Psychological Traits of Highly Innovative Organizations

Introduction

When creating an innovation team, a lot of thought and effort goes into bringing the right functional expertise together. This includes diverse design, engineering, product supply, finance, marketing, research, innovation, etc. personnel collaborating effectively to create synergies and opportunities. However, for a team to deliver big ideas and solutions that will meaningfully improve business outcomes, focusing only on functional expertise is not enough. We also need the right mix of personalities, youth and experience, cognitive diversity, etc. – with the need for balance between narrow and broad expertise for success with Incremental / Sustainable / Disruptive Innovation (or H1 / H2 / H3 or Core / Adjacent / New Innovation). Getting this mix right helps ensure not only good team dynamics, but also a team that naturally challenges itself, and balances speed of execution with an innate propensity to reach beyond their comfort zones or the usual suspects - and strive for game changing results. Of course, it's much easier to get the right balance of technical capability than some of these other, sometimes more intangible traits. But tools like personality tests, together with identifying and bringing in analogical innovators and deep critical thinkers, and then wrapping the team in principles derived from the scientific method help create high performing innovation teams that go beyond a basic mix of functional expertise.

To do this consistently requires thinking beyond individual teams. Who is brought into an innovation team is obviously highly dependant upon the talent pool, and this is in turn dependant upon who is recruited, retained and developed within the broader organization, plus people in our network and practitioners in the Innovation ecosystem. But many companies struggle to network or recruit and develop different expertise or analogical thinkers. For example, analogical thinkers tend to be late bloomers, simply because they have many interests, and so often lack the narrow focus that delivers the early track record of success we look for in high achievers straight out of college. We also tend to not select people who ' don't fit the mold ' because a lot of corporate training is designed to fill ' skills or performance gaps ' – which minimizes diversifying the talent pool or to cull the different. Even when a maverick slips through the net, many survive despite of, not because of the culture and reward system! This is all quite understandable, as atypical people require more time and resources for them to fit into the organization culture and to maneuver in the corporate political environment. This is problematic in an innovation context because it's very hard to deliver disruptive innovation without including people that think different. Addressing this issue is becoming increasingly important since organizations that do so have a growing advantage over competitors in driving change, invoking paradigm shifts, etc. This is important for success as the windows of opportunities decrease and the pace of innovation increases. While homogenization is appealing, it is a contributing factor to why enterprises struggle with change, becoming more sophisticated in business and managing risk, doing disruptive innovation, etc.

To make innovation in enterprises more rewarding, there is a need to increase cognitive awareness – especially in the leadership and innovation teams - with a scientific methodology to productively manage the creative tensions that, when harnessed effectively, can catalyze disruptive thinking.

To increase the rewards from Innovation, the important psychological traits are -

1. **Cognitive Diversity**

   One of the main reasons for creating an *innovation team* is to bring different ideas and perspectives to the table. So while individuals may come up with more ideas alone than in teams, there are significant benefits with Group Think by bringing together people with different expertise, backgrounds and thinking styles - especially if the goal is to develop detailed, robust innovations that will survive the journey from front to back end and meaningfully improve business outcomes. Interestingly, frequently when creating a team, the focus is primarily on diverse expertise - but largely ignore diverse thinking styles. There are a number of reasons for this. Firstly, it's much easier to quantify expertise - we know who the finance expert is, but are probably less sure of who the analogical or critical thinkers are in an organization, especially if we lack direct experience with individuals. Secondly, there is unconscious biases that push us towards collaborating with people who think in similar ways to ourselves. We've probably all recruited someone into a team because we liked them. However, that doesn't always lead to the most effective teams !

   If we really want a more effective mix of thinking styles to have more and different options to move the business forward, there are several personality tests that can be used to assess a person's psychology, motives, values, goals, competencies, etc. This includes OCEAN personality models, including a variation of this, called HEXACO, which measures Humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness and Openness. An example of this is agreeableness – a somewhat counter intuitive trait that can be leveraged. Teams where everyone is high in agreeableness tend to be fun and popular. But this can also be a bit of a ' feel good ' trap, as they are often relatively unproductive. They often lack someone to say, " stop, this isn't good enough ", or to challenge convention / the status quo, etc. This is needed to push the team to look hard at opportunities or potential issues / the downside early in the process - before momentum makes change more difficult than it needs to be. Of course, balance is key, as too much negativity can be toxic, but too little, and we don't challenge ourselves enough, or we defer tough, unpopular decisions and discussions, when frequently an earlier course correction could have been easier.

2. **T-Shaped Innovators / Analogical Thinkers**

   Really big ideas usually don't come from experts in the field – but if they do, then it's likely that they won't be uniquely big or disruptive for long. " If our group of experts has thought of it, then the competition's experts probably have as well, or at least will do very soon ". Or, ' Inside' experts tend to pull the pieces together at about the same time, and even revolutionary ideas often occur almost simultaneously amongst independent innovators exploring the same field. Examples of this so called ' multiple discovery ' abound, including calculus (Newton and Leibniz) the theory of evolution (Darwin and Wallace), and the telephone (Elisha Gray and Alexander Graham Bell). The latter independently filed patents for the discovery of the telephone on the same day ! These are unusually big, brilliant innovations, but we also see similar ' multiple discovery ' effects in more ' everyday innovations ' where ' in-domain ' experts race along   s-curves, evolving and optimizing in almost neck and neck races. We only have to look at cell phones or 5G to see this in

action. But truly disrupting a category often requires jumping an s-curve, and deep but narrow knowledge can often not provide the broader knowledge needed to do this - but can actually get in the way. To paraphrase George Lakoff - if I say " don't think of an elephant ", the first thing you think of is an elephant. Deeply held knowledge drives us down familiar paths. Or, if your only tool is a hammer, you see the world as a nail. An example of this is a surgeon is biased to see a surgical answer to the same problem that a physiotherapist will see an exercise solution to. The more we know about a subject, the more likely we are to use that lens when looking at a problem. This doesn't mean that we should abandon experts; far from it since an in-domain answer may well provide context and be a simple explanation. This is important for evolution and optimization as well as efficient and effective innovation.

While disruptive innovation has become a buzzword, the reality is that it is rare, difficult, and suffers high failure rates. Because of this, to be more successful at disruptive innovation, innovation teams need a mixture of domain experts together with broader, more analogical thinkers - or - T-shaped innovators or expert generalists – to bring a broader perspective to help with not missing a bigger, simpler idea (that is not one of the usual suspects). T-shaped innovators know a lot of stuff about a lot of things, are good at recognizing potential, transferring ideas and innovations from one space to another, bringing an external perspective, and facilitating communication between people having narrower domain expertise. Having extensive experiences with business, innovation and transformation while being immune from specific operational or functional responsibilities, T-shaped innovators are better placed to see and connect the dots, have strong look ahead skills to see opportunities, and an appreciation of what is needed to effect change. This is important for fluid dynamics to optimize traffic flow, or applying the aerodynamic gliding properties of bird wings to aircraft design. For further insights on how analogical thinking can help solve very challenging problems as well as insights on the 10,000 hour rule, especially in the context of complex problems requiring very creative solutions, see the book Range by David Epstein.

3. **Critical Thinkers, The Scientific Method, and Evolution**

In 2017, "The Edge" series from John Brockman posed the question, ' What Scientific Term or Concept Should be More Widely Known " ? Two of the most popular answers from some of the brightest minds on the planet were *the scientific method* and the *theory of evolution*. Interestingly, the power of the scientific method is that it teaches us to constantly challenge ideas and hypothesis. It teaches us not to test an idea to qualify it, but to challenge it, and find its faults. Authentically challenging our most passionate beliefs is quite hard, but having someone on the team who ' owns ' this can be crucial - especially in the early stages of the innovation process - before we get sucked too far down the escalating commitment and sunk cost pathway. But if we can get over this emotional barrier, there are lots of tools available for designing tests to find faults in an idea, for devil's advocates and the outside view, to leverage integrative thinking, etc. as described at - https://www.innovationexcellence.com/blog/2019/09/08/empathy-integrative-thinking-and-innovation/.

Applying the scientific method to business and innovation is the path P&G successfully took in the late 1990s to reinvent Olay as a prestige skin care product - as described in Roger Martin and A G Lafley's Aug 2012 HBR article - *Bringing science to the art of strategy.* Extending on this, there are well documented benefits to understanding evolutionary trends, as in TRIZ, or the TIPS theory of inventive problem solving. Pulsed evolution is a powerful analogy that can help us understand when early adopters and/or disruptive technology may or may not be valuable. Evolutionary psychology is a powerful tool for understanding and separating real from imagined gender differences and overlaps. Looking at growth through an evolutionary lens can help us to manage non-linear trends, and provide insights into how to manage external variation in growth and resources. Perhaps most valuable of all, evolution can provide insights into developing more sustainable innovations from the life cycle and systems perspective - rather than from the viewpoint of the individual initiative. In nature, nothing is wasted, and any residue or pollutant represents a resource and evolutionary niche for some adaptation.

4. **Need for Cognition and Curiosity**

Any innovation process is a balancing act between thinking and acting. Teams dominated by thinkers often fail to move grand ideas to action. Conversely, a bias for action can also be counter productive. It's rare the first idea is the best one, and jumping into execution phase too soon can be a serious disadvantage - especially if a competitor has more patience, knowledge, resources and/or a better strategy for developing a much bigger or more disruptive idea. This is especially true for products or environments with long lead times, require significant capital investment or regulatory challenges, etc. One way to address this is to have leadership pick an optimum time to switch from divergence to convergence or vice-versa to benefit from change, or have some people on the team with high cognition. This is a term that Cognitive Psychologist Art Markman refers to people who naturally seek deep understanding of whatever they are dealing with. This is useful because it drives deep causal knowledge of systems, which in turn helps promote both deep understanding of the problem at hand. It also facilitates the kind of deep connections and analogies that enable borrowing and reapply ideas from one domain to another. As a bonus, people who are high in need for cognition often double as expert generalists, simply because they are curious about everything they encounter. Further, because of the time it takes them to go deep as well as their need to understand and explain complexity, this helps prevent teams from over simplifying problems and acts as a natural braking mechanism.

We don't want a whole team high in need for cognition since little would get done. But a couple of team members in the mix can be invaluable. The need for cognition can be technical, take the form of deeply understanding consumer needs and motivations, or those who seek deep immersion in processes. For example, in hospitality, the best source of innovative insights and ideas are often from the maids, servers and bartenders.

5.   A Balance of Experts and non-Experts (Youth and Experience)

In organizations, birds of a feather tend to flock together. This makes it easy for teams to self assemble with like views, etc. The issue with this is lack of diversification of thought, the ability to thoroughly scope or analyze situations, and insular decision making. To get past this requires top down management. For example, even experts who do mentoring may still keep it as a separate activity from day to day work - to avoid slowing down innovation with detailed explanations or training in the midst of change. But mentoring on the job is not only a more Socratic and effecting training process, but the act of sharing knowledge to relative novices can be a catalyst for new ideas.   Likewise, teams of young, tech savvy individuals may not see the benefits of taking the time with older, experienced team members. But again, naivety and a need for explanation can be both a trigger for different ideas, and potentially expose vulnerabilities, feature creep, or lack of empathy for less expert users in a design.

The need for Balance in Innovation Teams

To understand how to achieve balance in an organization to innovate for impact and improve decision making for better outcomes, it's important to recognize the following –

Personality Models - Personality tests like Myers Briggs have been in use for years to weed out unsuitable candidates - rather then build cognitive diversity into teams and the organization. Better models than Myers-Briggs are OCEAN and HEXACO for cognitive science. While OCEAN (openness, conscientiousness, extroversion, agreeableness, neuroticism) is good, a modification of this called HEXACO is gaining ground because of the considerations for -

Honesty / Humility **-** Apart from the obvious, this measures how likely someone is to manipulate others, and to break rules

Emotional Stability **-** Susceptibility to negative emotions

eXtroversion **-** Externally orientated, comfortable in the limelight

Agreeableness **-** Desire to get along with others or be liked

Conscientiousness **-** Tendency to keep order, complete tasks, and follow rules

Openness **-** Openness to new ideas, and to promote innovative and diverse thinking

As with most good personality tests, these are not pass-fail criteria, but instead measure continuums. Most people sit somewhere nearer the middle than the ends, and indeed, being at one end of the continuum usually comes with both pros and cons. For example, being high in agreeableness favors getting along with people, being popular, and welcomed into teams. But people high in agreeableness also struggle to give useful feedback, or to stand up and say 'stop' when it is really needed. Have you ever been on a team where you come out of a meeting feeling upbeat, " we got this / we're on track, etc. " - but then realize nothing was really achieved ? Maybe this was caused by too many people high on agreeableness – versus having

those in the meeting who would challenge or push in another direction ? In contrast, a team where everyone is low in agreeableness will have its own issues ! Likewise, conscientiousness is good - to a point. We need some people on a team who do what they say they will, and when they say they will, and to keep the team aware of its commitments. However, rules, and adherence to past behaviors and/or deadlines can also constrain creativity, and a team full of people high in conscientiousness is unlikely to step too far out of the box, or disrupt the status quo. From this, to improve decision making and outcomes, it's important to have highly competent people with complimenting and different skills to have the diversity needed to improve the probability of success and reduce the risks associated with change to enable people realize their potential and for the organization to achieve their business objectives.

Balance is also dependent on what and where we are innovating or trying to achieve. We want conscientiousness in pilots or exploratory tasks or where there is a need to master considerable detail. For example, when about to have an operation we don't want to hear -" Hi, I'm your surgeon, and just for fun I'm going to try something completely new this morning " ! However, if it's about business or industry disruption, this may be exactly the mindset needed. Further, on an innovation team there is a need for tension between people with low risk tolerance (want to play it safe, maintain the status quo, etc.) – and those with an appetite for " the new " (have vision, bigger ambitions, entrepreneurial, etc.) who will step out of the box, and people with other attributes who will herd us towards good decisions and appropriate actions to make progress. It's also great to have at least one extrovert on the team, as they create energy, and often promote the team to others. But too many introverts typically means others don't get a word in, and the team drowns in a sea of unaligned powerfully articulated opinions ! Even Neuroticism can be useful. Team members who are overly susceptible to negative emotions can be draining, but an experienced cynic playing a devil's advocate role, helps with understanding - before pushing too far ahead with an inviting but flawed idea.

To facilitate having balance, how do we use Hexaco ? At one extreme, we could ask everyone in an organization to take and share a test, and use the results to create balanced teams. However, realistically that comes with all sorts of challenges. Not everyone wants to bare their soul, and certainly shouldn't be forced to do so. But knowing yourself, and developing the skills, empathy, and emotional intelligence to guestimate the personalities of others is less intimidating, and can still be very helpful, and simply understanding these traits can help this to happen. *The first step to this is self testing.* There are numerous sites on the web where you can do this for free, including http://hexaco.org/hexaco-online

The Curse of Robotic Behavior

While P&G has an admirable innovation track record, like most big organizations, it has had its ups and downs, needs to constantly reinvent itself to keep up with a changing world.   At P&G, employees are sometimes referred to as ' Proctoids ', a sort of clone or corporate ' Stepford Wife ' that exhibits robotic behavior. This reflected how similar P&G people appeared to ' outsiders ' since they acted like clones. There are similar optics by those outside of IBM and many other enterprises where a corporate culture expects and rewards certain behaviors. With this, people do their job and what they think is needed to contribute. There are enormous benefits to ' cognitive homogeneity ' and " robotic behavior " in large organizations –

especially for day-to-day work. Consistent business models, frameworks, training to fill ' skill gaps ', common processes, language, behavioral and thinking styles are especially valued in enterprises. Further highly structured global recruitment, training, and HR systems commonly evolve to take advantage of a standard protocol or process for predictable outcomes and operational efficiencies. As a result, many enterprises are populated with similar personalities and a certain culture - that often reflects senior management attributes and views. This is reinforced with a policy of internal promotions. As a result, groups of similar people tend to become sensitive to small differences within themselves and others, and overestimate their own diversity. Because of this and other factors, people don't know what they don't know – and don't really want to know ! This is a huge impediment to meaningful change, and why disruptive innovation in enterprises is so difficult. Further, evolving the organization culture to get past this is extremely challenging. However, in the end, since it's change or die, it's important to evolve and develop the new mindset needed to move forward.

This is especially the case today since successful digital disruption is a huge component of making business innovation more rewarding to –

    A. meaningfully improve outcomes
    B. increase relevance and revenue
    C. attract and retain top talent
    D. create significant wealth

The Proctoid, like other clone monikers, is a caricature that highlights the challenge for enterprises to do meaningful business innovation to re-invent or transform themselves. Simply put, disruptive innovations need disruptive thinkers, including some disruptive behavior. To move forward, it's important to understand, rigid cultures make it hard for disruptive thinkers to thrive. For example, if we squeeze too hard for efficiency, we squeeze out creativity. At P&G this was recognized where there were deliberate attempts to accommodate and nurture 'different' thinking styles, most notably by developing parallel technical and management career tracks in numerous disciplines. These were not perfect and tended to assume people were ' either / or '. This can result in people bouncing between career tracks because they don't fit neatly into either of the bimodal ' boxes '. But these frameworks, together with some functions did provide an oasis for cognitive diversity. The point is not that P&G's system was ideal, but that organizations need to find their own ways to both recruit and nurture more agile, disruptive thinkers. Interestingly, recruitment is often the biggest missed opportunity, as all too often the successful mavericks in organizations are recruiting accidents. They weren't hired because they were unusual or disruptive, instead their uniqueness slipped through the cracks. Further, they need to be integrated into the organization, rather than placing them away from the mainstream business. Because of this, it's a delicate balancing act of realizing the day-to-day efficiency needed in operations and benefit from the innovation mindset to create " the new " that recognizes -

As the pace of change accelerates, many companies will need to shift the balance away from the efficiency of cognitive homogeneity and towards the agility of cognitive diversity - to attract new and different talent, including some mavericks and people interested in meaningful change.

We'll still need people with traditional skills and domain expertise. However, more and more there will be a need for people who can adapt to new knowledge and new technologies, that are lifelong learners who can grasp new opportunities and concepts, learn fast, challenge the status quo, jump specialties, etc. With the accelerating turn over in the Fortune 500, the shrinking lifespan of enterprises, growing User expectations, more demanding business needs, the importance of getting results and monetizing value creation as well as the changing nature expertise to effect change. This is critically important for the organization to recruit for these new skills and cognitive agility – if the objective is to attract quality talent, evolve the culture and the business so the enterprise has a bright future.

Conclusion

It isn't easy evolving corporate capabilities and culture as well as building effective teams with cognitive diversity having critical and deep thinkers with a mix of functions (ie: business, marketing, finance, technical, etc. expertise). But given the importance of innovating for impact providing sustainable advantage to increase relevance and revenue in a changing business landscape, there is the need for a cultural DNA that delivers more frequent and more game changing innovations over time - to win in an on-line, real-time, all-the-time world.

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This article includes extended insights on making business innovation more rewarding by Pete Foley, a P&G veteran who has spent many years applying insights from psychology and behavioral science to innovation, product design, and brand communication. This includes 17 years as a serial innovator, creating novel products, perfume delivery systems, cleaning technologies, devices and many other consumer-centric innovations, resulting in well over 100 granted or published patents.