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Clayton M. Christensen et al (2010). Innovation Killers: How Financial Tools Destroy Your Capacity to Do New Things (Boston: Harvard Business School Press), Harvard Business Review Classics Series, pp. 49, p/b, ISBN 978-1-4221-3655-3

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Abstract: *This book argues that the better known financial tools invoked by analysts in evaluating the performance of firms were designed years ago to enable sustaining innovations rather than disruptive innovations.That is probably why firms have difficulty with innovation in practice even though they find the idea appealing in theory. It is therefore important to integrate across the functions of strategy and finance so that the financial tools used to evaluate a firm's performance is adequate to the purpose and reflects the contemporary reality of the financial markets. Likewise firms must be willing to acquire new strategic capabilities rather than think only in terms of expanding capacities by not only restructuring their value chains when required to do so, but by spinning-off disruptive innovations into separate units so that the criteria invoked to evaluate their performance are relevant; and the differences between sustaining and disruptive forms of innovation are not forgotten in both strategic theory and financial theory.*

Keywords: *Disruptive Innovation, Financial Metrics, Regulation, Sustaining Innovation, Value Chain*

I. Introduction

This book is a reprint of an article that was originally published in the Harvard Business Review (HBR) in January 2008. It is a part of a paperback series that brings together breakthrough articles from the HBR to a much wider audience of readers in the world of business; it is itself, needless to say, an important instance of a disruptive innovation in the context of business publishing on the part of Harvard Business School Press. It successfully 'redefines the value proposition,'of what a brief book for business readers should be like albeit without any compromise in the quality of its theoretical offering. The intention of the three authors - Clayton M. Christensen, Stephen P. Kaufman, and Willy C. Shih - is to find out why firms are enthusiastic about innovation in theory but inhibited in practice. They point out that there are a number of reasons for this form of inhibition. We may even go to the extent of saying that this important question addresses one of the most intractable problems in the theory and practice of innovation within the emerging literature of 'strategy as innovation' (as opposed to the better-known form of 'strategy as competition'). The main difference though between most theorists who address this question and Christensen et al is the fact that they identify the main source of the inhibition at the level of how financial tools are designed by either theorists or practitioners, and subsequently invoked by financial analysts to make sense of the performance of particular firms.

II. The Telos Of Tools

There is an old saying in management that in order to manage we must first learn to measure; and that in order to measure, we must first have appropriate tools in place (given the Aristotelian contention that we think with our tools).The better our tools are in terms of their design and fitness for a given purpose (the Aristotelian telos), the more likely is it that they will serve our needs and goals effectively. It is important to remember that the design and function of our financial tools (that are listed in any finance textbook) make important assumptions about what a firm is and what a firm is notat the level of economic theory, financial theory, strategic theory, and regulatory theory. It is not necessarily the case that all these theories are talking about the same thing though they all invoke the term 'firm' to assure themselves that they are referring to the same theoretical entity. Invoking the term 'firm' to make 'sense' of what entity is being talked about is not the same as saying that all these theories and theorists are referring to the same entity in theory or even the same prototypical objectin the world. Innovation in the strong sense therefore becomes possible only if the innovator is able to integrate the concerns of these four theories into a larger strategic goal for the firm as a whole; and in the process there is a better understanding of what sort of an entity a 'firm' is in theory and practice.What we however find in practice is that attempts to integrate the different aspects of a firm constitute the exception rather than the rule.While there is a lot of talk about integrating across a firm's functions in organizational theory, there is no integrated theory of the firm as such in the existing literature of the 'theories of the firm' that is adequate to the task of measuring the different aspects or dimensions of a firm effectively.

III. The Authorial Intent

Whatever maybe the financial tools in contention, it is important to remember from a practical point of view that there is a huge cost-factor in measuring a firm's performance; there is an even bigger cost-factor in not measuring for financial performance at all or in making a hash of it since that could seriously mislead both investors and the management who are dependent on these measurements for coming to the right decisions. It is therefore important to think through the challenges of measurement without making a fetish of financial metrics irrespective of what tool happens to be important at any point in time. Most financial analysts however get attached to some metric or the other as fads come and go and wind up over-emphasizing its importance in the over-all scheme of things. The main goal of this book is to prevent readers from making a fetish of financial tools merely because we have got used to thinking with particular tools that have proved to be useful in the past. We must, the authors argue, be willing to move on when better tools become available or when tools get pruned into their absolute essentials through forms of disruptive innovation that seek to activate not all the attributes or features of a product, metric, or service, but only those of consequence in a problem-solving solution. It is also important to be actively on the look-out for better tools in the relentless pursuit of excellence in all aspects of the firm's life, but simultaneously recognize the need to make intelligent trade-offs in generating, measuring, and analyzing the financials of a given firm since a firm cannot be all things to all customers. In order to do this effectively, we must be open to the idea of 'integrating' theories and practical insights across all major functional areas - especially strategy and finance in a firm - for instance rather than take a silo-like approach to organizational life because our sense of identity as employees has become more important for us than serving clients and customers. The next section of this review considers what it means to integrate across these important functions and the implications of not doing so at the levels of both theory and practice.

IV. Integrating Across Finance And Strategy

While the main focus in this book is on the need to integrate financial theory and strategic theory, this form of integration can also be done using a combination of the four forms of theory enumerated above. This is because some of the basic assumptions in these theories get incorporated – whether we know that to be the case or not - into regulatory mechanisms through statutory forms of legislation. This makes it difficult for firms to wish them away should they choose to integrate their functional areas in a way that is different from what is described in the work of a particular management theorist or in the approaches pushed by a particular consulting firm to its clients. The reason that firms struggle to integrate the theories listed above relates mainly to how organizational responsibilities are assigned to different departments or verticals in a firm. The endless preoccupation with questions of turf and territory also makes it difficult to have an honest discussion of how the process of integration must proceed in an inter-departmental meeting of Heads in a firm since it is easy to forget that the silos were put into the design of the firm in order to increase the efficiency of the firm rather than to keep employees from communicating with each other. The authors therefore argue that in the absence of formal mechanisms to facilitate 'give-and-take' between strategy and finance in a Heads meeting, or in the everyday life of a firm, theseconcerns about integration will not lead to anything practical. The conventions of financial analysis and the metrics in use in most firms rest on theoretical assumptions that turn out to be inadequate on close examination. These fallacious assumptions must be identified as precisely as possible in order to take corrective action in areas like organizational behavior, design, and development. It is also important to sensitize HR personnel on the behavioral implicationsfor employees of resistance to integration across functions in a firm. The authors start out by identifying three important metrics in use in contemporary firms and then explore why the underlying assumptions in these metrics don't make sense at all. The three metrics in contention include the routine invocation of 'discounted cash flow' and 'net present value' to evaluate the pros and cons of a potential investment; the inability to understand the role played by 'sunk-costs' and 'fixed-costs' in the context of competitive dynamics; and, finally, the commonplace obsession with 'earnings-per-share' as an indicator of financial performance in both firms themselves and in the business media.

V. Financial Tools Are Not Kantian Objects

The better part of this book is the attempt to understand why and how these metrics became so important and what role they actually play in economic theory and financial theory as applied to the observable behavior of a firm. Once these factors become clear, strategic innovators will have greater clarity on what is it that needs to be done in their attempts to integrate economic theory with financial theory; the implications of doing so in terms of how firms will be designed in the future, and the role that will be played by employees and stakeholders in socializing themselves to prevent the possibility that they will behave merely like agents rather than as principals. Or, to put it more simply, what the authors are hinting at is the fact that we must think through well-known financial tools in the context of Michael Jensen's work on agency theory.Do these financial tools increase or decrease the probability that stakeholders and employees will act in their own interests rather than those of the shareholders? Is it possible to redesign these financial metrics and incentive systems to ensure that those who take an ethical position are more likely to prevail in firms rather than those who push their own interests? It is not necessary for the reader to be interested in areas like innovation and strategy to read this book; it should even be of interest to those who are more interested in the history of financial metrics, the importance of agency theory in analyzing and predicting financial behavior, and the theoretical relationship between contemporary financial metrics in particular and agency theory in general. It is important to remember that financial metrics are not like scientific or philosophical tools at all. They are not transcendent Kantian objects of financial analysis. Furthermore, they arenot true, relevant, and useful, as Saul Kripke, the philosopher of language, might put it in ‘all possible worlds’ (i.e. in all business scenarios).

VI. Financial Tools And Conventions

Accounting and financial tools, if considered from an epistemological point of view, are only elementary or advanced conventions for reporting how firms use their capital stock to generate forms of value that are either retained by the firm, or returned to their respective shareholders, by a firm’s board of directors. These conventions are the result of either how firms have spontaneously evolved in a given society or are mandated from the outside by different forms of financial regulation. These regulations are either formal pieces of legislation (like the Sarbanes-Oxley Act of 2002 and the Dodd-Frank Act of 2010), ortake the form of informal agreements (between banks, and firms, for instance to provide overnight loans to each other to clear their dues on a daily basis). These informal agreements between banks might subsequently have become markets in their own right, but are eventually brought under the ambit of formal regulation. Resistance to financial reform from those who don’t understand the status of financial tools as objects of regulation does not only stem from the real or imaginary costs of regulation, but also from not being able to situate a financial tool as just a tool. These tools - as Aristotle correctly anticipated (though he was not really talking about finance in particular) - become ingrained habits of mind that are difficult to shake off even when they cease to be useful. The inordinate fear of the theory and practice of disruption in our business schoolsand business communities is a symptom of precisely that problem; it is this symptom that can be termed, as Christensen et al do in this book, as the ‘fallacy of Parmenides’. The object of this fallacy is the challenge of doing an effective scenario analysis - where risk is either incorporated or not incorporated into a firm’s strategy – in its attempt to do business going forward. It is therefore important to alert readers to this fallacy since the inability to think clearly about risk within a theory of innovation bothers Clayton Christensen as much as the inability to think clearly about the ‘economics of discrimination’ used to bother Gary Becker within a theory of human capital.

VII. The Fallacy Of Parmenides

The fallacy of Parmenides canbe best understood by invoking the misunderstanding that results from invoking the notion of ‘discounted cash flow’ and ‘net present value’where the reigning assumption is that it is less risky to not innovate than to innovate; this, needless to say, is a huge theoretical assumption and is not backed with any empirical data. This approach to risk, risk analysis, and the pricing of riskpresupposes that nothing is changing in the markets, and that a firm will generate a higher cash flow by simply choosing not to innovate and that the only sensible form of business is business as usual irrespective of how many opportunities are lost in the attempt to do so.What is so obviously overlooked here is that the ‘do-nothing scenario’ will not necessarily guarantee cash flows; it might even lead, as it usually does in fast-changing scenarios, to a ‘nonlinear decline in performance’ that can be difficult to reverse for a firm. The assumption that nothing is changing in the markets; and that a firm can safely keep doing more and more of the same, without any serious attempts at innovation given the ever present risk to cash flows, is referred to as the ‘fallacy of Parmenides.’Parmenides was a pre-Socratic philosopher who argued that there is no change in the real world, and so there is no need to do anything that will demand a departure from the way things are at the present. The risk, for Parmenides, is simply not worth it. Christensenet al however argue that it is important to compare the value that a firm hopes to generate from an innovation within ‘a range of scenarios’ in order to determine what it must do or what it must not do. They are also worried about situations in which firms get their cash-flow calculations wrong since the consequences of disruptive innovations cannot be modeled easily on a year-on-year basis in the hope that terminal values at the end of a project period will facilitate a more accurate calculation. This approach will not permit comparisons across scenarios since the cost of doing nothing (i.e. not innovating) is assumed to be nothing, but this doesn’t account for the possibility of a non-linear decline in performance as a result of a simply-do-nothing scenario. It will not be possible to generate a single number in such a situation – to put it simply - that can be an effective stand-in for effective financial comparisons or pricing risk in a theory of disruptive or even sustaining innovation.

VIII. Expanding Capacities And Acquiring Capabilities

Christensen et al also argue that financial decision making can be marred by making unwise use of fixed costs and marginal costs without understanding the strategic or financial implications of doing so. Here what decision makers in a firm overlook is the problem of strategic 'capabilities': what capabilities are required to succeed in the future will not be the same as those on which fixed costs and marginal costs were incurred in the past in a given firm. Not understanding this may make it difficult to leverage the potential returns to existing capabilities in the future. It was the unwillingness to acquire new capabilities and the preoccupation with leveraging fixed costs and sunk costs that made it difficult for companies like US Steel to respond dynamically to the disruptions created in the steel market by mini-mills like Nucor. Large integrated steel plants are then highly unlikely to attempt any Greenfield ventures since that will make it difficult for them to leverage on marginal costs which is a more attractive proposition in the short term than the need to think carefully about the need to minimize 'long-term average costs.' What is convenient from the marginal cost form of thinking will turn out to be inconvenient both in terms of long-term costs and of what is strategically required to respond to the process of disruption in any market. This will almost invariably lead to a situation when the incumbent firm will be disrupted at almost every level of its product hierarchy as the disruptor firm eventually decides to move upmarket. The fallacious assumption in such forms of thinking on the part of incumbents is in not understanding the difference between 'expanding capacity' (where it makes sense to leverage marginal costs on existing capacity by doing more of the same) andin actually 'acquiring new capabilities' where 'the relevant marginal cost is actually the full cost of creating the new' capability.Likewise, there is another interesting problem relating to the depreciation of assets in the firm. In this situation, the 'usable lifetime' and 'the competitive lifetime' of a capital asset are not the same. It is easy to make the obvious error of trying to depreciate the former - rather than think in terms of the latter since the former lasts longer. This error will make it necessary to 'often face massive write-offs when those assets become competitively obsolete and need to be replaced with newer technology assets.' The preoccupation with quarterly results will also delay the adoption of new technology that is required to respond dynamically to disruptive forces. The solution that is suggested here is that managers must move from a preoccupation with projects to thinking in terms of strategy in order to remain competitive. The reason that they hesitate to do this is their preoccupation with how the equity markets will respond to 'asset write-downs.'

IX. Restructuring The Value Chain

Unless there is an attempt to 'integrate' financial concerns with a strategic mind-set at this juncture, the financial health of a firm will become inversely correlated to its strategic potential.So, instead of trying to 'integrate' across functions, the firm will find that it is 'disintegrating' should there be a disruptive attack in the markets. In many such cases, the incumbent firms do not even understand what happened - let alone come up with an integrated response that will help them to recover strategically. This is because the incumbent firms cannot represent the formal structure of their own value chains if challenged to do so, as Michael Porter might put it, even in a business-as-usual competitive scenario – let alone in a disruptive scenario where the very definition of what a value chain is what is ultimately at stake. Unless the incumbents understand the implications of what is involved in restructuring the conventional value chain with a disruptive value chain that has fewer nodes, they will not be able to correctly identify what is at stake in disruptive innovation. So, to invoke an immediate analogy: just as a disruptive product will have fewer - and not more features than the incumbent's product – so, likewise, a disruptive value chain will manufacture or market with fewer nodes in its value chain by rethinking the rationale of the product; in the process it will also accrue considerable savings in cost by eliminating the needless or superfluous nodes in the firm's value chain.Or, to invoke a mixed metaphor from strategy; we must not assume, as the incumbents do, that a value chain is devoid of muda (i.e., slack or waste from a kaizen point of view).

X. Financial Metrics And Financial Strategy

The third metric that needs to be rethought is 'earnings-per-share' as the lead indicator of a firm's stock valuation. Hereproblems arise from the assumption that principals and agents are not sufficiently aligned with each other and will always work at cross purposes unless agents are hugely compensated in terms of stock options. It is this compensation mechanism and the assumptions that warrant it which lead to attempts to keep stock valuation as high as possible by seeking recourse to buyback mechanisms whenever the firm can afford to do so. These mechanisms will, needless to say, generate unnecessary cash-flow problems for publicly-listed companies. So while companies try to avoid innovation as risky from a cash-flow point of view, they don't seem to realize that boosting stock valuations through artificial means will misalign finance and strategy, and the company will be endlessly preoccupied with 'earnings surprises' to keep investors excited about their stock without any real concern about the long-term strategic or financial viability of the company. This approach to financial strategy without any genuine concern about the over-all competitiveness of the firm will eventuallymake it vulnerable to hostile takeovers and leveraged buyouts since there is a limit to managing the attention span of shareholders through gimmicks like earnings surprises. So, the solution to the problem of a possible misalignment between the principal and the agent turns out to be worse than the actual problem because these forms of misalignment turn out to be 'self-fulfilling prophecies.' Again, Christensen et al disagree with the contention that all managers are merely seeking to maximize their positions as agents though I am not clear whether there are empirical studies on this subject and how decisive these studies are one way or the other. The main contention in agency theory in a sense presupposes that there is little or absolutely no fit between a firm and its employees, all employees are agents who will ruthlessly pursue their own interests unless proved otherwise on a case-by-case basis, and that firms are completely oblivious of the need to institute HRM processes to socialize agents effectively so that they don't behave like agents and start behaving like stakeholders who are answerable to shareholders. Another important problem with the principal-agent approach to financial governance in companies relates to the changing nature of company ownership. The principals in contention (i.e. the shareholders since they are the rightful 'owners' of the company) are themselves not invested long-term in a company given their propensity to speculation, herd-behavior, and financial panics.

XI. Agency Theory

The main contention in agency theory used to be that you can't trust the agent with the long-term interests of the company unless their behavior has been sufficiently incentivized. Now however that turns out to be the case for shareholders and investors as well. They have ceased to be shareholders since they often don't hold stock for even as long as a year and are more rightfully described as temporary share owners. The bulk of the holdings in publicly-listed firms arecontrolled by different types of mutual funds that are preoccupied with forms of portfolio optimization using expert systems rather than with getting to know the company and its management well-enough to be described as principals in the traditional sense of the term. Or, to put it more simply, neither principals nor agents are what they used to be or what we thought them to be. Neither Wall Street nor Main Street is morally superior; and, in any case, the bulk of the investments these days are done by large scale institutional investors and pension funds like CALPERS. It is also important to note that one company's principal is another fund's agent – so it not clear how to draw a line, i.e., mark a clear ontological divide between the principal and the agent; the term that Christensenet alare forced to invoke then is not the 'agency problem' (where the agent fails to protect the interests of his principal), but rather the 'agent-agent problem.'Christensen might want to quip that the gains from being an agent are so high that instead of aligning agents to behave like principals, the latter have decided to become agents themselves; hence the 'agent-agent problem.' If this is the problem, what pray is the solution? Could we envisage a world of financial markets in which there is a 'principal-principal solution' to the 'agent-agent problem'?

XII. Discovery Driven Planning

And, finally, we need to rethink the structure of project financing as well since funds are usually released for the 'feasibility, development, and launch' of a project in stages. The transition from one stage to another of the project is structured through the mechanism of 'stage-gates.' This stage-gate mechanism was originally meant to ensure that funds were used carefully and stem wasteif there is an instance of misuse. It would also ensure that the release of funds corresponded in an ideal scenario to the scheduling of a linear sequence of activities. While this approach is sensible to ensure that funds are not misappropriated or wasted, this model of funding did not envisage the analytic distinction between sustainable innovations (for which it was designed) and disruptive innovations since both the criteria of evaluation and the burden of risk are not the same for both forms of innovation. It is much more likely that sustainable innovation will be funded than disruptive innovation though the long term financial health of a company depends on disruptive innovation.This model of project financing for sustainable innovation will ensure that an incumbent will not be able to summon a strategic response to a disruptor not because he lacks strategic agility, but because his model of project financing will not allow him to spend his resources in way that will make the incumbent truly competitive in a disruptive scenario. That is why it might be a good idea to spin-off projects into new firms rather than destroy funding for disruptive innovations using the criteria of evaluation for sustaining innovations. This model of project financing is probably why incumbent companies cannot fund lower-end products to stall the disruptor in the first place. That is also why incumbent firms are forced to flee upmarketendlessly to delay disruption to the extent possible until it is too late for them to respond strategically. An important mechanism thatwill solve this problem in the context of project financing is known as the 'reverse income statement;' this mechanism works with the minimum set of numbers that are acceptable if a project is to go ahead. Here there is a greater level of financial integrity since assumptions are not endlessly tweaked to make the project look good; but, instead, a 'discovery driven planning' approach is invoked that works with an 'assumptions checklist.' The idea is to ensure that planners understand what the crucial assumptions are in their projects, and are also willing to make them explicit so that 'the assumptions that constitute the key uncertainties' in a given project are made known to everybody before starting out. This is how disruptive entrepreneurs fund their projects; and this is what the incumbents must think through if they want to go beyond sustaining innovations, and re-define their value chains in terms of disruptive innovation.

XIII. Conclusion

Unless these three financial metrics are analyzed and the differences in assumptions between sustaining and disruptive innovations brought out into the open for all stakeholders to make sense of, incumbent firms will continue to struggle to understand the role of disruptive innovation in the financial and product markets.That is the danger that Christensen et al set out to diagnose and cure in this book. The urgency of their intervention is also related to the fact that the time required to pull the macro-economy out of a recession has repeatedly increased in the United States since neither incumbent firms nor policy makers have fully understood the differences between the policies required for sustaining innovations as opposed to disruptive innovations. This book, if read in the spirit of its strategic intent, will help them to do so. I couldn't recommend it more highly for both first time readers of 'strategy as innovation' and for those doing courses in strategy.