VALUE CREATION INSIGHTS
A Foundational Understanding of How Firms Build Knowledge and Create Value
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Chapter 1

A Theory of the Firm Needs Systems Thinking

> In contemplating questions about the design, development, and delivery of systems, we need to draw on not just the life, physical, and social sciences in describing what a system does and how it does it, but also the humanities in considering why systems are created, why they exist, and what they do. Every part of our intellectual understanding and knowledge is therefore relevant to systems.[1]
>
> —Colin Mayer

This chapter first explains the importance of systems thinking as a way of seeing and gaining insights about firms. Next, the objectives of a theory of the firm in general are specified, illustrating their usefulness for practitioners and academics. This sets the stage for describing well known theories of the firm while introducing the systems-based Pragmatic Theory of the Firm. Benefits from the latter include improved understanding and decision-making for managers, boards of directors, and investors.

Cause and effect, complexity, and systems thinking

The environmental, political, social, and economic challenges that we face are complex, to say the least, and require much more than reductionistic thinking. The complexity emerges from challenges that are not amenable solely to linear cause-and effect analyses.

We experience life while solving (and avoiding) problems that block our intended objectives. Our knowledge base grows as we break apart problems and learn to associate cause and effect. This reductionistic approach consists of linear cause and effect, i.e., event A causes event B and that, in turn, causes event C. This approach facilitates scientific experiments and has led to advancements in science.

A system is comprised of interdependent parts, with the whole having a specific purpose. While linear thinking connects events, systems thinking focuses on the interrelationships between the parts and the whole; the latter addresses how (e.g., feedback loops) and why events happen. Positive feedback adds to the momentum of the current direction whereas negative feedback reduces the discrepancy between the actual versus the desired state. And time lags in feedback can add significant complexity to a

[1] Colin Mayer. 2024. *Capitalism and Crises: How to Fix Them.* Oxford: Oxford University Press. p. 26.

system.[2] As a person's responsibilities increase in their work environment, the more critical becomes their need for skill in systems thinking.

Understanding and addressing today's problems should begin with constructive skepticism about how the problem is perceived and conceptualized. Constructive skepticism is part of the knowledge-building process which will be addressed in Chapter 2. A background in systems thinking facilitates an appreciation for the complexity of the system in which the problem is situated. Systems thinking is necessary for our modern, highly complex world but, unfortunately, is only slowly impacting the management of organizations. Mike Jackson, a leader in systems thinking, both practical and theoretical, tells us:

> What help can decision-makers expect when tackling the "messes" and "wicked problems" that proliferate in this age of complexity? They are usually brought up on classical management theory that emphasizes the need to forecast, plan, organize, lead, and control. This approach relies on there being a predictable future environment in which it is possible to set goals that remain relevant into the foreseeable future; on enough stability to ensure that tasks arranged in a fixed hierarchy continue to deliver efficiency and effectiveness on a passive and unified workforce; and on a capacity to take control action on the basis of clear measures of success. These assumptions do not hold in the modern world … [They] are simple, "quick-fix" solutions that flounder in the face of interconnectedness, volatility, and uncertainty. … In the absence of more thoroughly researched [systems thinking] ways forward, however, managers are left to preserve with their favorite panacea … or to turn to whatever new fad has hit the market.[3]

This brief explanation of systems thinking plus the discussion below about the Vanguard Method is sufficient for the level of analysis used throughout this book. Here are some additional takeaways from leading systems thinkers suggesting that upgrading one's systems thinking capability offers a high return.

Russell Ackoff emphasized that a properly designed system does things right (efficiency) and creates value by doing the right things (effectiveness).[4] Consequently, clarity is needed to connect a system's purpose with performance metrics. Donella Meadows argued that there are no separate systems. Rather, the world is a continuum and specifying a system's boundary depends upon the questions asked.[5] Jay Forrester explained that frequently a system's leverage points (targets for maximum performance gains) are counterintuitive.[6] His 1969 book, *Urban Dynamics,* was criticized because his systems analysis presciently demonstrated that subsidized low-income housing is a leverage point: and the less of it, then the better off *all* the city inhabitants. This contravened the national policy at that

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[2] For a comprehensive discussion of stock and flow diagrams, see John D. Sterman. 2000. *Business Dynamics: Systems Thinking and Modeling for a Complex World.* New York: Irwin McGraw-Hill.

[3] Michael C. Jackson. 2019. *Critical Systems Thinking and the Management of Complexity.* Hoboken, NJ: John Wiley & Sons. p. xix.

[4] Russell L. Ackoff. 1999. *Re-Creating the Corporation.* Oxford: Oxford University Press.

[5] Donella H. Meadows. 2008. *Thinking in Systems.* White River Junction, Vermont: Chelsea Green Publishing Company.

[6] Jay W. Forrester. 1969. *Urban Dynamics.* Cambridge, MA: MIT Press.

time. Systems thinking can, according to Michael Jackson, enable decision-makers and policy-makers to improve imaginative capability and to tie-in to powerful ways of thinking that transcend linear cause-and-effect methodology.[7]

The Vanguard Method

In the 1980s, John Seddon, while working as a prison psychologist, developed the (systems thinking) idea that changes in system design were far more effective than trying to help people individually. In the 1990s, Seddon honed the Vanguard Method for improving the performance of service organizations. He liberated management thinking that was typically blocked by conventional performance metrics. In 2003, he published *Freedom from Command and Control: A better way to make the work work.* The book explains the foundational systems concepts that led to exceptional performance gains by his clients worldwide.

Seddon and his colleagues have a track record for demonstrating that the conventional management belief of a tradeoff between reducing costs or improving service is false. Moreover, the knowledge gained from systems thinking is transferred to both management and key operational employees thereby enabling sustained superior performance. Implementing systems thinking that fundamentally changes how people think is an enormously powerful lever for improving overall system performance.

It is worthwhile to dig deeper into the Vanguard Method because the typical service organization does not have the complexities associated with manufacturing businesses. Consequently, the key systems ideas are easier to visualize and understand. The crux of the Vanguard Method is that management's strong beliefs (assumptions) shape how they perceive problems and how they orchestrate change to improve performance. However, most often management's assumptions are rooted in a command-and-control hierarchy—designed to control activities in order to control costs. Yet, often this control increases costs abetted by conventional accounting.

As to systems design, Seddon argues that service organization systems should be driven by what really matters, i.e., customer demand. In this way, employees doing the work can easily adapt to changes in customer demand. Performance metrics should provide information enabling those doing the work to improve their performance. The Vanguard Method separates customer demand into *value demand* and *failure demand,* the latter caused by failing to provide the desired customer experiences. Seddon emphasizes:

> Managing with functional measures always causes suboptimization, because parts achieve their ends at the expense of the whole … Controlling work through functional measures can only be harmful to flow. All work goes through some kind of flow, so we would be better having measures of it.
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> … Only by managing costs end-to-end, associating costs with flow, can you reduce costs in a sustainable manner. … In the current management philosophy, it is assumed that the bottom line can be influenced by using functional measures, targets, and standards to direct performance. … By their very nature, service demands contain high levels of variety. To tackle variety with command-and-control methods is to stifle the

[7] Michael C. Jackson. 2024. *Critical Systems Thinking: A Practitioner's Guide.* Hoboken, NJ: John Wiley & Sons.

> organization's ability to absorb it effectively. … The better able an organization is to absorb variety, the better the flow, hence the lower the costs and the better the service.[8]

Consider the management of an insurance claims provider that measures the number of calls taken per day by agents, the time spent on a call, and the total time to settle a claim and deliver a check. From a systems perspective what is missing? Begin with the purpose: to deliver the desired customer experience of a speedy receipt of a fairly-compensated check for damages incurred. The time to efficiently deliver that experience reflects value work. Time that exceeds that standard represents waste that should be communicated in an actionable format. Employees should receive performance information that identifies the sources of waste coupled to responsibility and the capability to take needed improvement actions. A properly designed system promotes a knowledge-building culture with a positive feedback loop to improve performance wherein performance shortfalls are identified and corrective actions follow.

Note the similarities between the Vanguard Method and lean thinking. The latter specifies a value stream (value added steps) for each product plus horizontal flow that enables customers to pull value from the producer as opposed to pushing products to customers.

In summary, the Vanguard Method echoes one of the six key insights described earlier in the Preface and Overview: knowledge-building and value creation are opposite sides of the same coin.

The need for a more comprehensive theory of the firm

Theories shape your worldview which, in turn, determines how you perceive the world, identify problems (opportunities), develop solutions (business plans), and even influence the data selected to test proposed ideas. Your worldview orchestrates feedback concerning your assumptions about how the world works that hopefully will improve your knowledge base. Everyone in business benefits from a useful theory of the firm. In addition, policy makers and even ordinary citizens benefit from understanding how the business firm is the engine of economic progress. Indeed, John Micklethwait and Adrian Wooldridge assert: "The most important organization in the world is the company: the basis of the prosperity of the West and the best hope for the future of the rest of the world."[9]

The importance of explicitly stating common sense objectives for a theory of the firm cannot be overstated. Absent these objectives, business school students are fed theories that seem plausible for a specific context—agency theory for corporate governance—but do not travel well in addressing all such objectives. The Pragmatic Theory of the Firm has four objectives not addressed by any other theory. They are pragmatic because they are attuned to important decisions made by management, boards of directors, and investors:

- Understand why some firms over the longer term outperform/underperform the average firm.

[8] John Seddon. 2003. *Freedom from Command and Control: A better way to make the work work.* Buckingham, UK: Vanguard Education, Ltd. pp. 50-51.
[9] John Micklethwait and Adrian Wooldridge. 2003. *The Company: A Short History of a Revolutionary Idea.* New York: Modern Library. p. xv.

- Connect, in an insightful way, a firm's long-term performance to its market valuation and shareholder returns.

- Facilitate better resource allocation decisions within the firm.

- Help frame problems with the potential to substantially improve firm performance.

These four objectives enable viewing the firm as a holistic system with connected activities—the bedrock of the pragmatic theory. In contrast, other theories of the firm can be categorized (as noted below) based on a single important issue that is of keen interest to the theory developers.

Since a strong case can be made that firms are the engine of economic progress, economists and other researchers who study progress invariably must explain the role of firms. Hence, the need for a theory. Attention to the theory developer's worldview explains the critical question they selected and how they answered it. The following overview briefly highlights notable theories (not a comprehensive review) in order to contrast them with the Pragmatic Theory of the Firm.

Neoclassical economics aggregates fundamental economic assumptions into a logically tight format. It integrates cost-of-production theory from classical economics with supply/demand and marginal cost analysis plus utility maximization. Neoclassical economists configure the firm as a black box that makes decisions ensuring marginal cost equals marginal revenue. Although this informs how an economic system attains equilibrium in stylized mathematical terms, it is nevertheless useless for understanding our four key objectives; and hence what is really going on in the black box.

Ronald Coase was awarded the Nobel Prize in economics partly for his 1937 article that explained why firms exist.[10] He saw the critical activity of the firm as providing a lower cost alternative to market transactions. So simple, yet so insightful. In his worldview:

> Economics has been becoming more and more abstract, less and less related to what goes on in the real world. In fact, economists have devoted themselves to studying imaginary systems, and they don't distinguish between the imaginary system and the real world. That's what modern economics has been and continues to be. All the prestige goes to people who produce the most abstract results about an economic system that doesn't exist.[11]

Coase opened the door for Oliver Williamson and others to develop the transactions cost theory of the firm that explains why firms choose different organizational forms.[12] This theory was then extended to control rights over the firm's assets.[13]

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[10] Ronald Coase. 1937. The Nature of the Firm." *Economica* 4(16): 386-405.
[11] Quote from Thomas W. Hazlett. 1997. "Looking for Results: An Interview with Ronald Coase." *Reason.* January.
[12] Oliver E. Williamson. 1981. "The Economics of Organizations: The Transaction Cost Approach." *American Journal of Sociology.* 87(3): 548-577.
[13] Sanford Grossman and Oliver Hart. 1986. "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration." *Journal of Political Economy* 94(4): 691-719.

With his *Capitalism, Socialism, and Democracy* (1942), Joseph Schumpeter took a systems perspective and criticized neoclassical economics for downplaying the role of entrepreneurship. Edith Penrose's *Theory of the Growth of the Firm* (1959) focused on the utilization of the firm's resources to explain long-term growth. Jay Barney carried this line of thinking forward with the resource-based theory of the firm attuned to difficult-to-duplicate resources that can lead to competitive advantage.[14]

A better understanding of how firms utilize resources can provide insights about economic progress. Barney summarizes:

> And, what is personally satisfying is that resource-based theory really is a theory about inequality in society. While acknowledging that sometimes inequality in outcomes can be inefficient, even evil, resource-based theory's core message is: heterogeneity in outcomes in society is common and natural and is often good for all of us, those who are advantaged as well as those who are disadvantaged. If firms are "better off" because they are more skilled at addressing customer needs, then this inequality in outcomes is perfectly consistent with maximizing social welfare in society.[15]

A deeper understanding of firms must necessarily grapple with how management actually makes decisions and how knowledge is continually created. This was the goal of Richard Cyert and James March in their 1963 book, *A Behavioral Theory of the Firm.* Knowledge building is a logical fit with resources that can enable competitive advantage.

Robert Grant is a developer of the knowledge-based theory of the firm.[16] He informs us that:

> As competition intensifies and the pace of change accelerates across most business sectors, the coordination requirements for firms becomes increasingly complicated. Firms increasingly need to simultaneously pursue multiple performance goals—cost, efficiency, quality, innovation, and flexibility. Explicit consideration of the knowledge management requirements of these complicated coordination patterns can offer us insight into the choice and design of organizational structures.[17]

Does not this suggest the need for systems thinking to conceptualize the firm as a system of connected activities? So why not begin with a holistic view of the firm? This point can easily be missed by those who observe desirable capabilities of firms and then build a theory of the firm solely upon those observations. However, a firm's culture that nurtures and sustains a collaborative knowledge-building proficiency is the fundamental cause of those desirable capabilities. David Teece, the principal architect

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[14] Jay Barney. 1991. "Firm Resources and Sustained Competitive Advantage." *Journal of Management.* 17(1): 99-120.

[15] Jay. B. Barney. "Where Does Inequality Come From? The Personal and Intellectual Roots of Resource-Based Theory." In Ed. Ken G. Smith and Michael A. Hitt. 2005. *Great Minds in Management: The Process of Theory Development.* Oxford: Oxford University Press. p. 295.

[16] Robert M. Grant. 1996. "Toward a Knowledge-Based Theory of the Firm." *Strategic Management Journal.* 17 (special Winter issue): 109-122. Grant agrees with the emphasis on individuals as the foundational unit of analysis for knowledge building (see Chapter2).

[17] Robert M. Grant. 2001. "Knowledge and Organization." In Ikujiro Nonaka and David Teece. Eds. *Managing Industrial Knowledge: Creation, transfer, and utilization.* London: Sage Publications. p. 165.

of the dynamic capabilities theory of the firm, argues that capabilities are the cause of knowledge building (organizational learning):

> Effective organizational learning—a continuous process in most industries—requires dynamic capabilities. These capabilities are activities that can usefully be thought of in three clusters: sensing opportunities (building new knowledge), seizing those opportunities to capture value; and transforming the organization as needed to adapt to the requirements of new business models and the competitive environment.[18]

Teece points out that ordinary capabilities entail doing things right whereas dynamic capabilities focus on doing the right things while adapting to a fast-changing economic world. Who can disagree with doing the right things? However, ask how did capability X originate and improve over time, and we return to knowledge-building proficiency.

The agency theory of the firm

With their influential 1976 article, "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure," Michael Jensen and William Meckling explained the far-reaching consequences of the lack of alignment between principals (shareholders) and agents (managers).[19] Basically, an agency relationship entails one or more principals engaging an agent to act on their behalf, requiring delegating decision-making authority to the agent. Jensen had exceptional skill in dissecting for a broad audience the economic fundamentals of major corporate issues, e.g., takeovers. Jensen's analyses, rooted in agency theory, demonstrated how corporate decision making could misallocate resources, and how corporate governance could rectify.

Jensen's contributions to a theory of the firm were rooted in viewing the corporation as a nexus of efficiency-generating contracts among employees, managers, customers, suppliers, and capital owners. He emphasized that stakeholder theory was deficient in being unable to resolve conflicts between stakeholders.[20] However, Jensen argued that if management made decisions to maximize the firm's total value, then this same criterion could be applied to evaluate proposed outlays for stakeholders.

Agency theory explains the heated market for corporate control (takeovers) in the 1970s and 1980s in response to entrenched management who refused to recycle to shareholders cash flows that exceeded management's opportunities to invest at or above the cost of capital ("free cash flow" in Jensen's terminology). The takeover premiums approximated the gain to shareholders from previously foregone market value due to management's reluctance to recycle free cash flow.[21] Leveraged buyouts (LBOs) offer a striking example of productivity gains due to linking management pay to performance coupled to tight alignment between management and the owners—agency theory writ large. As to how CEO compensation is decided by boards, Jensen and his coauthors argued for more closely tying CEO

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[18] David J. Teece. 2011. "Knowledge Assets, Capabilities, and the Theory of the Firm." Chapter 23 in Mark Easterly-Smith and Marjorie A. Lyles, eds. *Handbook f Organizational Learning and Knowledge Management.* Hoboken, NJ: John Wiley & Sons.

[19] Michael C. Jensen and William H. Meckling. 1976. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics.* 3(4): pp. 305-360.

[20] R. Edward Freeman. 1984. *Strategic Management: A Stakeholder Approach.* New York: HarperCollins.

[21] Michael C. Jensen. 2000. *A Theory of the Firm: Governance, Residual Claims, and Organizational Forms.* Cambridge, MA: Harvard University Press.

compensation to stock prices. This has been criticized for leading to a relentless upward trend of (perceived by many) excessively large CEO compensation.[22]

With the academic motivation to publish mathematically elegant articles, it is not surprising that agency theory has evolved in two directions: (1) highly mathematical and nonempirical 'principal-agent' literature, and (2) Jensen's 'positive theory of agency,' which minimizes mathematics and is empirically oriented.[23] Throughout his career, Jensen emphasized his strong preference for utilizing positive as opposed to normative research. Positive research seeks to better understand how the world actually behaves. Normative research asks questions that depend upon values, i.e., how should an issue be handled. Jensen reasons as follows:

> It is obvious from the logical structure of decision making that purposeful decisions cannot be made without the implicit or explicit use of positive theories. You cannot decide what action to take and expect to meet your objective if you have no idea about how alternative actions affect the desired outcome—and that requires positive theory.[24]

In the last decade of his working life, Jensen partnered with Werner Erhard to develop a leadership course that spotlighted integrity as a necessary ingredient to workability (productivity). After the global market crash of 2007-2008, Jensen saw a need to go beyond narrow self-interest in the management of firms. He noted: "I look forward to seeing the creation of an entirely new field of inquiry in economics, and in its sister social sciences, focused deeply on the positive analysis of the role of values in evaluating the possible outcomes of human interaction."[25]

Erhard and Jensen considered employee performance as profoundly influenced by employee perceptions of the firm's culture which in turn connects with the Pragmatic Theory of the Firm. [26]

The Pragmatic Theory of the Firm

The Pragmatic Theory of the Firm begins by clarifying the firm's purpose. The following four mutually reinforcing objectives constitute the firm's purpose and should be guideposts for management:

- Communicate a *vision* that can inspire and motivate employees to work for a firm committed to behaving ethically and making the world a better place.

[22] For a comprehensive reply to critics, see Micael C. Jensen and Kevin J. Murphy. 1990. "CEO Incentives: It's Not How Much You Pay, But How." *Harvard Business Review.* May-June. pp. 138-153.
[23] Michael C. Jensen and Clifford W. Smith, Jr. 1985. "Stockholder, Manager, and Creditor Interests: Applications of Agency Theory." In E. I. Altman and M. G. Subrahmanyam eds. *Recent Advances in Corporate Finance.* Homewood, IL: Irwin.
[24] Michael C. Jensen. 1983. "Organization Theory and Methodology." *Accounting Review.* 58(2): pp. 319-339.
[25] Michael C. Jensen. 2008. "Foreword." In *Moral Markets: The Critical Role of Values in the Economy.* Edited by Paul J. Zak. ix-x. Princeton, NJ: Princeton University Press.
[26] See Bartley J. Madden and Douglas E. Stevens. 2024. "Michael Jensen's contributions to the theory of the firm: A tribute in three acts." *Journal of Applied Corporate Finance.*36(3): 117-125.

- *Survive and prosper* through continual gains in efficiency and sustained innovation, which depend upon a firm's knowledge-building proficiency. Nothing works long term if a firm consistently fails to earn its cost of capital.

- Work continuously to *sustain win-win relationships* with all of the firm's stakeholders.

- Take care of *future generations* with a commitment to ensure the sustainability of the environment. The early design stage of products and processes needs to focus on minimizing waste and pollution.[27]

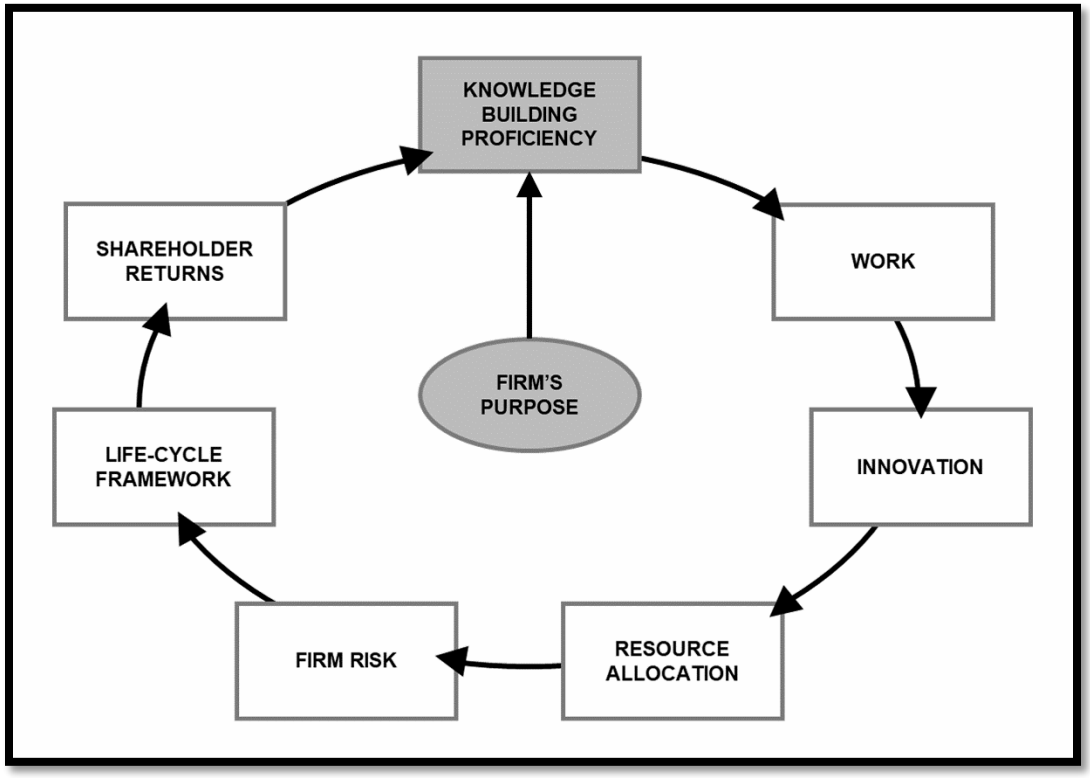
Importantly, the Pragmatic Theory of the Firm includes three core beliefs. First, the above mutually-reinforcing objectives should be adopted to define the firm's purpose. Second, maximizing shareholder value is best positioned not as the firm's purpose, but as the result of a firm successfully achieving its four-part purpose. Third, sustaining a culture of knowledge-building proficiency is the critical determinant of a firm's long-term performance in achieving its purpose.

Failure to secure genuine clarity as to purpose has led to endless debates about capitalism, which in turn has obfuscated the firm's critical role as the engine of economic progress. These debates typically begin with one side asserting that management's sole purpose is to maximize shareholder value thereby maximizing their own compensation (tied to stock price performance). And this results in a hyper-focus on meeting or exceeding Wall Street's quarterly earnings expectations to the detriment of building long-term value and benefitting all stakeholders.

The pragmatic theory is about *connectedness* of the firm's purpose, its knowledge-building proficiency, its major activities, and its long-term performance emphasizing (measurable) financial performance. Figure 1.1 illustrates the components of this theory.

[27] 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. p. 26-27.

Figure 1.1 Components of the Pragmatic Theory of the Firm



Source: Bartley J. Madden. 2021. "The Pragmatic Theory of the Firm." *Journal of Applied Corporate Finance.* 33(1): 98-110.

Figure 1.1 highlights the firm's purpose as the beginning point for the pragmatic theory of the firm. Achieving that purpose critically depends on integrating knowledge-building proficiency in the firm's major activities—work, innovation, and resource allocation.

Work

The Vanguard Method spotlights the need for systems thinking in organizing work and designing performance metrics useful for both management and employees. The objective is to reduce waste, i.e., time and resources spent that do not add value to the product/service. A systems perspective is essential in order to see how an action in one part of a system can cause waste in another part.

For example, management uses cost accounting to measure the efficiency of work being done and to determine productivity bonuses. Consider a manufacturing line where parts produced by A flow into B where additional work is performed, and then proceeds to C. The constraint (bottleneck) in the system is B, which has an excess amount of work-in-process inventory of parts waiting to be processed. To improve efficiency at A, a faster machine is installed. However, B is now swamped with parts to be processed. The result is a degradation of overall system efficiency stemming from a management action to improve localized accounting-based efficiency at A.
Systems thinking facilitates thinking about how value is created. Whether processing an insurance claim or building a windmill, proponents of lean thinking focus on the complete *value stream* for delivering the

final product.[28] Picture an uncluttered value stream of horizontal flow across all activities needed to create value. However, for many firms, the picture shows a disjointed value stream cluttered with silos of functional activities connected to accounting-cost-based (local) performance metrics. These metrics in turn are connected to targets based on plans and budgets by which higher-level management seeks to control lower-level performance. As a practical matter, a theory of the firm benefits from a systems perspective that helps see performance in a way that connects the firm's major activities, including its organizational structure (analyzed in Chapter 4) and related hierarchical control.

Consider lower levels in the firm where most of the value-creation work gets done and where a knowledge-building culture is especially beneficial. Such an effective culture promotes continual improvement in employees' problem-solving skills, collaboration, and job satisfaction. This requires a work environment that treats problems as opportunities for improvement plus the freedom to experiment and learn to the mutual benefit of employees and the firm. Moreover, in the spirit of win-win relationships, employees should participate in discussions that affect them. In such an environment, managers are skilled at asking the right questions. Toyota calls this thinking/behaving cultural process *kata.* Mike Rother, a leading expert on Toyota's culture, explains:

> Toyota's improvement kata involves teaching people a standardized conscious "means" for sensing the gist of situations and responding scientifically. This is a different way for humans to have a sense of security, comfort, and confidence. Instead of obtaining that from an unrealistic sense of certainty about conditions, they get it from the means by which they deal with uncertainty. This channels and taps our capabilities as humans much better than our current management approach; explains a good deal of Toyota's success; and gives us a model for managing almost any human enterprise.[29]

Innovation

Knowledge-building proficiency involves constructive skepticism about what we think we know. Our initial perceptions of problems and initial ideas for new products can be hindered by assumptions that are no longer valid but rarely questioned. Testing assumptions is the heart of innovative designs of solutions that solve customers' problems and/or provide new experiences that are valued by customers.

We can gain insights about the process of building useful knowledge from design thinking. Design thinking is a process whereby participants collaborate in order to repeatedly generate effective innovations. The process involves prototypes, which are rough models of the key elements of proposed designs. Importantly, prototyping helps refine what is possible and desirable while staying in the bounds of technological constraints. This serves as a reality check, an inspiration for new ideas, and a topic for conversations that can generate a stream of asking better questions—a prime source for breakthrough ideas. Design thinking relates to the Pragmatic Theory of the Firm because innovation is a (subset) product of a firm's knowledge-building culture. Let's review how Intuit, a premier consumer and small business software firm, advantageously embraced design thinking. (We analyze it later in this chapter using the life-cycle framework.) In 2007, Intuit's management feedback showed competitors' product performance gaining on Intuit. In response, management committed to moving beyond 'designing for

[28] James P. Womack and Daniel T. Jones. 2003. *Lean Thinking: Banish Waste and Create Wealth in Your Corporation.* 2nd ed. New York: Free Press.
[29] Mike Rother. 2010. *Toyota Kata: Managing People for Improvement, Adaptiveness, and Superior Results.* New York: McGraw Hill. p. 165.

ease of use' of their software products to 'designing for delight,' or D4D. The point person for this initiative was Kaaren Hanson. Importantly, she worked with Scott Cook, Intuit's founder, who organized strong management backing. Over time, Hanson built a 200-person team of innovation catalysts who were trained in design thinking and handled training. The catalysts were requested to devote two days a month for design work. This proved inadequate. Hanson summarizes:

> It used to be that we thought about doing design sessions for large-scale or strategic projects. But once we decided that our goal was really to get D4D into the company's DNA, the catalysts began to spend 90 percent of their time doing D4D in their *daily* work and 10 percent helping others outside of their core group to do design thinking. This was a very important shift, because when it was about the [training] sessions, people thought that design thinking is what you do in a one- or two-day period while someone holds your hand. But that's not really the big win. The big win is doing it in every meeting you're in.[30]
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> (italics in original)

A significant proportion of Intuit's employees write software code or interact with customers, making experimentation and customer feedback less difficult. However, there is still a formidable challenge to improve commitment to deliver higher value to customers across the entire firm. This is about every employee participating in a continual stream of innovation. Those who neither write software nor interact with customers can think creatively and innovate in different ways to improve the efficiency of Intuit's many processes. Such a widely-practiced culture constitutes a competitive advantage enabling the firm to continually adapt using value creation as a guidepost and the nuts and bolts of design thinking as a toolbox.

Resource allocation and firm risk

Resource allocation and firm risk are connected since management's resource allocation decisions involve either an explicit or an implicit assessment of risk. The traditional view of risk is variation from expectations with an emphasis on the magnitude of the potential downside deviation. However, management and boards that overly minimize the downside (we are in control) can easily forego the innovation and adaptation necessary to survive and prosper over the long term (one of the four objectives of the firm's purpose). This returns us to the beginning point for the pragmatic theory—the firm's purpose. Here is a definition of firm risk (see Figure 1.1):

> Firm risk is about obstacles management faces that interfere with achieving the firm's purpose. Firm risk increases (decreases) in lockstep with changes that degrade/improve the likelihood of achieving the firm's purpose. An *increase* in firm risk, all else equal, means a greater likelihood for a firm to generate *lower* future financial performance. … there can be a substantial time lag between a significant change in firm risk and investor perception of this change. As such, an increase in firm risk will eventually be understood by investors and, all else equal, this adjustment process will cause a decline in the firm's market valuation.[31]

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[30] Jeanne Liedtka, Andrew King, and Kevin Bennett. 2013. *Solving Problems with Design Thinking: 10 stories of what works.* New York: Columbia University Press. pp. 183-184.

[31] Bartley J. Madden (2020). p. 107. Also see Chapter 8 of David R. Koenig. 2020. *The Board Member's Guide to Risk.* (b)right governance publications. Northfield: Minnesota.

(italics in original)

In addition to conventional business risks, firm risk also includes less obvious ways that interfere with achieving the firm's purpose. Keep in mind that excessive management focus on meeting or exceeding Wall Street's quarterly earnings expectations can result in unethical and detrimental practices, e.g., cheating on automotive emissions testing. There are myriad ways that are not unethical but nevertheless undermine long-term survival and prosperity: not investing in employees by curtailing mentoring and training; neglecting high potential R&D with a long-term payoff in favor of lower returns on R&D but having a quick payoff; etc.

In a fast-changing world, management needs to continually monitor if certain capabilities that previously contributed to a firm's competitive advantage have degraded. This may simultaneously offer new opportunities for value creation. But in the early stage of these competitive shifts, new opportunities are not visible which is why questioning of assumptions and experimentation are so useful.

This happens by nurturing and sustaining a highly proficient knowledge-building culture that facilitates experimentation and fast adaptation to a changing environment. Such a culture typically resides in a firm with an organizational structure that promotes innovation with a minimum of bureaucracy. In contrast, firm risk increases with a culture ill-equipped for adapting to change due to business-as-usual attitudes coupled to heavy bureaucratic controls and an aversion to downside risk.

In general, resource allocation is justified to improve efficiency or expand product lines for businesses when expected ROIs meet or preferably exceed the cost of capital. In addition, resources should be spent on exploring both new opportunities that use existing capabilities and new opportunities that require building or acquiring new capabilities. These exploratory investments can have a big upside yet be accompanied by a significant downside that warrants managing these opportunities like managing a startup business.

Here is a corporate governance principle that deserves to be etched on the wall of every corporate boardroom: Boards have the responsibility to evaluate the skill of business unit leaders and judge if they have earned the right to invest shareholders' capital. Shrinking a business unit and redirecting capital to more promising opportunities should be an alternative that is always on the table. What information do boards need to fulfill this responsibility? This is explained in the next section.

Life-cycle framework and shareholder returns

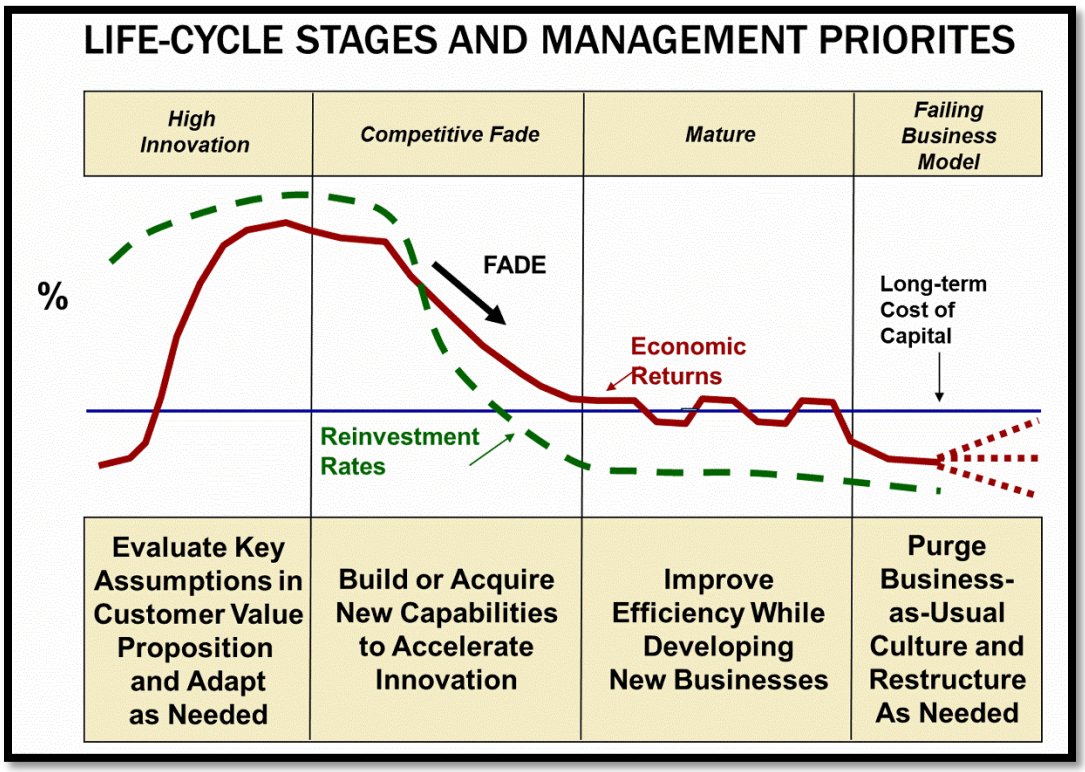
My involvement in the development of the life-cycle framework began in 1970 at an investment research firm, Callard, Madden & Associates.[32] Details of this work are presented in Chapter 5. Today, many large money management organizations worldwide use the life-cycle valuation model along with the global database provided by HOLT.[33] This section discusses how the life-cycle framework connects firm performance to stock market valuations and shareholder returns, an important capability that is missing from other theories of the firm.

[32] Bartley J. Madden. 2024. *My Value Creation Journey: An Autobiography of my Work.* Naples, FL: Bartley J. Madden Foundation.

[33] Key individuals left Callard Madden & Associates and formed HOLT Value Associates in 1985, which was later acquired by Credit Suisse in 2002. UBS acquired Credit Suisse in 2023.

The key life-cycle concept is that, in a market-based economy, a firm's economic returns (returns on capital) regress towards the average or cost-of-capital return. And its reinvestment rates (organic growth) slow as the firm gets larger and faces ever more competition. Figure 1.2 displays these relationships as transitional stages over a firm's life cycle.

Figure 1.2 The Life-cycle framework



Source: Bartley J. Madden. 2023. "Understanding the Benefits of Capitalism through the Lens of a New Theory of the Firm." *Capitalism and Society.* 17(1) article 2.

At the *high innovation* stage management's critical task is to confirm or refute key business model assumptions and, if necessary, pivot to a more viable approach to delivering value to targeted customers. High economic returns and high reinvestment rates are the hallmark of a commercially successful startup. Competitors are attracted to this opportunity and strive to duplicate and possibly improve upon the value creation offered by the successful startup. So begins the *competitive fade* stage.

As Figure 1.2 illustrates, the subsequent *fade* of economic returns (returns-on-capital) towards the cost of capital and slowing reinvestment rates quantify how the firm is performing relative to competitors. How can management achieve a favorable fade? The critical managerial task is to build or acquire needed capabilities to expand beyond the comfort zone of their existing products/services. As noted earlier, the proficiency (or lack thereof) of the firm's knowledge-building culture helps or hinders in seizing new opportunities. Amazon's founding CEO Jeff Bezos succinctly describes the need to overcome a firm's comfort zone:

> Companies get skills-focused, instead of customer-needs focused. When [companies] think about extending their business into some new area, the first question is 'why should we do that—we don't have any skills in that area.' That approach puts a finite

> lifetime on a company, because the world changes, and what used to be cutting-edge skills have turned into something your customers may not need anymore. A much more stable strategy is to start with 'what do my customers need?' Then do an inventory of the gaps in your skills. Kindle is a great example. If we set our strategy by what our skills happen to be rather than by what our customers need, we never would have done it. We had to go out and hire people who know how to build hardware devices and create a whole new competency for the company.[34]

At the *mature* stage, economic returns approximate the cost of capital and management of the now much larger firm faces a tough challenge. There is a tendency to myopically focus on the efficiency of existing businesses; however, through experimentation with emergent opportunities—even though typically costly in the short term—management can position the firm to adapt early to fundamental change and possibly achieve economic returns on these new investments substantially more than their cost of capital. The hallmark of the *failing business model* stage is a business-as-usual culture that fails to adapt to fundamental change. Management perceives repetitive below-cost-of-capital economic returns as due to temporary economic conditions and other excuses. Purging this culture and shrinking the business is the top priority.

Traversing the life-cycle stages: Eastman Kodak

The life-cycle track record for Eastman Kodak, 1960 to 2011 (see Figure 1.3) illustrates how life-cycle thinking provides insights in analyzing a firm's history. Note that historical analysis of financial variables requires adjustments for inflation to more accurately measure levels and trends. A common convention is to label inflation-adjusted variables as "real." The real long-term cost of capital for industrial firms in the U.S. has averaged 6 percent.[35]

The top panel of Figure 1.3 plots economic returns with the real metric CFROI® (cash-flow-return-on-investment) that includes a considerable number of adjustments to minimize accounting biases (more details in Chapter 5).[36] The dark horizontal line shows the benchmark real 6 percent cost of capital. The middle panel displays real asset growth rates that approximate (organic) reinvestment rates. The lower panel plots a relative wealth index that measures out- or under-performance of shareholder returns compared to the S&P 500.

A deep understanding of how best to meet customer needs (knowledge building) is the beginning step in value creation. In the late 1800s, George Eastman worked at a bank during the day and spent his evenings developing a way to overcome the technical headaches faced by professional photographers. His dry plate emulsion innovation clearly advanced the crude status quo process. He continually innovated and obsoleted his early work with a revolutionary camera designed to make photography available to everyone. It had film inside and he called it the "Kodak." The Kodak camera was designed to

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[34] *Bloomberg Businessweek. "*Bezos On Innovation." Interview. April 16, 2008.

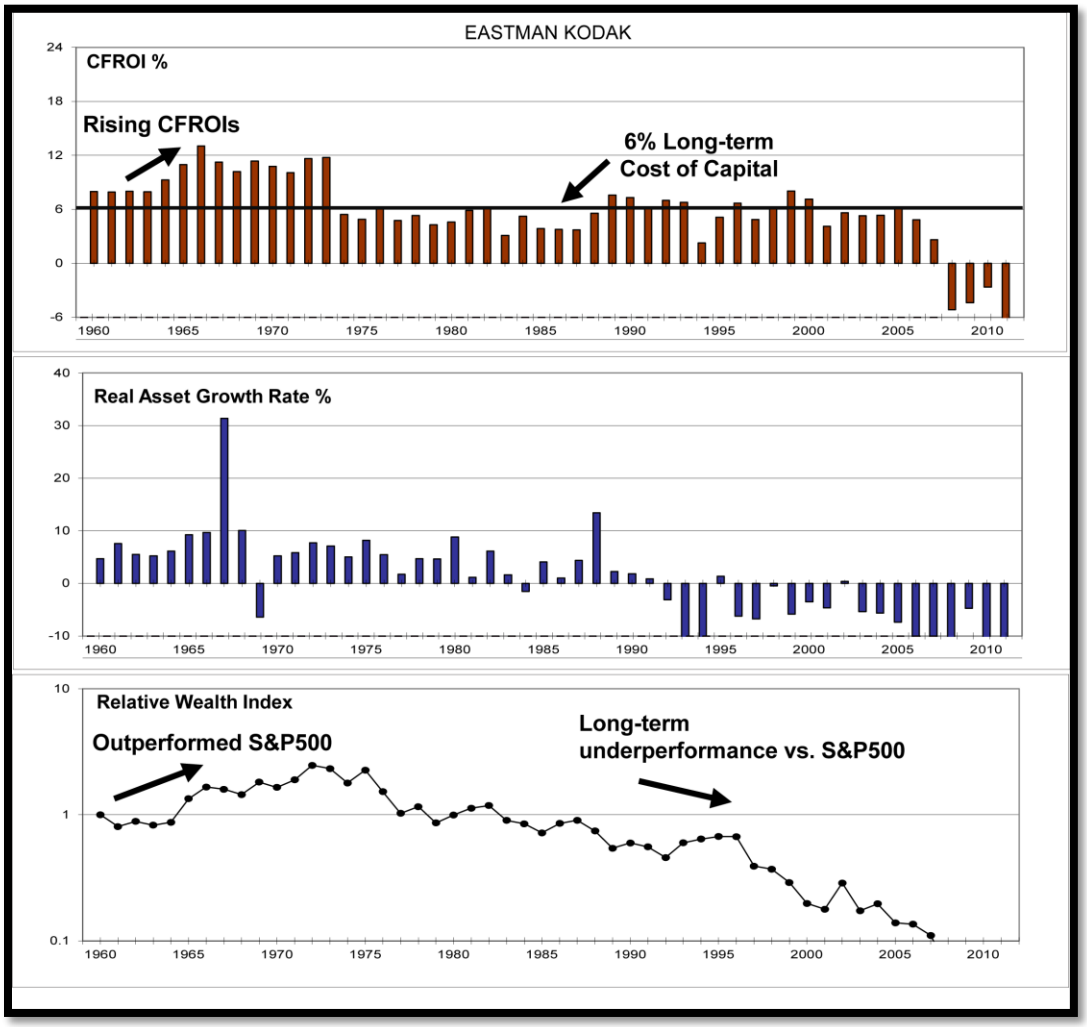
[35] The real cost of capital was estimated at 5.95% in Eugene F. Fama and Kenneth R. French. 1999. "The Corporate Cost of Capital and the Return on Corporate Investment." *Journal of Finance* 54(6): 1939-1967.

[36] CFROI® is a registered trademark of HOLT, a subsidiary of UBS. Bartley J. Madden. 1999. *CFROI Valuation: A Total System to Valuing the Firm.* Oxford, UK: Butterworth-Heinemann, Chapter 5. David A. Holland and Bryant A. Matthews. 2018. *Beyond Earnings: Applying the HOLT CFROI and Economic Profit Framework.* Hoboken, NJ: John Wiley & Sons. Chapter 3.

be part of a *customer-friendly system* enabling customers to send the camera with its exposed film inside to Eastman's firm and receive back developed pictures and a fully reloaded camera. This was a value-added experience that the firm touted as "You press the button, we do the rest."[37]

Kodak dominated the film and camera market for decades, and then in the early 1960s introduced the Instamatic cartridge, which greatly simplified loading and unloading film. CFROIs then surged to a 12 percent level by the mid-1970s (top panel of Figure 1.3). This was accomplished with significant real asset growth (middle panel). This unexpected surge in performance was rewarded by a rising relative wealth line (bottom panel) as Kodak's stock price outperformed the S&P 500. Then, from its peak in the mid-1970s, Kodak's future was all downhill. Why?

Figure 1.3 Eastman Kodak 1960-2011



Kodak's core problem was a bloated and complacent bureaucratic culture emblematic of the failing business model life-cycle stage. A series of CEOs was unable to address the issue of a slow-moving firm in what had become a new world of fast-paced change. With improved quality, Fuji film became a

[37] Elizabeth Brayer. 2006. George Eastman: A Biography. Rochester, NY: University of Rochester Press.

formidable competitor to Kodak's film. Meanwhile, management spent R&D on improving yesterday's technologies. Even though digital photography originated at Kodak, it was ignored by management because they viewed themselves as running a film business. Management failed to anticipate the onslaught of cameras in cell phones.

As Kodak's march continued through the mature stage to the failing business model stage, management pursued an endless stream of acquisitions, divestitures, and restructurings culminating in massive layoffs and demoralized employees. Kodak filed for bankruptcy in 2012.

Boards of directors should position their firm and each of its business units on the life cycle. This pinpoints the current challenges and what should be the top priorities for management (see bottom of Figure 1.2). Life-cycle track records are especially useful in explaining the firm's current stock market valuation and past shareholder returns. As Chapter 5 explains, future shareholder returns are driven by future life-cycle performance relative to life-cycle expectations at the beginning of the time period. A long-term fade upward of economic returns is rarely expected due to the skill required and almost always is accompanied by substantial outperformance of the S&P 500.

The importance of social norms

Historical analysis of firms invariably involves understanding the firm's culture, as described by Edgar Schein:

> The culture of a group can now be defined as a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.[38]

A firm with an effective knowledge-building culture promotes the questioning of assumptions, experimenting, and solving an array of problems necessary to implement value-creation ideas. For such a culture to thrive requires a supportive organizational structure wherein employees enthusiastically contribute their knowledge to help other employees solve problems, with the realization that over the long haul everyone benefits from such collaboration.

Social norms play a critical role in a firm's culture. Social norms are about doing what is right consistent with being a member in good standing in society, e.g., fairness, reciprocity, honesty, and trustworthiness. This is ignored in neoclassical economics and in the agency theory of the firm that stresses rational self-interest.[39] Along these lines, top academic journals in accounting and finance continue to be influenced by the research paradigm promoted in Milton Friedman's famous essay, "The Methodology of Positive Economics," in which he asserts: "The only relevant test of the *validity* of a hypothesis is comparison of its predictions with experience."[40] In many instances of complex economic phenomena, much can be learned by organizing and studying data as if certain assumptions were valid.

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[38] Edgar H. Schein. 2010. *Organizational Culture and Leadership.* 4th edition. San Francisco, CA: Jossey-Bass. p. 18.

[39] Douglas E. Stevens. 2019. *Social Norms and the Theory of the Firm: A Foundational Approach.* Cambridge, UK: Cambridge University Press.

[40] Milton Friedman. 1953. *Essays in Positive Economics.* Chicago: University of Chicago Press. pp. 8-9.

However, proponents of Friedman's positive economics often defend their models by asserting that their assumptions, which can be clearly unrealistic, are nevertheless not to be criticized—only pay attention to how well the model predicts. Hence, rational self-interest (a critical assumption) dominates model building while minimizing the importance of social norms.[41]

In contrast, Doug Stevens and I argue that the Pragmatic Theory of the Firm with its four-part purpose that includes win-win relationships must (and does) embrace social norms.[42] This also fits with firm risk that increases with the firm's unethical behavior, especially when widespread and condoned by management as a practical means to hit quarterly performance targets.

The firm is a system and understanding its complexities requires multiple perspectives that extend far beyond the homo-economicus model, as recommended by Colin Mayer in this chapter's opening quote. Claus Dierksmeier acknowledges that there has been a re-orientation in economic and business theory towards an appreciation of the social sciences and the humanities:

> … After about 200 years of imitating the methods of the natural sciences and their thoroughly positivistic approach, and after decades of relegating any and all moral considerations to the margins of business theory, often belittling its tenets as not amenable to quantitative models, now, arguably, a paradigm shift is under way. We are seeing an ever stronger (re-)orientation of economic and business theory towards the social sciences and the humanities, and we are witnessing the return of qualitative methods and ethics to economics. … Management education, having inched away from the *homo economicus*-model for several years now, is about to cut loose fully from its former moorings in the mechanistic paradigm of the past. Instead of tracking the behavioristic depictions of human behavior as a mere pursuit of profit maximization, a new course has to be chartered. … To understand human agency, we must penetrate the normative dimension of the human mind. *Descriptions* of economic behavior match reality only when they are observant of the moral *prescriptions* that inform said behavior.[43]
>
> (italics in the original)

Figure 1.4 showcases how shared essential social norms promote both a shared purpose and a knowledge-building culture. This is exhibited by employees who work hard to help other employees solve their problems without any immediate recognition or economic incentive, but simply because such behavior is the right thing to do and benefits everyone in the long term.

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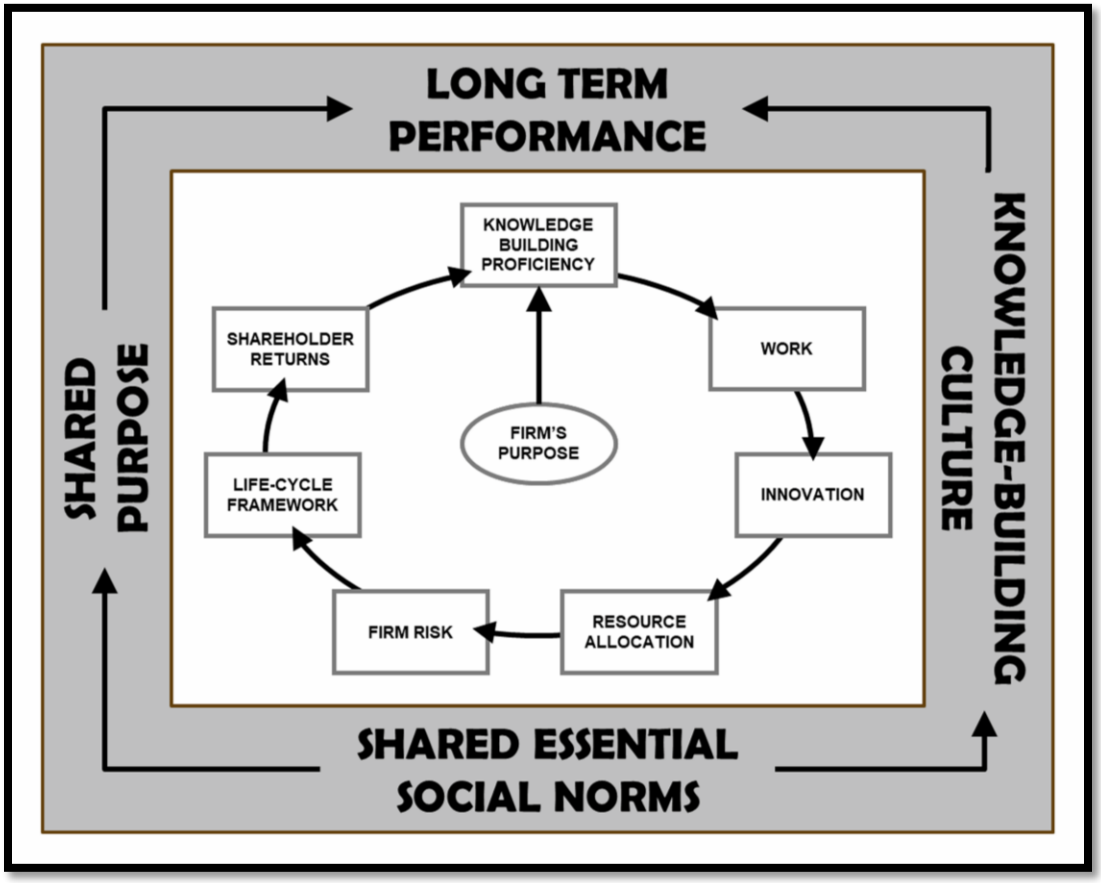
[41] For a critique of Friedman's methodology, see Bartley J. Madden. 1991. "A Transactional Approach to Economic Research." *Journal of Socio-Economics.* 20(1): 57-71. For personal correspondence between Friedman and the author regarding this critique, see https://www.learningwhatworks.com/papers/MiltonFriedman%20_2_.pdf

[42] Bartley J. Madden and Douglas E. Stevens. "Extending the Pragmatic Theory of the Firm with Social Norms." https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4842572

[43] Claus Dierksmeier, "Reorienting Management Education: From the Homo Economicus to Human Dignity," in *Business Schools Under Fire. Humanistic Management Education as the Way Forward*, Amann, W., Pirson, M., Dierksmeier, C., von Kimakowitz, E., Spitzeck, H., Eds.: Houndmills: Palgrave Macmillan, pp. 19-40, 2011.

Figure 1.4 Management and long-term performance



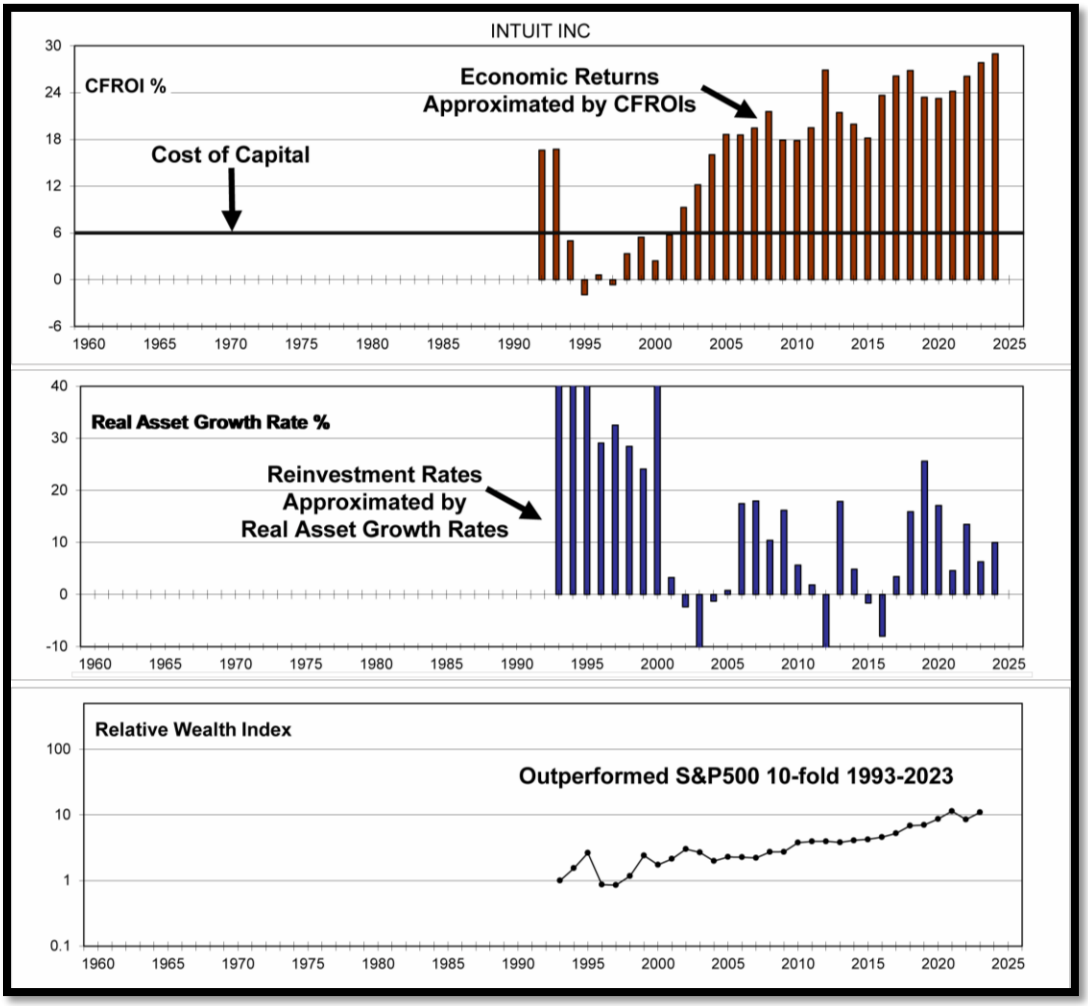
Source: Bartley J. Madden and Douglas E. Stevens. 2024. "Extending the Pragmatic Theory of the Firm with Social Norms." SSRN working paper.

The importance of social norms and knowledge-building practices to a firm's culture is apparent when studying firm histories. Couple that way of thinking with the life-cycle framework and the resulting lens is significantly more insightful than conventional security analysis keyed to earnings per share growth rates. Let's revisit Intuit and analyze its long-term performance in value creation.

Sustained innovation: Intuit

Earlier in this chapter, Intuit's innovation skill in financial software for personal use and for small businesses was highlighted. The firm began in 1983 when co-founder Scott Cook envisioned personal computers replacing tedious paper-and-pencil personal accounting. Figure 1.5 displays Intuit's long-term life-cycle track record.

Figure 1.5 Intuit 1992-2023



Source: HOLT global database

The steep drop in CFROIs (top panel) in the early years accompanied by exceptionally high reinvestment rates (middle panel) is not uncommon for a startup that is experimenting with its business model and trying to deliver superior value to its customers. In these early years, Intuit faced intense competition from Microsoft for both Quicken (personal finance) and QuickBooks (small business). The remarkable surge in CFROIs that was then sustained echoes the firm's proficiency in knowledge building. Shareholders were rewarded as the stock outperformed the S&P 500 10-fold (bottom panel) from 1993 to 2023.

Intuit beat Microsoft in the marketplace. How? In their book, *Inside Intuit: How the Makers of Quicken Beat Microsoft and Revolutionized an Entire Industry,* Suzanne Taylor and Kathy Schroeder noted an important detail about product development for Microsoft versus Intuit:

> … Microsoft hired usability experts who ran the (product usability) tests and then produced a report … Microsoft engineers did not learn firsthand by observing customers interact with their software. In contrast, Intuit engineers loved to find problems with the

> software and treasured those "A-ha!" moments when they watched a customer get stuck and realized, "My God that's so obvious; we did that wrong!"

Intuit's culture was summarized by Brad Smith, CEO from 2008 to 2018:

> Job one in creating a culture is building a purpose-driven culture … 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 that 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."[44]

The above quote neatly ties into the pragmatic theory's emphasis on purpose and the firm's knowledge-building culture. The CEO's words reflect the soul of Intuit. In contrast, typically Wall Street analysts myopically focus on quarterly earnings which facilitates writing repetitive reports forecasting next quarter's earnings. Lost is an analysis of the culture that drives long-term value creation.

Intuit exemplifies the earlier point that (for economic progress) the most important type of organization is the company. It is the means to focus attention on the pain points encountered by people, whether or not they are current customers, doing a needed task. Minimizing those pain points leads to value creation.

As another example, Intuit's management green-lighted a project to help poor Indian farmers whose biggest pain point was perishable inventory that went unsold or had to be sold at a very low price. The new product, Mobile Bazaar, was quickly (mostly by word of mouth) adopted by 180,000 farmers who then realized significantly higher prices—an example of economic progress that lifts all boats.[45]

In conclusion, this chapter provides insights about systems thinking, highlighting its application by the Vanguard Method for service firms. We showed that the Pragmatic Theory of the Firm is rooted in viewing the firm as a holistic system with interrelated components: purpose, knowledge building, work, innovation, resource allocation, firm risk, and the life-cycle framework for insights about stock market valuations and shareholder returns. The incorporation of social norms in the pragmatic theory sharply contrasts with assumed self-interest that is the driving force of agency theory, which unfortunately is widely taught in business schools. The next chapter analyzes the critical determinant of a firm's long-term performance—knowledge-building proficiency.

[44] Brad Smith. 2016. "The Most Important Job of a CEO." Investors.intuit.com. accessed March 13, 2016.
[45] Roger L. Martin. 2011. "The Innovation Catalysts. *Harvard Business Review.* June.