

The Perils of Indicator-Driven Management

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Organizations of all types rely extensively on key performance indicators (KPIs) to define and evaluate success. To motivate performance, target outcomes for these indicators are often linked to management bonuses. We argue that such practices are nearly always counterproductive. Instead, companies are better served by using KPIs as instruments for promoting organizational learning. When used properly, KPIs identify knowledge gaps that allow the company and its people to more effectively cope with a constantly changing competitive and technological landscape.

To make these arguments, we introduce a concept called “blue-line management,” an approach in which all decisions of consequence are made with one aim: to create value. This approach stands in stark contrast to the more common practice of “red-line management” in which value creation may be the stated goal, but the business is managed to deliver on specific indicator targets, independent of whether these efforts are value creating or value destroying.

Value creation and the “blue line”

To create value, a firm must systematically invest in those projects where the expected value of cash coming in is greater than the cash going out, a difference commonly expressed as Net Present Value (NPV). In other words, projects that are expected to yield free cash flows with a present value in excess of the investment are value enhancing, while all other projects are value destroying. These values depend entirely on the cash flows expected from the investment in a probabilistic sense, and not on the cash flow forecasts made by managers. To put it another way, all investments have an intrinsic value that exists independently of management beliefs.

The failure to confuse intrinsic value with personal estimates of value leads to the serious error of equating price and value. Price is the outcome of a market mechanism, or negotiation, between two or more parties. For any item, from consumer goods to shares of stock, the buyer in a voluntary exchange assigns a value at least as high as the price paid

and the seller assigns it a value no greater than the price paid. For a company whose value equals the present value of the expected free cash flows discounted at the opportunity cost of capital, there is absolutely no reason to assume that the price negotiated between these parties is equal to this value.

Figure 1. The value of the company as represented by the blue line



The blue line in Figure 1 illustrates how the intrinsic value of a company might fluctuate over time. Whenever expected cash flows or the cost of capital change, value changes too. For example, the blue line goes up every time the company invests in a positive NPV project. Seen in this light, the overarching goal of a value-driven enterprise can be expressed as follows: Raise the blue line as high as possible.

The obvious practical difficulty of this concept is that the blue line is unobservable. To know the intrinsic value of a company or capital investment proposal, one must accurately and instantaneously process all information about it, and know all states of nature that might prevail in the future and the precise probability of each potential state of nature actually occurring, and the cash flow consequences for these states of nature. Price arises from consensus forecasts of expected cash flows, not from *the* expected cash flows that drive intrinsic value. These consensus forecasts, and the probability distributions of future events implied by the forecasts, reflect the beliefs of many individuals. Although these forecasts may be reasonable estimates, they can never substitute for the true probability distribution that underscores value.

Despite the unobservable nature of the blue line, it still represents the goal for a value-driven entity. Every decision a business undertakes impacts value and, therefore, the blue line, in some way. In short, every decision either creates value or destroys it. Whether the manager is aware of this does nothing to alter the fact. Of course, human nature being what it is, managers tend to focus on what they can directly observe. For this reason, companies everywhere rely extensively on a set of key performance indicators (KPIs). It is widely believed that by focusing management attention on observable and measurable KPIs, the business can incentivize value creating behavior. This naïve belief has been responsible for staggering amounts of value destruction, as we discuss below.

The curse of red-line management

The most visible indicator of “value” for a publicly traded company is share price. Indeed, value creation is sometimes expressed (erroneously) as a rising share price. But remember that share price is not value. It’s a market consensus of value, but under no circumstances should it be mistaken for the real thing. To clarify this point, consider the graph in Figure 2.

The red line depicts the movement of stock price over time. Although we cannot know this with absolute certainty, we expect the red line to fluctuate around the blue. As deviations between value and price get larger, well-endowed investors on the lookout for mispriced securities will take appropriate action. If shares appear seriously overpriced, they sell or even short; if the reverse is true, they buy. The practical effect of this activity is to tether share price to the blue line. The size of the tether that separates the two lines (i.e., the extent to which shares can be mispriced) is a function of market efficiency, how widely held the shares are, the number of analysts tracking the company, and so on. The extent of the mispricing, therefore, is likely to be far less for a global giant like Procter & Gamble than for a small biotechnology firm.

But in all cases, we expect that the red line (stock price) and the blue line (intrinsic value) will never equal, apart from the briefest of moments when they cross. Although raising the blue line should be the goal, stock price is still an excellent indicator of value. The problem is not with stock price as such, but rather with efforts by executives to manage it to the detriment of value. Given the tether between the two lines, anything that managers do that

subtracts from value will not only adversely affect the blue line, but the red line too. In other words, value destruction causes share price to go down, just as value creation causes it to increase.

Figure 2. The blue line representing value and the red line representing price



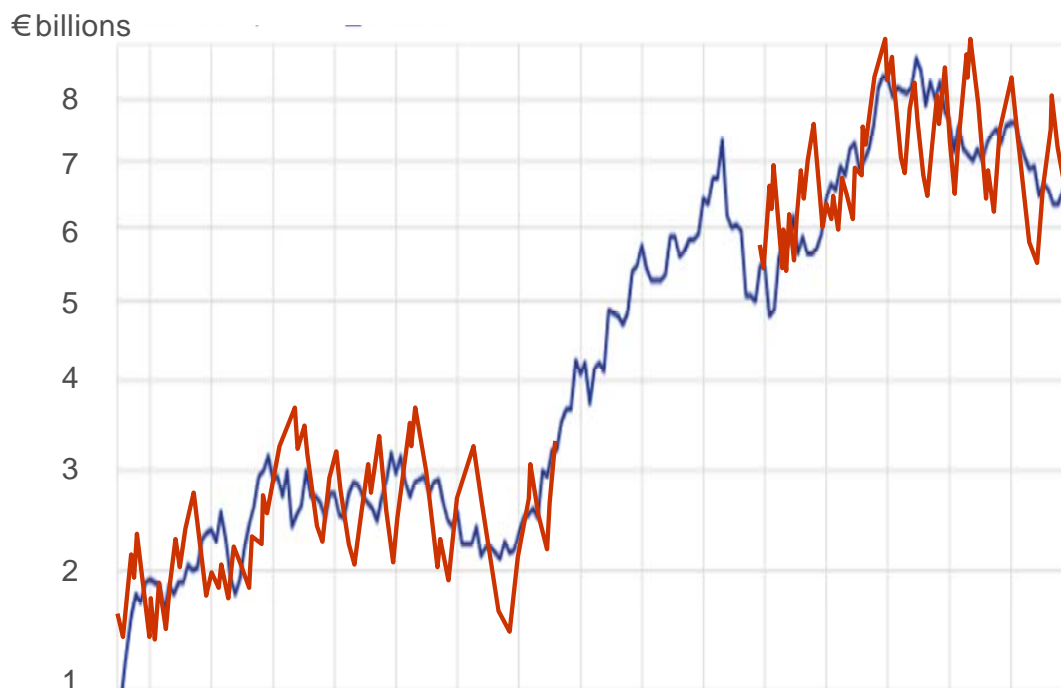
Figure 3 illustrates what happens to the red line as the blue line changes. Notice that the red line continues to fluctuate around the blue, but because the blue line is higher (i.e., value has been created), share price increases. If share price is to fluctuate around the blue line, isn't it better that it fluctuates around a higher set of values? And that is precisely what is happening in this example.

With this framing of price and value, we can now refer to "blue-line management" as the approach that focuses on value creation as the overarching aim of the firm. We contrast this approach with "red-line management" in which management focuses on performance indicators, such as share price, while ignoring the blue line. The stated goal may be value creation, but the practical reality is something else.

To summarize, while the two lines may never entirely coincide, when viewed over a sufficiently long time horizon, a high degree of convergence can be expected because of the ceaseless efforts by well-endowed investors to identify mispriced securities and profit from the mispricing. What this suggests is that the only way to be reasonably confident that share price will increase is to make decisions that raise the blue line. If a manager devotes time or other company resources to managing the red line, it is nearly certain that the diverted resources will cause the blue line to fall. This leads to the interesting result that

trying to manage the red line with the aim of raising share price will almost certainly result in a lower share price. In contrast, a blue-line company never tries to “manage” its share price. Instead, it simply allows price to be determined by the capital market.

Figure 3. The blue line drives the red line



The evidence that management is red-line motivated will show up in a number of ways. Two examples are the buying back of one’s own shares with the aim of increasing Earnings per Share (EPS), and the massaging of accounting numbers to reduce earnings volatility. A buyback can be justified on several grounds, but doing it to increase EPS is certainly not one of them. This behavior is motivated by the mistaken belief that share price is based on a fixed multiple of earnings. If true, any action that increases EPS, even if it has no impact on the cash generating capability of the firm, will cause the share price to increase. Of course, the signal conveyed by an increase in EPS may be misinterpreted, but when the implied increase in future cash flows fails to materialize, share price is bound to fall.

Another common practice is to create hidden reserves of accounting profits through the over-provisioning of expenses and losses (e.g., warranties, bad debts, environmental cleanup, restructuring, etc.). The reserves can then be released in future years to artificially boost earnings in low-profit years. The effect of this practice is to create a stream of

reported earnings that is far less volatile than that implied by the underlying operations of the business. Managers play this game for a number of reasons, but one is the false belief that income smoothing can make their businesses appear less risky, thereby increasing share price. When viewed through the lens of blue-line red-line, it becomes clear that such games are counterproductive.

The problem with indicators

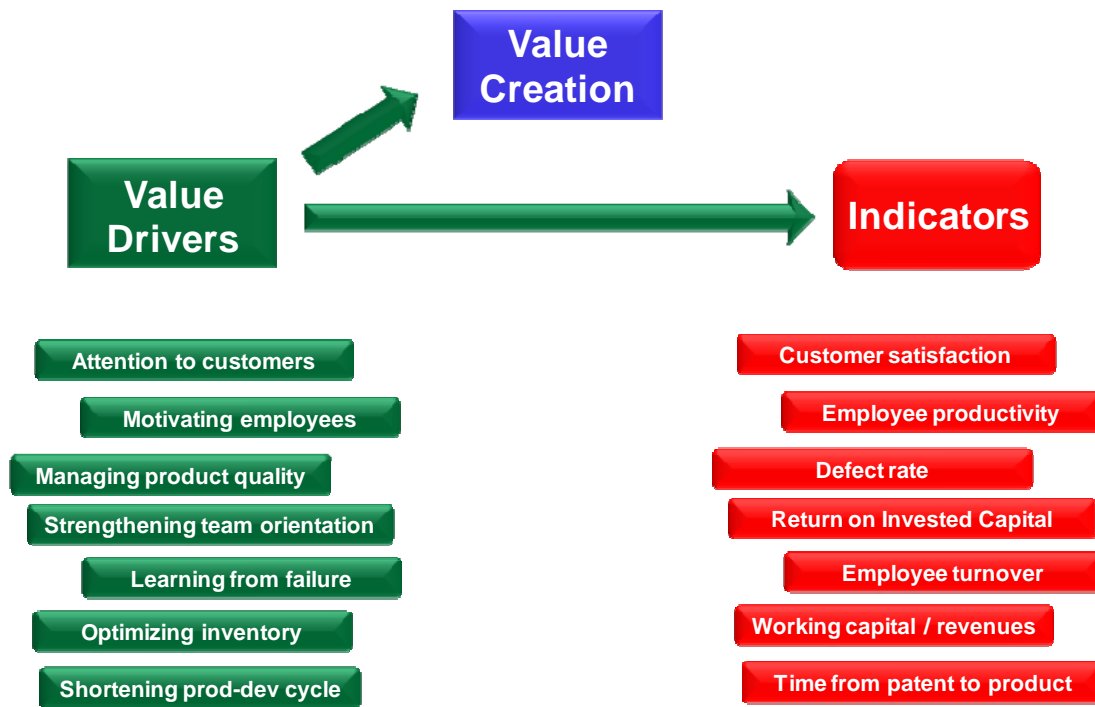
At corporate level, much of red-line behavior is motivated by the desire of senior managers to finesse share price. However, similar thinking can occur at any level of an organization, principally through the misuse of KPIs. As shown in Figure 4, the objective of value creation is achieved through actions and behaviors commonly known as value drivers. These drivers are the critical success factors that must be managed well for the business to succeed. Examples include how to motivate employees, relationships with customers and suppliers, the positioning of equipment and machinery in factories, and so on.

Because the actions and behaviors related to value drivers are not directly measurable, companies rely instead on KPIs. Indicators are the observable results of behaviors, after the influence of myriad random factors that arise between business decisions and their outcomes. Indicators do say something about value drivers, but indicator outcomes are also determined by factors that have little or nothing to do with the actions of management. In other words, indicators are, at best, noisy indicators of how well value drivers are being managed. For this reason, an indicator should never be mistaken for a value driver, just as we must never confuse share price with intrinsic value.

Figure 5 illustrates how a large specialty chemicals company has mapped out its R&D process. For each box, there are behaviors that take place behind the scenes to drive performance, and an indicator that summarizes observed performance for a given period. For example, converting technology into applications (enhanced functionality of products, new product features, and process innovation) is deemed to be a critical success factor, or value driver. Because of its importance to the long-run success of the business, some effort is made to measure the performance of responsible managers on this dimension. But here's the problem. As soon as we take a value driver and try to measure it by, for example,

putting a euro sign, point value, or percentage sign in front of it, the very nature of the value driver has been transformed. At that point it becomes an indicator.

Figure 4. The relationship between value drivers and indicators, and how they relate to value creation.

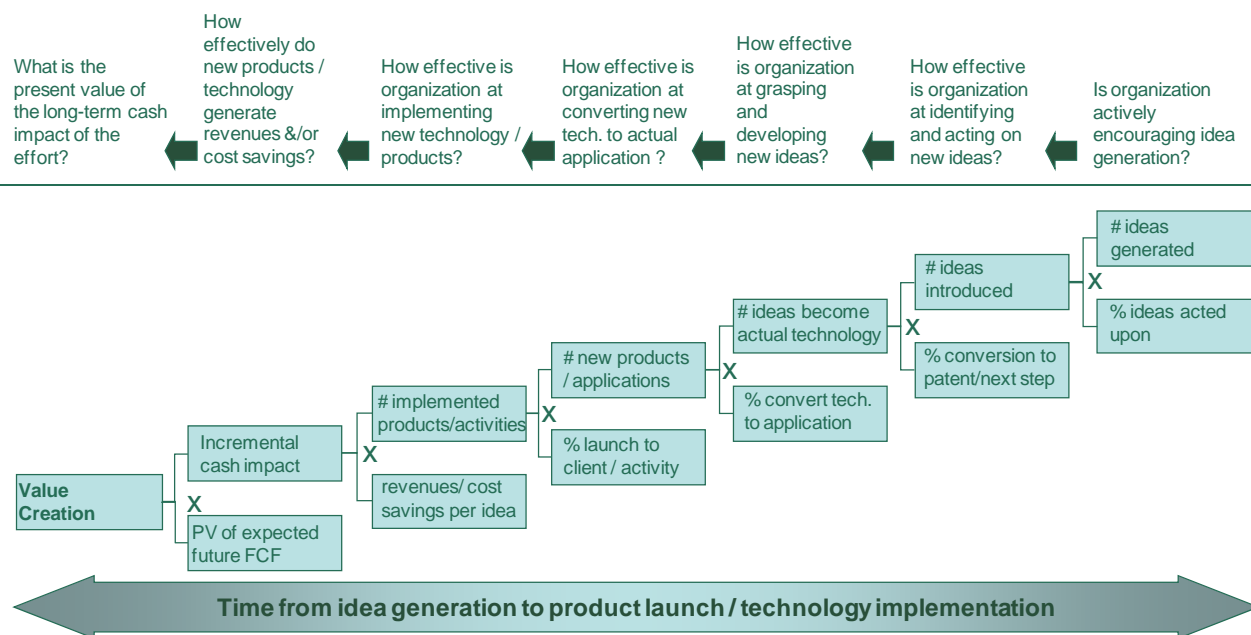


There is nothing wrong with indicators *per se*. In fact, as we discuss later, any complex organization must be indicator intensive, otherwise there is no practical way to gauge how well key processes are being run or to know how these processes might be improved. The problem occurs, as is so often the case, when indicator outcomes are the focus of the business. In effect, red-line behaviour spreads through all levels of the organization, a behaviour we should expect whenever employees are paid based on indicator outcomes. They quickly discover that it is in their interest to deliver on the indicator target, even if value is destroyed in the process.

Returning to Figure 5, consider what happens when a manager is held accountable for converting technology into practical applications. A manager evaluated and incentivized on the *percentage* of technologies converted may discourage or reject ideas that are potentially path-breaking but which have a high risk of failure. Meanwhile, any project with a high probability of success, even if the contribution to value is marginal or negative, will be

accepted. The practical result is that the manager's behavior leads to a high observed value for the metric, but value is destroyed or, at least, value creating opportunities are passed up.

Figure 5. Drivers and indicators in a product development process



An additional concern when metrics are used for incentives is that the metrics will no longer indicate what managers think they are indicating. Instead, they become contaminated by the conscious efforts of decision makers to manage them. Of course, it is well understood that any indicator can be gamed, but what we are describing here is something deeper and more troubling. Employees may be managing in good faith to achieve KPI targets, without any conscious effort to deceive. What are already noisy proxies for value drivers become even noisier, and their use in diagnosing genuine problems or knowledge gaps is seriously compromised.

As everyone in the organization manages to KPIs, it becomes impossible to trust the indicators or to interpret them in a meaningful way. Managers will therefore be unable to understand how changes in behavior impact either outcomes or value creation. Given the inherent difficulty in distinguishing positive NPV projects from negative NPV, even in the best of circumstances, value creation becomes a practical impossibility because all

numbers are lies to varying degrees. Indicators, when used properly, are instruments to promote learning and continuous improvement. But they work only if no one is manipulating or interfering with them.

In addition, as employees are incentivized to deliver on specific indicators, and thus begin to manage the indicators, they quickly realize that they no longer have a shared, or aligned, purpose. They realize that whatever the stated purpose of the organization may be, it is not value creation. Indeed, even when senior managers insist that they are still focused on value and wish everyone else in the organization to do likewise, middle managers understand that they are being paid to deliver indicators independent of value creation. As a result, any claim by senior management that they should be focused on value, in the face of a compensation scheme that pays for value destruction, will simply reveal senior management to be either dishonest (they aren't speaking truthfully) or confused (do they not understand the difference between creating value and delivering on an indicator). In either case, employees will lose sight of their common purpose. Alignment is lost and people no longer work toward the same objective.

A blue-line approach to the use of KPIs

If indicators should be neither carrots (to reward employees who hit targets) nor sticks (to punish employees who fail to deliver), what is their proper role in the value-driven company? We believe that the primary function of KPIs is to promote organizational learning, a mission that will certainly be undermined when indicators are used for incentives.

Technological and scientific progress has given us products and services that perform in ways that were unthinkable a generation ago. But these advances have come at a price: ever increasing complexity. Products may be more reliable, functional and durable than ever, but the business systems needed to deliver them have become devilishly complicated. A logical consequence of this complexity is ignorance and uncertainty. Systems are too complicated for managers to know all that they need to know to maximize value creation. Although companies may go to great lengths to design and document

systems and processes, something important will always be overlooked. Therefore, it becomes impossible to predict how a system will perform under the full range of circumstances that may occur in the future. In short, there will always be knowledge gaps.

Value creation is ultimately about how we manage this ignorance. In an uncertain, complex world, the successful business culture is one in which everyone is continuously learning. It is also a culture in which having the right answers is less important than asking the right questions. In other words, value creation demands experimentation. In a value-based culture, not only is trial-and-error tolerated, it is strongly encouraged. Only through continuous trial and exploration and, yes, failure, will we gather new, relevant information to help us better understand the business and how to get more value from it. Such a culture cannot possibly prevail if managers are forced to obsess about outcomes.

Indicator targets *are* important, but not because we need them to motivate performance. When set honestly, without the game playing that is so common in budgeting these days, targets are hypotheses about how business systems are supposed to work. They reflect expectations based on imperfect knowledge. The actual outcomes for KPIs will then reveal the extent to which our understanding of the system was incorrect or incomplete. In effect, indicators act as early warning signals, the proverbial “canary in the mine shaft.” The surprises that inevitably result from the discrepancies between targets and outcomes reveal problems as they emerge; allowing us to plug knowledge gaps and resolve problems faster. But this process works only if we allow it to. The measurement of outcomes must be unbiased and uncontaminated by conscious efforts to steer or massage the indicators. When businesses are managed on KPI outcomes, the problems that might otherwise be revealed are suppressed, hidden, and ignored.

To punish managers for failing to deliver on KPI targets is similar to punishing a scientist who fails to reject a null hypothesis when performing a laboratory experiment. When we consider that business is really just a never-ending series of experiments, how can we punish managers when some experiments don't work? Indeed, much of the most useful organizational learning occurs through failure. When companies are managed on the red line, extraordinary amounts of time and energy are devoted to hiding failure, enabling managers to avoid the punishment that comes from not meeting KPI targets. Those

resources could have been better deployed to learn why failure occurred and to thus create value from the learning.

Conclusions

Great swathes of wealth have been destroyed because of a common tendency among business executives to confuse value and share price, and to believe that achieving KPI targets is tantamount to value creation. Shareholder value does not come from a higher share price, but from positive NPV investments and other actions that raise the firm's blue line. Indeed, one of the great ironies of managing a publicly traded company is that the more attention and resources one devotes to managing share price, the lower the share price.

Similarly, delivering on KPI targets is no guarantee of value creation. In the many executive development programs we have taught in recent years, we always ask the participants, "Over the past 5 years, how often have you achieved the targets set for you by your boss?" Invariably, the answer is either "most of the time" or "all of the time." They then admit, somewhat sheepishly, that they have often cut corners to make the boss happy. For example, they underinvest in brands or training to trim short-term costs, or they play revenue recognition games to artificially boost sales growth.

But when managers have incentives to manage to the indicators, the indicators no longer represent what they are supposed to represent. Sales growth and profit margins, for example, are undeniably important indicators, but how can we interpret them when we know that, to some extent, they're lies? KPIs are indispensable to organizational learning, but this critical function can work only if the performance measurement system is designed to reveal the truth.