

# Capturing The Voice Of The Customer Before The Customer Knows What They Want

TRIZ, Spiral Dynamics, and The Fourth Turning

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## **Abstract**

The paper discusses the integration between TRIZ and other tools and strategies in order to create a more capable problem definition and solution generation scheme. The basis for the integration is the comparative weakness of TRIZ with regards to understanding of the customer. TRIZ 'knows' that all situations should deliver a more ideal solution to the customer. Given the broad range of possible 'more ideal' solutions in any particular situation, it is necessary to know which of these solutions are the ones best suited to the present needs and requirements of the customer. The sting in the tail here is that in most situations, the customer has little idea what they want until they actually see it. It is this problem to which the paper is primarily addressed. The psychology research presented in Spiral Dynamics and the societal 'DNA' uncovered in the Fourth Turning are suggested as two platforms upon which to build an enhanced understanding of how customers work, and therefore how innovators can best serve them.

## **Introduction**

Most organisations today recognise the importance of capturing the voice of their current and future customers. They also recognise what a difficult task this is, not least because very often those customers have no idea what it is that they want. Or rather, they can tell us they want a 'better, faster, cheaper' version of what they already have. But then when it comes to asking for something different, the story changes and few if any customers are able to offer any meaningful assistance to the designers tasked with deriving commercially viable new solutions. Coupled to this is what may be called the 'Segway Effect', or 'don't get so far ahead of the parade that no-one knows you're in it' (Reference 1), a trap that those same designers are highly prone to fall into. The key innovation skill of organisations may thus be seen as identifying the market-changing jumps that are big enough to create some blue ocean space, and also small enough that the intended customer base is able to connect and identify with what is being offered.

This 'big *and* small' jump problem as used as the starting point for the discussions here. Those familiar with TRIZ, and particularly the Trends/Evolution Potential aspects of the toolkit, will know that here is an enormously powerful tool for predicting the 'what' of technology and business breakthroughs. The paper shows this capability to be a necessary but far from sufficient element of the innovation story. The next important step, the paper suggests, is to identify which of the known possible jumps are best suited to the prevailing market conditions. In this area classical TRIZ has little, if anything to offer. During the course of an extensive programme of research into the problem of capturing what may be described as the 'unspoken voice of the customer', it has been observed that the 'who', 'where', 'when' and 'why' aspects of

the innovation story require a deep understanding of psychological and societal issues. The paper describes how a blend of one psychology-based and one societal-based tool are beginning to be used to help organisations do a better innovation job. The paper thus introduces Spiral Dynamics from the world of psychology and the 'Fourth Turning' work of Strauss and Howe on generational patterns, and shows how they have been woven into a unifying framework provided by TRIZ.

Although primarily focused on describing the construction and underlying theory of the amalgam of methods, a final section of the paper describes a short case study in which the developed methods were used to define a likely breakthrough product innovation in a specific market context. However, before that we begin with a short background into the strategy and reasoning behind the integration with other methods and then a description of Spiral Dynamics and the Fourth Turning.

## **Research Platform**

In retrospect, what Genrich Altshuller and his team of researchers has given the world is a distillation of the workings of the world of technical systems. Classical TRIZ has provided an excellent platform upon which to build new capabilities into the 21<sup>st</sup> Century. It has now reached a level whereby just about any technical problem can be handled with a high degree of confidence that provided we are persistent enough, breakthrough answers will emerge. This is undoubtedly an important capability. It is one that is often sufficient as long as the problem being tackled is one that is hidden from the customer. Creating a breakthrough that permits, for example, car bodies to be painted in 30% less time and with 25% less wasted paint would represent such a case. Maybe the customer ultimately sees a financial saving as a result of such an innovation, but they will never see – or want to see – how it was done.

On the other hand, when it comes to a problem like designing a more comfortable car seat, although TRIZ can allow us to hear the 'Voice of the System' (Reference 2) and consequently be able to generate hundreds of possible future evolution jumps, these ideas are far from sufficient. What is also necessary if we are to genuinely create a better car seat (or any other product or service) is an understanding of what any given customer wants and needs at any given point in time.

TRIZ has not studied this part of the innovation story. Fortunately others have. It is to these people that our research programme has turned. The basis of that research is illustrated in Figure 1. What this figure shows is a division of the world into five different areas. Five being the number that presents the possibility for a complete and viable system (Reference 3), and something that seemed to emerge by itself during the construction of the research strategy.

The five areas can effectively be summarised as the 'I' (intra-personal psychology), the 'IT' (the world of technology), the 'WE' (inter-personal psychology and societal DNA), the 'ITS' (integration between people and technology; effectively complex systems), and the 'CO-ORDINATE' (knitting the first four elements together). Also shown in the Figure is the idea that in order to create a unified understanding of the world, we first need to assemble the understanding obtained in each of the different segments. In the world of technology, the foundations laid by Altshuller form as solid a platform to build on as any. The other quadrants of the figure identify the people or the pieces of research that we believe are consistent with what Altshuller and his team did. They are all things that have tried to take a helicopter view of the world, to acquire lots of data, and to distil that data into a coherent story. The two quadrants of

particular interest to us here in this paper are the 'I' and the 'WE', these being the two that have the most direct impact on our understanding of the customer. According to our findings, the work of Clare Graves on what has more recently become known as Spiral Dynamics seems to define the right starting point for building a TRIZ-like version of individual psychology. Research on the 'WE' side of the story is, as might be expected rather fuzzier. Here we have ultimately determined that the research on generational cycles reported in the Fourth Turning and other books by Strauss and Howe forms the most appropriate platform, albeit that platform has been heavily influenced by some of the ideas and findings of people like Pitirim Sorokin and to some extent by others - Ervin Laszlo for example. None has individually got the story right (according to us), but these are the people that have at least been asking the right questions, and have given us a shoulder to stand on.



**Figure 1: Systematic Innovation: Overall Research Architecture**

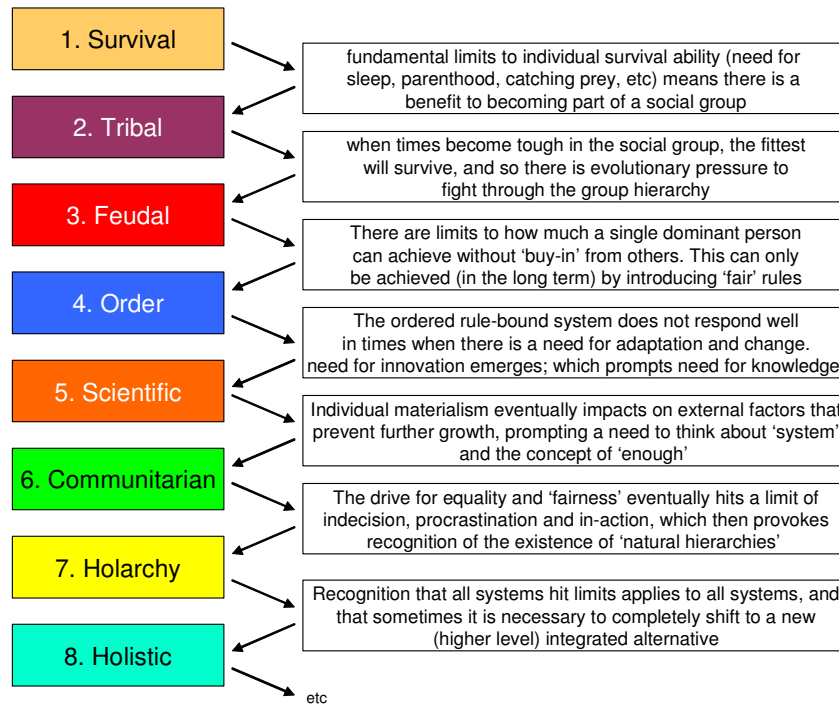
Before exploring the implications of what might emerge if these five areas can successfully be united, it might be helpful to dig a little deeper in the Spiral Dynamics and Fourth Turning domains:

### **Spiral Dynamics**

Psychologist Clare Graves (Reference 4) began his research into human personality at the start of the 1950s. What has emerged has the same sort of pedigree and maturity as TRIZ. In many ways it represents the psychology analogue of what TRIZ has done for the world of technology.

What emerges from Graves' work is a model of the evolution of human thinking levels ('Levels of Existence' in Graves' terminology). Of particular importance – as in TRIZ – were what Graves observed to be the discontinuous shifts that occurred between one way of thinking and another. An analogy with the gearbox in a car seems to work well to explain the big ideas (Reference 5) – when we are born, we all of us think at 'Level 1'; we all have one gear in our gearbox. As we grow we come to realise that this thinking level (these days labelled 'Beige' or 'Survival') has problems. In fact we hit a contradiction (Reference 6). Eventually this contradiction gets resolved (hopefully!),

and when it does we jump to a second thinking level. In the gearbox analogy, we add a second gear to our gearbox. We can still use the first gear, but now we have a choice and can use whichever gear is most appropriate for the prevailing surroundings. Each time we hit and resolve one of these contradictions, we add another gear to the gearbox. Over the course of a lifetime an individual may be expected to end up with between two and seven gears in their personal gearbox. 0.01% of the population might have found an eighth ('Turquoise' or 'Holistic') or perhaps higher thinking Level, but, to all intents and purposes, our customers are 99.99% likely to be thinking at one of the first seven thinking Levels shown in Figure 2.



**Figure 2: Spiral Dynamic Thinking Levels And Contradictions Provoking Shift From One Level To The Next**

Recognition and understanding of these Levels is important when our task is to try and understand 'the customer'. Unless we know the thinking Level of each of our customers, realistically we have little hope of being able to systematically create the right innovation for them or to even be able to communicate what it is and what benefit it provides them. One of the things that makes the 'understanding the customer' story so difficult for companies is that between each of the thinking Levels there is a large swing of a pendulum from one extreme of thinking to another. At one end of this pendulum swing are the odd numbered thinking Levels. This is the end of the pendulum labelled 'express self', and all of the odd-numbered thinking Levels are thus concerned with the ego and an individual getting what they want. The even numbered Levels represent the other side of the pendulum swing. These Levels are all concerned about sacrifice ('deny self') of the individual to the collective. We all of us experience this individual-versus-collective conflict in many situations through life. Conflict turns out to be the key word here when we think about the implications of Spiral Dynamics on how we set about understanding our customers. A Blue-thinking customer is the polar opposite of an Orange one; a Green is polar opposite again to the Orange, and so on. In simple terms what we can glean from this very high level discussion is that there is no way that we can ever hope to design a product or service that will satisfy every customer every time unless we can successfully resolve

– at least – the individual-versus-collective conflict, and ideally all of the conflicts that occur between the different Levels.

A good example of a product that has successfully achieved at least some of these inter-Level conflicts is the iPod. iPod allows a person to be part of a ‘Tribe’ – for example with limited editions like the iPod-U2 – and also still be totally an individual because they can load their own personal choice of music into the machine.

If a large part of the TRIZ breakthrough generation story is about finding and resolving contradictions, at the very least Spiral Dynamics provides a systematic means of finding some very important ones. Later on it also allows us to construct the right message when we need to sell our breakthrough solution to each of (or some of) the different types of thinking out there in the marketplace. Important, but not yet enough:

### The Fourth Turning

The Fourth Turning is the main text emerging from the societal evolution studies of historians William Strauss and Neil Howe (Reference 7). The key finding of that research is that there are distinct patterns of repeating characteristics that occur across the generations. Put simply, the way in which a person was brought up by their parents later on influences the way that they in turn will bring up their own offspring. Thus, if a person was brought up by two parents who worked and believed in ‘personal freedom’ and ‘doing your own thing’, they are very likely to over-compensate for their ‘abandonment’ by being very protective of their own offspring. These children in turn react to their protected upbringing in the way they later on raise their own children. The Fourth Turning identifies the fact that eventually generations come full circle and the pattern begins again. As illustrated in Figure 1, the pattern they uncovered was one with four distinct stages. Each of these stages represents the generic characteristics of a generation. By way of calibration, the Baby Boomer generation was the most recent generation of ‘Prophets’. They gave birth to Generation X ‘Nomads’; and they in turn are currently giving birth to Generation Y ‘Heroes’.

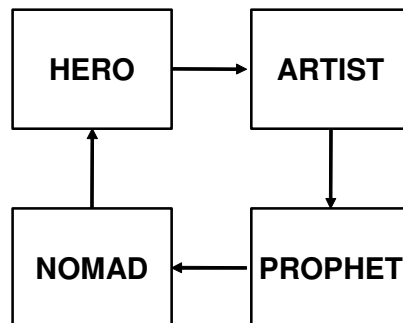


Figure 3: Fourth Turning – Four Phase Generational Cycle

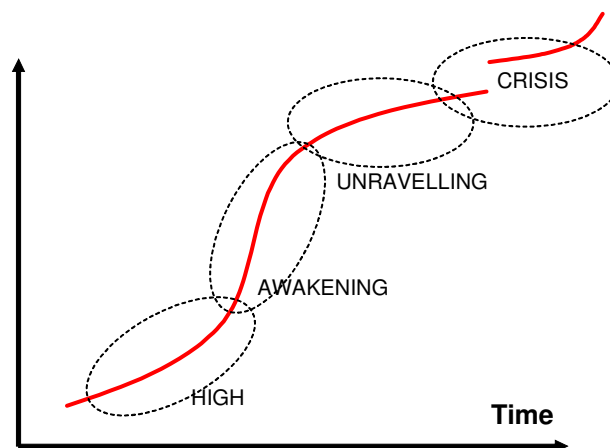
Figure 4 digs a little deeper into this story by highlighting some of the characteristics of the different generational types at different stages in their life – from childhood (age 0-20 – important since this is when most learning takes place) to young adulthood (21-40 – important since this is when most parenting takes place), to mature adulthood (41-60 – important this time since it is the age at which a person is most likely to want and achieve status and power either in business or politics), to late life (61-80 – also important since at this age, we become both grandparents and also societal ‘elders’).

	0-20	21-41	42-62	63-83
HERO	protected	heroic	hubristic	powerful
ARTIST	suffocated	sensitive	indecisive	empathic
PROPHET	indulged	narcissistic	moralistic	wise
NOMAD	abandoned	alienated	pragmatic	tough

**Figure 4: Fourth Turning – Generational Characteristics As A Function Of Age**

Clearly the way the world works is not nearly as clear-cut as these demarcations suggest ('Prophets who had children late in life may, for example, find themselves raising 'Hero' offspring), but overall at a societal level the patterns are quite distinct. The reason they become distinct is due to a phenomenon we have labelled 'rhythmic entrainment' (Reference 8). Rhythmic entrainment occurs when certain cultural or large scale environmental events take place that serve to align and unite large numbers of people. World War 2 was such an event. More recently 9/11 was another. On a smaller scale but nevertheless influential in bringing about similar characteristics in large numbers of people were things like Elvis Presley, The Beatles, Woodstock, The Sex Pistols and, most recently, The Arctic Monkeys.

The first link between Strauss and Howe's work and TRIZ comes primarily from their observation that the four-phase generational cycle also produces a four phase societal effect that effectively forms a societal s-curve. At the end of this cycle we then get a discontinuous jump to a new cycle. At any given moment in history, one of the generational types will be in childhood; another will be parents; another will be in power; and the fourth will be the grandparents and elders. The characteristics that these generations have at that particular moment in time (as defined in Figure 4) in turn affect the societal behaviour. Crudely speaking (as illustrated in Figure 5) as a result of the generational characteristic shifts that occur over time, societies pass through a four stage high-Awakening-Unravelling-Crisis cycle.



**Figure 5: Fourth Turning – Societal Characteristics Emerging From Generational Characteristics**

Broadly speaking each of these phases spans the length of time of a generation. A typical generation is 20-25 years (depending on the occurrence of the events like 9/11 that serve as the things that serve to entrain and unite a generation). This means that the full four-phase societal cycle typically spans somewhere between 80 and 100 years.

By way of calibration, at the time of writing the Prophet generation Baby Boomers are predominantly in political power and Generation X 'Nomads' are busy raising a new

generation of 'Heroes'. The world has also just entered the 'Crisis' period in the four phase cycle. The last time we were in this phase was the depression of the 1930s up to the end of WW2. Crisis phases typically end in this kind of cataclysmic way (e.g. American Civil War, Defeat of Napoleon) from the ashes of which emerge the new s-curve.

Rather than explore such a pessimistic direction (important as it is), our job here is to explore what all this has to do with TRIZ and our task of better understanding the voice of the customer. Probably the easiest way to do this is by examining a pair of examples of where companies – actually 'a' company – got things wrong.

## Two Case Studies

Question. What car was the first in the world to feature self-adjusting brakes? What about automatic lubrication? Or a 'push-button' gearbox? What about dynamic power steering?

The answer in all four cases is the Ford Edsel - one of the biggest commercial disasters in the history of business, supposedly Henry Ford's final legacy. So proud of it, he named it after his son. How can someone who knows the industry so well – nay, someone who to all intents and purposes invented the industry (quite literally the machine that changed the world) – get things so drastically wrong?

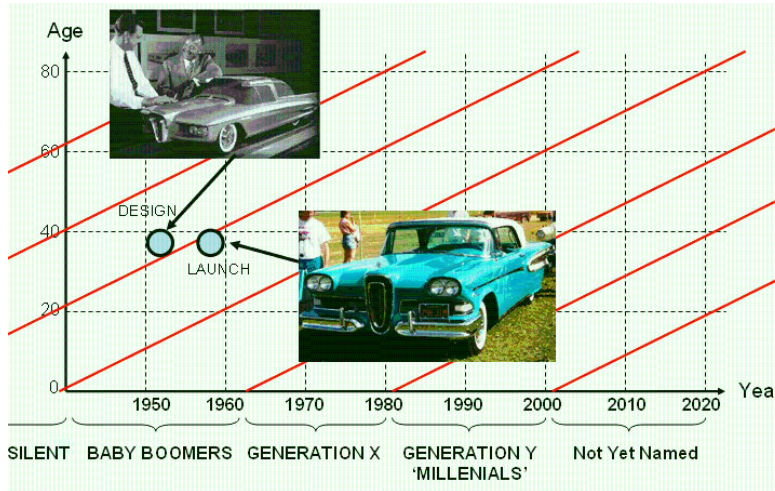
The story is, of course now the stuff of legend. Taught as a classic 'how not to' on just about every MBA business or marketing course. However none of those discussions has ever presented a truly coherent case for the failure. There is speculation about getting the pricing wrong, or mis-positioning the brand, or about how the economic recession at the end of the 1950s causing customers to shift to smaller cars, but there just doesn't seem to be a clear story to tell.

Something else we can notice about all of the features of the Edsel listed above were totally consistent with what the TRIZ trends would have said were definite moves towards a more ideal automobile. The 'voice of the product' apparently got it wrong when it came to the Edsel.

Perhaps there is an element here of the afore-mentioned 'don't get so far ahead of the parade, no-one knows you're in it' expression from John Naisbitt. Especially since all of the Edsel's revolutionary features are now pretty much standard in all cars. Was it, in other words, just that the 'voice of the product' was speaking ahead of its time?

To begin to answer the question it is worth examining the story of the development of the car in a little more detail. Read up on the history of the car and you will quickly learn that it had a rather long gestation period. The first market research and designs were in fact commissioned and conducted in the early 1950s. The actual launch of the first Edsel's onto the road didn't take place until September 1957 (on so called 'E-Day' in the US). The Edsel was aimed to squeeze into the company's marque hierarchy between Ford and Mercury. As such its target market was largely going to be families and mid-level managers. Typically, therefore, people in their thirties. Take a look at Figure 6. This is another form of the generational cycle pictures. It plots the generational cycles on an age versus date graph. This particular graph features the Edsel. It also features two key data points on the age-date grid; the first – the point on the left – shows the period during which the market research on the target market was conducted. The second then shows the point at which the car was launched onto the market.

The key thing to notice in the space between these two data points, then, is the crossing of a generational divide: When the Edsel was being designed, the primary market was the tail-end of what these days has become known as ‘the greatest generation’. This is the ‘Hero’ generation (Reference 1) that successfully came through the Depression in the 30s and then World War II. Alas, when the Edsel was finally launched onto the market, the Hero’s were older (and therefore quite likely to have moved upmarket to Lincolns, Oldsmobiles and Cadillacs). A new generation of ‘Silents’ was now the most likely to be the customers for the car. As is the case in every generational shift like this, what one generation likes, the next is almost inevitably will not. The rest is history.



**Figure 6: Edsel Design And Launch: Two Different Sides Of A Generational Divide**

It is true that all of the elements of the failure cited in literature contributed to the failure of the Edsel, but if we are looking for a single root cause from which all of those other elements arise, then this looks like a pretty compelling case. The Edsel made the very simple mistake of missing a generational shift. The Voice of the Product was right but the selection and presentation of the ideas emanating from that Voice were falling into the wrong ears.

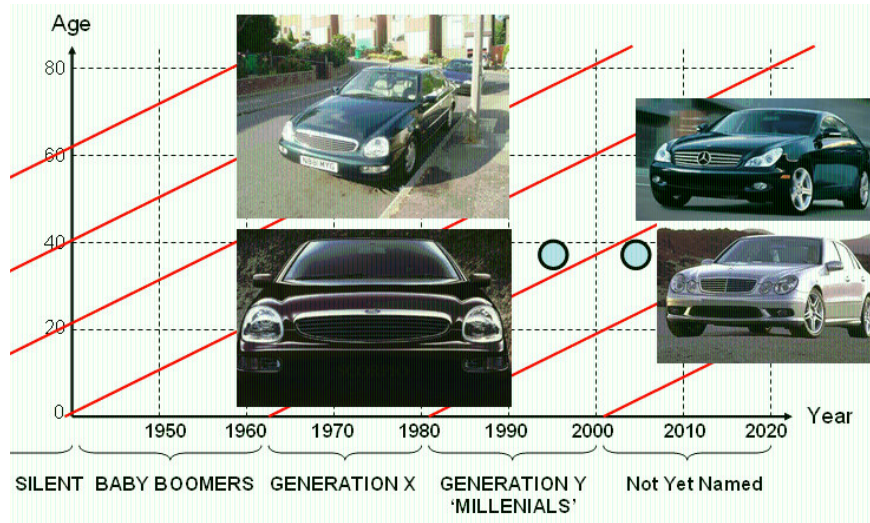
Without wishing to be seen to be picking on Ford, they pretty much managed to repeat the trick again in the 1990s. Albeit at a less catastrophic scale. Mention of the word ‘Scorpio’ in many countries in Europe, though, is soon likely to be followed by sorrowful shake of the head or a snigger. Or an out and out belly laugh.

The Scorpio was – lets be generous – not the best looking car in the world. The rear end looked bulbous and kind of out of proportion. The front view was even worse (Figure 7). In France, the Scorpio quickly picked up the nickname ‘la grenouille triste’ (the sad frog). The main contributor to this image was the strangely shaped headlights.



**Figure 7: La Grenouille Triste**

In fact those headlights were something of a pioneering feature of the Scorpio. They were the first in a new generation of curved profile lights. Plot the evolution of car headlights and you will quickly observe a classic example of evolution along the TRIZ 'Geometric Evolution' trend – points evolving to lines evolving to 2D curves evolving to fully 3D designs. And here was the Scorpio bravely making one of those jumps. Then again all that was happening was that the designers were listening to the 'Voice of the Headlight'.



**Figure 8: Scorpio versus Mercedes Headlights: Two Side Of Another Generational Divide**

Then guess what happens? Well, according to Figure 8 what happens is that Mercedes introduce several similarly 3D curved headlights a couple of years ago and they turn out to be a great success. Suddenly the 'voice of the headlight' prediction has become the right solution.

What Figure 8 also shows us is that in the time between the 1995 Scorpio and the 2003 Mercedes, there has been another of those generational shifts that we saw in the Edsel story earlier.

## Final Thoughts

Of course both of these case studies have been built retrospectively. This is hopefully a useful thing to do in terms of gaining an understanding of the implications of the Fourth Turning (and to some extent also Spiral Dynamics – which ultimately underpins the generational characteristics). Once the patterns are known we can begin to start using them to pro-actively to project into the future.

TRIZ, as we know, is an excellent tool for generating ideas about where products – like headlights or self-adjusting brakes – will evolve in the future. It remains to all intents and purposes useless at knowing which of those ideas is the right one for a given market at a given moment in time.

Our proposal here has been that Spiral Dynamics and The Fourth Turning can help us to better answer that question. Specifically, Spiral Dynamics allows us to identify the thinking styles of our target markets, to map the conflicts that exist between those different styles and therefore to determine WHICH 'voice of the product' ideas best resolve the problem. The Fourth Turning research then gives us a good first indication of WHEN those ideas are most likely to be successful. Clearly the whole story is much bigger than this one (see Reference 9 to explore additional pieces our research is trying to build and assemble), but

hopefully we have been able to present here one or two useful steps on the journey to an all-encompassing systematic innovation capability.

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