

Beginning to know about the knowing of innovation

What do you know?

First steps toward a broader and deeper understanding of the “knowing” characteristic of breakthrough innovation

Practitioners, popular authors and academics – the contemporary triad of those with vested interest in, and typically strong opinions regarding, what they know about innovation.

By its very definition, breakthrough innovation requires **practitioners** to know what to do today – to do something in an unexpected and new way – in order to succeed commercially in the future. Among the greatest challenges they face is that their experience usually is limited to a few specific companies and industries, so that they often possess little ability to see broader trends on their own.

To overcome these shortcomings, practitioners often turn to **popular business press authors**, those who bring broad perspective, and, like fishing guides, direct practitioners in what to try and where to look.¹ Their solutions typically take the form of simple, quick, easy to understand, easy to apply, almost recipe-life advice, repeated with some variation in a best-selling book. To make this work, practitioners must learn how to translate the author’s ideas and apply them successfully to address their firm’s particular needs.

In order to draw what they believe are the most reliable conclusions, business **academics** conduct formal, focused studies, seeking to identify which carefully-worded hypotheses about innovation can be proven based on correlations (often statistical) between outcomes and actions. By their very nature, most business scholars draw precise, specific conclusions about topics of at times limited application, as they explore isolated, often controlled environments.

It is important to note that the nature of knowing in innovation is relatively unique. It is forward-looking (not current) and, as we will see later, mathematically chaotic (thus, not easily predictable). In many ways possessing vision in innovation is similar to forecasting the weather or, even better, forecasting prices when trading commodity futures. It requires competitive advantage in seeing what the future will hold. What do the best commodity futures traders look like? What and how do they know? How do they get a leg up on their competition? Is it a random game, where the winners just trade places from year-to-year or are there patterns that enable some to perform consistently better than others? These are the types of questions we will seek to address for the most successful breakthrough innovators through these essays.

The emerging pattern, then, is that practitioners, popular authors and academics alike concern themselves with what they know about innovation and how confident they are in that knowledge. Each seeks to know today in order to succeed tomorrow. So, if knowing is a core competence of

breakthrough innovation, what can we learn from others who, beyond the boundaries of the field of innovation and beyond the present to the past, have reflected on what it means “to know”?

In philosophy, **epistemology** is the study of what we know and how we know it. The epistemology of innovation, then, is the study of how breakthrough innovators come to know what to do today – in order to succeed commercially in the future. With this essay we begin along the path of considering the epistemology of innovation.

“On the Epistemology of Innovation: How Breakthrough Innovators Connect the Dots” will be a series of brief, occasional essays addressed to senior executives, managers and technologists responsible for innovation in industry. Its purpose is to challenge readers to reflect broadly and deeply on the practice of innovation – in particular on how innovators come to know what to do today – in order to succeed commercially in the future.

With this approach my aim, first, is to help the reader gain awareness of their personal, unarticulated embedded epistemology of innovation - that is, “**how do I come to know when I innovate?**” – as well as that of others. Second, I seek to challenge readers with new perspectives and views of what it means to innovate. Having engaged in this way, readers will be better able to develop a more explicit, intentional personal framework through which they can understand innovation and communicate with others.

By its very definition, breakthrough innovation requires practitioners to know what to do today – to do something in an unexpected and new way – in order to succeed commercially in the future.

By doing so, I hope to enable innovators to both: (1) expand their personal innovation skills and (2) be better able to articulate to others what they know and how they know it. Similarly, I hope to enable managers and senior executives to: (1) more successfully identify potential innovators, (2) better understand the innovators with whom they work, and (3) better advocate and make decisions on their behalf.

In these essays, I will explore new, relevant metaphors – from outside of the contemporary innovation mainstream – more extensively than what normally is applied to the field of innovation as means of gaining insight into innovation, covering a wide range of topics such as: how innovators ➤

Outside of innovation mainstream	Philosophers (of antiquity and “modern”)	Less explicit descriptions (e.g. metaphors, etymologies)
	The great economic minds (e.g. Smith, Schumpeter)	Academics, Practitioners, and Popular authors
Within innovation mainstream	Past	Current

are like witnesses testifying to the truth in a court trial; the analytical implications of innovators being described as “π-shaped”; the deeper implications of using techniques such as “brainstorming” and speaking of innovation as being “chaotic”; how innovation is like viewing a Magic Eye® image; and how the language we use – in particular, its etymology – can provide a richness of insight into innovation.

I also will reach beyond the insights of contemporary practitioners, popular authors and academics – those who either engage in or study innovation in industry – to the reflections of philosophers and economic minds of the past to consider in plain language how their perspectives might suitably be appropriated (or not) to gain insight into the field of innovation, covering a wide range of sources such as: Plato’s Meno and how we know how to begin in innovation; how the dissonance between Newton’s and Goethe’s views of optics plays out in the practice of innovation in industry to this day; the relevance of Hegel’s views of thesis, antithesis and synthesis to innovation; Hilbert vs. Gödel and the limits of innovation processes; how Kuhn’s structure of scientific revolutions also illuminates innovation; how Polanyi’s tacit knowledge is being considered to new depths; and perhaps even Yogi Berra’s reflections on nescience!

Finally, I will profile a few exemplar innovators along the way as a means of illustrating how this all works together.

All the while, as we take a fresh – and at times perhaps provocative – look at innovation by exploring these other perspectives, I promise to remain true to that which is observed throughout our careful researchⁱⁱ into the practices of a broad sample of exemplar breakthrough innovators across multiple industries.

In return for sharing these essays with you, I have a favor to ask – your participation as it makes sense for you to do so. First, if you have additional insights that would complement, correct, or in any other way improve them, I would like to hear from you. Second, after you have read at least a half dozen or so of these essays I would like to know whether you see value in receiving them. Finally, I encourage you to share them freely with others as you see a fit with their interests or needs. I always benefit from conversation partners as I cultivate and glean while developing insights – this project is something of an experiment for me as I engage with others in a manner I have not previously explored. Thank you in advance for your participation, assuming you choose to read these, and for contributions to the process that you deem appropriate to make, if any.

Thank you for joining me on this first step – I hope to see you on the journey. ■

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ⁱ For example, Open Innovation suggests looking outside the firm, to suppliers and customers; The Innovator’s Dilemma to new customers and lower end product configurations; and The Medici Effect to unique connections between disparate ideas.

ⁱⁱ Abbie Griffin, Raymond L. Price and Bruce A. Vojak, Serial Innovators: How Individuals Create and Deliver Breakthrough Innovations in Mature Firms (Palo Alto: Stanford University Press, 2012).

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