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# Introducing Hybrid Thinking for Transformation, Innovation and Strategy

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Hybrid thinking integrates the increasingly popular business concept of design thinking with other ways of thinking in order to take on "wicked problems" in business transformation, innovation and strategy. Design thinking's fundamental emphasis on creating meaningful, human-centered experiences provides the core for hybrid thinking, which is an emerging "discipline of disciplines." Hybrid thinking goes beyond design thinking by integrating other forms of creative thinking to take on the most ambiguous, contradictory and complex problems.

### **Key Findings**

- Enterprises require a new discipline for embracing transformation, innovation and strategy in the face of accelerating change driven by a hyperconnected business environment.
- The conventional engineering mind-set focused on algorithms, analysis and quantification is ill-suited to the ambiguous and creative process of transformation, innovation and strategy.
- Most major enterprises confront wicked problems, yet few realize the special nature of such problems.

### Recommendations

- Embrace hybrid thinking to create successful outcomes to wicked problems by cocreating more meaningful, human-centered experiences.
- Seek hybrid thinkers who exhibit passionate thinking: creative, empathetic, integrative, optimistic, experimental, collaborative and comfortable with ambiguity.
- Recognize that successful outcomes must be meaningful to the people using them or working with them; otherwise, people will shirk their involvement with the outcome by delaying, minimizing or delegating it.

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## ANALYSIS

We are inaugurating a new line of research on "hybrid thinking": an emerging discipline that integrates design thinking with other ways of thinking to produce successful outcomes to wicked problems, by co-creating more meaningful, human-centered experiences.

This report is part of a series that will familiarize clients with the background, motivation, key concepts and core principles of hybrid thinking. Clients should review all the reports in this series to gain a basic understanding of Gartner's approach to this emerging trend. Future research will delve into specific techniques, practices and case studies of hybrid thinking.

# **1.0 Introduction**

Enterprises have always struggled with change — especially transformative, innovative and strategic change. Many disciplines have attempted to better enable such change, including enterprise architecture, with limited success. Senior business leaders have long recognized the risks posed by their inability to effectively drive major change, but too often, they have became inured to the situation, given its difficulty and the infrequency of major change events.

Such an attitude is no longer viable. In this hyperconnected global economy, the speed, diversity, complexity and magnitude of change are accelerating rapidly, and top-down control is increasingly an illusion. Many call this environment the "new normal."

The hyperconnected new normal offers great opportunities, such as cloud computing, global markets, global sourcing and social networks. However, such globally complex and real-time hyperconnectivity brings great risks as well. Many industries, like media, entertainment and finance, are already undergoing historic upheavals, and others are sure to follow in the coming decades.

# 2.0 Taking on Wicked Problems

The kind of strategic challenges presented by such an environment are ambiguous, contradictory and incredibly complex. Over the past 30 years, such problems have come to be known as "wicked problems" (see "Getting Real: Understanding IT Strategy as a 'Wicked Mess"). Wicked problems are those that defy conventional approaches to understanding, planning, design, implementation and execution because:

- The stakeholder interests are so diverse and divisive.
- Interdependencies are so complex and so little understood.
- Behaviors are so dynamic and chaotic (unpredictable).

Our research indicates that the most important step in taking on wicked problems is for business and IT leaders to consciously and explicitly recognize them as problems that defy the conventional approaches. All major enterprises confront wicked problems, yet few realize the special nature of such problems (see Section 3.5 for a discussion of the biological nature of wicked problems).

Leaders who *do* recognize wicked problems typically don't speak in terms of "solving the problem," because wicked problems involve such fundamental trade-offs that they don't have a "solution." Instead, they speak of "taking on" a wicked problem to produce a "successful outcome," which merely means that the outcome of the effort leaves the organization sufficiently better off that it was worth the effort.



Wicked problems emerging from the hyperconnected new normal require a new discipline for taking on such problems. Hybrid thinking is just such a discipline — one that can drive transformative, innovative and strategic change in the face of wicked problems.

# 3.0 Hybrid Thinking

Gartner defines the essential concept of hybrid thinking as follows:

Hybrid thinking integrates design thinking with other ways of thinking to produce successful outcomes to wicked problems by co-creating more meaningful, human-centered experiences.

At the core of hybrid thinking is the discipline of design thinking. As discussed in "Gain a Foundation in Design Thinking to Apply Gartner's Hybrid Thinking Research," design thinking is a major business trend that is driving fundamentally new approaches to enterprise transformation, innovation and strategy. What design thinking brings to the mix is a fundamental emphasis on using empathetic, intuitive thinking — the hallmark of great designers — to create meaningful, human-centered experiences.

The problem with most business and IT disciplines is that they've focused so heavily on the issues of technical feasibility and economic sustainability that they've lost sight of the most important issue: Will people embrace an outcome at an emotional level?

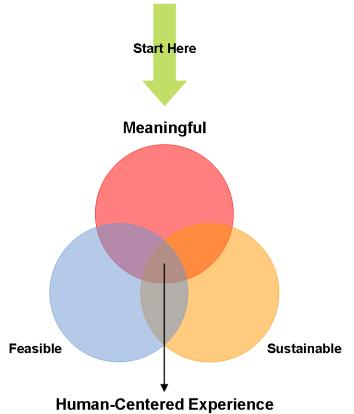
An outcome like the creation of a new product, service, organization or process *must be meaningful to the people using or participating in that outcome*. If they don't find meaning in it, they will seek ways to shirk their relationship with the outcome by delaying, minimizing or delegating it (including automating it). Former Procter & Gamble CEO A. G. Lafley — a champion of design thinking — characterized this essential requirement of meaningfulness as the "two moments of truth":

Our goal is to delight consumers at two "moments of truth": First, when they buy a product, and second, when they use it. (See <a href="http://money.cnn.com/2008/03/07/news/companies/lafley\_charan.fortune/index.htm">http://money.cnn.com/2008/03/07/news/companies/lafley\_charan.fortune/index.htm</a>.)

Design thinking puts the goal of "meaningfulness" first among equals (see Figure 1).







Source: Gartner, based on IDEO's Human-Centered Design Toolkit

If putting meaningfulness first was all there was to hybrid thinking, there would be no need to distinguish it from design thinking. Hybrid thinking, however, goes beyond design thinking by emphasizing a number of key elements for successful business outcomes:

- Integrative thinking
- Passionate thinking
- Transformation, innovation and strategy
- Co-creation
- Resilience

# 3.1 Integrative Thinking

Design thinking applies empathetic and intuitive thinking to the creation of successful outcomes to wicked problems. But design thinking, on its own, is as siloed as any other kind of thinking. What is really required is the integration of diverse ways of thinking about the most complex problems — from the most creative, emotional and intuitive thinking to the most algorithmic, analytic and quantified. In fact, Roger Martin, dean of the Rotman School of Management, and a leading advocate of design thinking, prefers to call design thinking "integrative thinking" (see Note 1).

A good example of such a hybrid approach is found in some recent initiatives undertaken by Whirlpool. Chuck Jones, vice president for global consumer design, integrated design thinking

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and Six Sigma thinking to create Whirlpool's successful line of products for the front-loading laundry market. While some design thinkers believe that Six Sigma is anathema to design thinking, hybrid thinking embraces such an integration of opposites.

An even more compelling — and more systemic — example of integrating different kinds of thinking to address wicked problems is the U.S. Army's integration of design thinking into its war-fighting thinking. The Army recently published a major revision to one of its most strategic field manuals, "FM 5-0: The Operations Process" (see <u>http://usacac.army.mil/cac2/FM50/index.asp</u>). At the heart of this revision was the incorporation of design thinking into battlefield strategy:

The *introduction of design into Army doctrine* seeks to secure the lessons of eight years of war and provide a cognitive tool to commanders who will encounter complex, ill-structured problems in future operational environments.... As learned in recent conflicts, challenges facing the commander in operations often can be understood only in the context of other factors influencing the population. These other factors often include but are not limited to economic development, governance, information, *tribal influence, religion, history and culture*. Full spectrum operations conducted among the population are effective only when commanders understand the issues in the context of the complex issues facing the population. Understanding context and then deciding how, if, and when to act is both *a product of design* and integral to the art of commande.

Integrating an understanding of such human-centric factors as religion, history and culture into a battlefield commander's way of thinking represents the essence of hybrid thinking.

Hybrid thinking is more than just the binary integration of design thinking with a single complementary discipline (for example, design thinking plus Six Sigma thinking or design thinking plus war-fighter thinking). It is the integration, over time, of many disparate disciplines into a unified discipline of disciplines (see Figure 2). In this regard, hybrid thinking is like "scientific thinking," which unifies and integrates a diverse range of disciplines — from physics to psychology.



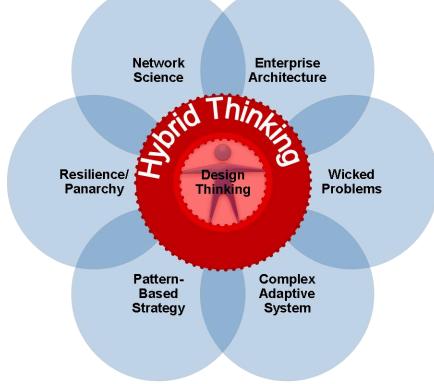


Figure 2. Hybrid Thinking Is a "Discipline of Disciplines" for Taking on Wicked Problems

As more disciplines unify around the core of design thinking, a powerful set of hybrid thinking principles, practices, models and attitudes will emerge. However, not every aspect of each discipline will be "assimilated" into hybrid thinking. Hybrid thinking should be thought of as a set of "universal" principles, practices, models and attitudes that should be shared across many disciplines, not the union of all aspects of all disciplines. It represents a means of coordinating different ways of thinking when taking on wicked problems.

# 3.2 Passionate Thinking

Succeeding with hybrid thinking is not simply a matter of bringing together practitioners from various disciplines to address problems in multidisciplinary ways. Bringing together unimaginative, risk-averse and inflexible practitioners will not lead to a successful transformation, innovation or strategy. At least some of the participants themselves must be hybrid thinkers. There are various descriptive terms for such individuals, including "T-shaped" and "versatilist" (see "Inside the Concept of Versatilists: What Are They and How Do CIOs Develop Them?").

Such individuals may come from a variety of disciplinary backgrounds, including sociology, anthropology, technology and business. Besides being T-shaped, hybrid thinkers must also exhibit particular characteristics and attitudes, such as the following:

- **Creative:** They have the ability to generate inventive, inspiring and transformative ideas.
- Empathetic: They have the capacity to walk in someone else's shoes.
- Integrative: They don't rely solely on analytical thinking that produces either-or choices.

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Source: Gartner (April 2010)

- **Comfortable with ambiguity:** They can easily understand or balance contradictions.
- **Optimistic:** They are convinced that a better outcome can be found for any problem.
- **Experimental:** They explore alternatives by "failing forward fast" and looking obliquely for the unforeseen.
- **Collaborative:** They can work with and facilitate groups of diverse individuals at all levels inside and outside the organization.

We refer to this combination of characteristics as "passionate thinking." For those organizations that prefer a slightly less provocative label, "enthusiastic thinking" or "rational exuberance" conveys roughly the same idea. It is passionate thinking that most fundamentally distinguishes the discipline of hybrid thinking from disciplines based on financial and engineering mind-sets. To quote Ralph Waldo Emerson, "Nothing great was ever achieved without enthusiasm."

This does not mean that every person involved in a hybrid thinking collaborative session, or "charrette," must be such a passionate hybrid thinker; that will never happen. What it does mean is two things. First, most enterprises that want to infuse hybrid thinking into their organizations' transformation, innovation and strategy initiatives will need to engage outside facilitators who are hybrid thinkers to initially facilitate charrettes or to provide coaching to help members of the organization develop their hybrid thinking.

Second, the degree of hybrid thinking that is needed will be directly proportional to:

- The magnitude of the wicked problem being addressed
- The scope of the transformation, innovation and strategy being pursued
- How early the organization is in the process of tackling the wicked problem

In other words, the most passionate hybrid thinking is needed to initiate the biggest strategies for the hardest problems at the earliest stages.

As wicked problems get chunked into more manageable problems further into the process, the need for hybrid thinking wanes (but should never completely disappear), and the need for the specialized skill and mind-set within a single discipline increases. Accordingly, enterprises that are trying out hybrid thinking and are unsure of their degree of passion may want to start with a wicked problem of a lesser magnitude and a strategy of a smaller scope.

# 3.3 Transformation, Innovation and Strategy

Although design thinking is intended to be the application of design principles, practices, models and attitudes beyond just to products and services, most of its emphasis is still on such offerings. Hybrid thinking, on the other hand, is primarily applied to driving transformation, innovation and strategy at the level of an enterprise or even industry.

As such, it is focused on problems that are much more wicked than the typical "tame" design challenge of improving a single product or service. In other words, the more one moves from product design problems to wicked problems, the more one's thinking shifts from design thinking to hybrid thinking.

As an illustrative example, the difference between tackling a tame problem with design thinking and tackling a wicked problem with hybrid thinking is comparable to the difference between designing and implementing a successful new aircraft like the Boeing 787, and designing and implementing a successful new air traffic control system like the Next Generation Air

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Transportation System (NGATS). Design thinking applies to the 787; hybrid thinking applies to NGATS.

We have already discussed applying hybrid thinking to enterprise *strategy* in the example of the U.S. Army. A successful example of applying hybrid thinking to enterprise *transformation* is P&G's "flow to the work" organization.

Filippo Passerini, P&G's CIO and head of its Global Business Services (GBS, which includes IT), created a "design shop" culture (that is, intense, multidisciplinary, creative and time-boxed work) by reinventing the structure and approach of GBS. He outsourced all the routine aspects of business and IT operations to a network of strategic partners and transformed what remained into a flow-to-the-work organization. Passerini once explained:

I want P&G's [GBS] to be delivering an ever-stronger foundation for P&G business growth: driving business transformation and working as the "go to" organization for all wicked problems. This means designing ourselves for simplicity so that, together with our partners, we can "flow to the work" and respond to emerging priorities. (See "Agility Is Still the New Buzzword," from CIO Update — <a href="http://www.cioupdate.com/trends/article.php/11047\_3736841\_1">www.cioupdate.com/trends/article.php/11047\_3736841\_1</a>.)

P&G used its flow-to-the-work teams to successfully integrate its Gillette acquisition in 15 months instead of the usual three to four years.

Finally, an example of applying hybrid thinking to enterprise *innovation* is GE's reverse innovation initiative. Rather than take a high-end product designed at corporate headquarters for sale in a developed economy like the U.S. and then try to downgrade it for sale in developing economies like India or China (aka "glocalization"), reverse innovation invents a new product in the developing economy and then upgrades it for sale in developed economies.

At a recent design thinking conference, Ferdinando Beccalli-Falco, president and CEO of GE International, spoke about a reverse innovation example in which low-cost, portable ultrasound machines that were originally developed in China for use by rural doctors, are now being sold in the U.S. as "the new stethoscope" for doctors doing hospital rounds. GE CEO Jeffrey Immelt has described how integrating its new "reverse innovation thinking" with its traditional "glocalization thinking" is essential to GE's success.

# 3.4 Co-Creative Exploration

Hybrid thinking emphasizes two aspects of co-creative exploration:

- Exploration via experimentation
- User and community innovation

One of the fundamental concepts of design thinking, which hybrid thinking builds on, is the notion of iteratively implementing — aka "learning by doing." This signifies that hybrid thinking is not just about *thinking*, but also about *doing*: creating, implementing, executing, evaluating and then iterating. Rather than break down the creative process into a linear sequence of "first analyze, then strategize, then implement, and finally execute," hybrid thinking seeks as quickly as possible to implement a set of progressively better working prototypes so that further creative work on the problem can be driven by the actual results generated from these prototypes.

But such prototyping is much harder to do when applied to processes, organizational structures and even entire strategies. Hybrid thinking emphasizes a "portfolio of strategies" approach to exploration via experimentation. Especially in large, global enterprises, there are ample opportunities to try different processes, organizational structures and strategies in different parts of the enterprise and then share the practices that emerge from such experimentation across the

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entire enterprise. This is the approach used by organizations such as Microsoft, Whole Foods Market and GE. However, it is essential that such experimentation be done in a conscious and measured way so that, eventually, a superior approach can be identified and replicated.

Finally, co-creative exploration is centered on the concept of co-creation of value and meaning by all the players in the ecosystem. This is in sharp contrast to the traditional mass production approach to creation, where the enterprise creates, and the buyer merely consumes.

It is also in sharp contrast to the paradigm of the auteur theory of design, which is popular in some design thinking circles. While some design thinkers believe that great design is best left to the great designers, hybrid thinking focuses on how users and communities can evolve great designs. Gartner refers to this creative set of co-creators as "the collective" (see Note 2 and "The Collective Imperative: Thriving in Chaotic, Out of Control and 'Normal' Markets").

# 3.5 Resilience

As we have discussed, since wicked problems cannot be "solved," hybrid thinking focuses on outcomes that are superior to the current state, but may generate subsequent challenges of their own. In a sense, hybrid thinking is all about failing forward fast, a concept popularized by many business thinkers. Although the best engineers realize that all good design emerges from the inevitable flaws and outright failures of previous design explorations, those with a risk-averse engineering mind-set believe that all possible design failures can and must be eliminated before the design is put into use.

An overemphasis on preventing failures is a stifling — and dangerous — way of thinking, especially when taking on wicked problems (see "Engineering a Safer, More Beautiful World, One Failure at a Time," from The New York Times —

www.nytimes.com/2006/05/02/science/02prof.html ). Instead of spending more and more time *designing out* all possible causes of failure (a Sisyphean endeavor), hybrid thinking spends more time *designing in* more and more resiliency. Although some parts of the design thinking world are only beginning to embrace sustainability and resilience, hybrid thinking embraces the ecologically inspired concept of sustainable and resilient design as a foundational concept.

One of the most profound paradigm shifts represented by hybrid thinking (when compared with other business and IT disciplines) is the shift toward a primarily biological and ecological paradigm of transformation, innovation and strategy, and away from a predominantly engineering paradigm. This is because wicked problems are more like biological or ecological problems than they are like engineering problems.

A good example of this shift can be found in a recent paper presented by Andrew Haldane, executive director of financial stability for the Bank of England, entitled "Rethinking the Financial Network":

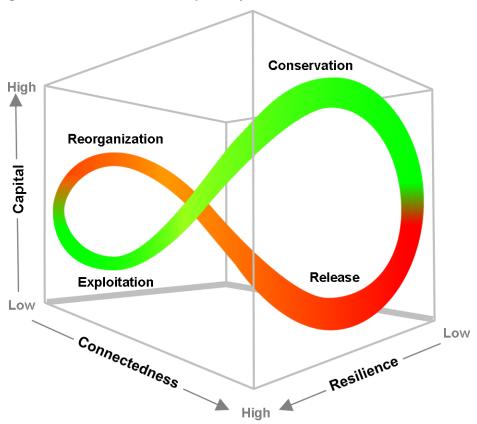
[The financial crises resulted from] the behavior under stress of a complex, adaptive network. Complex because these networks were a cat's-cradle of interconnections, financial and nonfinancial. Adaptive because behavior in these networks was driven by interactions between optimizing, but confused, agents. Seizures in the electricity grid, degradation of ecosystems, the spread of epidemics and the disintegration of the financial system — each is essentially a different branch of the same network family tree. This paper considers the financial system as a complex adaptive system. It applies some of the lessons from other network disciplines — such as ecology, epidemiology, biology and engineering — to the financial sphere. (See

http://www.bankofengland.co.uk/publications/speeches/2009/speech386.pdf .)



In other words, models based on the biology of ecosystems and epidemics can shed more light on wicked problems like the hyperconnected global economy than traditional economic models can.

The ecological concept of resilience is based on the idea of the adaptive cycle, which is derived from the comparative study of the dynamics of ecosystems in the book "Panarchy: Understanding Transformations in Human and Natural Systems" by Lance Gunderson and C. S. Holling (see Figure 3).



### Figure 3. Resilience — The Adaptive Cycle

The adaptive cycle recognizes two loops. The front loop (green) is the well-understood S-curve of sustaining innovation (made famous by Clayton Christensen's "The Innovator's Dilemma"). Resilience thinking focuses on what to do when such progress inevitably comes to an end. Eventually, a system reaches a phase where some sort of failure or other trigger causes the much less well-understood back loop. This back loop (red-orange) is composed of two phases: the creative destruction phase (aka Christensen's "disruptive innovation") and the often painful reorganization phase. Hybrid thinkers design with this back loop in mind when taking on wicked problems.

An IT example of keeping the back loop clearly in mind is the fundamental pair of agile programming concepts: design debt and refactoring. Conventional waterfall software design methodologies assume that a system should undergo only minor design changes after the design phase is complete. In other words, it assumes only an S-curve of system evolution — it pays



Source: Gartner, adapted from Gunderson and Holling's "Panarchy"

attention to only the front loop of gradual change and ignores the back loop of major reorganization.

Agile methodologies, on the other hand, assume that the design should change substantially over time, and that such changes will incur design debt (that is, design compromises that will make future changes more difficult). Accordingly, agilists plan for and refine the process of refactoring their designs periodically, so that the pain and risks of such reorganizations are minimized. They focus on the back loop.

# 4.0 Conclusion

Hybrid thinking drives major change through the co-creative exploration of more meaningful, human-centered experiences (see Note 3). Gartner is inaugurating a new line of research on the hybrid thinking discipline, which will have a profound impact on business transformation, innovation and strategy.

And as with any new endeavor, we expect that the discipline of hybrid thinking will go through the inevitable stages of "form," "storm," "norm" and "perform." In fact, many of the practitioners of design thinking, on which hybrid thinking is founded, acknowledge a similar transition from mystery, through heuristic, to algorithm. What is important initially is not to have all the right answers, but rather a passion (or enthusiasm) to explore a new set of challenges with a new way of thinking.

Like the outcomes it produces, Gartner's approach to hybrid thinking is based on a "learning by doing" approach. Rather than waste time and effort on creating the perfect definition of hybrid thinking that clearly identifies every aspect of the concept and every technique and method for practicing it, we are providing a "good enough" prototype of the concept — one that can be incrementally innovated on as we and our clients jointly co-create this passionate new discipline. When in doubt as to what hybrid thinking is and how and where to apply it, we will fall back on the design thinking community's decades of experience to guide us.

Additional research contribution and review: Jennifer Beck, Scott Bittler, Anthony Bradley, Richard Buchanan, Bard Papegaaij and Bruce Robertson

# **RECOMMENDED READING**

"Gain a Foundation in Design Thinking to Apply Gartner's Hybrid Thinking Research"

"Getting Real: Understanding IT Strategy as a 'Wicked Mess'"

"Leadership Development Module 6, Chapter 6: The Future CIO"

"Using 'EA Lite' to Architect for Innovation: Principles and Best Practices"

"Understanding EA Approaches: Middle-Out"

"Introducing Pattern-Based Strategy"

IDEO's Human-Centered Design Toolkit

# Note 1 Why Call It "Hybrid Thinking"?

Gartner's choice of the term "hybrid thinking" over "design thinking" was inspired by the article <u>"Forget Design Thinking and Try Hybrid Thinking,"</u> by Dev Patnaik. Patnaik makes the case that hybrid thinking is a more accurate term for this emerging business discipline because many

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of the leading practitioners were actually not formally trained as "designers." Gartner concurs. The term "design thinking" posits only one type of thinking — that of a professionally trained designer — as the key to success.

One reason that some practitioners of design thinking stress formal training in design is that such training cultivates creative inspiration more than conventional business disciplines do. But it is Gartner's experience in working with clients from myriad disciplines that the creative spark can glow in a variety of places — as long as the qualities and characteristics of hybrid thinking discussed in this research are embraced by such practitioners.

For example, Claudia Kotchka, P&G's recently retired vice president for design innovation and strategy, was trained as an accountant, not as a designer. Nonetheless, she was able to integrate design thinking into her analytical thinking and, more importantly, into P&G's conservative and methodical culture. She is a perfect example of a hybrid thinker.

Furthermore, the word "design" too often provokes needless debates on the relative meaning and importance of design versus architecture, especially among enterprise architects — a key target audience for hybrid thinking. Although Gartner has chosen the term "hybrid thinking" over the more popular term "design thinking," we do not intend to create an equally needless debate on the relative meaning and importance of these terms. We use them interchangeably in virtually all contexts, except when discussing the ways in which hybrid thinking extends beyond design thinking.

## Note 2

## A Long History of User Innovation

For a compelling account of this paradigm shift from producer (and professional) innovation to user (and amateur) innovation, see <u>"Modeling a Paradigm Shift: From Producer Innovation to</u> <u>User and Open Collaborative Innovation"</u> by Carliss Baldwin of Harvard Business School and Eric Von Hippel of MIT's Sloan School of Management. While the shift from producer to user innovation is reaching a tipping point, it has a long and rich history.

For example, Adam Smith commented on it in 1776:

A great part of the machines made use of in those manufactures in which labor is most subdivided were *originally the inventions of common workmen,* who, being each of them employed in some very simple operation, naturally turned their thoughts toward finding out easier and readier methods of performing it. (Emphasis added.)

### Note 3 A Comprehensive Definition of Hybrid Thinking

Gartner formally defines the concept of hybrid thinking as:

An organic discipline for taking on wicked problems by iteratively implementing transformative, innovative and strategic change via the co-creative exploration of human-centered experiences that are culturally meaningful, technically feasible and economically sustainable.

This formal definition is somewhat of a shopping list of concepts that comprise hybrid thinking. The formal definition should be treated as merely a narrative expression of the following list of essential attributes of hybrid thinking discussed in this inaugural series of research:

• Organic discipline (integrative and biological)



- Centered on business transformation, innovation and strategy
- Wicked problems
- Iterative implementation
- Co-creative exploration
- Human-centered experiences
- Culturally meaningful
- Technically feasible
- Economically sustainable

Either of the following shorthand definitions can also be used instead of the formal definition, as long as they are clearly linked to the full list of key attributes in some way:

- Hybrid thinking creates successful outcomes to wicked problems by co-creating more meaningful, human-centered experiences.
- Hybrid thinking is an emerging "discipline of disciplines" for "wicked problems" in transformation, innovation and strategy.

This research is part of a set of related research pieces. See "Embrace Hybrid Thinking to Drive Transformation, Innovation and Strategic Change" for an overview.



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