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PORTFOLIO MANAGERS'

perspective

Judgment Calls

Introduction

Jim Johnson has a major decision to make. His company's sales have stalled over the last two years, having missed significant growth opportunity in the high-end segment of the market. Jim's engineers have designed what he believes to be a lower-cost version of his company's principal product to serve the same segment. A new product launch will require significant capital expenditures at a time when the robust industry conditions of the last several years may be peaking. The decision is complicated by the fact that the company's last two product launches have not met expectations. There is a lot that could go wrong. The estimated manufacturing costs may be understated. Competitors may reduce prices to meet the challenge of a new lower-priced offering in the high-end segment. Distributors may not fully support the new product. Perhaps the growth in the high-end segment is temporary? Jim has to make a judgment call.

The nature of Martin Capital Management's business demands that relatively high-stakes decisions be made on a regular basis. We have therefore made continuous improvement in our decision-making processes a high priority. Most of our readers must, at least periodically, make judgments like the one our hypothetical Jim Johnson has to make. Yet most executives and managers think very little about how decisions are actually made. Information technology has given us additional data, but we've not yet designed a computer that incorporates goals, values, risk preferences, and other important subjective input. In short, computers cannot make judgment calls.

Peter Drucker, the father of managerial science, once remarked that the key to the success of Jack Welch and Warren Buffett is their uncanny ability to see the world clearly. They somehow limit the cognitive biases and distortions that commonly interfere with objectivity and rationality during the process of making decisions. Fortunately, decision-making skills, like any other skill, can be improved. In most cases, as with the alcoholic's acknowledgment that there is a problem, the first step toward improvement is admitting that we all have cognitive biases that distort our view of reality. Ego, for example, often prevents us from giving the role of chance any credit for success; yet cognitive dissonance assures us that failure is simply bad luck.

Our goal in this piece, therefore, is to identify a *few* of the major biases and other tricks our mind sometimes plays, suggest a few remedies that may improve decision-making skills, and demonstrate some of the ways we have incorporated what we know of decision science into our business practices. In this vein, we quote Ben Franklin who, in dispensing advice to a friend, said, "I cannot, for want of specific premises, advise you *what* to determine, but if you please, I will tell you *how*."

The Problem of Uncertainty

Uncertainty is the bane of decision-makers, and it is omnipresent. Few things in life can be considered fully predictable — except, of course, death and taxes. Confronted with the possibility that there is more than one potential outcome, people tend to rely on experience and heuristics (mental shortcuts or unconscious routines, e.g., stereotyping), both of which have the potential to inappropriately short-circuit objective and rational decision-making. Significantly, the higher the level of uncertainty, the more this is true. In effect, our minds are naturally "filled up" with extraneous factors in the absence of facts and information. Experience and heuristics are often useful, but they can be unreliable. Heuristics tend to be inappropriately applied, and our experiences are frequently limited or incomplete. To quote Ben Franklin again: "Experience is a dear teacher, yet fools will learn from no other school."

Permutations and Combinations: Understanding the Math

Any good decision-maker assigns, at least intuitively, rough probabilities to potential outcomes. This is most apparent in games of chance (poker, bridge, craps). Most people, however, have a very limited understanding of the mathematics of probability. Therefore, they're inclined to rely on intuition, which often leads them astray, as illustrated by the following three examples:

1) What are the chances that, in a group of 25 randomly selected people, two or more will be found to share the same birthday?

2) Suppose you test positive for a disease. In 5% of the cases, this test shows positive, even though the subject doesn't have the disease. Furthermore, in the population at large, one person in 1,000 has the disease. What is the probability that you have the disease?

3) Suppose Jim Johnson assigns the following probabilities to the decision presented in the first paragraph of this report.

   - Estimated production costs are too low: 20%
   - Competitors respond with price cuts: 40%
   - Distributors do not fully support the product: 15%
   - The high-end segment experiences a decline: 30%

If any one of the above turns out to be true, the new line will not be successful. What is the probability of success?

The answers to the first three questions are 57%, 2%, and 29%, respectively. Don't worry if you were wide of the mark. You're in good company. The point is that even when the facts are clear, a basic understanding of the fundamentals of permutations and combinations (probability theory) can be invaluable when making judgments about uncertain events. Incidentally, just because the probability of success for Jim Johnson's new product launch is only 29%, that doesn't suggest he should defer the launch. Other factors, including the potential payoff and the number of future opportunities (bets), also play an important role.

Heuristics and Biases

Understanding the mathematics of probability is a necessary, but by no means fully sufficient, precondition for making rational decisions. As previously suggested, much more basic is the need to understand the biases and heuristics that influence the data (estimates) that are incorporated into our decision-making processes. What if, for example, Jim's estimates of the above probabilities and payoffs are systematically biased? That is, what if the true probability of competitors responding with price cuts is 85%? Much of the remainder of this analysis addresses the biases that influence our estimates and, therefore, our judgments.

Availability Bias

This problem is associated with a lack of data or a distorted view of data. We tend to process only what is "available" in our mind. We tend to give more weight to

our experiences that are more recent or to those that are especially dramatic (experiences emblazoned on our mind forever). Many Depression-era investors never returned to the stock market, having been overly influenced by the financial travails of the period. Conversely, many investors today have a skewed sense of risk, having enjoyed very good returns over the last several years. Success, likewise, tends to register more powerfully than failure in our mind, especially in light of our tendency to downplay, ignore, or "sweep under the carpet" problems and failures.

In addition, for many decisions we can know only the outcome of the chosen course of action. In most cases we know little, if anything, about the potential outcome of alternative courses of action. Thus we tend to lend inordinate credence to our limited experiences. In effect, we count only our experiences, rather than incorporating other potential outcomes into our decision-making processes. We're inclined to associate good outcomes with good decision-making, even though an alternative course of action may have been superior. On the other hand, a poor outcome could have been the result of a good decision had the alternatives been even less favorable. All of these factors can easily distort our view of reality. In this context, Jim Johnson should be careful in assessing the relevance of the last two product-launch failures.

Framing

How problems and decisions are framed has a considerable impact on how we process information. For example, given the opportunity for a sure gain of $240 — or a 25% chance of winning $1,000 and a 75% chance of winning nothing — 83% of the time people choose the sure thing. However, when faced with a choice of losing $240 for sure — or a 75% chance of losing $1,000 and a 25% chance of losing nothing — 87% of the time people choose to roll the dice.

In the investment world, we have found that investors are more likely than not to hold a stock with a loss, even though they would not initiate a new position in the same company at the same price. In general, when decisions are framed from a position of gain, people tend to be risk-averse. On the other hand, when risks are framed from a position of loss, people tend to exhibit risk-seeking behavior. Another way of looking at it is that people are more troubled by losses than they are pleased by gains of identical amounts. The framing of issues sneaks into our life in subtle and not-so-subtle ways. High-ticket retailers (jewelry and furniture) use high initial mark-ups in order to entice consumers with "sale prices." The idea is to change our frame of reference from how much we're spending to how much we're saving.

Anchoring and Adjustment

This phenomenon reflects the fact that most people fail to adequately adjust previously established estimates even after they are presented with new information. A company may set an internal sales goal of $2 million based on estimates of the size of the market and market-share potential. Even if the sales goal proves erroneous, the $2 million estimate often proves to be an "anchor," from which adjustments tend to be insufficient. Anchoring is especially apparent in most compensation systems. Salary levels tend to be adjusted from the previous year, with minor changes reflecting performance levels. Again, this "shortcut" can prove useful, but it can put too much weight on the starting salary level of a new employee. Initial mistakes of this kind are rarely corrected.

The process of anchoring and adjustment is often used as part of negotiation. As with most biases and heuristics, the more uncertainty is associated with an outcome, the more powerful anchoring becomes. For example, in negotiating the price of a house, if the initial bid is an extreme outlier, one would be more likely to dismiss the other party as unreasonable, having a greater sense of how the value of a home is calculated. Negotiating the price of a one-of-a-kind painting, however, is quite another matter.

Overconfidence

Overconfidence relates to overstating the reliability of estimates. Its root cause is in the old idea of not knowing what you don't know. In the midst of uncertainty, it is very difficult to gauge the magnitude of what can go wrong. There are two kinds of knowledge: primary and secondary. Primary knowledge relates to

how much you know. Secondary knowledge relates to how well you know your limits. Primary knowledge is often overstated, because the converse question, namely, "What don't I know?" is seldom asked. This bias suggests that most people underestimate the degree of uncertainty.

Biased Generation of Experience

A group of therapists determined, based on their experience and data, that child abusers need therapy to change their behavior. Yet the sample was skewed because it did not include people who may have stopped abusing children on their own, thus not requiring therapy. Especially when it's difficult to estimate the size of a market, a business will often get a distorted view of product preferences in the market by using surveys among its customers. These surveys may distort the reality of the market, since existing customers are in effect self-selected, having already determined (by virtue of being customers) that they value the product offering. In order to get a more accurate view of the marketplace, surveys also need to include those who are not customers. We must be careful that the conclusions we draw from our experience are not guided by biased (non-random) samples.

Superannuation

This is simply fancy terminology for "things change." We rarely encounter two identical situations in life, and our past experiences may be wholly or partly irrelevant given varying conditions and circumstances. Look no farther than the financial markets for ample evidence of experience misapplied. You will often hear prognostications of future stock prices based on the Federal Reserve's easing or tightening, or what happens to stocks if a Republican is elected president, or what happens to a particular sector of the market if the economy enters a recession — all based on previous experience. It makes great conversation, but it won't fatten your wallet.

Retrospection

Human memory does not function like a computer. It is an imaginative process. Not only is recall limited, it is heavily influenced by current knowledge, beliefs, and feelings. In the words of G.E. Valliant: "It is all too common for caterpillars to become butterflies and then to maintain that in their youth they had been little butterflies. Maturation makes liars of us all." There is little doubt that memory fragments are biased (far more than we are consciously aware) by what we now believe to be true. For example, a landmark study recorded political beliefs of subjects in 1973 and again in 1983. The result demonstrated that the subjects' recall of their beliefs in 1973 was much more highly correlated with their beliefs in 1983 than with those that were actually stated in 1973.

Hindsight Bias

A close cousin of retrospection, hindsight bias simply means that people who are currently aware of the outcome of a past event overestimate the probability with which they would have predicted it. Hindsight bias implies that we are insufficiently surprised by our experiences. This goes well beyond the "knew it all the time" syndrome, in that people make honest mistakes in their ability to recall what they thought would happen.

The Role of Chance

Human beings have an innate need for an explanation of events. The result is that we sometimes cite causal explanations for what are really random events. Ego, as previously mentioned, drives some of this pattern of behavior, especially as it relates to explaining our successes. Ego also makes it difficult for many people to admit that some events or outcomes are unexplainable. Again, we need look no farther than the abundant commentary on the performance of the capital markets. Any serious and experienced investor understands that the movement in stock prices over a short time frame is utterly unpredictable, even random. Yet there is a huge market for newsletters, financial press, and other media among investors seeking explanations for these random occurrences. Likewise, care should be taken in developing employee incentive

systems that reward or punish what are actually random outcomes instead of desired behavior.

Causal Assumptions

Making causal assumptions amounts to confusing correlation with causation. This is a familiar problem that needs little elaboration. Sometimes, however, even correlations are misinterpreted. For example, in Tom Peters' book *In Search of Excellence*, the author reports on various activities and practices that "excellent" companies have in common. The strong implication is that companies who implement these practices can become similarly successful. The list of activities and practices found in the successful companies, however, also can be found in many less "excellent" companies. For his analysis to have real credibility, Peters would have needed to determine that the attributes that exist in successful companies are not present in those that are less successful.

Escalation and 'Sunk' Costs

Comedian W.C. Fields once said, "If at first you don't succeed, try, try again. Then quit. No use being a damn fool about it." Escalation can take place when there is a series of decisions to be made that often are dependent on previous decisions. For example, a lender makes a loan to a customer who later comes back with news that, without additional funding, he will have to file for bankruptcy. Consider again personnel issues. A manager makes a decision to invest in the training of an employee, who later requires additional training. In both cases, the key question is: How do you know when and if to quit?

Non-rational escalation occurs when previous investments or decisions prevent us from changing course. "Throwing good money after bad" is a common expression that well articulates the escalation bias. Sometimes we are reluctant to change course because we seek to avoid acknowledging a previous mistake. In other words, our decisions have a tendency to validate or justify previous commitments. Still other times we fail to recognize previous investments as "sunk" costs. Rather than evaluate a situation from a current reference point, we allow the past to trump current realities. In most decisions, it is the *future* costs and benefits of various alternatives that need to be scrutinized most closely. The thought processes that led to our nation's experience in Vietnam may be the most tragic and vivid example of the escalation bias at work.

Remedies

It is all well and good to understand the vulnerabilities that influence our view of reality and, therefore, have an impact on our judgment. It's quite another thing to alter our behavior and decision-making processes in a manner that improves the clarity of our thinking. Listed below are a few tools worth considering.

List Differences, in Addition to Similarities

When making analogies and comparisons (e.g., this company could be the next Microsoft), make sure the focus isn't exclusively on the similarities. Explore the differences with as much care as the similarities.

List What Is Fact, Presumed, and Unclear

This process forces decision-makers to acknowledge assumptions made and the factors that cause uncertainty (what is unclear). Too often we consider only what we know for sure, in which we may mistakenly include unfounded assumptions.

Alexander's Question

Alexander's question is simply, "What data, facts, or events would cause you to change your mind?" This is a powerful question. Some people are so cocksure of their decisions that no additional data will change their minds. That is a sure sign of irrationality. The oft-quoted declaration of the close-minded, "My mind is made up; don't confuse me with facts," might be considered the First Corollary to Alexander's Question.

Make Bets

In the process of making decisions, assign probabilities or handicaps to alternative outcomes. This will naturally require decision-makers to give more consideration to alternative outcomes. It will help decision-makers think beyond the simple analysis of what can go right … to include what can go wrong. The simple acknowledgment of uncertainty is useful.

Record and Debrief

Given the fact that our memory is both limited and biased, a record of important decisions and rationales will help make learning from experience more enlightening. The feedback created by making bets, recording the bets, and debriefing is invaluable information that will help detect systematic biases in an organization. In an environment of uncertainty, mistakes will be made. The key is whether (or not) the decision-making is sound.

Meteorologists are said to be well calibrated. Over a long period of time, we will find that it rains 60% of the time when the weatherman says there is a 60% chance of rain. Of course, 40% of the time people will say he was "wrong," which only further demonstrates common misperceptions regarding uncertainty. Physicians, on the other hand, are generally not as well calibrated. They tend to be overconfident in their diagnoses. Again, the key is detecting systematic biases, which can be done only if records are kept.

Seek out Disconfirming Evidence

Once decisions are made, or we are predisposed toward a particular solution, we often instinctively seek out information that confirms our thesis. It would be far better to seek out disconfirming facts or ideas and embrace them as real possibilities. This process tends to counterbalance the availability bias, whereby only confirming evidence registers in our consciousness.

Think Independently

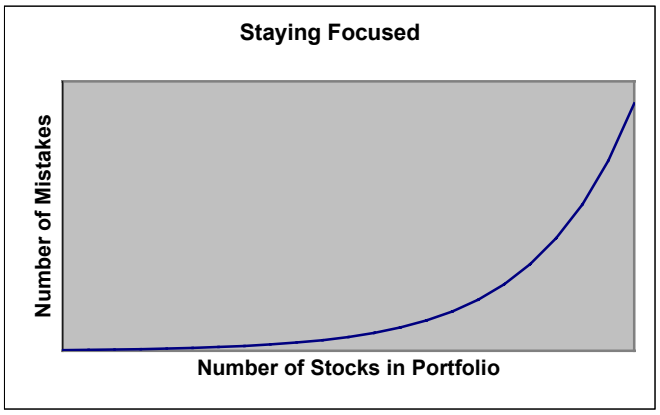
When a group is making a decision, it is useful for each person to develop and record his or her own opinion. That will help avoid anchoring or using the first viewpoint expressed as the reference point.

Consult Dispassionate Parties or Reassign Responsibilities

It never hurts to allow a fresh pair of eyes to review problems and issues, especially when things are not going as expected. A trusted "devil's advocate" can be quite useful. John Gardner, author of *On Leadership* (1990), says, "Pity the poor leader who has unfriendly critics and uncritical friends." It's easy to escalate problems, but as Warren Buffett likes to say, "The first thing to do when you're in a hole is stop digging."

Use Multiple Frames

Consider issues from multiple viewpoints. Some people innately view the glass as half empty, while others see the same glass as half full. Learn to give equal consideration to both perspectives. In addition, be wary of using a single and fixed reference point. For example, an owner of Yahoo! stock may choose to use $240 (its high) as a reference point and may view the current price of $15 as "low" or "undervalued." Someone else, who may have purchased the stock in 1998, might use $8 as



the reference point. Still another may choose to use a valuation measure (P/E, for example) as a primary reference point.

Thinking backwards helps us see a problem from a different reference point — or frame of reference. Often during the planning process we use our current status as a reference point and plot sequential steps required to reach a goal. Sometimes it can be useful to start with the goal and work backwards. Doing so can help develop a fresh perspective on alternative ways of achieving the same goal. Stephen Covey in *The Seven Habits of Highly Effective People,* says, "Begin with the end in mind." There are many variations on this theme, and it may take some practice to develop new ways of thinking about old issues.

Applications at Martin Capital

Concentration

The biases and heuristics that affect our judgment are exacerbated by the presence of uncertainty. The greater the uncertainty, the more likely it is that our objectivity and rationality will be compromised. This belief has significantly affected our view of risk and the role of diversification in reducing risk.

As we often have stated, for long-term investors volatility is a very poor measure of risk. We tend to think of risk as the potential for making a poor judgment in regard to the future prospects of a business. If uncertainty compromises objectivity and rationality, the presence of uncertainty increases the probability of making mistakes. At Martin Capital we use the level of uncertainty regarding the prospects of a company as an important screening mechanism. We gravitate toward companies that are more predictable over time (our 2000 Annual Report examines in more detail how this is done). Such companies are relatively uncomplicated, have fewer moving parts, and rely less on multiple factors (lots of things that have to go right) for their success. In this sense, especially when we get past 10 to 12 ideas, the risk of a portfolio goes up with every company that is added to the portfolio. The chart on the previous page presents our thesis graphically. In other words, diversification is effective up to a point, but the addition of marginal investments (those that have higher levels of uncertainty) eventually adds to the aggregate risk of the portfolio, as the number of mistakes is likely to rise disproportionately relative to the number of stocks.

Avoid Too Much Specialization

At many brokerage and investment management firms there is a tremendous amount of specialization. There are bond managers for each type of fixed-income security. Every industry (automobile, banking, chemicals, technology, etc.) has its own analyst. While this may seem efficient, it makes it very difficult for anyone to check the objectivity of the analyst. Stated simply, every Martin Capital analyst and portfolio manager must have a working knowledge of every company Martin Capital owns. Everyone needs to be able to ask informed questions. Only knowledgeable analysts can seek out disconfirming evidence and constructively play the role of devil's advocate.

Record Earnings Per Share (EPS) Estimates for Each Company

At the beginning of the year each Martin Capital analyst is asked to estimate the earnings for the upcoming year of companies for which he is responsible. This is standard practice in our industry. What is very different, however, is our use of the information. Any given year's EPS is more or less irrelevant to our decision-making process. For Wall Street, analysts' estimates are the key element in buy-and-sell recommendations. We, on the other hand, use these estimates as a basis for asking intelligent questions. It isn't the "what" that's important but the "why." We inevitably learn something about a company from the process of estimating EPS.

EPS estimates also play a significant role in monitoring the calibration of our analysts. While we don't expect to "hit the numbers" every year, we can use the estimates to detect systematic biases. It's useful for an analyst to know, for example, if his estimates are too high 80% of the time. Conversely, perhaps our estimates for a company are consistently far off the mark, in which case we need to consider how well we really know the business. In both instances, the feedback is eminently useful.

Conclusion

We all respond to uncertainty in different ways based largely on unique personality traits. Some will go

through the proverbial "paralysis by analysis" syndrome, searching for facts and data that simply don't exist. Others will make snap judgments by "the seat of their pants," ignoring facts and data that do exist. Complicating the whole process of making "judgment calls" is our natural proclivity to use "mental shortcuts" that often reside in our subconscious in an effort to further streamline decision-making. Greater awareness and understanding of decision theory is a great enabler in our endless pursuit of improving decision-making capability. We hope you find the ideas presented in this paper interesting and, more importantly, useful.