



KNOWLEDGE BUILDING, VALUE CREATION, AND SUSTAINED PROGRESS

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SIX KEY LEARNING OBJECTIVES

My 2020 book, *Value Creation Principles*, summarizes five decades of research principally focused on the measurement and connection of a firm's long-term performance to its market valuation. The key conclusion is that a firm's knowledge building proficiency is the primary determinant of a firm's long-term performance. Knowledge building and value creation are opposite sides of the same coin.

We read endlessly about business success as driven by, for example, a firm's R&D skill, manufacturing efficiency, product design, etc. And startups that IPO at huge market valuations due to their unique ways of filling (and sometimes also creating) customer needs. However, a strong case can be made that these touted *causes* of success are actually *results* from a fundamental knowledge building process that stays the same even though the context continually changes with different businesses.

The takeaways from *Value Creation Principles* are summarized as six key learning objectives. My work-in-progress book, *Knowledge Building Proficiency* expands upon them. Those working in business, and management in particular, are better equipped to solve problems at all levels of the firm by integrating into their thinking process the following six learnings objectives presented in this PowerPoint:

Six Key Learning Objectives

- **Knowledge building** is the thread that connects seemingly separate topics (e.g., innovation and organizational structure (see Madden (2020), pp. 198-209) to the benefit of improved decision-making.
- **The Knowledge Building Loop** facilitates both a better understanding of the past and breakthrough thinking about a future that cannot be extrapolated by simply using a model based on past data.

LEARNING OBJECTIVES

- **Language is perception's silent partner** and is broadly influential as part of the Knowledge Building Loop. Language is a means to uncover assumptions that are no longer viable and to travel along a path to breakthrough thinking.
- **Pragmatic imagination** helps develop novel and practical, value-creating ideas for successfully adapting to a fast-changing world. At times, these ideas may constitute a new strategy for the firm. This differs from the typical business school emphasis on quantification and optimization assuming the future comports with the model being used.
- **Systems thinking** can overcome the blinders created by siloed command-and-control organizational structures and the underlying linear thinking. In school, business students typically learn how to forecast, plan, and “control” for a linear extrapolation of the past. However, we are living in a world of highly complex systems (e.g., climate change) in which the future emerges in complex ways. This requires systems thinking and related flexibility, and monitoring the emergent future so that adaptation is early and successful. In addition, pragmatic imagination about possible futures will increasingly prove useful in getting ahead in today's fast-changing world.
- **A theory of the firm** is needed to gain clarity about the purpose of the firm and a better understanding of how a firm's long-term performance connects to market valuations and shareholder returns. **The pragmatic theory of the firm** (Madden (2020), pp. 4-6) fulfills this need while treating the firm as a holistic system and utilizing life-cycle track records to better understand a firm's history and likely long-term future performance.

KNOWLEDGE BUILDING STARTS WITH HOW OUR BRAINS WORK

“By hiding from us all the unconscious inferences it makes, our brain creates the illusion that we have direct contact with objects in the physical world.

...What I perceive are not the crude and ambiguous cues that impinge from the outside world onto my eyes and my ears and my fingers. I perceive something much richer --- a picture that combines all these crude signals with a wealth of past experience. My perception is a prediction of what ought to be out there in the world. And this prediction is constantly tested by action.”

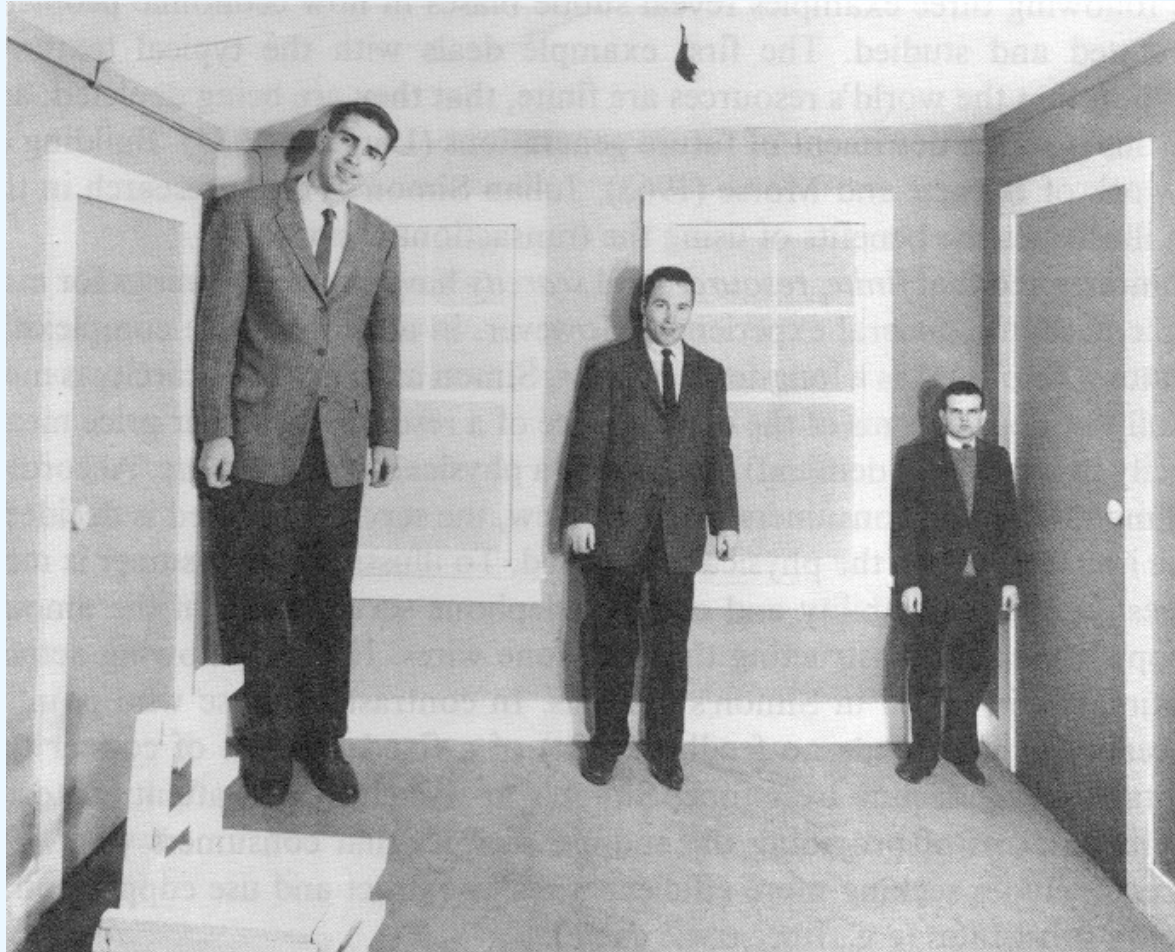
Chris Firth, Neuroscientist

Chris Firth. 2007. *Making Up the Mind: How the Brain Creates Our Mental World*. Hoboken, NJ: John Wiley & Sons pp. 17 and 132.

The underappreciation of how individuals participate in creating their perceptions is discussed in Teppo Felin, Jan Koenderlink, and Joachim I. Krueger. 2007. “Rationality, perception, and the all-seeing eye.” *Psychonomic Bulletin & Review* 24(4): 1040-1059.

PAST EXPERIENCES SHAPE ASSUMPTIONS

The Ames Distorted Room



Source: *Scientific American*, April 1959, p. 58

Bartley J. Madden. 1991. "A Transactional Approach to Economic Research." *Journal of Socio-Economics* 20(1): 57-71.
Knowledge about the construction of the room does not alter subsequent perceptions. See the next slide for a clue about how we can accurately perceive people in this distorted room.

INNOVATION AND FUTURE POSSIBILITIES

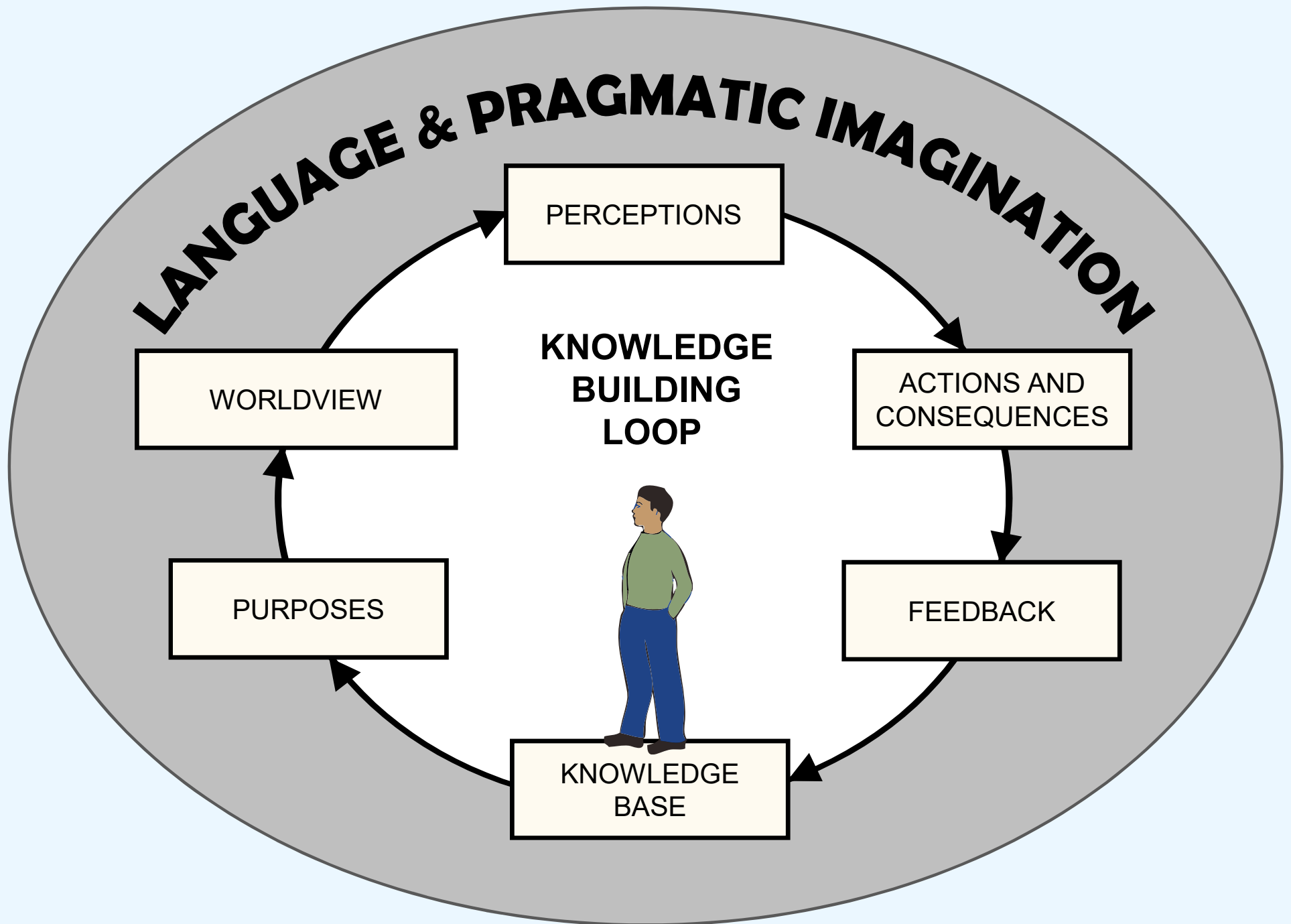
“In order to see differently, we must first see *seeing* itself differently. This is important in a deep, lived sense beyond just the visual... getting a stronger sense of the principles of your own brain allows you to see how subtly past experience not only biases us, but creates us. Knowing this, you can learn to take ownership over your brain’s apparatus and thus **make new pasts that will change your brain’s perception of future possibilities.**”

Beau Lotto, Neuroscientist

Beau Lotto. 2017. *Deviate: The Science of Seeing Differently*. New York: Hachette Books.

TOP PRIORITY OF MANAGEMENT AND BOARDS: SUSTAINED INNOVATION

- Question – How should a firm be managed to deliver sustained innovation?
- Better Question – What is the first step in nurturing and sustaining a knowledge-building culture that treats everyone as a value creator and innovation then becomes a way of life?
- Answer – Gain clarity about the knowledge-building process



Bartley J. Madden. 2020. *Value Creation Principles: The Pragmatic Theory of the Firm Begins with Purpose and Ends with Sustainable Capitalism*. Hoboken, NJ: John Wiley & Sons, Chapter 1.

KNOWLEDGE BUILDING LOOP COMPONENTS

KNOWLEDGE BASE

contains assumptions of varying degrees of reliability

PURPOSES

reflect what we seek to achieve and typically explain the actions we take

WORLDVIEW

represents our ideas and beliefs through which we interpret and interact with the world and frames problem situations

PERCEPTIONS

involve our active participation based on assumptions built up through past experiences

ACTIONS AND CONSEQUENCES

may result from being on “automatic pilot” or that we are experimenting in order to gain an initial assessment of cause and effect; but that could be incomplete especially when complex systems are involved

FEEDBACK

reflects how the consequences of our actions are organized to evaluate our existing assumptions and hypotheses that we are investigating

WORLDVIEWS MATTER

- Cisco management's worldview—sees the world as potential buyers of capital equipment (routers, servers, etc.)
- Cisco acquired WebEx and the acquired firm's management's worldview saw customers demanding perfect 24/7 reliability and high quality for video meetings
- Key employees (Eric Yuan, etc.) were frustrated in their failure to get funding and management support for their vision of a future for video meetings. They left to startup Zoom.
- Management should be willing to fund those who demonstrate an ability for fast and effective traversing of the Knowledge Building Loop. However, pay attention to feedback that can confirm or disconfirm the innovator's vision of a future.

PRAGMATIC IMAGINATION IS ABOUT ALTERNATIVE WAYS OF SEEING

“One understands *what is* by using the imagination to generate **possibilities of *what could be***. Every thing and experience is understood from two temporal perspectives—both what it actually is in the here and now, and the possibilities the imagination allows us to see in it. And this is a way of being in the world, as well as a way of learning about the world ...

By generating a whole host of potential versions of what is present today, **pragmatic imagination** drives inquiry, which drives action, which in turn drives **knowledge building** that leads back to action.”

— Ann Pendleton-Jullian and John Seely Brown, *Design Unbound: Designing for Emergence in a White Water World*

For a superlative example of successful pragmatic imagination, see Peter L. Jakab. 1990. *Visions of a Flying Machine: The Wright Brothers and the Process of Invention*. Washington, DC: Smithsonian Books.

ALTERNATIVE WAY OF SEEING WAREHOUSE PRODUCTIVITY

- KIVA management's **purpose** (first step in Knowledge Building Loop) was to overcome constraints imposed by conventional assumptions
- Conventional improvements involved incrementally better ways to stack and retrieve products for shipping
- KIVA management **imagined a future** where the shelves moved to employees and, exemplifying pragmatic imagination, management also had the capability to implement (next slide) this radical innovation

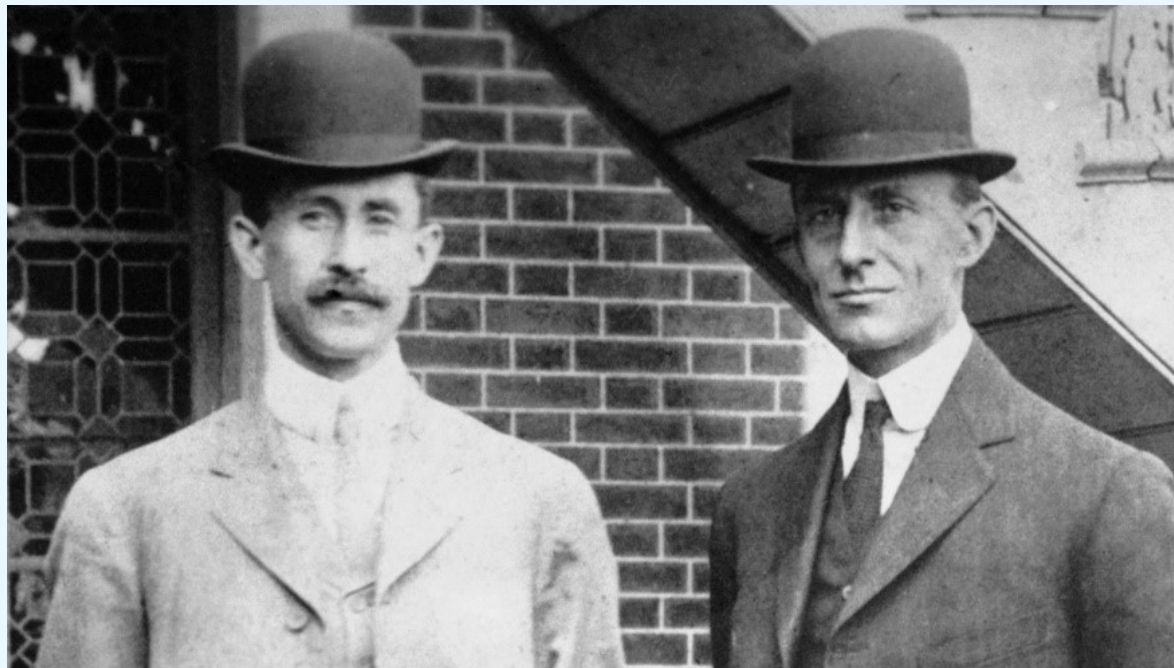
THE KIVA SYSTEM



EDUCATION THAT SHAPES OUR BRAINS TO SEE NEW POSSIBILITIES

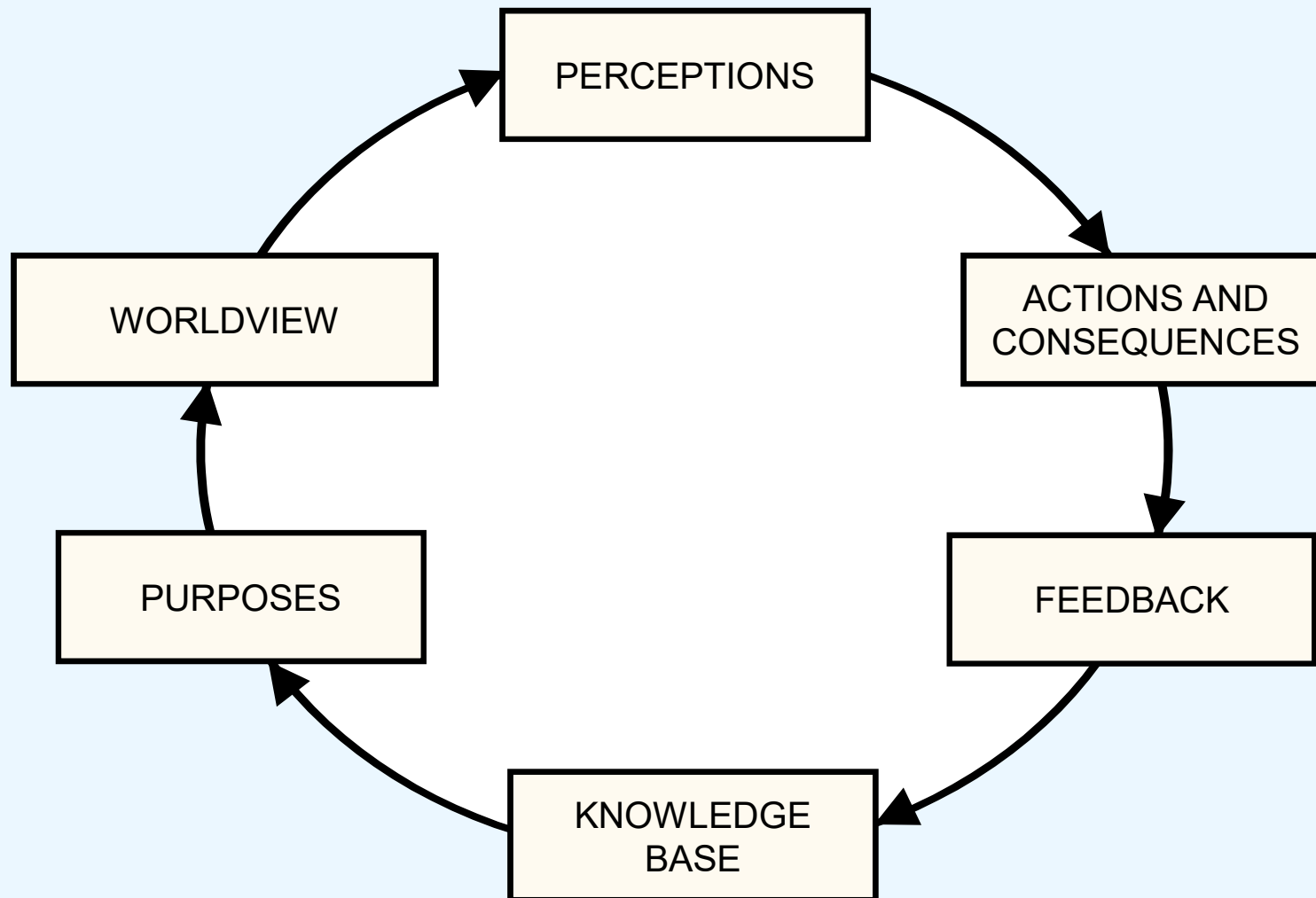
- New experiences can shape our brains and overcome assumptions that constrain how we perceive the world
- Include in these new experiences historical analyses of successful innovations and failures in business, science and other disciplines
- Students (and others) would significantly benefit from using the Knowledge Building Loop to guide historical analyses and **gain new insights about the causes of success and failure**

ORVILLE AND WILBUR WRIGHT, SPENT 4 YEARS, \$2,000, AND TAUGHT THE WORLD HOW TO FLY



**THE BROTHERS WERE UNIQUELY SKILLED AT FAST AND
EFFECTIVE TRAVERSING OF THE KNOWLEDGE BUILDING LOOP**

HOW DID THEIR APPROACH TO KNOWLEDGE BUILDING DIFFER FROM THEIR COMPETITORS?



SYSTEMATICALLY SOLVING PROBLEMS THAT MATTERED

KNOWLEDGE BASE

Began with a study of what had been done but maintained skepticism of conventional assumptions and empirical findings

PURPOSES

To achieve powered flight and not die from a crash

WORLDVIEW

Blend of linear cause-and-effect thinking and systems thinking focused on maximizing control, not stability as did their competitors

PERCEPTIONS

All perceived problems put in the context of relationships within a holistic aircraft system.

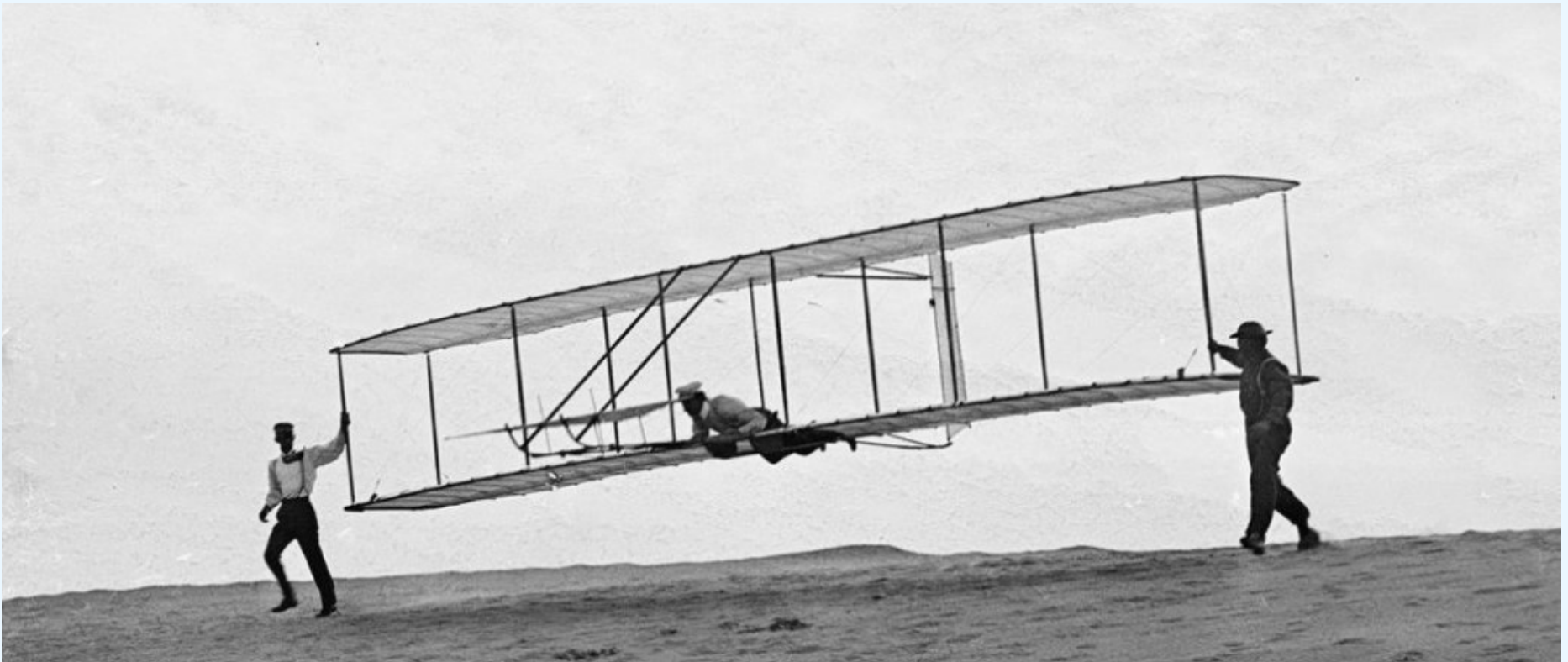
ACTIONS AND CONSEQUENCES

Ingenious wind tunnel experiments overturned accepted empirical relationships

FEEDBACK

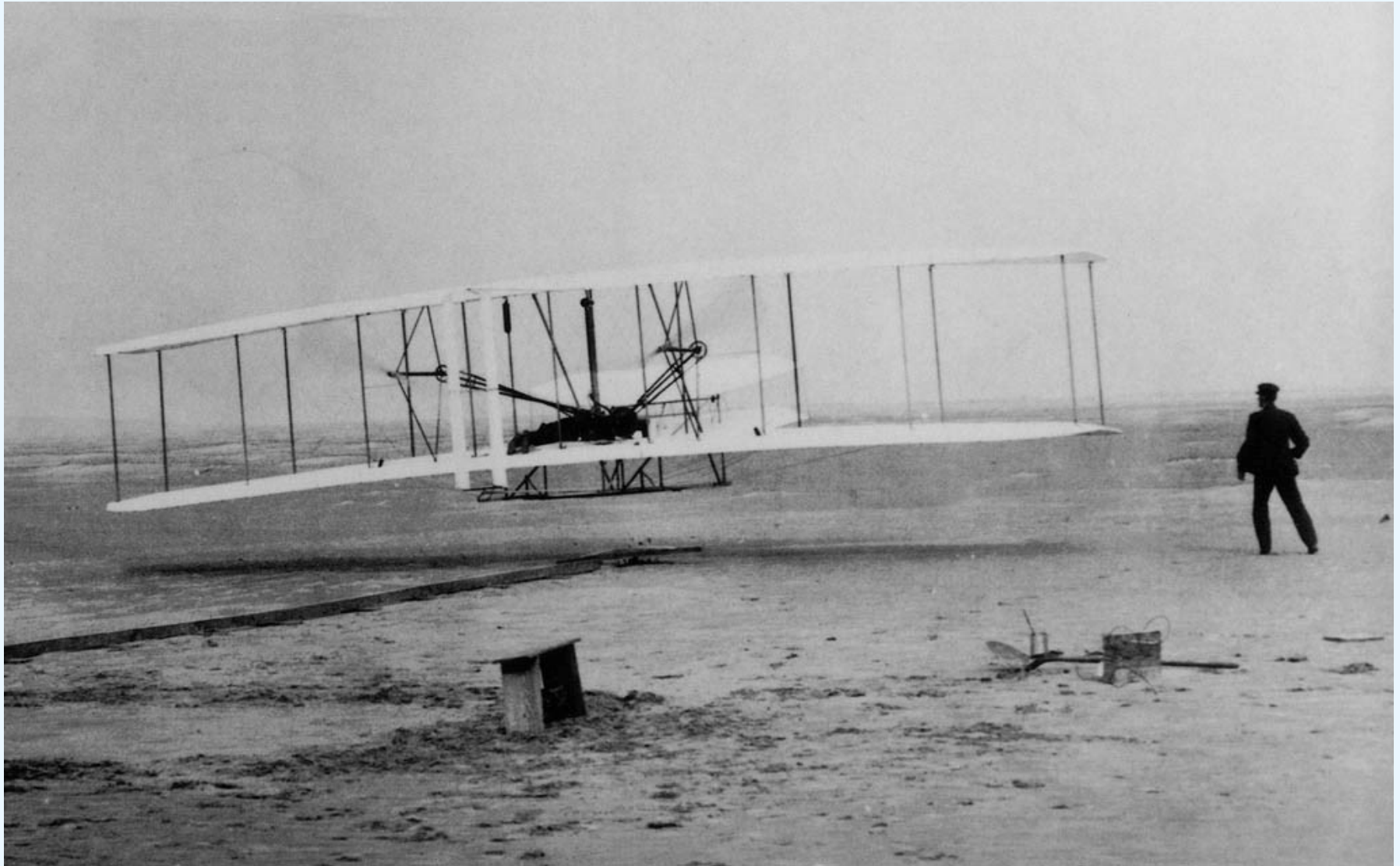
In contrast to their competitors, they systematically learned how to change components of the aircraft in ways that improved the performance of the overall system

ORGANIZING FOR SAFE FEEDBACK FROM GLIDER EXPERIMENTS WAS IGNORED BY WRIGHT COMPETITORS



After initial knowledge building using kites, they initiated a logical series of experiments with gliders that developed design innovations to achieve sustained lift and control sufficient for successful powered flight

HISTORY MADE DECEMBER 17, 1903



The fourth flight that day was the longest, covering 852 feet in 59 seconds

OPPORTUNITY TO BOOST INNOVATION

- Large firms often have excessively bureaucratic command-and-control organizational structures
- Eliminating excessive layers of control can facilitate fast and effective traversing of the Knowledge Building Loop and boost innovation
- Is there a large firm that is especially successful in sustaining a knowledge building culture?

BRAD SMITH, CEO INTUIT

“The culture you create lays the foundation that enables every other part of the company to grow and succeed. ... job one in creating a culture is building a *purpose-driven culture*. What is the mission of the company? What is the bigger idea that we are all part of? It is the CEO’s job to articulate and communicate this purpose across the company, so team members at every level have something to rally around. At Intuit, our mission is to improve our customers’ financial lives so profoundly they can’t imagine going back to the old way.

... One way leaders can create an action-oriented environment is to match inspiration with rigor, adopting a rapid experimentation culture. Great ideas are simply hypotheses unless matched with tangible proof they deliver meaningful impact. A rapid experimentation culture cuts through hierarchy (especially if leaders hold their own ideas to the same scrutiny of testing), creating an environment where everyone can innovate, and debate turns into doing.”

Source: Brad Smith, “The Most Important Job of a CEO,” January 28, 2016, *Observer*.

See Chapter 11, “Scaling a Design Thinking Competency at Intuit,” in Jeanne Liedtka, Andrew King, and Kevin Bennett. 2013. *Solving Problems with Design Thinking*. New York: Columbia Business School Publishing.

LANGUAGE IS PERCEPTION'S SILENT PARTNER

Our perceptions, our thinking, and our use of language are intertwined to such a degree that unraveling the assumptions behind the words can be a useful step in building knowledge.

DOES LANGUAGE SHAPE PERCEPTION?

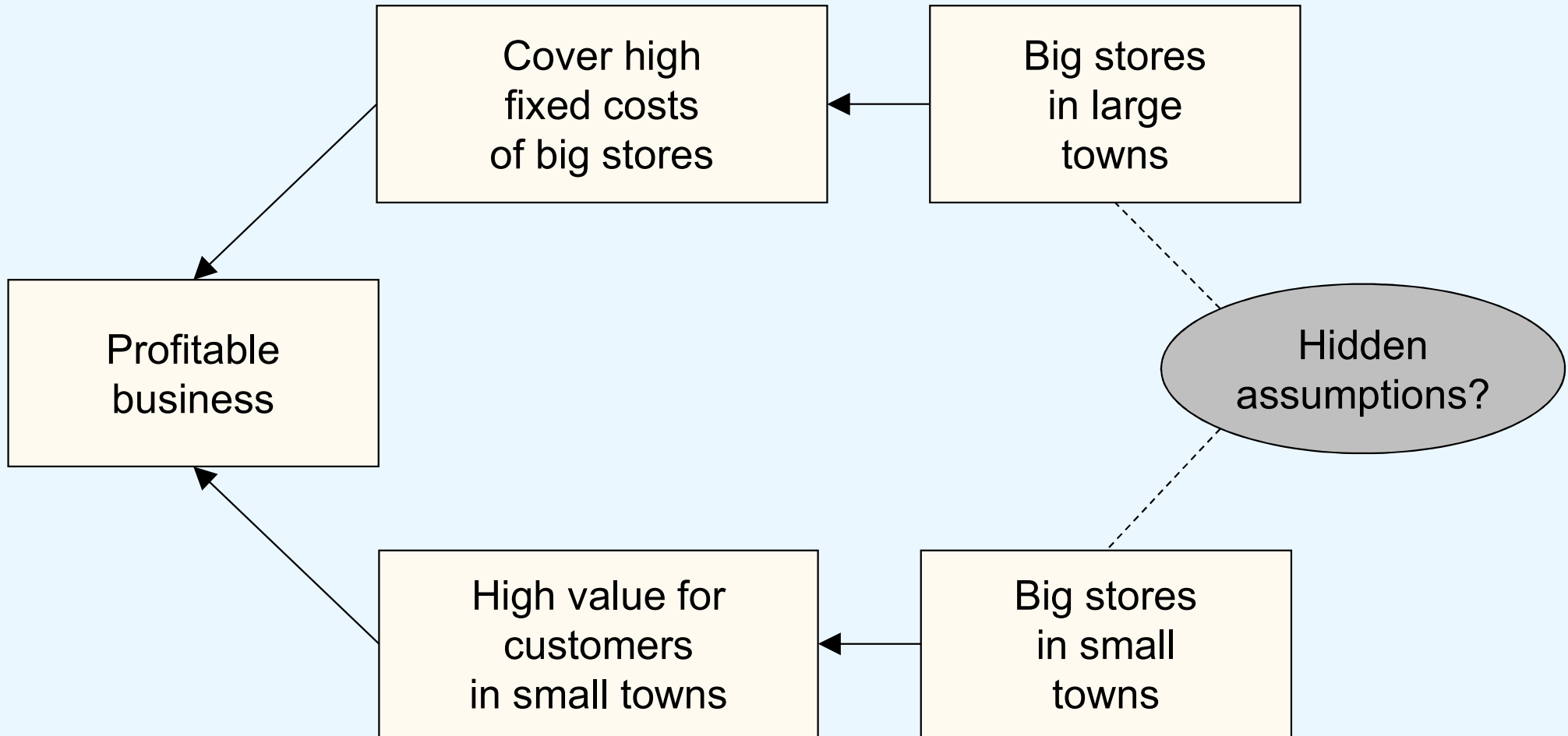
“I didn’t think languages could shape the nuts and bolts of perception, the way we actually see the world. That part of cognition seemed too low-level, too hard-wired, too constrained by the constants of physics and physiology to be affected by language ... I was so sure of the fact that language couldn’t shape perception that I went ahead and designed a set of experiments to demonstrate this ... but I found exactly the opposite. It turns out that languages meddle in very low-level aspects of perception, and without our knowledge or consent shape the very nuts and bolts of how we see the world.”

Lera Boroditsky, Professor of Cognitive Science

Lera Boroditsky. “Operation Perceptual Freedom” in John Brockman. 2009. *What Have You Changed Your Mind About: Today’s Leading Minds Rethink Everything*. New York: HarperCollins.

LANGUAGE HIDES ASSUMPTIONS

KMART



WALMART

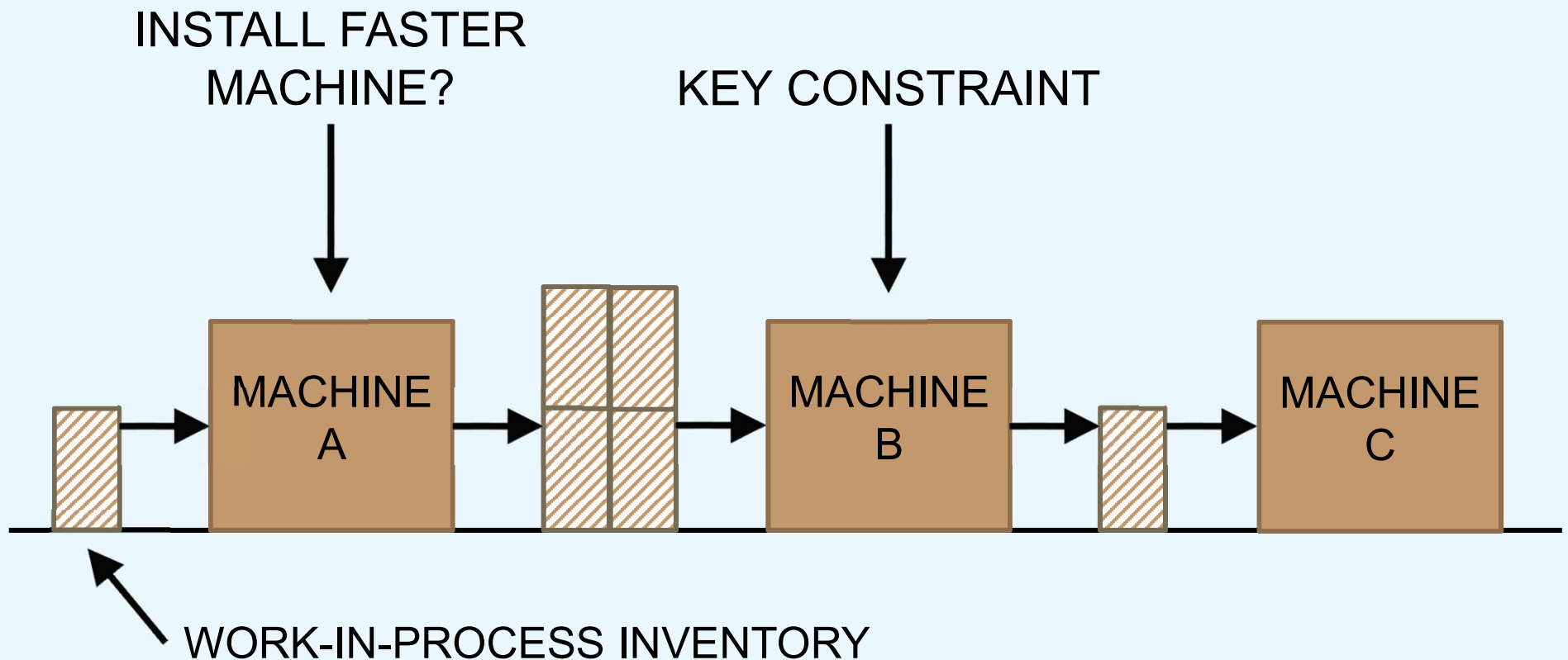
Bartley J. Madden. 2014. *Reconstructing Your Worldview: The Four Core Beliefs You Need to Solve Complex Business Problems*. Naperville, IL: LearningWhatWorks.

ASSUMPTIONS AND VALUE CREATION

- KMART – a “store” is a stand-alone entity
- WALMART – a “store” is part of a network

In the early 1970s, Kmart was the number one retailer in the U.S. Walmart's strategy and execution skill eventually drove Kmart into bankruptcy. I verified in personal correspondence with Sam Walton that, in Walmart's early years, he truly did see a store as a node in a network. See also, Richard Rumelt. 2011. *Good Strategy/Bad Strategy: The Difference and Why It Matters*. New York: Crown Business pp. 25-28.

WHAT ASSUMPTION HIDES BEHIND THE WORDS "MINIMIZE ACCOUNTING COSTS"



Minimize accounting "costs" implies system components are independent. However, installing a faster machine at A will reduce A's accounting costs but likely worsen the bottleneck situation at B and degrade system performance.

THE KNOWLEDGE BUILDING LOOP BEGINS WITH PURPOSE

- An organization's purpose is rarely questioned, especially if the organization is long-lived
- This is an opportunity for uncovering obsolete assumptions and embarking on a path potentially leading to breakthrough thinking

ACCOUNTING RULE-MAKERS HAVE A PURPOSE THAT BLOCKS INNOVATIVE WAYS TO HANDLE INTANGIBLES

- Purpose of accounting is to **calculate “true earnings”**, therefore match revenues with expenses
- Intangible “*expenses*” that are truly “*investments*” pose big problems
- A more useful purpose is to **deliver data for calculating accounting-based performance metrics that enable management and boards to make better resource allocation decisions.**



Facilitates fast and effective traversing of knowledge building loop and progress in handling intangibles

SPECIFY THE PURPOSE OF A SYSTEM THEN IDENTIFY KEY CONSTRAINT

FDA REGULATORY SYSTEM

- FDA's purpose originated with 1962 Federal Legislation – ensure **safe and effective drugs**
- Arguably a better purpose attuned to today's technology – **better drugs, sooner, at lower costs**
- **Key constraint** – FDA clinical testing process takes a decade and costs billions

DRUGS APPROVED BUT TOO LATE FOR THESE PATIENTS



Photos provided by the Abigail Alliance for Better Access to Developmental Drugs. Abigail Burroughs (middle photo) was valedictorian of her high school class. On two occasions she was unable to access an especially promising developmental drug that specifically targeted her type of cancer and may have saved her life.

During the last 16 years, every drug that the Abigail Alliance has pushed for early access was subsequently approved by the FDA.

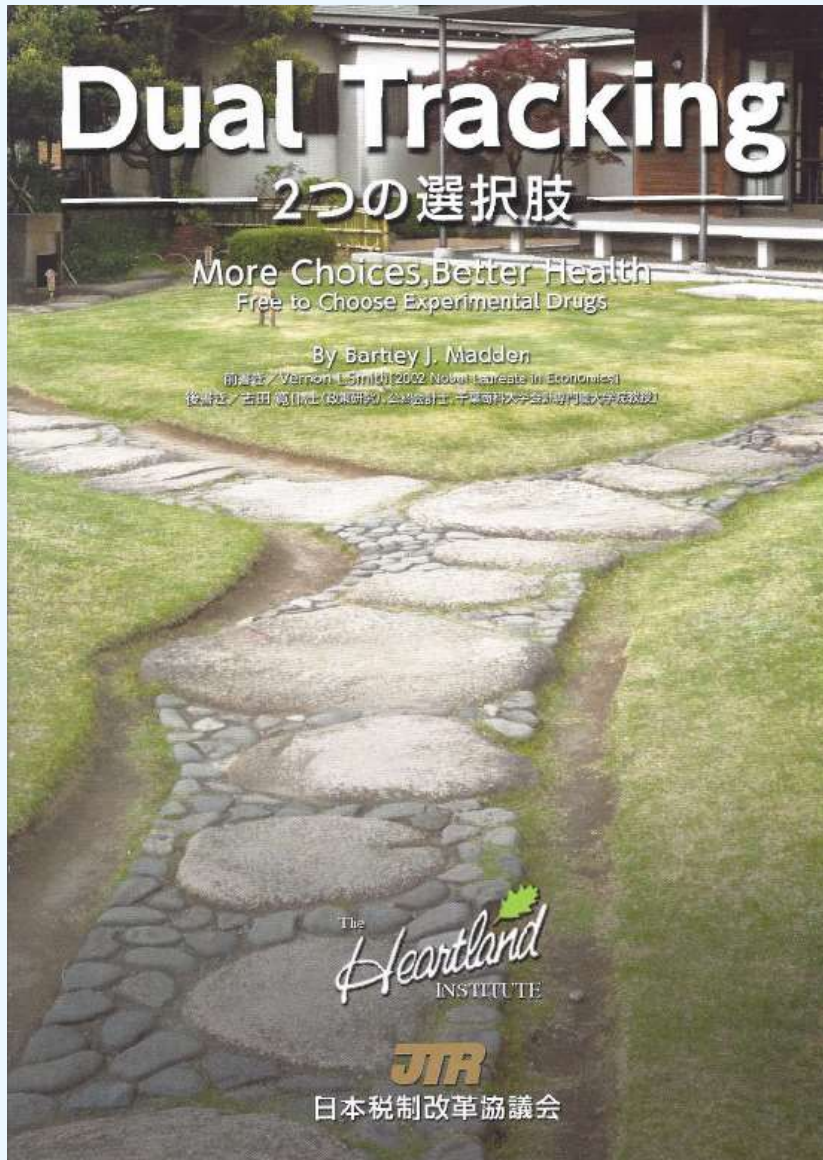
MARKET-BASED SOLUTION ... FUNDAMENTALLY BIPARTISAN



“Madden’s market-based solution appeals to economists like me who are keenly aware of the critical importance of institutional design for a **system to promote decentralized responses close to the local knowledge that is available to physicians and their patients, but not to the FDA. This book is fundamentally bipartisan and should be read in that spirit.**”

Vernon L. Smith
Chapman University
Nobel Laureate in Economics,
2002

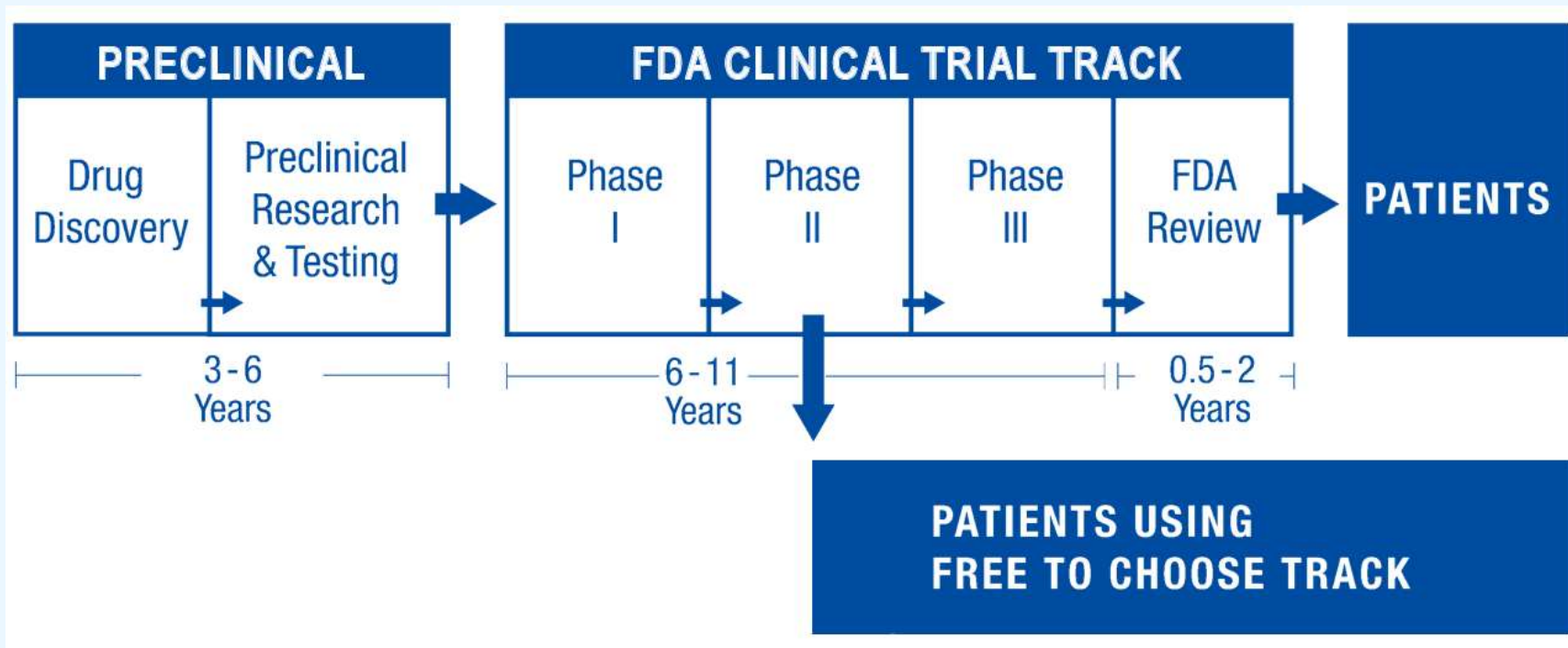
FREE TO CHOOSE MEDICINE IN JAPAN



This 2007 Japanese translation of an early FTCM booklet was heavily promoted to Japanese politicians by Masaru Uchiyama (Mr. You), President of the Japanese for Tax Reform.

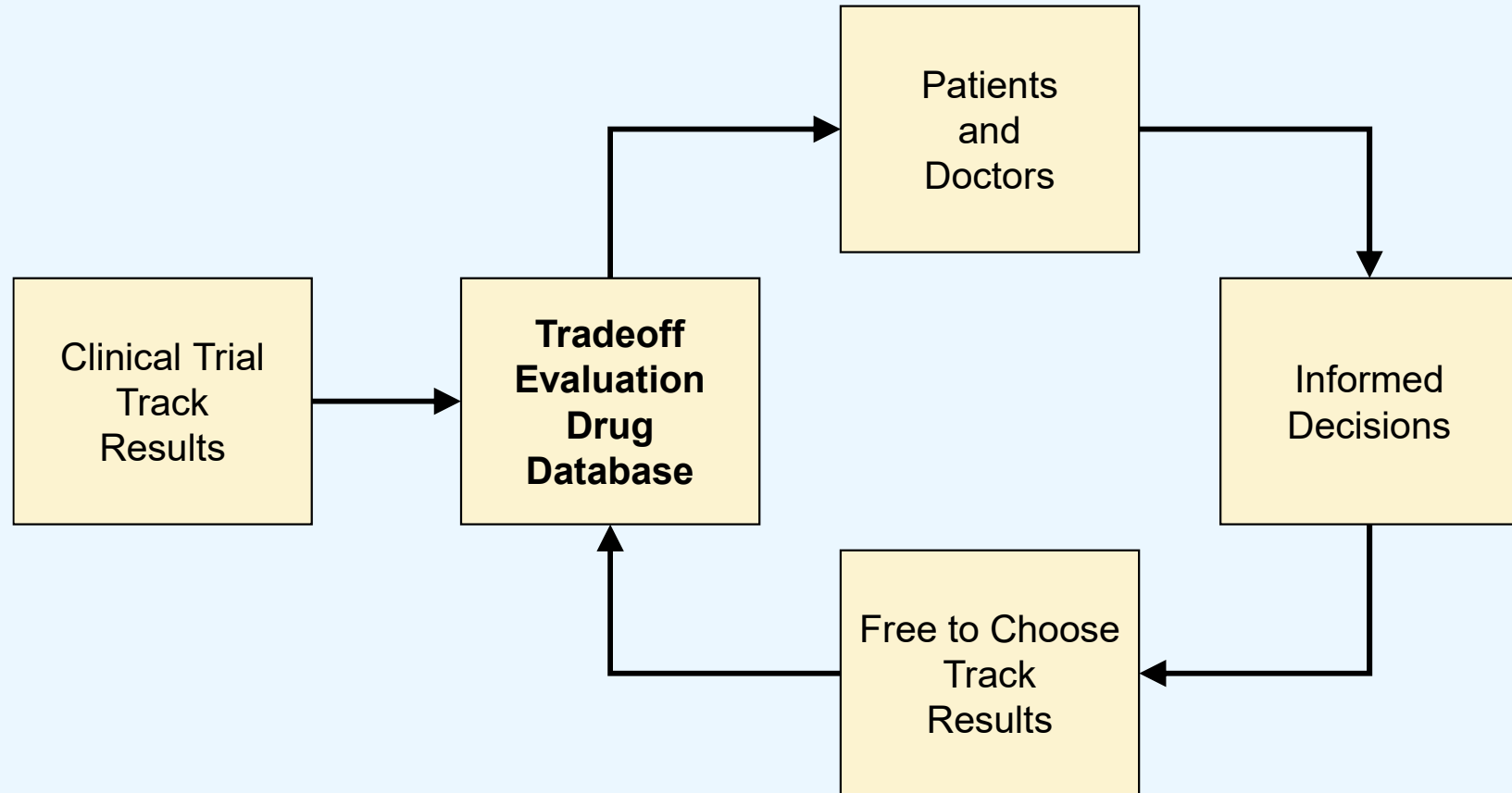
FTCM principles contributed to the passage in 2013 of Japanese legislation permitting early access to regenerative medicine drugs which will be monitored via observational data.

FREE TO CHOOSE TRACK OPERATED INDEPENDENTLY OF THE FDA



- Operated Independently of FDA
- Consumer Choice and Competition
- Enable Individual Preferences
- Informed Decisions

TRADEOFF EVALUATION DRUG DATABASE (TEDD) FACILITATES MAKING INFORMED DECISIONS

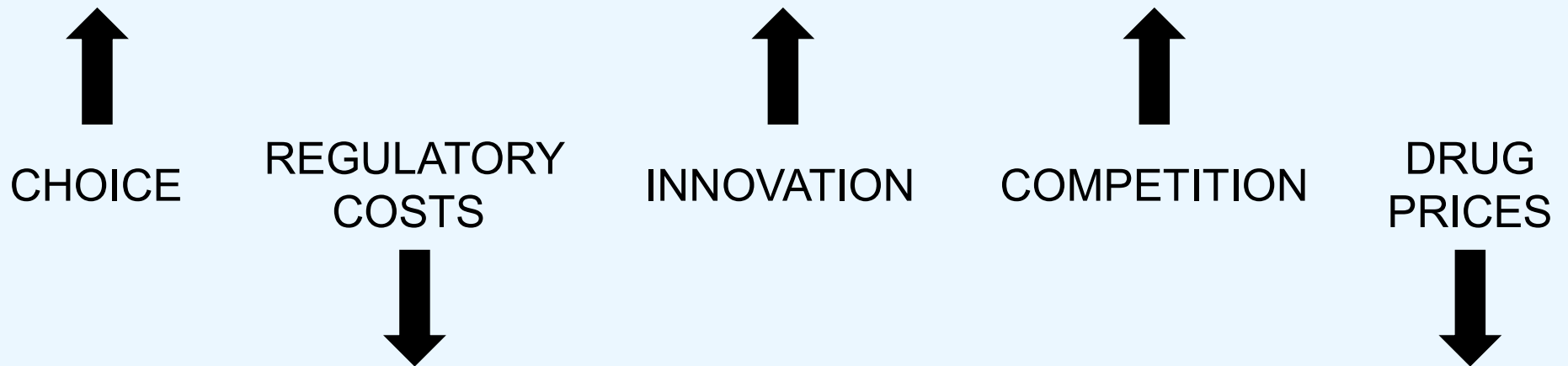


- Evaluate Approved VS Not-Yet-Approved Drugs
- Patients' Genetic Data and Biomarkers
- Fast Sharing Data
- Self-Adjusting System
- Boost Innovation

PATH TO OBSERVATIONAL APPROVAL

- FDA could grant Observational Approval due to compelling **safety and effectiveness demonstrated in use**.
- Based not on randomized control trial data, but on treatment data for **real-world patients**.
- Consistent with recent regulatory improvements in **Japan**.
- Drug developers would be motivated to charge **lower prices** in order to gain increased usage for their FTCM drug.
- TEDD's **up-to-date observational data** would guide patients and doctors, especially when genetic/biomarker tags identify subsets of patients who do especially well or poorly.
- Observational Approval would **expedite insurance reimbursement**.

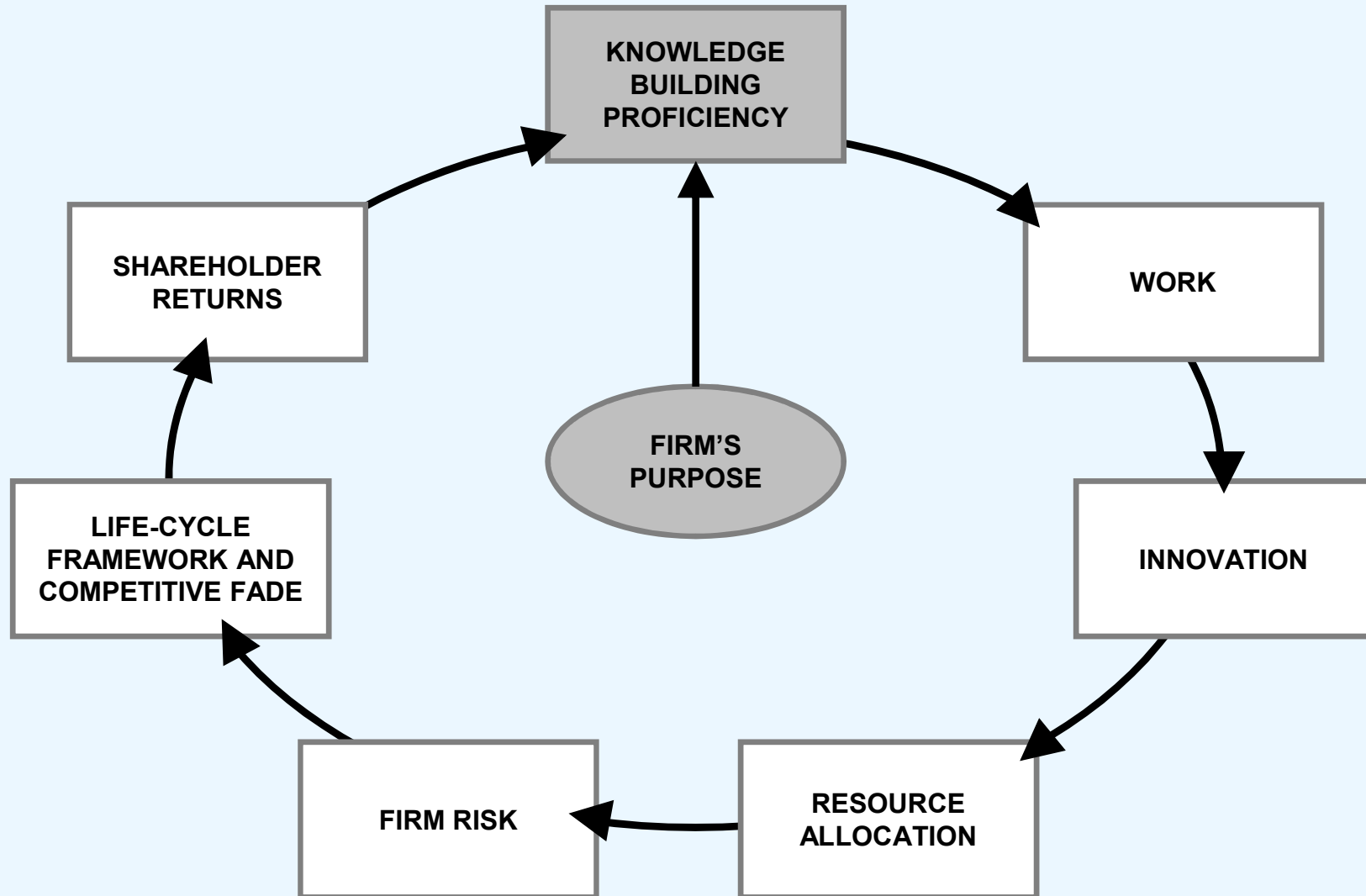
MARKET-BASED SYSTEM FOR BETTER DRUGS, SOONER, AT LOWER COST



PROMISING PATHWAY ACT

- Introduced in U.S. Congress May 2021
- Contains all of the elements of Free To Choose Medicine
- Immediate benefit to patients
- Successful implementation would provide a unique, easy-to-understand demonstration of the value of freedom of choice
- Expect other countries to then duplicate the U.S. regulatory innovation

PRAGMATIC THEORY OF THE FIRM TREATS COMPONENTS OF THE FIRM AS A HOLISTIC SYSTEM



Business students need a viable theory of the firm to conceptualize how the material they learn fits together.

PRAGMATIC THEORY OF THE FIRM – FIRM'S PURPOSE

Four mutually reinforcing goals constitute a firm's purpose and warrant support from all of the firm's stakeholders

- Communicate a **vision** which inspires and motivates employees to work for a firm committed to behaving ethically and making the world a better place.
- **Survive and prosper** through continual gains in efficiency and sustained innovation, which critically depend upon a firm's knowledge-building proficiency. Nothing works long term if a firm consistently fails to earn the cost of capital.
- Work continuously to **sustain win-win relationships** with all of the firm's stakeholders.
- Take care of **future generations**. Importantly, the early stage of the design of products and manufacturing processes should be focused on minimizing waste and pollution.

Firms that deliver on these four goals (a package deal) will contribute to **sustained economic progress**.

Maximizing shareholder value is best positioned not as the purpose of the firm, but as the result of a firm success fully achieving its four-part purpose

TRUST TO DO WHAT IS RIGHT

When management and the board of directors embrace the four-part purpose as the foundation for how the firm operates, then employees, customers, and suppliers will trust the firm to do what is right. Recall the 2007-2009 financial crisis when many banks recorded boosts in quarterly earnings helped by the sale of “innovative” products, such as negative amortization loans. With these loans, in the early years customers made very low payments (less than the interest expense) but the principal owed kept increasing. Many customers eventually suffered severe financial losses.

BB&T was the best performing large bank during the financial crisis. Then CEO John Allison explained that negative amortization loans were not sold by his bank because they violated the firm’s commitment to ethical dealings with customers. Resonating with the firm’s four-part purpose, Allison noted:

If you want to have passion and energy in your life, you must have a sense of purpose in your work ... I ask the employees of BB&T: **Are you truly making the world a better place to live through your work?** Are you really helping your clients achieve economic success and financial security? Are you providing the quality of advice that ensures that they make better decisions?

You should never do anything that you believe will not be in your client’s best interests, even if you can make a profit in the short term ... **Life is about creating win-win relationships.**

John A. Allison. 2013. *The Financial Crisis and the Free Market Cure: Why Pure Capitalism is the World Economy’s Only Hope*. New York: McGraw Hill p. 241.

KEY DETERMINANT OF A FIRM'S LONG-TERM PERFORMANCE

If you could choose just one thing for a firm's management to get right in order to survive and prosper over the long term, what would that be?

My answer: a firm's knowledge-building proficiency

The firm's long-term performance is primarily driven by its knowledge-building proficiency relative to competitors. Knowledge-building proficiency is the fundamental source of competitive advantage. This eliminates confusion which can arise due to the myriad arguments that, say, capability X is truly the source of competitive advantage. How does management improve capability X? This circles back to the firm's knowledge-building proficiency as the root cause of competitive advantage.

Bartley J. Madden. 2018. "Management's Key Responsibility." *Journal of Applied Corporate Finance* 30(3): 27-35.

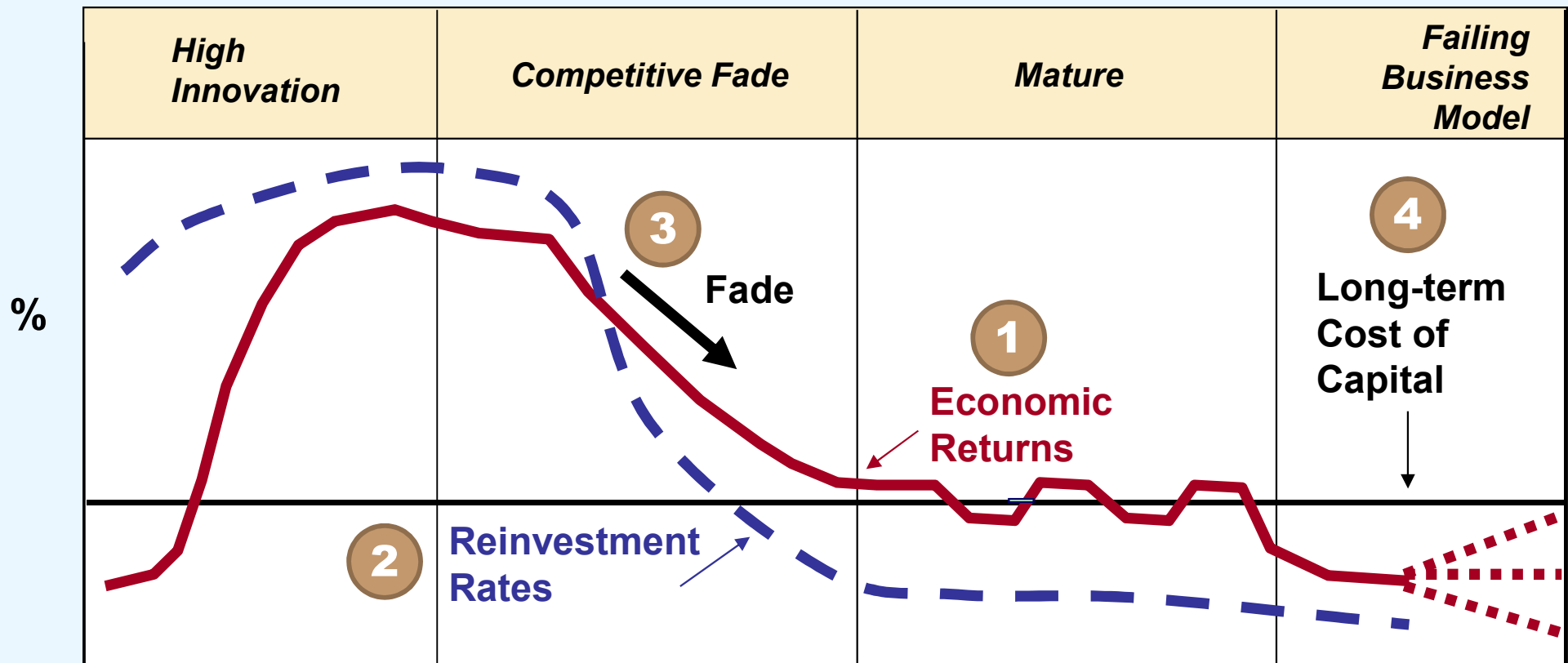
PRAGMATIC THEORY'S LIFE-CYCLE FRAMEWORK IS THE PREFERRED CONCEPTUAL LENS FOR ANALYZING A FIRM'S LONG-TERM PERFORMANCE

For a theory of the firm to be complete, it must necessarily connect a firm's long-term performance to its market valuation. The pragmatic theory utilizes the firm's life-cycle framework and related valuation model to make this connection in a far more insightful manner than the Excel spread sheets and NPV calculations frequently used in business schools and corporate finance departments. A firm's performance—distilled into **long-term track records of economic returns and reinvestment rates**—reveals in financial terms management's relative success in achieving the firm's four-part purpose. These track records provide a lens for management and boards to apply constructive skepticism to the firm's planned resource allocation decisions thereby leading to **better value-creation decisions**. Investors gain the capability to analyze a firm's past and compare it to market expectations of future performance—all in life-cycle language.

LIFE-CYCLE STAGES

The next slide illustrates the **four stages of the life-cycle framework**. In the **high-innovation** stage, successful commercialization of an innovative business model results in earning economic returns well above the cost of capital. High economic returns, especially if coupled with high reinvestment rates, attract competitors. At the **competitive fade** stage, economic returns fade towards the cost of capital and reinvestment rates fade towards economy-type growth. The firm's knowledge-building proficiency relative to competitors determines how favorable these fade rates become. At the **mature** stage, the firm earns approximately cost-of-capital returns and management faces a tough task. While working to improve the efficiency of existing businesses and sustain core competencies, management must simultaneously innovate in ways that may require new competencies or even compete with existing businesses. The hallmark of a firm entering the **failing business model** stage is a bureaucratic culture, business-as-usual complacency, and lack of early feedback as to a changing external environment. Life-cycle analysis can help management and boards by pinpointing the life-cycle position of each of the firm's business units thereby focusing on the most critical issue: **in the high innovation stage, prove or disprove the business model's key assumptions as soon as possible. In the competitive fade stage, build or acquire new capabilities to expand and stay ahead of competitors (Amazon has excelled in this regard). In the mature stage, adapt early to fundamental change. In the failing business model stage, purge business-as-usual culture.**

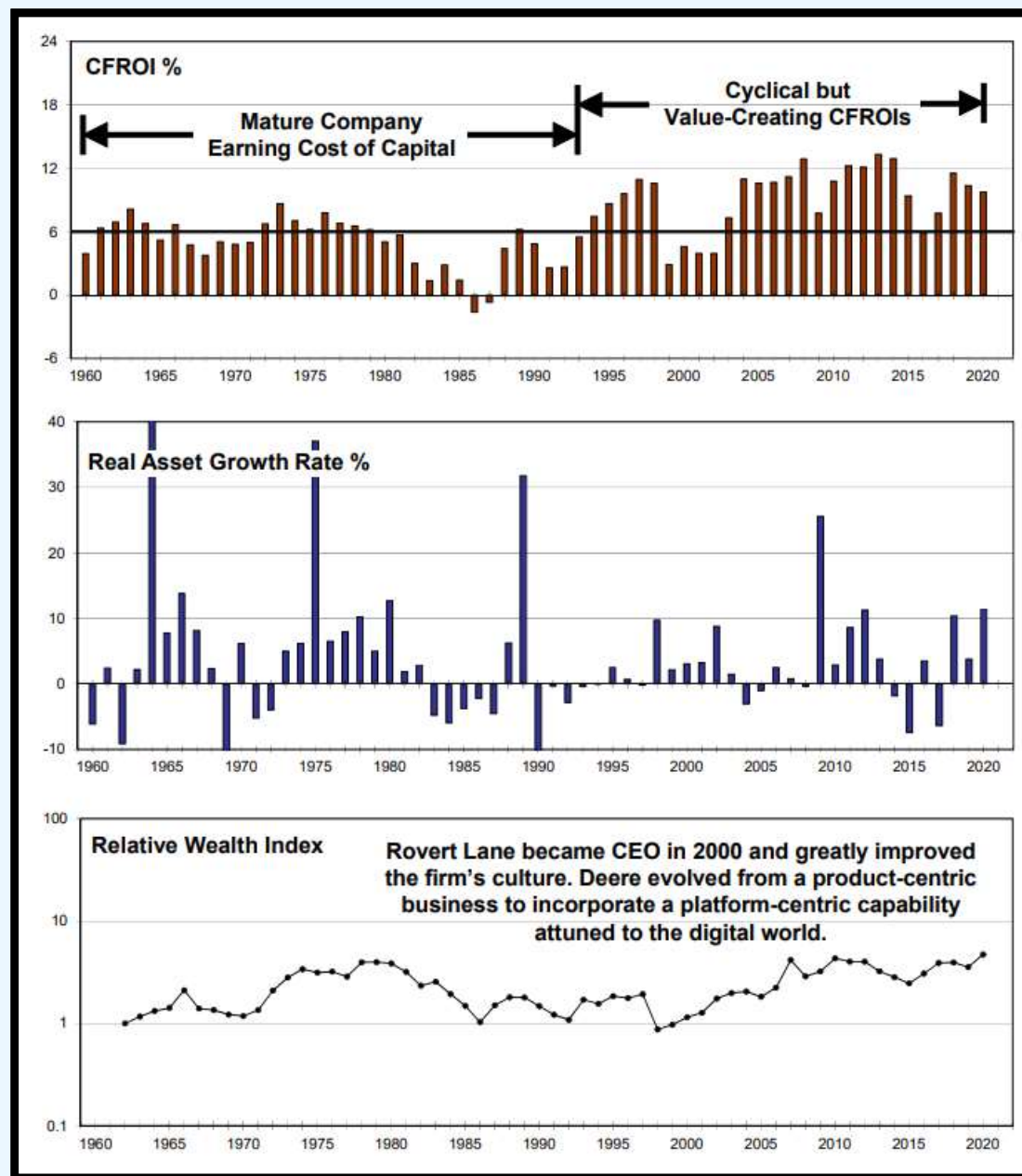
THE LIFE-CYCLE FRAMEWORK



The life-cycle framework captures the dynamics of a firm's profitability and growth. It displays a firm's typical life-cycle stages. Individual firms can experience exceptionally short or long specific stages.

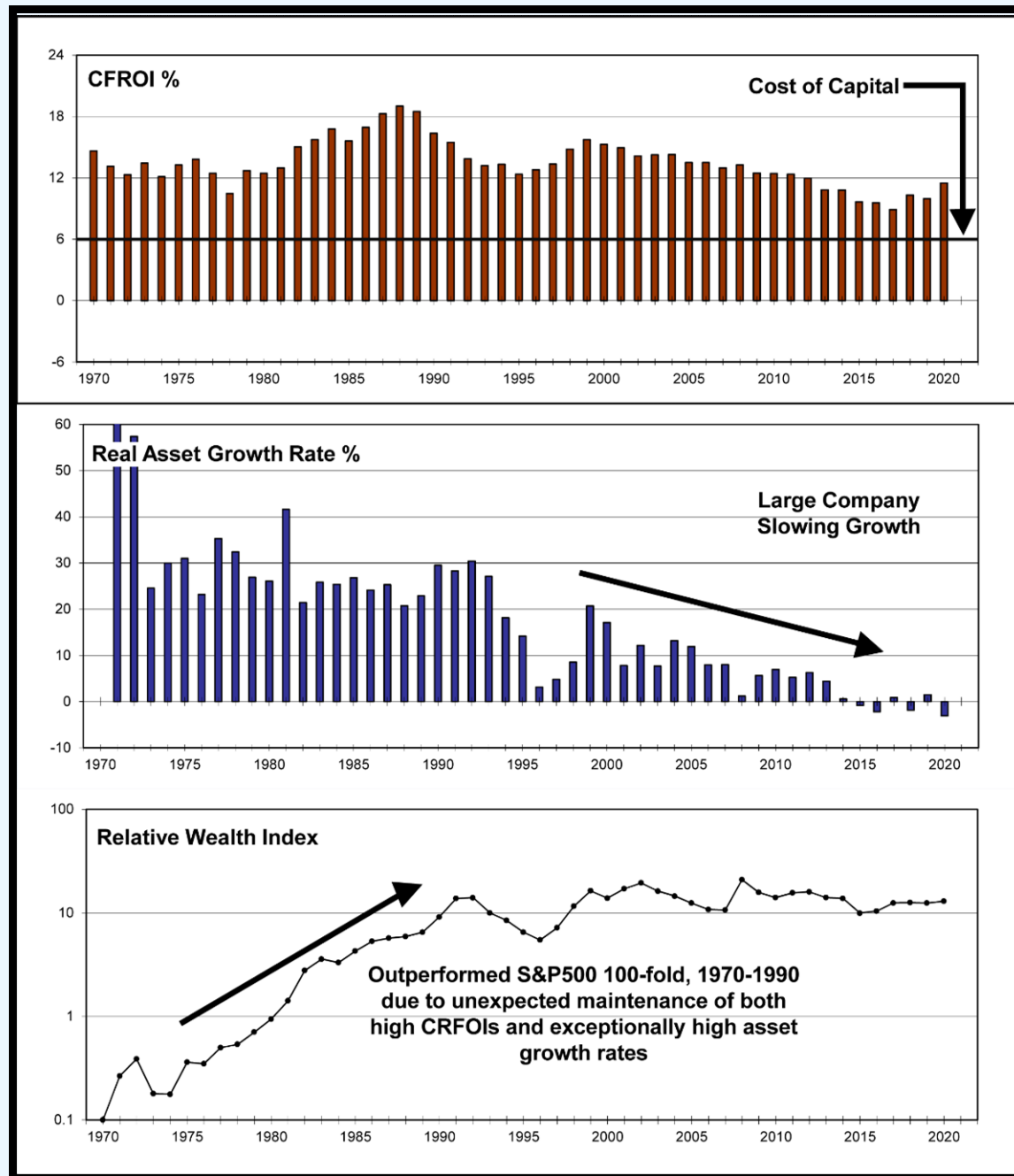
Bartley J. Madden. 2020. *Value Creation Principles*. Hoboken, NJ: John Wiley & Sons. Figure 4.2.

DEERE 1960 - 2020



Source: Credit Suisse HOLT global database. For a comprehensive life-cycle analysis of Deere see Bartley J. Madden. 2021. "The Pragmatic Theory of the Firm." *Journal of Applied Corporate Finance* 33(1): 98-110.

WALMART 1970-2020



Source: Credit Suisse HOLT global database.

PRAGMATIC THEORY'S FIRM RISK IS ABOUT OBSTACLES TO ACHIEVING THE FIRM'S PURPOSE

Firm risk increases (decreases) in lockstep with changes that degrade (improve) the likelihood of achieving the firm's purpose. This perspective comports with David Koenig's approach to corporate governance:

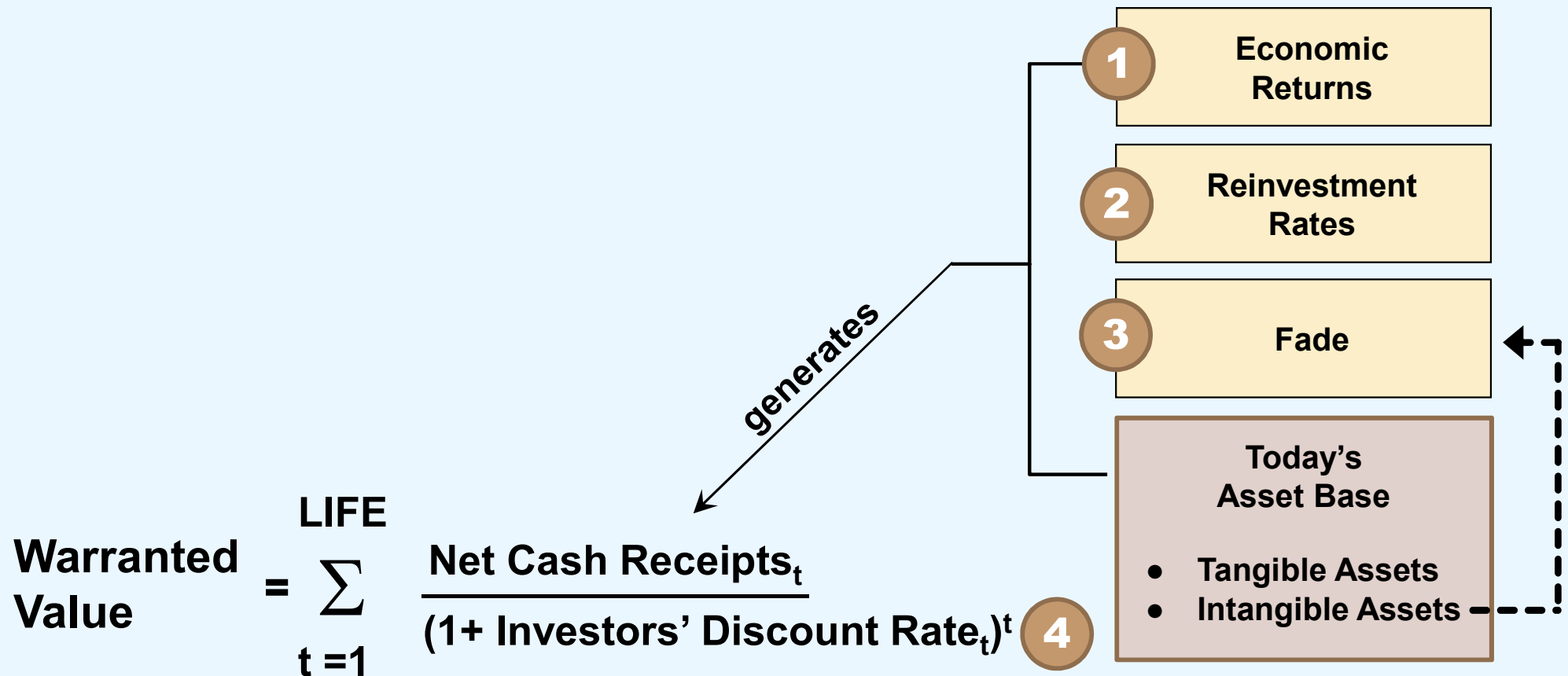
Businesses exist to take risk ... We know that if risk is always seen negatively, we will be making sub-optimal decisions about taking it ... the fear of taking risks is the surest way to realize failure, as our customers will ultimately leave us for better alternatives, or through simply finding little new value in what we do.

– David R. Koenig

Firm risk is long-term oriented, rooted in the firm's foundational purpose, and engages broadly with all of the firm's stakeholders. **There can be a substantial time lag between a change in firm risk and investor perception.** In each of the six years leading up to its bankruptcy at the end of 2001, Enron was named "America's Most Innovative Company" by *Fortune*.

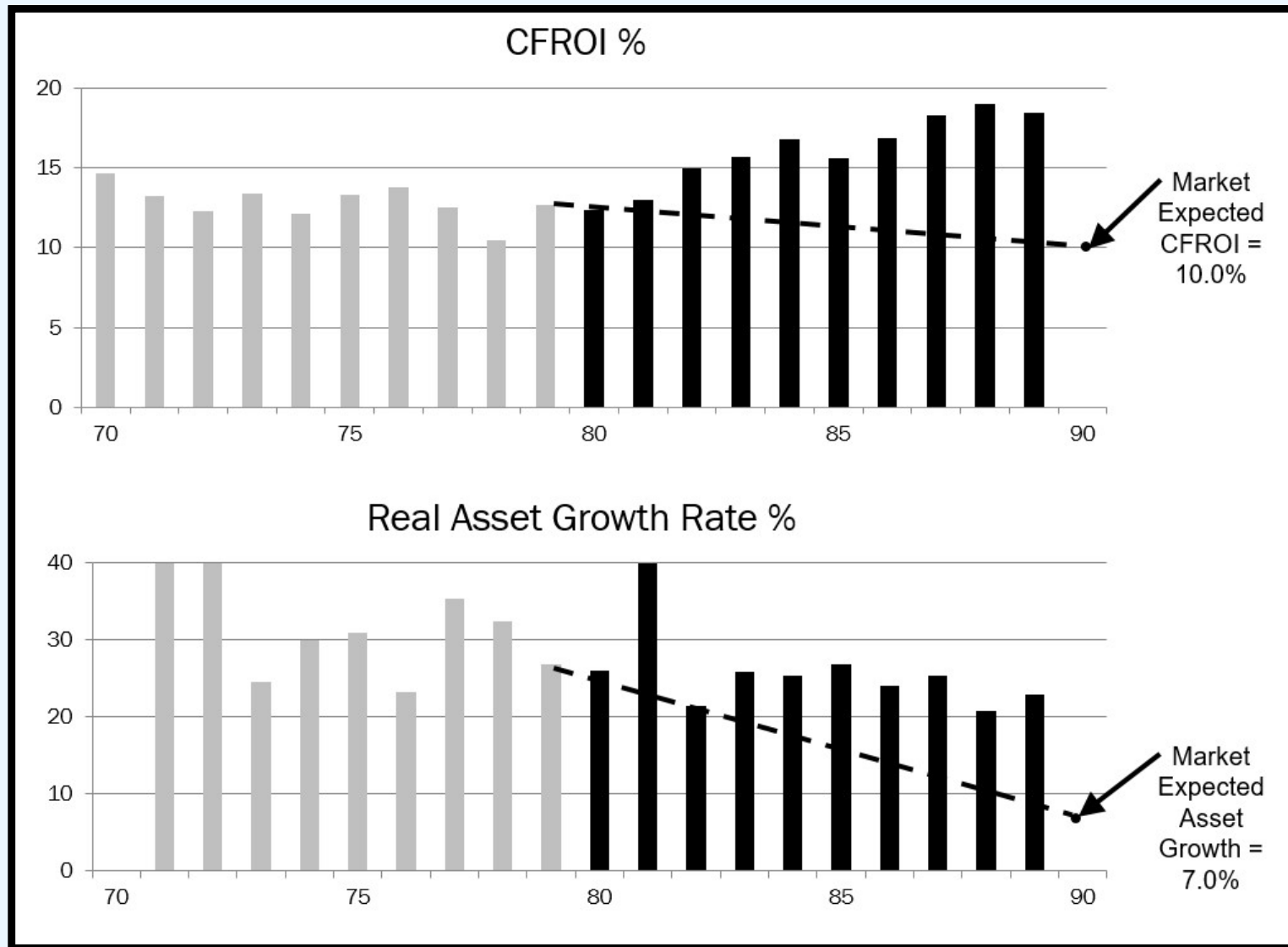
David R. Koenig. 2020. *The Board Member's Guide to Risk*. Northfield, MN: (b)right governance publications pp. vii and 65. See the podcast I did with Koenig, <https://davidrkoenig.podbean.com/e/bart-madden-june-16-2020/>.

LIFE-CYCLE VALUATION MODEL TRANSLATES LIFE-CYCLE FORECASTS TO WARRANTED VALUATION



Bartley J. Madden. 2020. *Value Creation Principles*. Hoboken, NJ: John Wiley & Sons. Figure 5.3.

WALMART OUTPERFORMED S&P 500 100-X, 1970 to 1980



Source: Credit Suisse HOLT global database. Bartley J. Madden. 2016. *Value Creation Thinking*. Naperville, IL: LearningWhatWorks Figure 6.6.

SIX KEY LEARNING OBJECTIVES

- **Knowledge building proficiency relative to competitors** is the key determinant of a firm's long-term performance and the source of competitive advantage.
- **Knowledge Building Loop** identifies ways to improve thinking. Cisco management should have understood the radically different worldview of acquired WebEx management.
- Analysis of **language** can lead to discovering faulty assumptions. “Minimizing accounting costs” is not always beneficial.
- **Pragmatic imagination** is illustrated by the Wright brothers' insight that an inherently unstable bicycle could be easily controlled. This concept was then used in the development of the version 1.0 airplane.
- **Systems thinking** promotes awareness of interrelationships and of alternative ways to define problems and to develop solutions. For example, in sharp contrast to price controls, Free to Choose Medicine/Promising Pathway Act promotes lower regulatory costs and competition to deliver lower drug prices while also promoting innovation.
- Of the many conceptual insights available via the **Pragmatic Theory of the Firm**, the connection between long-term performance and market valuations/shareholder returns is especially useful, e.g., see the life-cycle track records for Deere and Walmart.