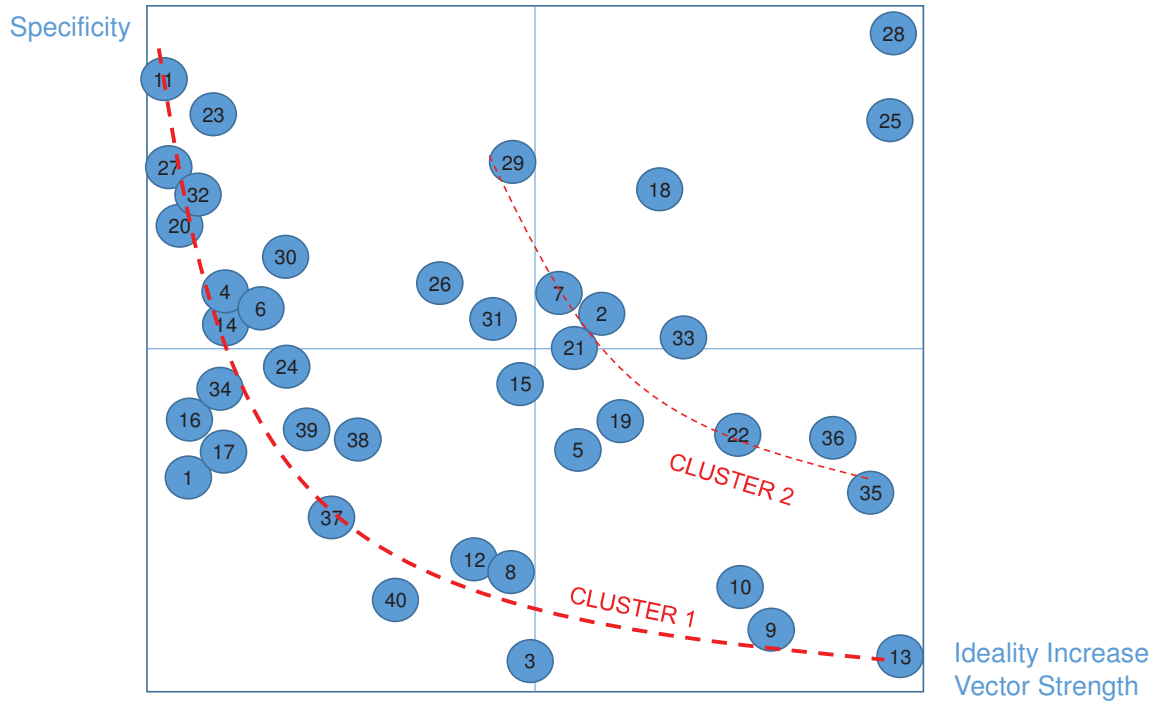


Figure 6: Strength-Versus-Specificity Principle Clusters

Cluster 1 Principles seem to sit at various points along what might be seen as a not-so-surprising strength-specificity trade-off line, whereby Principles are either specific or potentially strong, but not both. Principle 13, The Other Way Around, for example, can deliver some sea-change solutions, but the provocation is very abstract. Adding feedback or a 'beforehand cushioning' back-up are both specific, but unlikely to deliver any kind of trilemma-solving strategy by themselves.

Cluster 2 Principles, also form some kind of strength-specificity trade-off, but this time, if we can imagine the red-dashed lines as an 'average', the Principles in this cluster are

significantly closer to the important top right hand corner of the graph. Use of Principles from this cluster, in other words, are more likely to 'help' than those in cluster 1.

Overall, what's important is the strength of the solutions that are achievable. The Principles in the right-hand half of the picture are the ones most likely to deliver genuine step-change. (These are the ones, in fact, mentioned in one of the heuristics from Part 2 of this series: trilemma-breaking pretty much demands the use of at least one Principle from this half of the graph.)

What we're able to add this time is that, if we get good at using Principles 13, 35, 25 and 28 we will give ourselves the very best possibility of breaking iron triangles…

…back them up with, and use them in combination with as many of the cluster 2 Principles as possible, and we pretty much guarantee we'll deliver solutions that will allow all three of the trilemma parameters we're dealing with to move in the right direction.

Life has conditioned us to make and accept 'two out of three' choices. Hence the 'iron' in iron-triangle. Iron is a strong, tough construction material. But it's also brittle and therefore very definitely breakable.

Worst Of 2013

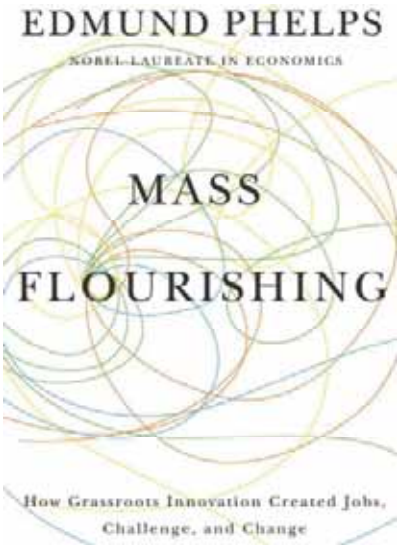
Another bonanza year of First World problems, annoyances and trivialities…

Joint 'It-Can't-Be-KLM-Again Suck'y-Airline Of The Year' and 'All-Conversations-May-Be-Recorded-For-Training-Purposes Customer Service' Awards – In theory at least, my home is in the UK. This means, whether I like it or not, if I want to leave the country without spending a fortnight queuing in traffic or waiting on a cold station platform waiting for a cancelled train, I'm going to have to resort to an aeroplane. Which in turn means that sometimes I'm not always going to be able to avoid British Airways. In the past, although they've done some pretty dumb things and messed me around quite a lot, they've never been bad enough to win this award. They've been bad, obviously, just not as bad as KLM. Or Air France. Or Delta. In 2013, however, something changed. And not just the name…

…during the year I found myself on 14 BA flights. A staggering 12 of which managed to be late enough that I was either embarrassed with a client or missed a connection home. Now, granted, the lack of capacity at Heathrow is a contributory factor – I've spent so long in holding patterns I think I made more circles over the city than the London Eye – so I was prepared to make allowances. But then, just before Christmas I had the misfortune to fly with the airline to Hyderabad. If someone told you they were pissed-off because the airline had given them an upgrade, you'd probably that person to be somewhat ungrateful. I was that person. Both going out and coming back. Two upgrades. Two times pissed-off. Going out I'm pissed off because when I asked for a converter plug so that I could charge my laptop I was told I'd have to purchase one from the onboard Duty-Free trolley. 'But it's a British plug,' I pleaded, 'on a British plane'. The bitter-butler-like Business Class Steward looked down his nose at me and said, 'do you want to buy one or not?' I voted 'not'. Coming back, the offer of another upgrade was quite a surprise. Not least of the surprise being that after offering it to me, within five seconds, the check-in staff member tried to negotiate a price for the upgrade. When I shook my head, he started haggling, if I wasn't prepared to pay $250, how about $200? When I made it clear I wouldn't be paying anything for any kind of upgrade, especially one he'd twenty seconds ago offered me for free. He printed out my boarding pass and there I am again, back in Business Class. Quietly seething in the usual British way.

The Depeche Mode Everything-Counts-In-Large-Amounts Literature Award – if 2013 proved to be one of the worst ever years in relation to producing novel and meaningful

business literature, what it failed to deliver in terms of quality it certainly tried to make up for with quantity. The world of innovation saw over 2000 books published during the year. A crude statistical analysis of them seems to us to suggest that someone, somewhere in the publishing industry has brought the 'reduce variation' aspects of Six Sigma to bear on their catalogues: not only have the breakthrough outliers been eliminated, but so have the vast majority of the really, really bad books. Not a good thing as far as our Award giving desires are concerned. Although it could've allowed us to save quite a bit of investigation time because even a cursory look at any 'Best Of' list of 2013 business books reveals that it could equally well serve as our 'worst of'. Fortunately, the team being diligent investigators and all, one or two real stinkers manage to squeeze their way through the dreck-filtration system. We frame this whole discussion, by the way, only in the direction of books that achieve publication into the physical world of paper: the explosion of ebooks through 2013 has meant that any idiot and his dog is able to get a manuscript published at almost zero cost. And so, guess what, a large proportion of the purported 200,000 shitty manuscripts that would otherwise have been dismissed by the publishers now get to fill several screens of options every time we might chose to conduct an Amazon search of a given topic area. As far as this Award is concerned, in other words, only books that a publisher sanctioned and chose to invest actual paper at their actual printer have been deemed eligible. Here, then, are our joint winners of this year's award:

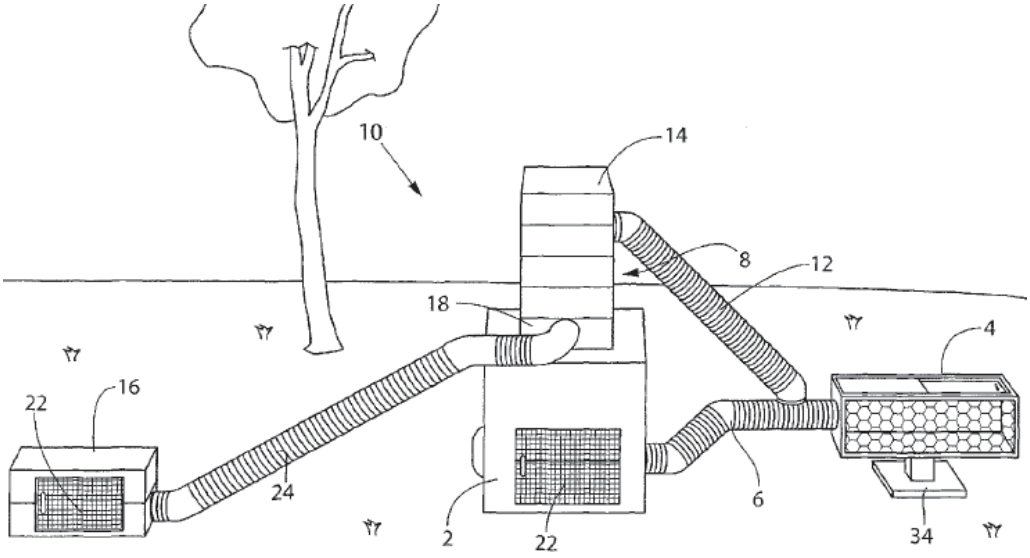


Okay, so anything associated with Open Innovation is a likely target for ridicule these days, but Leading Open Innovation takes the phenomenon to a whole new level of ineptitude. Boasting over 20 contributors – many of whom are leading lights in the field – I guess we could say that, at least the community is practicing what it preaches. But then again, it's rare for a good book to ever come from the work of a committee. And what we have here is a committee of authors that couldn't even be bothered to stitch their individual contributions into any kind of coherent whole. Somewhat ironically, given that the word 'leading' features in the title, it seems that this book was the output of a project that never really had any leadership at all. Hmm. Maybe that was the point they were trying to make: when there is no leader, the result will be pointless confusion. Idiots.

A label that is much more difficult to pin to our second winner, 'Nobel Laureate' author, Edmund Phelps. The basic premise of Mass-Flourishing, aside from its crappy title, is open innovation by more covert means. From the book's preface: "Why did prosperity explode in some nations between the 1820s and 1960s, creating not just unprecedented

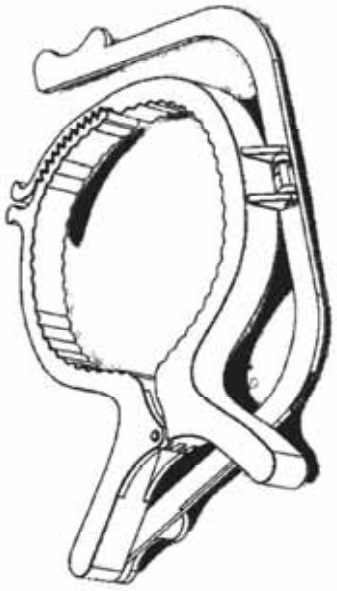
material wealth but "flourishing"--meaningful work, self-expression, and personal growth for more people than ever before? Phelps makes the case (using some pretty sparsely justified examples) that the wellspring of this flourishing was modern values such as the desire to create, explore, and meet challenges." Anyone but an economist might well spot a basic flaw in this premise: the last two waves of prosperity growth have come not through the flourishing of 'meaningful work' but largely through its opposite – powerful employers fragmenting jobs down to the most meaningless level possible such that they could be performed by a semi-trained ape. The give-away, of course, in all of this, is that Edmund Phelps is a Nobel Laureate economist. Which is shorthand these days for, 'person who won a prestigious award that history will look back on, usually after about a decade, as a delusional nincompoop'. You heard it here first.

The Necessity-Is-Not-Always-The-Mother Invention Award – mediocrity was also the name of the biggest game in town when it came to the patent offices of the world in 2013. As ever, though, the Examiners don't manage to remove all of the truly awful solutions. As is often the case, the pet owners of the world seem to be the ones that manage to hypnotise the Patent Office staff into allowing things that the RSPCA would otherwise seek to put an outright ban on. Amongst a veritable panoply of candidates, we eventually selected US8,342,131, 'Urban Adventure Playground' as one of our multiple favourites. Here's the main manifestation of what must surely one day go down in history as the very best feline psychological torture device of all time:



If anyone reading this used to keep mice or small mammal pets when they were small, you may remember having a system of interconnecting cages to give the poor wee beasts something to do during the 23.9hours a day you ignored them? Welcome, then, to inventor, Dawn McPherson's cat-sized equivalent. Extra marks for including a sketch of a tree next to the cat warren. What better way to torture a cat than by letting it look at the place it would really like to be, without ever having the chance to actually get there.

Choice number two, US8,342,138, also comes from the ever-so-slightly-warped mind of a lone inventor, this time, stand up and take a bow, Moshe Hazan from Illinois for 'Dog's Waste Catcher'. I'll leave it to your imagination to work out how you'd set about attaching the following to your poor dog…

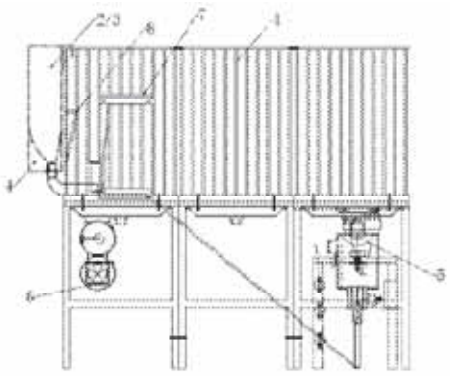


…legally that is.

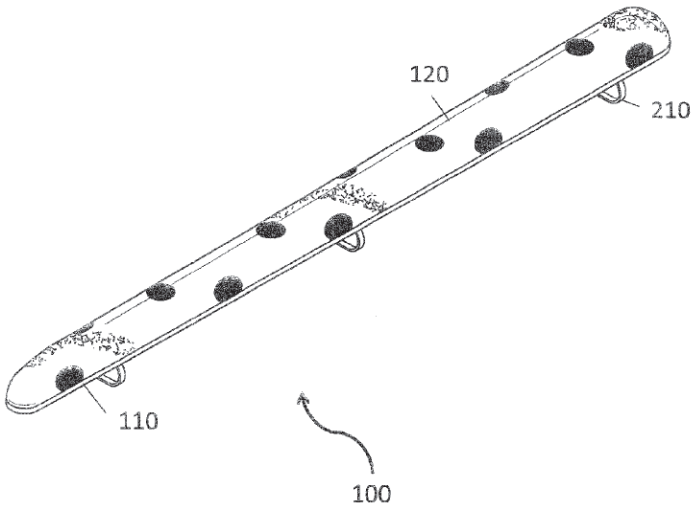
At the opposite end of the pet cruelty spectrum, our next contender takes us to China and Hong Kong, and this time an actual manufacturer. US8,544,418 is an ‘intelligent doghouse’:

An intelligent doghouse full-automatic processor includes a cage bracket module, and an automatic excrement treating device, a feeding module, a water feeding module, a snack feeding module, a disinfection and heat preservation device and a video/audio module which are arranged on the cage bracket module as well as an automatic door control module, a host computer control module, a network communication module, a background control service module, a terminal use program and the like. With the modules, an owner can remotely monitor an intelligent doghouse, perform video/audio conversation with a pet dog and control and manage the eating and drinking, defecation and entering and exiting cage of the pet dog, disinfection of the cage and temperature regulation of air inside the cage by a computer or a mobile phone through a network browser. Moreover, parameters of the intelligent doghouse can be set through network.

The real genius this time around seems to be that what we now have is a doghouse that is so intelligent, the dog owner need never interact with their dog ever again. A real step forward in human-canine relations. Here’s what the doghouse looks like, just in case you happen to be a dog owner with a few hundred thousand dollars to invest in never having to stroke your dog again:



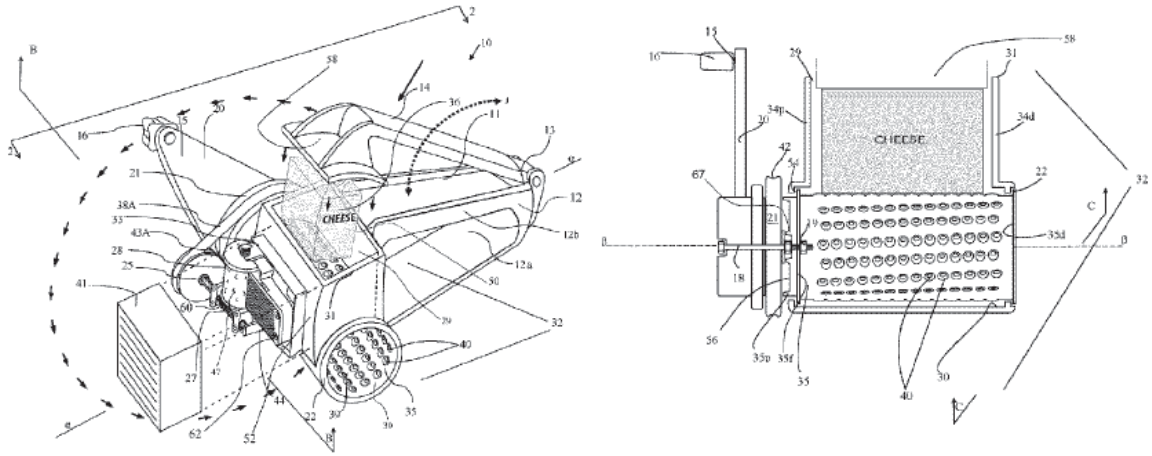
Me? I think I'll wait for the human version.
On the other hand, I'd like one of these right now:



Actually, two. This is US8,383,213 from Donald Clarke. Donald also works out of Illinois, so maybe there's a clue for those of us that ever succumb to inventor's block – just get on a plane to Chicago. Mr Clarke's as yet un-assigned patent – did you guess what it was yet? – is 'a decoration device for attaching to a windshield wiper featuring a generally flexible elongated strip; a cloth component disposed on a top surface of the strip, the cloth component resembles a tail of an animal, the animal includes a cat, a dog, a lion, a rhinoceros, a snake, a tiger, an elephant, a zebra, a wolf, a dingo, a kangaroo, or the like; and at least one clip disposed on a bottom surface of the strip, the clip is configured to wrap around a portion of the arm of the windshield wiper'.

What could possibly be better than driving through a rainstorm with your matching snake windshield wipers to keep you company, knowing that you've just brought boundless joy and laughter to the crowds of pedestrians and other drivers around you?

Unless… you find something better. Much, much better. Enter our overall winner for this year, US8,579,219, granted to (surprise!) another lone inventor, Robert Graham from the fine state of Tennessee. Here's Mr Graham's grant from November 12:



Tellingly, the application shot through the US Patent Office in near record time. The Examiner clearly had no doubts about the merit of this one. Who wouldn't want a musical cheese grater after all is said and done? Forget cold fusion and flying cars, what the world really needs now is music while they grate cheese. Mr Graham's thinking is right on the money every step of the way. Here's his background description:

Manual rotary music makers are ubiquitous in many family celebrations of birthdays, engagements, as well as Christmas, Hanukkah, New Year's Day, and other holidays.

Manual rotary cheese graters are often used to dispense grated cheeses such as Parmesan, Romano, Gruyere, as well as other condiments. This process is often dreary and time-consuming and this puts a damper on the festivities at the dining table.

The state of the art provides no solutions that remedy the dreariness of manual cheese-grating or condiment-grating.

A need exists in the art for a rotary device that simultaneously provides music and grates cheese and thus provides entertainment as cheese is grated at table. In at least one embodiment, the device should be manually actuated so as to aid in portability. Also, the device should look like an ordinary cheese grater so as to provide an element of surprise when the music starts. Finally, the device should be reliable, modular and easy to disassemble for cleaning purposes, and also the device should facilitate a change of the music that it provides.

Ah, yes. If I had a dollar for every time my cheese grating efforts at the dinner table had put a damper on the evening's proceedings, I'd be a rich man by now. Unfortunately for me, it looks like Mr Graham's flash of genius means he'll be the one spending the rest of his life living in the very lap of luxury. Damn.

The Slow-Fast-Moving-Consumer-Goods Design Excellence Award – The panel has a strong suspicion that the 2013 winner won't actually be recognized as the enormous stinker it is until well into 2014, but we're going to stick our neck out anyway, stand on a high mountain shouting 'the emperor has no clothes', and declare that Samsung's Galaxy Gear is by some margin the worst mass-consumer product of the last 12 months. The advertising agencies of the world must've been wincing when the product first dropped (somewhat bulkily) on their laps. How to make this stupid thing look cool and sexy? Err..

When the damn thing doesn't even fit on the model's wrist, that's supposed to be a clue that your product is a lemon, you dummies.

Choosing the very 1960s name 'Gear' probably didn't help either. Unless they had an inkling they might use Ringo Starr to help them promote it. He was – and still is – after all

the talentless Beatle. Very apt. Representatives from Samsung tried to defend the Gear by telling the media they'd shipped 'over 800,000' to the US alone during 2013. I have no doubt they did indeed ship this number. I expect we could walk into Samsung's US warehouses and still count 799,950 of them.

Controversial? Maybe. But not nearly as controversial as Nabisco's decision last year to launch watermelon-crème Oreos.

Rest assured, you won't find warehouses full of these things left unsold. They're all past their consume-by date now. Fortunately for Nabisco the production-line was only running for an hour before the workers held a vote of no confidence on the Marketing Department and then went on strike until the nonsense stopped. Unusual flavor combinations are often popular with the public. The tiny detail Nabisco's Marketing Department unfortunately missed was that, the two flavours are supposed to complement one another, so that when people put the sugary comestibles in their gullible mouths they're not immediately then reaching for a bucket.

Let's All Jump Off A Cliff Advertising Suicide Award: 2013, finally, proved to be a bumper year for jaw-droppingly awful advertising campaigns. In the end we couldn't decide whether Ford or Mountain Dew were the most offensive, so we thought, the heck with it, why not let them share the honour equally.

Here's Ford Figo's attempt at 'humour' first:

This was an advert aimed at the Indian market. Now I'm not that much of an expert on Indian culture, but try as I might I can't see why Italian prime ministerial embarrassment Silvio Berlusconi giving the victory sign with a boot full of trussed and gagged women was going to help sell more cars. Still, at least, Ford lived up to their 'Go Further' tag-line. Or rather, went beyond it.

Mountain Dew's advertisement was ultimately deemed so offensive that pretty much every record of its existence has been expunged from the Internet by PepsiCo. The basic premise of the Tyler-commissioned ad was that domestic violence was acceptable, provided a goat was involved. Obviously.

Patents of the Month – LEDs & Pile Driving

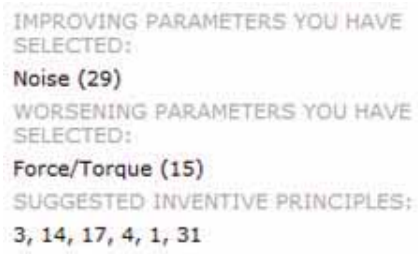
We have joint winners of the Patent of the month honour this month, both falling in to the category of 'simple and elegant'. The second takes us to our friends at Tsinghua University in Beijing. We've been featuring them quite a lot in recent times. This month they manage to show us another excellent example of the 'obviousness' that comes with knowledge of the Trends of Evolution. Before that story, however, our first example takes us to the University of Washington and patent number US8,622,658, granted on 7 January. Probably fair to say that we never expected to be featuring an invention relating to pile-driving in this feature, in many ways one of the nicest aspects of this patent is knowing someone cares enough about what most of us might have suspected was a very occasional and transient problem. Here's what the inventors tell us in their background description:

Pile driving in water produces extremely high sound levels in the surrounding environment in air and underwater. For example, underwater sound levels as high as 220 dB re 1 .mu.Pa are not uncommon ten meters away from a steel pile as it is driven into the sediment with an impact hammer.

Reported impacts on wildlife around a construction site include fish mortality associated with barotrauma, hearing impacts in both fish and marine mammals, and bird habitat disturbance. Pile driving in water is therefore a highly regulated construction process and can only be undertaken at certain time periods during the year. The regulations are now strict enough that they can severely delay or prevent major construction projects.

There is thus significant interest in reducing underwater noise from pile driving either by attenuating the radiated noise or by decreasing noise radiation from the pile.

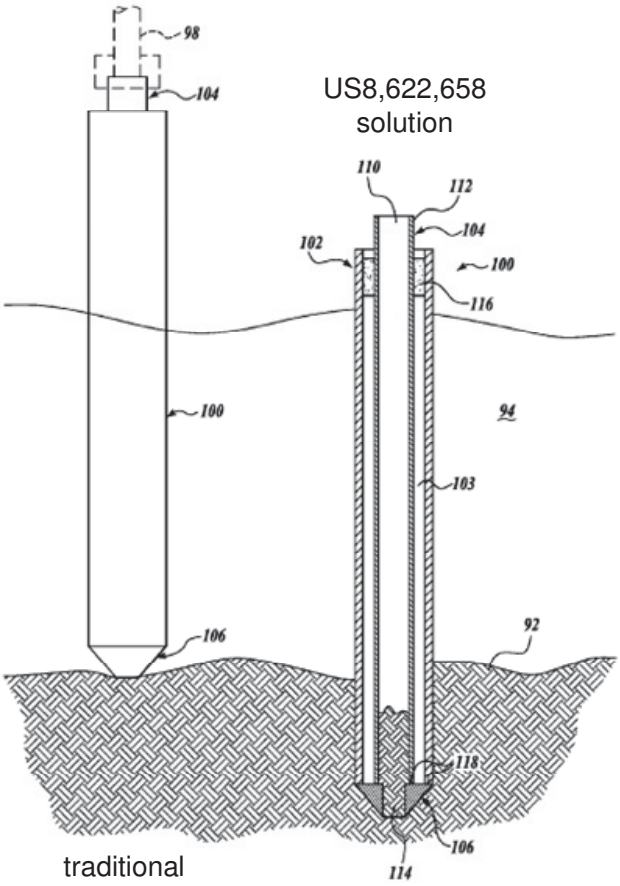
From a conflict perspective, what we see here is a clear desire to reduce noise, and what stops us is the size of the force needed to get the impact hammer to drive the pile into the seabed. Here's what that problem looks like when mapped on to the Matrix:



And here's how the inventors have solved the problem:

A method for driving piles into a seabed comprising: providing a pile comprising a driving shoe, an inner member having a proximal end that is attached to the driving shoe and a distal end that extends upwardly from the driving shoe, and an outer tube surrounding the inner member such that an annular space is defined between the inner member and the outer tube, the outer tube having a proximal end that is attached to the driving shoe and a distal end that extends upwardly from the driving shoe, and wherein the distal end of the outer tube is not rigidly connected to the distal end of the inner member, and further wherein the annular space is substantially filled with a compressible material; positioning the pile at a desired position with the driving shoe contacting the seabed; and driving the pile with a pile driver such that the pile driver impacts the inner member without impacting the outer tube such that the outer tube is configured to be pulled into the seabed by the driving shoe.

Just in case you don't read patent-ese, the main drawing from the disclosure ought to help:



US8,622,658
solution

traditional
pile

Not a perfect match as far as the Matrix recommendations are concerned. Principle 7 would have been perhaps the closest match to the solution, but the presence of Principle 31, 'Holes' and Principle 1, 'Segmentation' when taken together get us to the basic concept – i.e. segmenting the pile into two parts: a 'driving shoe' and an 'outer tube', and making sure there is a 'compressible material' filled gap between them.

The other very nice feature of the solution is how the inventors solved the problem of getting the outer tube into the ground – it, of course, being the thing that still defines the overall diameter of the hole that needs to be created in the ground. Obviously, this tube can't be pushed because pushing with the impact driver is what causes the noise problem in the first place. The problem gets solved by pulling the outer tube by attaching it to the submerged end of the driving shoe – a good illustration of Principle 13, The Other Way Around… also, sadly, missing from the current Matrix recommendations.

US8,624,285

Winner number two is probably about as far from pile-driving as it's possible to get. The Tsinghua University inventors nevertheless manage to match the elegance and brevity of the problem description of the first patent:

LEDs are semiconductors that convert electrical energy into light. Compared to conventional light sources, the LEDs have higher energy conversion efficiency, higher radiance (i.e., they emit a larger quantity of light per unit area), longer lifetime, higher response speed, and better reliability. LEDs also generate less heat. Therefore, LED modules are widely used as light sources in optical

imaging systems, such as displays, projectors, and so on.

LEDs include an N-type semiconductor layer, a P-type semiconductor layer, an active layer, an N-type electrode, and a P-type electrode. The active layer is located between the N-type semiconductor layer and the P-type semiconductor layer. The P-type electrode is located on the P-type semiconductor layer. The N-type electrode is located on the N-type semiconductor layer. Typically, the P-type electrode is transparent. In operation, a positive voltage and a negative voltage are applied respectively to the P-type semiconductor layer and the N-type semiconductor layer. Thus, holes in the P-type semiconductor layer and photons in the N-type semiconductor layer can enter the active layer and combine with each other to emit visible light.

However, the extraction efficiency of LEDs is low because the contact area between the N-type semiconductor layer and the active layer is not large enough. Thus the electron-hole recombination density is low, and the photons in the LED are sparse, thereby degrading the extraction efficiency.

Here's what that problem looks like when mapped on to the Matrix:

IMPROVING PARAMETERS YOU HAVE SELECTED:

Illumination Intensity (23)

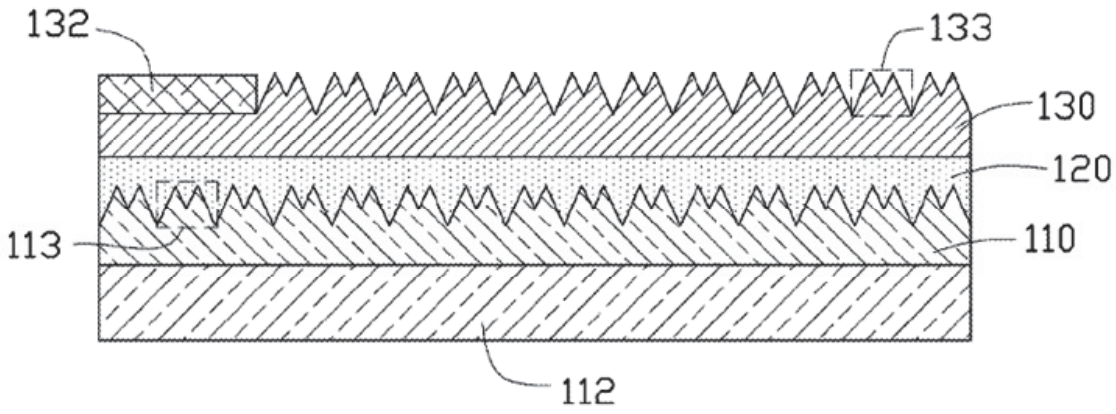
WORSENING PARAMETERS YOU HAVE SELECTED:

Area of Stationary Object (6)

SUGGESTED INVENTIVE PRINCIPLES:

14, 17, 4, 35, 24, 32, 19, 1, 26

And here's how the problem has been resolved. Again, the drawing probably makes the obviousness of the solution more visible than the actual words:



A light emitting diode, comprising: a first semiconductor layer having a first surface and a second surface opposite to the first surface; an active layer stacked on the second surface of the first semiconductor layer; a second semiconductor layer stacked on the active layer; a first electrode electrically connected with and covering the first surface of the first semiconductor layer; a second electrode electrically connected with the second semiconductor layer; and a plurality of three-dimensional nano-structures located on the second surface of the first semiconductor layer and on the light emitting surface, wherein each of the plurality of three-dimensional nano-structures has a first peak and a second peak aligned side by side, a first groove is defined between the first peak and the second peak, a second groove is defined between each two adjacent three-dimensional nano-structures of the plurality of three-dimensional nano-structures, and a depth of the first groove is less than a depth of the second groove.

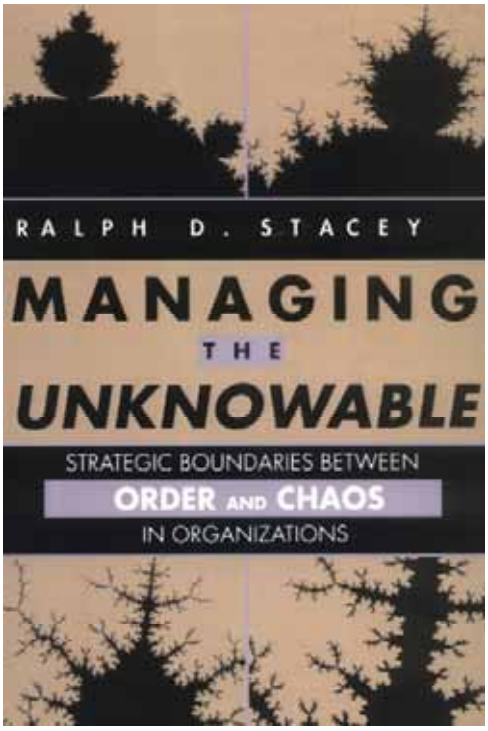
Or, put another way, ‘make use of Inventive Principles 17 and 4’.

Perhaps what this invention prompts us to think about more than anything else is, ‘how much longer will the Patent Offices of the world allow inventors to patent things that the Inventive Principles and Trends make so obvious – if you had a picture of the Surface Segmentation next to a picture of an LED, how would it be possible to *not* imagine that the smooth interfaces would eventually evolve to become protruded?

Meanwhile, the inventors at Tsinghua are doing exactly the right thing by patenting all that they can get away with. And, something you’ll perhaps glean if you take the time to read their invention disclosure in more detail, why not also make use of the Trends and Evolution Potential tools to make the job a deal easier.

The obviousness clock is ticking, people. Tsinghua University is sending you an alarm call.

Best of the Month – Managing The Unknowable



We finally found ourselves heading back to 1992 in order to select something worthy of our 'best of' feature this month. If there has been a worse year for business literature than 2013, according to us, it must have been over twenty years ago, before the days when we first started our exploration of the domain. To say the industry has been in the doldrums during 2013 would be a grave insult to doldrums.

Anyway, Ralph D Stacey's lost diamond-in-the-rough is the subject of our recommendation this month. Managing the Unknowable was one of the first of a wave of books that came out in the early 1990s connecting the then very fashionable world of chaos theory to the world of business. That Professor Stacey's tome has somewhat disappeared from view is probably in part due to the fact that that early wave of chaos theory books never appeared to create any recognizable change of behavior in the business world. Busy managers, then and now, I suspect had difficulty connecting the innate beauty of a Mandelbrot Set image and the cut and thrust of the world they were experiencing. That Stacey himself also appeared to walk away from the subject less than ten years later probably didn't help the cause much either. At the turn of the 21st Century, Stacey in fact dropped the whole idea of the application of complex adaptive systems to organisations, arguing that it was invalid to simply apply the natural sciences to human action. Instead, the complexity sciences are regarded as a source domain for analogies and when these analogies are transferred to the domain of human action they need to be interpreted in a manner that takes full account of the attributes of human agents, namely, that they are conscious, self-conscious, emotional, often spontaneous, often thoughtful and reflective beings who have some degree of choice over what they do. Amen to that.

Except. I don't think that insight does anything to invalidate the words and content of Managing The Unknowable. Sure, there are things we know now that Stacey didn't know when the book was researched, but that should merely mean that, now we do know these things, it allows us to read Stacey's words and obtain a higher level of understanding of how the world of business does or doesn't work.

The main underpinning insight of the book – that 'stable equilibrium' is a dangerously invalid objective for any business – continues to be highly pertinent to today's generation of managers. The still prevalent erroneous belief that if enterprises successfully weather the post-GFC storm that things will settle down to 'normality' again sits right at the heart of Stacey's thesis. Aiming for stability in any kind of complex system is simply the wrong goal irrespective of the current level of turbulence. Business success – at least where sustainable success is the goal – comes from assuming the opposite: winning organisations are the ones that embrace instability and learn to benefit from its inherent tension and conflict.

Insight number two is closely related to insight number one, but is perhaps equally profound: the media, shareholders and commentators that make comments about the performance of enterprises are also assuming that stable equilibrium and harmony are the desirable goals of those enterprises. 'Classic' tomes like Good To Great and In Search Of Excellence – books that pretty much defined the strategies of all of the Fortune 500 companies through the 1980s and beyond – according to Stacey are particularly guilty of this invalid assumption. A whole generation of business advisors, in other words, sent the majority of Western industry sailing merrily down the wrong road – try to achieve stable equilibrium was merely a way to make the gurus and commentators like you. Stacey's warning wasn't heeded at the time because he arrived at a time when the management guru tide was flowing strongly in favour of Jim Collins and Tom Peters. Perhaps – fingers crossed – by encouraging people to pick up the book now (encouragingly, it is still in print) the tide might have just have reached the point where it has a chance of swinging things in Stacey's favour.

Especially amongst the TRIZ/SI community. Why? Because here's a group of people that knows when Stacey states (throughout the book) that 'the long term future is fundamentally unpredictable', that he's only partially right. Add what we know about long term predictability onto the rest of Stacey's overall thesis and we think the resulting insights are nothing short of profound.

Being able to pick up a secondhand copy for less than a dollar, as you can on Amazon right now, probably doesn't do any harm either.

Conference Report – Philosophy Clinic

The Philosophy Clinic - practical Stoicism

What better way to spend a cold January Saturday than discussing death with a group of strangers in a Dublin college? That's what I figured, anyway, on January 11. That the group of strangers in question belonged to online discussion group, 'The Philosophy Clinic' probably did much to convince me. A great name, and, as it turned out a fascinating, thought-provoking day using stimulus from Marcus Aurelius' Meditations.

The Philosophy Clinic was founded to address and provide answers to the current crisis of meaning. Drawing on the wealth of worldly wisdom in the Western Socratic and, in particular, Stoic tradition, it aims to bring profound and practical philosophy to bear on issues of everyday life. Modern living has placed a great strain and stress on many people who are experiencing fragmentation and frustration, emptiness, existential distress and ethical confusion. There is a longing for guidance and growth, wholeness and healing. The Clinic aims to cater for such a context.

In all, close to thirty people turned up to listen to facilitators, Dr Stephen J. Costello: Director of the Viktor Frankl Institute of Ireland and (full disclosure: good friend) Barre Fitzpatrick. The day ran from 11am to 4pm and consisted of a heady mix of stimulus:

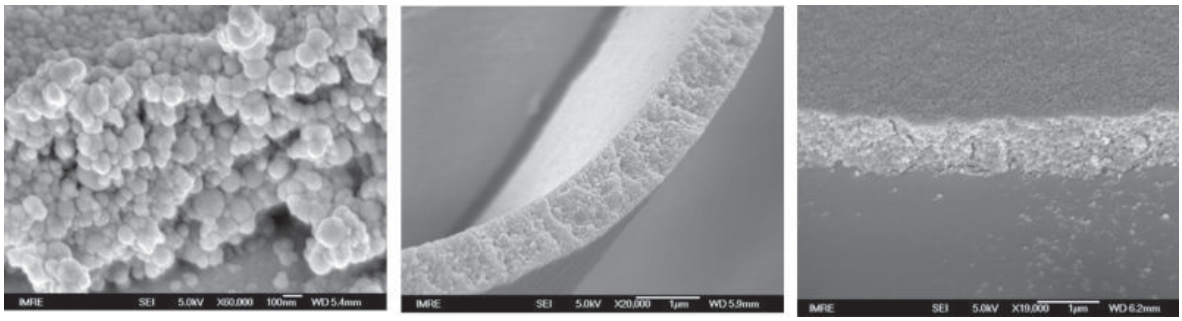
Morning session
• Setting the scene philosophically
• Reading relevant passages on death from Marcus Aurelius' Meditations
• River of life meditation

1-1.45pm: Lunch in dining-room
Afternoon session
• Reflection on Marcus Aurelius' 'Let your every deed and word and thought be those of one who might depart from this life this very moment'.
• Blind walk
• Meaning of the experience
• Obituary exercise
• Plenary discussion
• Journaling
• Dawn meditation
• Legacy: My imprint
• Goal-setting for the New Year

What I liked best about the day was the amazing spectrum of people who turned up. Literally all ages, and nearly as many different occupations and professions as there were attendees. It would've been virtually impossible not to have a good conversation with the people in this crowd. That the day was given its upbeat death theme meant that the facilitators had a pretty hard time getting everyone back from the discussions and onto the schedule for the day. I have a feeling that the Philosophy Clinic idea is one that has hit a moment in time that will strike a chord with a lot of people in many parts of the world. I for one would like to see the idea spread to the four winds and beyond. Time out from day to

day minutiae, blindfolded, with a group of like-minded people amidst some lovely surroundings. What more could anyone wish for?

Investments – Tera-Barrier Films



Tera-Barrier Films (TBF), a Singapore-based company formed in 2009 to commercialise its work on OLEDs and solar panels recently announced the next in its string of nano-based material solutions. A company press release disclosed their invention of alternative stretchable plastic for prolonging shelf-life of pharmaceuticals, food and electronics.

The new plastic by TBF has one of the lowest moisture vapour transmission rates (mvtr), preventing air and moisture from penetrating the layer. The plastic has an air and moisture barrier that is about 10 times better than the transparent oxide barriers which are currently being used to package food and medicines owing to its uniquely encapsulated nanoparticle layer. Perhaps even more significantly, the low transmission rate of the material makes it a potential replacement for many packaging applications that currently require metal-based solutions.

Aluminium as a metal has very high oxygen and moisture barrier properties, but aluminium-based packaging comes at a higher processing cost, is opaque, non-stretchable, and interferes with electronics, making the integration of components like RFID devices difficult. TBF's new stretchable thin films are cost effective and transparent, with barrier properties comparable to that of aluminium foil.

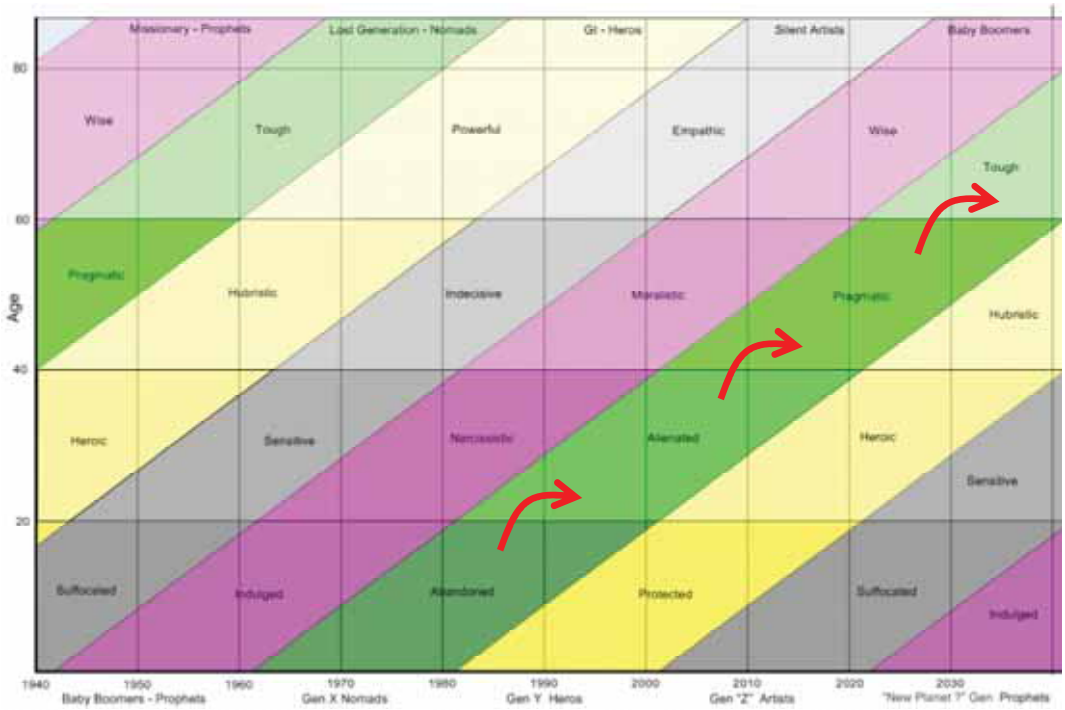
Conventional multilayer barrier plastics have successive layers of barrier plastic films to enhance the impermeability to air and moisture but they have not achieved higher barrier properties. TBF's film uses minimal layers as its encapsulated nanoparticles increase the packing density of nanoparticles, which in turn makes it extremely difficult for water and oxygen molecules to pass through the film. The encapsulated nanoparticles also actively adsorb and react with water and oxygen molecules to trap them, thus further lowering the amount of moisture and air passing through the film.

"The University of Tokyo confirmed TBF's barrier film performance at 10-6g/m2/day," said Mr. Nakazawa, Managing Director, KISCO (Asia) Pte. Ltd. "There has been very favourable response from our potential customers in a spectrum of industries wishing to benefit by incorporating TBF's superior barrier films into their products, these applications range from food and medical packaging to high end PV, lighting and display sectors where TBF's barrier films excel."

TBF's reduced number of barrier layers and lower material costs, as compared to conventional barrier film technologies, brings in tremendous cost efficiencies into TBF's manufacturing process. With TBF's unique technology and low cost, access to newer applications like Quantum dot color filters, Vacuum Insulated Panels (VIPs), Food & Medical Packaging has been made possible in addition to the company's conventional application areas.

Generational Cycles – Life-Stage Step Changes

One of the most frequent questions we get about the basic Strauss & Howe generational cycle model concerns the shifts that take place in behaviours at different ages through our lives. Why is it, for example, that turns a 'moralistic' Baby Boomer suddenly turn into a 'wise' elder? Does some kind of switch get flicked on their 61st birthday? Or is it something more gradual. What about the shifts that take place at the end of our teens and when we hit 40?



CONTEXT:	high	awakening	unravelling	crisis	high

The first thing to say is that there is nothing hard and fast about the precise date that these transitions take place. Some generations seem to make their respective life-stage shifts sooner or later than others. What is certain, however, and also important to the overall model is that all of the shifts represent some kind of nonlinear step-change. The transitions are thus not about gradual change. At the root of each of the transitions in fact is the emergence and resolution of a contradiction. Sometimes those contradictions are attributable to a fundamental dynamic of our life passage; other times they are driven by the societal context in which we find ourselves. The aim of the following table is to examine each of the three main step-changes – when we're 20, 40 and 60 years old – through the lens of the contradictions that provoke them for each of the four generation archetypes.

For each of the main boxes in the table, the generic behavioural transition is summarized, the societal context (in terms of the Four Turnings – 'awakening', 'high', 'unravelling' and 'crisis') surrounding the transition is shown, and then the specific contradiction and resolution that triggers the particular transition is summarized.

	Age 20 Transition	Age 40 Transition	Age 60 Transition
generic life shift	'becoming an adult'	'time to get stuck in and make a contribution'/'making a difference'	legacy/ 'giving back'
Prophets	indulged-to-narcissistic (societal context: awakening) life is good, and finally I'm allowed off the leash by my (weak, never did anything interesting) parents, so therefore I'll go out into the world, try whatever I want, do whatever I want, and live however I want	narcissistic-to-moralistic (societal context: unravelling) the previous generation couldn't make any decisions; the emerging generation (our kids!) of adults can't be trusted, so we need to start thinking about bigger pictures, 'getting a grip' and making sure we properly take charge of society	moralistic-to-wise (societal context: crisis) a realization that if you want people to listen to what you have to say, it's best to wait for them to ask you, rather than forcing your opinion on them
Nomads	abandoned-to-alienated (societal context: unravelling) the feral child enters society and the world of work and suddenly has a whole bunch of people telling them what they can and can't do. The sudden loss of freedom to authority figures that don't seem to deserve respect is treated with the cynicism it deserves	alienated-to-pragmatic (societal context: crisis) fighting every fight is very tiring and with all of the work and family pressures comes the realization that some fights are more important than others: the time to prioritize has arrived, and the time to concede some of the more trivial battles	pragmatic-to-tough (societal context: high) Even though the Nomads made the difficult Crisis decisions, credit went to the Heroes and so they get to capture the glory that comes with the new societal High. Difficult decisions still have to be made, and someone has to make them. Because the adult Nomad saw the worst of the crisis, and don't care about popularity contests, they get to be the ones to 'step up'
Heroes	protected-to-heroic (societal context: crisis) the overly-praised child enters the harsh realities of the world believing they can do anything (even if, in reality, they can't)	heroic-to-hubristic (societal context: high) having apparently seen society (successfully) through the Crisis caused by the two previous generations, the Heroes get to sit back and admire all of their hard work	hubristic-to-powerful (societal context: awakening) the upcoming generation of decision makers don't appear to be up to the task of making society's difficult choices and so rather than retire, the Heroes find themselves picking up the reigns of control again, John Wayne style.

Artists	suffocated-to-sensitive (societal context: high) the child enters the harsh realities of adult life with none of the skills required to cope	sensitive-to-indecisive (societal context: awakening) when the need to start leading rather than following the instructions of others arises, lack of skills and will to take the inevitable tough decisions becomes apparent. There will always be detractors in any decision, in trying to make everyone happy, no-one gets to be happy.	indecisive-to-empathic (societal context: unravelling) when all of the direct decision-making pressure passes to the next generation, the Artists get to spend their time doing what they were good at all along: seeing the world from many perspectives and empathizing with all the different viewpoints around them

Biology – Wombat Scat


Who's A Clever Boy, Then?

It's not often that animal droppings go viral on a global scale, but that's what the humble Australian wombat appears to have achieved during the last couple of months. It's claim to fame? Cubic poo.

Why on earth would nature evolve a solution requiring an intricate enough coordination of sphincter muscles to be able to create cubic faeces?

Animal droppings are natural ways of marking territory to prevent confrontation and promote mating. In addition to scent markings, or scents produced by the hormones that animals release, wombats leave their cube-shaped scat as territorial signposts on the tops of rocks and logs. That distinct shape is beneficial since the flat sides of the cubes keep the droppings in place on their precarious locations. If wombat poop was rounded, like that of koalas, it would probably roll off its intended drop point. And since wombats can produce between 80 and 100 pellets per day, stray scats could lead to a lot of disgruntled wombats. Also, if it was moist and sticky, it would require the waste of precious and difficult to come by fluid. The problem, in other words, is about how to make scent markings stay in the desired place for as long as possible, when the best places to position it are potentially incompatible shape-wise with staying put.

Here's how the conflict is best mapped on to the Contradiction Matrix:

IMPROVING PARAMETERS YOU HAVE SELECTED:

Duration of Action of Stationary Object (13)

WORSENING PARAMETERS YOU HAVE SELECTED:

Compatibility/Connectivity (33)

SUGGESTED INVENTIVE PRINCIPLES:

10, 24, 17, 28, 11, 3

Good to see that Principle 17, Another Dimension is already there in the list to give the right clue about shape change (point to line!). Personally, I think I'd've opted for a Principle 24 or 28 solution if I had to solve the problem. Both sound far less painful, muscle contraction-wise.

Short Thort

"From the horizon of the sunny, charismatic melodies of Paul McCartney's musical creations, to the valleys of the dark and mysterious undertones of John Lennon, one thing is for sure; together they made magic. But how do two people with such differences create something that works in such unison together? Most Beatles fans know that McCartney and Lennon wrote most of the songs, but few realize it was these vast differences between them that created their bewitching chemistry.
If these two were alike in any way, it was in their competitive nature. It was this competitive nature with one another that pushed them to improve their writing, and make their songs better and better. As one of the world's most successful songwriting partnerships, their differences complimented the task at hand. They were the answer to each other's questions. If McCartney would write "it's getting better all the time," then Lennon would write "it can't get no worse." A perfect example of how their differences worked so wonderfully together, and of the different perspectives they had on life…"

"Among peoples who possess a highly developed pugnacious instinct we find the greatest progress in the arts, sciences, social and political organization, commerce and industry. The instinct takes the milder form of rivalry which is the motive force of the great portion of the serious labors of mankind."
Holly Estil Cunningham

Who is your **pugnacious analogue**?
How might you set about finding one?

News

Hands-On Systematic Innovation – 3rd Edition
We are pleased to announce that work to update our best-selling text book is approaching completion and that we're set for publication in the early Spring of this year. As occurred with the previous edition, we're interested in including comments and testimonials from past and ongoing readers. Anyone interested in contributing something should get in touch with Cara in the first instance.

AEROSOLSydney2014
Darrell will be presenting a keynote address at Asia's big aerosol conference of 2014. Details of the event can be found at http://aerosol.com.au/events/aerosol-sydney-2014/

University Of Sunderland EMBA
We will be delivering two-days of SI-for-Business content again for this year's EMBA cohort up in the North-East of the UK. May 13 and 14 are the dates. We may have the ability to invite one or two outside visitors if anyone is interested in joining the sessions. Contact Darrell in the first instance.

Danish Technical University
Speaking of EMBA programmes, we will also be presenting and expanded two day session at DTU in November. 14th and 15th are the planned dates.

New Projects
This month's new projects from around the Network:

- Transport – SI Tools
- Healthcare – SI Workshops
- Healthcare – ICMM workshops
- Healthcare – IP bulletproofing project
- Apparel - ApolloSigma IP and White-Space Study
- FMCG – TrenDNA study
- FMCG – PanSensic study
- Aerospace – Problem-Solving Project
- Government – Innovation Strategy project