Preface (Mandatory Reading)

At some point in the history of business, manufacturers came down with the same illness that afflicts merchants: they were taught to believe that the purpose of what they were doing was to make money. Merchants, like banks, buy cheap in order to sell high. For merchants, this is done through goods, while banks go through this same process using money. No doubt, both of these figures are central to the world as we know it today.

The manufacturer, however, brings something into the world that doesn't previously exist. At some point in their creative and vocational process, manufacturers have to be passionate about something that isn't money. New products are created precisely because they have to be; they're created in order to become a part of something larger, something that ultimately improves other people's lives and makes the designer proud. There is an element of artistry involved in this process.

One of the twentieth century's greatest thinkers on the subject of management, Peter Drucker, was firmly opposed to Milton Friedman's ideas of economy and business. Friedman argued that, "a business has a sole responsibility: economic performance." In numerous publications, however, Drucker stated that, "the purpose of a business is to create and serve customers." Money, he would add later, is a necessity.

As anyone intuitively knows, a company needs money in order to grow; and, in order to get money, a company has to be profitable. Yet, money cannot and should not be the *purpose* of a business; this is true even when a business's products and services are so technical that they are by and large overlooked by the everyday consumer. I am referring to industrial products and services. On the contrary, the more hidden these products, ingredients, and components, the greater their impact and responsibility to other industries, businesses, and people. From vacuum tubes to transistors, changes in technology have had wide-reaching impacts on the way hundreds of companies do business, leading to improvements in thousands of products and bettering the lives of millions of people.

Even small or incremental improvements to an industrial product or service can have huge effects on its end user applications. Because of this, I firmly believe that the *purpose* of a company should be strictly related to world progress.

Yet, starting at the end of the twentieth century and continuing on into the twenty-first century, business academies have completely standardized their business doctrine. In today's world, either implicitly or explicitly, teaching business strategy is

about teaching ways to "make more money." Some of us believe that this is not a legitimate objective for a business strategy. For us, it is as inappropriate as a Field Marshal who says their sole strategy is to "gain ground."

Business literature is filled with ideas about how to benefit short-term stockholders, which is the type of person the Stock Exchange is teeming with. Too much focus is put on the word *profit*. There are far too many ideas and concepts about *profit-seeking*.

Greed—an uncontrollable desire about which Gordon Gekko[1] said, "it's good; it's necessary and it works"—has done more than simply generate some of the worst financial crises in the history of business. On a day-to-day basis, the anxiety to increase revenue destroys the creative drive to develop a better product, it stifles potential, or it simply leaves a product by the wayside; meanwhile, greed and competitiveness are what ultimately become the markers of a profitable "business model." Put simply, passion for money and passion for technological creation do not go hand in hand in the typical business environment. In today's world, it would seem as if a company's value or its reputation stems from its level of sales or from its profitability, rather than from the objective or demonstrable good that its products provide.

The academe of business has even started to "evangelize" its hopeful audience with case studies of companies that use corporate ingenuity to increase their bottom-line, never mind that in many instances this involves introducing a mediocre product into the world. This ingenuity has been turned into a business model, and its various mechanisms have been singled out and named by its authors: to wit, "built-in obsolescence," "customer lock-in," "network lock-in," "customer recruitment and retention," etc. These ideas are flawed in two ways: they underestimate the customer's intelligence and they do so from the comfort of the office.

For the most part, the conceptual tools that are taught and presented in MBA programs are founded on these ideas and objectives. For decades, academic courses on strategy, marketing, finance, and operations have attempted to systematize ways of getting customers to "fall" into traps—traps set by cunning and predatory businesspeople who find it unnecessary to immerse themselves in the inconveniences of fieldwork. Their business courses have taught them how to use a variety of key decision-making techniques, techniques that are employed from the upper floors of a corporate building. Young people who graduate from these academic programs arrive at their companies with a more theoretical outlook that shows little, if any, empathy: they superimpose a "business model" onto the realities and complexities of the field. The hundreds of case studies these students have been presented with over the course of their academic programs drive them to make fate-altering decisions for their company with very little effort. What they ignore is that these case studies obscure a story that is far less glamorous and synthesized: that is, that

[1] Businessman and the main character featured in the films *Wall Street* (1987) and *Wall Street: Money Never Sleeps* (2010); both films were produced and directed by Oliver Stone.

these businesses have arrived at a successful business model after years of trial and error. What academic case studies don't show are the numerous instances of companies that failed, despite having followed the exact same protocols.

Likewise, marketing has also fallen prey to this complacent and abstract view. Marketing is discussed as if it were an "office-game," one characterized by unilateral methods in which the customer is seen more as a victim rather than as a participant. The most precarious form of market research (and thus the most commonplace) has companies using segmentation programs and the "Four Ps" to try to get customers to give conditioned responses, much the same as in Dr. Pavlov's clever experiment.

Fortunately, sociological approaches don't work for getting an industrial customer to purchase a product/service. An industrial customer is a *colleague*. The customer's personnel may be just as knowledgeable about engineering, just as executive, and just as much of a leader as the suppliers. Dealing with a colleague requires field experience, scientific preparedness, respect, iteration, as well as a certain degree of humility. Industrial suppliers should think of marketing as a science, one that is both conceptual and technical. Marketing creates a mutual understanding between supplier and customer and, furthermore, it allows this understanding to be articulated within the company. This understanding allows an organization to institute important changes (in areas such as investments, engineering, infrastructure, etc.), which also let a company provide demonstrably better offers. In all likelihood, this process accounts for the greatest difference between consumer marketing and industrial marketing. Consumer marketing frequently uses elements of social science to make an offering appealing to customers' psychological phenomena.

While inter-organizational relationships between industrial companies are not free from psychological phenomena, they are nonetheless far more scientific in nature. In fact, they are *increasingly* scientific. This represents a growing trend, one overlooked by company strategists: that is, products and services are becoming increasingly complex and sophisticated. In the past, it would have been sufficient to design and manufacture products solely using metallurgical knowledge; today, designing and manufacturing have to incorporate other sciences, such as electronics, chemistry, magnetism, and data processing, to name a few. As such, it's inconceivable for an industrial marketer not to understand their own products. Perhaps industrial marketing should actually be called engineering marketing. Fully grasping the problems and needs of a clientele, as well as introducing new products, requires scientific and linguistic competencies.

Modern-day executives shouldn't forget that flimsy academia will try to eschew what it does not understand and will, in turn, only promote paradigms of what it does understand. Unfortunately, what academia doesn't grasp might turn out to be an essential ingredient for a business's success. Some of the ingredients that are not covered under social sciences include product engineering, the assorted functionalities that a technical product has for different users, or the various *types* of attributes that a customer looks for in a properly designed product.

The Science of a Product and the Precision of Language

Throughout the twentieth century, one of marketing's greatest flaws was its lack of linguistic precision. Or, to be fair, we should say that language was used carefully for *branding* different marketing concepts, but very little attention was paid to how managers interpreted those concepts over time.

Take, for instance, the word "value." For decades, the word "value" has been used within academia and business literature, as well as by consultants and seminar speakers in every field of business. Perhaps when it first appeared it was a precise term whose sole meaning was immediate and universally understood by all. Today, however, the word "value" is frequently used by those who either don't know or don't care to specify what it means. Given how widely its meaning varies and how often it is subjected to simplistic interpretations, it is not even useful as a metaphor or generalization. What exactly does it mean when someone proposes creating a "value-based strategy" for a customer? What tangible and demonstrable benefits can a customer expect to receive from that sort of statement? Does it provide a good foundation for a research and development department to design technical specifications?

In other contexts, the word "value" is used to refer to benefits accrued by the company itself. When management says that "executives are here in order to add value to the company," it's plausible that what they're referring to is how to increase the company's selling price. In this context, is the word "value" just a euphemism so as to avoid using the word "money"?

In the present volume, we will replace the word "value" with the term "benefits to customers." Throughout these chapters, it will become clear that this benefit has an economic aspect to it and that, furthermore, the economic benefit that an industrial customer receives is an excellent indicator of their purchase intention. Perhaps the word "benefit" is no more precise than the word "value" once was when it was first used by modern-day managers; however, in today's world, the word "benefit" is subject to fewer interpretations. At some point, when the word "benefit" becomes confusing, nebulous, or euphemistic, it will be necessary to search for a new term that provides even greater precision.

Another term that is commonly misused in a business-to-business context is "customer loyalty", which has come to mean unconditional customer loyalty. It is incorrect to think of "loyalty" as an irreversible exchange, one that guarantees a steady and indefinite flow of money from loyal customers. In fact, it can be funny to listen to people who have such an alluring notion of loyalty: they think that eventually, they'll be able to *convert* a customer. It's not just that this idea is bad—which, for the most part, it is—but experienced executives will often insist on taking this leap of faith. In an industrial context at least, marketing strategists should just assume that there's no such thing as customer loyalty. A customer company will continue to purchase from a supplier until a supplier makes a decision that makes them stop. Hence, there was never any loyalty. Or at least, there wasn't the kind of loyalty that inspired Shakespeare to write Sonnet 116. Even if customer loyalty were possible, it would be better for an executive at an industrial company to assume

that it wasn't. It's troubling to realize that what really drives suppliers is finding ways to ensure sales over time. If it were possible to ensure industrial customers' loyalty, suppliers might settle on merely providing mediocre, arrogant, and monopolistic offers. In the real world, however, an industrial strategist strives day by day to retain their company's customers. Technical progress is by and large the result of customers' disloyalty.

Another term that industrial products and services suppliers should think twice about is "differentiation." It was very insightful of James Hlavacek to point out that differentiation is an ambiguous goal for an industrial company to have. Industrial customers don't purchase a technical product because it's "different." Conversely, this isn't the case in consumer markets, where customers are interested in products that are distinctive. An industrial customer buys a product or service because it's "better or more apt." The product or service must be functional and technically suitable. Perhaps the word "differentiation" should be exchanged for the word "adaptation." Naturally, differentiation is the result of an industrial product or service being the most proficient of its kind; this is similar to Darwin and Wallace's theory, in which a new species is different because its ancestors underwent changes in order to adapt to their environment. Once again, the word "adaptation" seems more precise and operational than the word "differentiation."

The word "innovation" has also joined the burgeoning world of imprecise language. Today, it's nearly impossible to find a company that doesn't refer to itself as "innovative." For now, there are no studies that show just how many companies really think this about themselves; using the word has become a "me-too" type situation. In second and third world countries, it's very common to find businessmen and women who claim to be innovative solely because they buy new machinery for production. Others tout themselves as "innovative" because they import or assemble products designed in more developed countries. Even within the world of academia, there is no clear consensus about what "innovative" means. For those who are most knowledgeable on this subject, there are essentially three types of innovation: that is, a new product, an improved product, and changes to administrative/operational processes. Classifying innovation in this way is helpful to companies; it allows them to be more conscious about how they innovate or how they might innovate later on. Nonetheless, given that the word "innovation" is subject to varied interpretations, this volume will avoid its use. Instead, it will simply be replaced by the term "new product development." The following chapters will discuss the scope of this development within industrial companies; it will discuss the creation of radically new products as well as incremental improvements to preexisting ones.

The redefinitions outlined above aren't something that this author has done on a whim. Engineering marketing deserves greater language precision so that it will not fall prey to spur-of-the-moment interpretations. It's right to think about how company executives and directors interpret academic concepts; this is because they make and implement decisions based on these interpretations. It is academia, consultants, and business literature that are all responsible for the surplus of definitions that exist for the above terms. Academia shouldn't throw terms around as if it were

releasing a flock of white doves into the open air. The wide range of interpretations for words is because each person's mental processes are different. For some executives, the meaning of a word is clearly visible in the word itself (e.g., "to segment" means "to partition"); others, however, have been conditioned by the business culture they live in (e.g., "customer behavior" is defined as "customer purchasing behavior").

"We Were Infected by a Commodity"

It's not wrong to differ somewhat from Ted Levitt when he says, "commodities only exist in the minds of the inept."

Commodities do exist, and they are *conceived of* by the inept. To grasp this idea, one should consider the birth of a new product: why does the company that invented this new product allow it to mature into a commodity? Here, we have to be especially careful about what we say. A good product that is imitated extensively naturally reaches its maturity as a commodity. Hence, the question should be: why do companies that create a new product allow for its current design to mature into a commodity?

The following chapters are based on the premise that managerial behavior is directly responsible for the emergence of a commodity. Or, perhaps better said, a commodity is the direct result of managerial oversight. This can also be understood as: in order for commodities to exist, there must first be minds that think like commodities. After a commodity has infected a company or an industry, something even worse begins to take shape: Commodity Culture. Commodity Culture is a generalized infection that affects the business organization as a whole. In this case, exploratory market research is pushed aside and more resources are devoted to advertising, sales, and production; meanwhile, the company gets fixated on large-volume customers, the research and development department is forced to close due to costs, and members from the board of directors show up each month to review the balance sheet and go over sales figures. Additionally, this infection also sows fear and uncertainty within the organization.

Of course, there are commodities and there are commodities. There are some commodities whose physical makeup is immutable (PTC—*periodic table commodities, see* Chap. 3) or commodities that are more chemically complex and are therefore changeable (CCC—*chemically complex commodity*). Examples of the former include lithium, copper, iron, tin, etc. Examples of the latter include petroleum, cellulose, as well as a vast array of chemical compounds. A lot has been said and written about the difficulties of decommodifying these products. With regard to either of these cases, we will be discussing some of the ways that a company can "cure itself" of true commoditization: that is, the commoditization of a product.

This issue will be discussed at several points throughout this book; specifically, what may have seemed like a good idea in the beginning of times (decommoditizing a commodity by providing a more multifarious offer, e.g., services) has ultimately sent a bad message to company executives: a physical product can be put aside in

favor of creating more supplementary services. These services include improvements to logistics, communications, financing, etc. and they are by and large much simpler to implement than a physical improvement to a product. And, of course, customers will undoubtedly take their business to a commodity supplier that offers more services while still maintaining *competitive price*s. Yet, there is an almost mathematical and indisputable truism: regardless of whatever peripheral services there may be, so long as a physical product remains the same, then the benefits of using it remain the same. This inconvenient truth is compounded by another troubling possibility: if it's fairly easy for a supplier to invent peripheral services for their commodity, then it will be just as easy for their quick-witted competitors to do so as well.

The rule of thumb of this book is this: so long as the benefits of a product have been *conceptually* understood, then the possibility of making tangible improvements to a product should never be disregarded. This is true no matter what. After all, the product is what lives on long after the sales transaction and any service benefits have faded into the past. The product is the *raison d'être* for the relationship between customer and supplier; and, in the long run, the benefits of using a product are what interest a customer, or the customer's customer, or the customer's customer's customer, etc. In an industrial context, the product is king! Long live the product!

Customer Behavior or Customer Purchasing Behavior?

All companies have to make sales in order to live, survive, grow, or fulfill their true potential. Each case is different. However, when a company's goal is essentially to "make money," then "achieving sales" becomes an urgent goal. Sales are vital, but they shouldn't be considered essential (the essence).

Like it or not, in the business world critical issues are not necessarily the most important ones. In fact, as the cliché states, obsessing over critical issues can mean setting important ones aside. Yet, what few managers realize is that disregarding important elements exacerbates critical ones, and from here, this vexing cycle of incompetence only gets worse. The company either goes under or gets bailed out at a very high price. Sales are critical. And, as a result, customer purchasing behavior is both *critical* and pressing. Product functionality is *important* and so, understandably, *user behavior* is important as well. As we'll see later on, functionality is essentially the product of a product; functionality is the reason why a product is used and, it follows, why it's bought. Unfortunately, a lot of industrial company directors don't understand this simple logic; this is because in a varied and sometimes prosaic world, customers tend to be far away, dispersed, or simply unknown.

From an intellectual or operational perspective, the higher-ups at a majority of industrial companies spend their time and energies trying to understand their immediate customers' purchasing habits. This is true even when their immediate customer is also a user. Any other type of phenomenon (for instance, product use) is considered too abstract, too long term, and calls for information that the sales force doesn't know and can't find out. There just isn't time. The sales force has time to

research information or data that might threaten or improve sales: seasonal variation in sales, sales logistics, money earned from sales, customer complaints, competitor behavior, etc. Similar to T. Levitt's description of a marketing myopia,[2] it's also possible to talk about a sales myopia. One in which the director of an industrial company can only see purchase orders and paid invoices. In so doing, they cultivate one of the key ingredients for a perfect storm: they mistake customer behavior with customer purchasing behavior.

For someone standing safely at a look-out point, it would seem as if the other ingredients for a perfect storm were all interdependent variables in the same algorithm: that is, short-term thinking, commoditization, sales culture, and a lack of knowledge about the user.

Too Many Names for Marketing

Not surprisingly, confusing customer behavior with customer purchasing behavior has discredited marketing, so that now many people see it as a social science purely dedicated to creating manipulative and cunning advertising. In the Garden of Eden, Eve could well have fallen victim to a snake that studied marketing.

The idea that marketing is essentially a promotional tool is the result of an organization's "sales culture" and the sales culture at academies where these executives studied. This type of marketing has many faces, some of which go in and out of vogue: direct marketing, relationship marketing, content marketing, digital marketing, guerrilla marketing, viral marketing, internal marketing, etc. Now well into the twenty-first century, some authors list over 130 terms for marketing. At the risk of sounding too conservative, this author maintains that there are only two types of customers: natural persons (and their plants and animals) and organizations made up of people. Here, this book proposes combining all of the various terms in order to arrive at two forms of marketing: marketing for mass consumption and industrial marketing (or engineering marketing). The reader is asked to distance themselves from what they've read and studied about different types of marketing and to really reflect on what each type of marketing stands for: does it have a promotional objective? Is it primarily for communication purposes? Is it inspired by Pavlovian theory of customers' conditioned responses?

Take for instance the type of marketing known as "relationship marketing." Who can properly define relationship marketing without mentioning things that are really the responsibility of a proactive sales force? Furthermore, all of this is based on the premise that people who design and implement relationship marketing have win-win intentions. Once again, when academia fails to provide a precise definition for a term, management steps in with its own meaning. In today's world, it's easy to find company directors who believe that relationship marketing is just a mix of activities

[2] Marketing Myopia. Theodore Levitt. HBR September-October, 1975.

that are meant to "smooth out the relationship" with their most important customers. In this context, very few people would draw a line between relationship marketing, a loyalty program, company dinners, rounds of golf, and corporate gifts. It's easy to see how appealing relationship marketing is for company directors and executives who think that social activities will increase their sales! For them, sales executives are hired precisely because they are extroverted, charming, and good-natured people.

When industrial marketing is properly understood, it becomes clear that promotional techniques are just the last in a long line of activities, all of which are much more complex and fundamental. This type of marketing understands that success largely hinges on iterating, understanding, and translating a customer's needs into technical language so that they can be articulated in an intelligent way within a company. Companies with this mindset assume the responsibility (and everything else this implies) to design and develop an adequate product/service. If this initial phase is done well, then it's industrial marketing's turn to take the stage; industrial marketing allows a new product to be properly understood by customers that might chose to adopt it. Meanwhile, the sales force carries out iterative activities with customers to determine which product is right for each case. Lastly, industrial marketing is responsible for the performance promise and consistently studies how the product is being used by the customer. When understood correctly, industrial marketing is about caring for the most powerful long-term relationship that exists with a customer: the relationship between a customer and the benefits of the product.

The End User Is the Real Customer!

Whether it's a company or a household, the end user is responsible for setting the entire industrial and logistical chain in motion. When the end user demonstrates a preference for a particular product or service, it's because the benefits they provide are the ones most suited to that user's needs. Benefits consist of functionalities and attributes. These functionalities and attributes are made possible due to engineering, including the engineering that goes into developing ingredient and component products at other industrial companies.

The end user, however, is more than just derived demand or a pull strategy for components and ingredients. Derived demand or pull strategy is for people who only think of marketing in terms of promotional marketing.

The end user should be seen as a source of information and insights, one that facilitates functional and engineering improvements to a finished product. This lets industrial companies know what they need to do, whether it's improving a product or developing a new product. This is also true for those who wish to engage in disruptive innovation.[3] To put it another way, once a company has developed a product

[3] The Innovator's Dilemma. Clayton M Christensen. Harper Business; Reprint edition. October 4, 2011.

that benefits end users (and cost permitting), there should be nothing that keeps these customers from adopting it. Intermediaries (e.g., distributors, constructing companies, contractors, integrators) can be powerful, but the end user is even more powerful.

Intermediaries will not necessarily know very much about the end user. They are not a good source of information for learning about what goes on between an end user and an integrated product. If some of these intermediaries have been infected by commodity culture, they simply will not be interested in finding out what goes on beyond their company's front door. In other cases, however, a manufacturer can team up with a more progressive intermediary (e.g., an integrator) to learn about the final customer. Or it can be done with a supplier. Or it can be done by all three.

Naturally, some modifications to a product's ingredients and components might benefit an intermediary without actually benefiting the end user. These benefits could, for instance, have a positive effect on an intermediary's productivity, or they might facilitate its stock, transport, or integration operations. These are all good ideas and they could give a manufacturer a competitive edge… but only so long as their competitors ignore the end user. In the long run, a company that improves its product solely for the benefit of an intermediary cannot compete with a company whose product improvements benefit the end user. Ideally, however, a manufacturer should concern itself with all the aspects of a product: those that benefit the intermediary as well as those that benefit the end user. What benefits one may not benefit the other, and the present volume will make a first attempt at classifying these elements so that they can be more easily understood.

The Organization of an Industrial Company: Culture, Change, and Fear

The present volume contains an array of concepts, tools, and techniques for industrial companies that are looking to modernize their marketing. But it also contains a forceful call for cultural change within an organization. All of the concepts that are presented in this book are based on the assumption that a business or company exists for one particular reason: to serve customers. Profitability is understood as an outcome, not as a purpose. For those that disagree, many of the concepts and tools presented in this book will make them uneasy.

Industrial companies must develop an awareness of themselves. These days, they are afflicted by a paradoxical malaise: these companies are self-absorbed but they are not self-aware.

The list of distractions keeps growing: the obsession with reaching a sales quota and the enormous amount of "how-to-do" tools are two things that plague talented executives on a day-to-day basis. Company's "what-to-do" have gotten buried under other "impostors," such as growth goals, "top-line goals," and "bottom-line goals." Furthermore, these are all goals that are common to any company within the same industry. Thus, their "what-to-do" is just as faulty as that of their competitors.

Of course, profitability ratios are real and they're necessary, but they shouldn't be the starting-off point for defining what a company needs to do. Stockholders' profit objectives are no longer inspiring. Perhaps they never were. The following dialogue should never take place at any progressive company or business unit:

General manager: Stockholders need a X% ROI this year. I need each and every one of you to bring me an activity proposal and a budget that lets us meet this goal.
Executives: That goal is way too high for the state of the current economy. Our markets aren't growing.
General manager: Stockholders don't care about that. You'll figure out what you need to do. Sell more, lower the costs, or increase the prices! Or do all three!

There are two problems here. On the one hand, there's a time-based mentality. Companies that organize their *objectives* quarterly, biannually, or annually are the same companies that lower their defenses and are at risk of being infected by commodity culture. Management control might be able to work on this schedule, but a company's goals shouldn't have to.

Secondly, the above dialogue shows just how few variables these types of companies work with: sales, prices, and costs. For pundits at these companies, this is all they're allowed to think about; thus they end up asking themselves, "What am I doing here? Shouldn't there be a better place for me to put my talents to work? How can I take the leap?"

In this author's experience, companies whose projects have a beneficial impact on the world are naturally able to motivate their employees. The ongoing development of interesting products has a huge effect on employee productivity and creativity. Conversely, at companies that get stuck doing the same thing over and over again, where the only novelties are customer complaints or breakthroughs made by competitors, leaders have a hard time motivating their personnel and overcoming personnel's resistance to new performance goals. It's these type of companies that make use of motivational, leadership, and "soft" skills workshops. They are plagued by fear and/or resignation.

There is both good news and bad news for people who work at a company infected by commodification. The good news is more good than the bad news is bad. Nevertheless, it's important to realize that the bad news is still quite bad.

The good news is that there is a solution for this situation. This volume hopes to contribute to that solution. The bad news is that it takes time and, possibly, changes to the head of the company. That is, either change what's in the head or change the head itself.

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