Evidence-Based *Decision* Management

J. Frank Yates, University of Michigan
Georges A. Potworowski, University of Michigan

**Abstract**

Decision making is the lifeblood of every organization and the central focus in the practice of Evidence-Based Management (EBMgt). To help guide the practice of EBMgt, this chapter describes fundamental concepts of decision making and decision management. It begins with a discussion of the features that distinguish decision making from other, related concepts, such as more general problem solving and judgment. It then describes how crucial aspects of decision management are approached especially effectively when processes are broken down into essential elements. It then describes the theory known as the “cardinal decision issue perspective,” and illustrates its use as a decision tool.

**Keywords:**  
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Decision management  
Decision appraisal  
Cardinal decision issues
Picture the following scene at a meeting of the executive board of fictional Northern Manufacturing. The discussion concerns what to do about the Lincoln Facility. That installation is relatively new, having opened only a couple of years ago. Part of the problem is that quality is abysmal at Lincoln and costs are high, too. To make matters even worse, demand for the components produced at Lincoln is declining. It is no secret that, if they were to make the decision today instead of four years ago, the executive board would not approve the opening of Lincoln. June Ward, the rapidly rising executive vice president, had been the chair of the committee that recommended building what is now the Lincoln Facility. As one might expect, Ms. Ward feels distinctly uncomfortable in this meeting.

The Lincoln scenario illustrates well several ideas and facts about business life. Most prominent is the central role that decisions play in the everyday functioning and welfare of any organization and any manager within that organization. A high percentage of the Northern executive board’s time -- including that of June Ward -- is spent making decisions. And the resulting decisions have great impact on whether Northern and its leaders’ careers flourish or instead founder. In any organization, it is uncommon for anyone’s decisions to be immune to influence by others. Instead, by design or otherwise, and for better or worse, most people’s decisions are affected by the actions of numerous other people in that organization. Consider how June Ward’s colleagues and superiors on the Northern executive board discuss and respond to the perceived success or failure of the Lincoln decision that had been advocated by Ms. Ward’s committee.
Those reactions will likely affect not only how Ms. Ward makes decisions in the future but also the decision behavior of everyone who is aware of her experience. Thus, if Ms. Ward’s peers and bosses treat her harshly, we should expect more conservative, risk averse decisions in the future (Swalm, 1966).

Implicit is the concept of “decision management”: the actions a person takes that affect how and how well the people on the scene -- subordinates, peers, superiors, and the person him -- or herself -- make decisions (Yates, 2003). Some decision management effects are inadvertent and even surprising to the manager in question. (“Really? They did that because of something I said?”) But this fact simply reinforces the theme of this chapter, that nurturing sound decision management practices is essential to managerial success more generally. This is especially so for those with high standing in an organization. After all, because high-status people control more resources, other people pay more attention to them, are more responsive to their wishes, and are more likely to mimic their behavior.

What are the connections between decision management and evidence-based management? As noted in Rousseau’s opening chapter in this volume, decision making is at the heart of evidence-based management. In particular, evidence-based management puts a special emphasis on making decisions that are informed by “the best available scientific findings” (p. xx). Such defensible evidence can have two foci. The first, as Rousseau notes, is on the “content” of the decision problem at hand, e.g., rigorously documented facts about the problem faced by the Northern Manufacturing executive board that ultimately resulted in
its decision to build the Lincoln Facility. The second focus is on the “process” by which a decision is reached, e.g., the consistency of the Northern executive board’s decision making practices with what valid scientific research has shown to have good chances of contributing to sound decisions. The two foci are clearly related. After all, ideally, a decision process whose elements have been properly validated should (among other things) demand validated facts for every decision. As its definition above suggests, in organizational contexts, decision management is largely about the details by which managers’ actions -- deliberately or inadvertently -- affect the processes by which the people in that organization decide. From this perspective, then, decision management is a concrete, primary vehicle via which every manager exercises evidence-based management principles -- or not.

An overarching aim of this chapter is to provide the reader with a practical, working understanding of key decision management ideas, with a special emphasis on the roles of evidence. Among other things, managers should leave the chapter with the ingredients for a checklist of considerations to take into account when attempting to facilitate major decisions in their own organizations. That is, they should have an answer to this kind of question: “How, exactly, can I go about my work such that we decide well, making the best use of evidence-based concepts?” Researchers can expect to gain a clear, functional structure for identifying problems for study that are critical to achieving deep understanding of fundamental decision principles as well as effective prescriptions for better decision making. And management educators, the essential links between
The plan for the remainder of the chapter is as follows: The next major section describes the decision management portfolio -- the major classes of decision management activities that are important to distinguish. The section after that provides requisite clarity about critical decision making essentials, including core concepts such as “decision,” “judgment,” and “decision quality.” The third -- and largest -- major section of the chapter presents most of the specific, detailed ideas and facts that are essential to high-quality decision making and decision management, within the context of a conceptual theory called the “cardinal decision issue perspective.” The final section points toward the next steps that the reader might consider pursuing.

**The Decision Management Portfolio**

Decision management activities fall into several categories, as summarized in Table 1 (Yates, 2003). Every manager in charge of an organization has an obligation to carry out these activities to the best of her ability. After all, if they are performed poorly, the organization’s welfare is seriously jeopardized. Table 1 can serve as a useful checklist for the manager to review periodically in her efforts to meet her decision management obligations. (“Am I doing what I’m supposed to be doing? How well am I doing those things?”) Let us consider, in turn, what those duties entail:
• Making Specific Decisions: This category includes: (a) making decisions personally, as when June Ward exercises her discretion to select her own office staff or to approve purchases below a specified cost level; (b) deciding collaboratively, as when Ms. Ward, as a member of the Northern executive board, voted on whether to approve the construction of the Lincoln Facility; (c) leading or facilitating decision making deliberations, as Ms. Ward did for the Lincoln Facility committee; and (d) affecting decisions from a distance, as when Ms. Ward lobbied county commissioners, over whom she had no authority whatsoever, for their votes on tax breaks in the county where the Lincoln Facility was eventually located.

• Supervising Decision Routines: Every organization has routines for making particular recurring decisions. Routines for vetting job applicants and supply vendors are examples. Even when the routines are well established, they do not run themselves. Someone must assure that the people responsible for executing those routines actually fulfill their obligations. Someone must also figure out what to do when odd cases that do not fit the parameters of the established routines come along. These “someones” are the designated supervisors of the company’s decision routines.
• Shaping Decision Practices: There is seldom a unique, ideal way of making any kind of decision. That is why every organization occasionally tinkers with its decision making practices, often described as making policy changes. Such is the case in universities where the rules for making decisions about promotions from assistant to associate professor are occasionally revised. Someone has to lead the process of making such policy changes. And when a new organization is established, someone (perhaps a group) must develop the organization’s decision practices from scratch. That is what happened when Charles Jones, the general manager of the new Lincoln Facility, was given broad discretion to craft hiring procedures at that unit.

• Providing Decision Resources: Decision making is not free. It consumes resources that, depending on the circumstances, can be substantial. And the character and extent of those resources can significantly constrain the quality of the decisions that are made. Thus, a final major decision management responsibility is providing the resources used in making the decisions at hand. For instance, when June Ward led the committee developing plans for the prospective Lincoln Facility, she oversaw a sizable committee budget for a host of services, such as site analysis consultations. She expected those services to be essential for informing wise decisions.
When they ponder stories like that of June Ward and the Lincoln Facility, practicing managers readily acknowledge that it is important for them to decide well and to somehow induce those around them to do the same. But then comes the hard part: “How can I do that? Do I just need to try harder doing things the way I do them already? Or should I do things differently? And where, exactly, does good evidence enter the picture?” Much of the remainder of this chapter offers paths to answers for questions like these. At the core of the discussion is a particular perspective on the nature of real-life decision processes. These are the mechanisms that produce the decisions in question, by managers themselves and by the people managers seek to influence. But before getting into the details, the meanings of critical concepts must be clarified.

**Decision Making Essentials**

Decision making is a fundamental human function, on a par with other behaviors such as learning. Everyone does it and seeks to assure that it is done well. Moreover, it is the subject of study in a broad range of disciplines, from psychology to philosophy, economics, strategy, law, engineering, finance, statistics, marketing, and, medicine, to name just a few. This attention is a mixed blessing. On the one hand, it means that when we have questions about how people decide or could decide better, we can draw on an enormously extensive pool of ideas, experiences, and scholarship. On the other hand, among other challenges, the resulting ambiguity about the meanings of common terms can encumber conversation and cripple productive research and development efforts, particularly collaborative ones. To minimize such difficulties, in this section we
describe and define precisely key concepts that are used in the subsequent
discussion. These meanings are not arbitrary, however. Instead, they represent
the most common (but of course not universal), consensus meanings across
myriad scholarly and practical decision literatures, particularly the
multidisciplinary literature dedicated to fundamentals, which is usually described
as being about “judgment and decision making,” often called simply “JDM.”
Specifically, we discuss “decisions,” “judgments,” “decision parties,” and then
various varieties of decision-related “quality.

**Decisions**

We adopt the following definition of a “decision,” which is at the core of ways the
term has been used in literatures that address decision making: a commitment to a
course of action that is intended to serve the interests and values of particular
people (Yates, 2003; Yates & Tschirhart, 2006). We make a distinction between
interests and values because they do not always coincide. Consider, for instance,
the situation of a cocaine addict. At a particular moment, the addict desperately
craves (“values”) using the drug although pursuing that action would be contrary
to his long-term interests. Such contradictions implicate a (sometimes
philosophical) conundrum that must be worked through in the course of arriving
at a decision.

It is useful to acknowledge several varieties of decisions:

- Choices are instances in which the decision maker selects a subset
  from a larger collection of alternatives, e.g., Northern
Manufacturing’s selection of Bartonville over Lexington and New Stanton as the site for the Lincoln Facility.

- Acceptances/rejections are particular kinds of choices in which the decision maker is presented with a single option and chooses to either pursue it or not, e.g., the Northern board’s decision to either accept or reject a proposal to acquire its major competitor, Peerless.

- Evaluations are special statements of how much some entity is worth. Northern Manufacturing’s bid on a contract with Jackson Instruments would be one example. June Ward’s performance appraisal for her subordinate, Len Mason, would be another. These statements are special in the sense that the decision maker is willing to back them up with actions commensurate with the magnitudes expressed. For instance, a contract bid of $500,000 indicates the acceptance of an obligation to perform specified actions in return for $500,000 in compensation, no more and no less.

- Constructions are the products of decision makers’ efforts to create the alternatives they think would be ideal for them, conditional on available resources and constraints, e.g., the custom design of Northern Manufacturing’s Lincoln Facility allowed by the budget allocated for the project.
The decision varieties described here are useful to recognize because they rest on quite disparate operations and skills. They are also amenable to different kinds of repairs when they go awry. The definitions are important also because they allow for the precision that is demanded of serious scholarship. Consider, for instance, the difference between “decision making” and “problem solving.” People are often stumped when asked to discriminate between them. Here, decision making is recognized as a special case of problem solving, one that emphasizes the aim of satisfying the personal interests and values of certain individuals, not people in general. A new Ford Mustang might be the ideal solution to Tom’s car purchase decision problem but totally inadequate for Jim’s, who has different transportation needs and esthetic tastes. More generally, the implied highly variable standards of decision adequacy are perhaps the most distinctive and challenging characteristic of decision making, what makes decision problems especially hard to solve.

Judgments

The preferred meaning here for the term “judgment” is an opinion as to what was, is, or will be some decision-significant state of the world (Yates & Chen, 2009). When June Ward’s recruiting consultant says that plant manager candidate Dale Laws improved productivity 33% at his last job, that is a “was” judgment. A real estate title consultant’s assertion that a property being considered as the site for the Lincoln Facility is free of liens is an “is” judgment. And the Northern board’s expectation that demand for the primary components made at Lincoln “probably” will stay flat for at least 15 months is a “will be” judgment. The kinds of
decisions whose wisdom depends on the adequacy of those judgments are easy to envision. It is worth noting that, despite the fact that judgments are “opinions,” they do not have to originate with people. Increasingly often these days, judgments are rendered by devices, such as property title search algorithms. In perhaps the earliest research tradition, the source of a judgment used in making a decision is referred to as the “judge.” As the present examples suggest, the judge easily can be different from the decision maker (e.g., a consultant) and does not need to be a human being.

Unfortunately, the expression “judgment” sometimes has different interpretations in decision-related fields. For instance, in law, legal decisions are often referred to as “judgments,” as when a court pronounces a “judgment for the plaintiff.” In some decision making studies, researchers also sometimes describe evaluation decisions, e.g., product or employee performance ratings, as “judgments,” to distinguish them from choices (e.g., Sood & Forehand, 2005). The convention described here is older, more common, and therefore preferred in the interests of avoiding distracting ambiguity.

To foreshadow later discussions, it is important to highlight the fact that judgments are the primary focus of the “evidence” addressed in evidence-based management discourse. Consider human resources as an example (cf. Boudreau, this volume). A judgment that drives common and especially important human resources decisions concerns the costs of employee turnover. How do managers arrive at such judgments? How good are they? Are they good enough? How
could managers acquire better judgments, perhaps based on better evidence, and at what costs?

**Decision Parties**

Implicit in the definition of a decision are hints of the fact that, typically, decision episodes in organizations entail more roles than simply “decision maker” and “decision manager.” There is good reason to expect that in practice, decision makers (and decision managers) sometimes overlook some of these roles and that that kind of neglect can contribute to decision failures. Table 2, which can serve as another practical checklist, summarizes the key players in typical decision making scenarios: decision makers, beneficiaries, decision managers, stakeholders, and bystanders (cf. Yates, 2003):


--- Insert Table 2 about here ---


- Intended beneficiaries are the people whose interests and values the decision maker pointedly seeks to serve by the decision in question. Other people might benefit from a decision, too. However, from the decision maker’s perspective, this is only coincidental. In organizational settings, it is useful to acknowledge two classes of intended beneficiaries. First are the immediate beneficiaries. These beneficiaries are “immediate” in that the desired outcomes of the decision (and often the decision process) would affect them directly. In the Lincoln case, the immediate
beneficiaries included the customers, whose needs for high-quality components were intended to be served more quickly and reliably. Workers in the new state-of-the-art facility were among the immediate beneficiaries, too, in that the decision makers hoped that the workers’ jobs and working conditions would be improved. Decision makers themselves, such as the Northern Manufacturing executive board members, are almost invariably immediate beneficiaries also. It is hard to imagine non-pathological circumstances in which decision makers deliberately try to make decisions that harm their own personal interests. Then there are the distant beneficiaries. These are people whose improved welfare is sought through the decision, but only indirectly, via the impact of the decision on immediate beneficiaries. In a typical private business, this group includes the owners, such as shareholders. If, for instance, in the Lincoln case, the new facility in fact provides better products and service to Northern’s customers, all else being the same, this would result in higher share prices for the owners. Such examples illustrate the fact that “distant” does not mean “unimportant.”

- Decision makers are the key protagonists in a given decision episode, the ones who make commitments to the courses of action in question. In private life, there is often only one decision maker. But in organizational life, for high-stakes decisions, there are
typically multiple decision makers, as when the Northern Manufacturing executive board voted on building the Lincoln Facility. And in bargaining situations, decision scenarios that are part of the very fabric of commerce and politics, there are two or more decision makers who have at least partly opposing interests. A good example, even though many might not normally recognize it as a bargaining situation, is that in which June Ward worked through with her colleagues and superiors the ground rules by which her board subcommittee functioned. Ms. Ward had her own thoughts about what those rules should be and the other board members had different preferences.

- Decision managers, whom we discussed already in the context of the decision management portfolio, take actions that affect the processes by which decisions are made, even their own, personal decision processes. A key fact that decision makers and formally acknowledged decision managers are wise to recognize is that in a given situation, there can easily be numerous other decision managers actively attempting how decisions are made, too. For instance, it would not be surprising to learn that a host of non-executive board employees at Northern Manufacturing tried to affect the Lincoln Facility decision in some fashion or another.

- Stakeholders are people who have power and are inclined to apply that power to serve or harm the interests of the decision maker’s
intended beneficiaries if they are, respectively, either pleased or displeased with the decision in question, or even how it is reached. A decision maker might sometimes seek to make stakeholders happy, but this is only because doing so might indirectly affect the intended beneficiaries’ interests and values. In the Lincoln scenario, government construction inspectors would represent one class of important stakeholders. If they are unhappy about the design or the construction work at the Lincoln Facility, they have the power to halt the project until compliance with their regulations is achieved, an action that would frustrate the aims of serving customers and shareholders. The same would be true of powerful local civic leaders.

- Bystanders are individuals are similar to stakeholders except that they can have little or no power, perhaps because they are not organized collectively. Decision makers do not aim to promote bystanders’ interests per se. However, perhaps for reasons of ethical concerns or good citizenship, the decision makers seek to assure that their decisions do no harm to those people collaterally. The poor residents who live close to the Lincoln Facility qualify as bystanders. The decision makers on Northern Manufacturing’s executive board would hate to see the new unit make the neighbors’ lives worse by, for instance, polluting their
environment. And thus the committee members explicitly take that desire into account as they deliberate the facility’s design.

It is useful to think of the various roles distinguished here as just that—roles. Accordingly, a given person can assume more than one of them. Thus, June Ward is both a decision manager and a decision maker in executive board meetings. She is one intended beneficiary of her decisions, too. It is also useful to emphasize that failures to recognize almost any of the “players” in a decision episode can have significant adverse consequences. If a powerful stakeholder, say, a local politician, goes unrecognized, then this might be interpreted as a deliberate slight. The result could be the failure to obtain required government permits in a timely fashion, if at all.

Quality

Proponents of evidence-based management contend that it is a sound approach to “making better decisions” in organizations (Rousseau, this volume, p. xxx). Such expectations are at the heart of a surprisingly knotty set of questions about quality such as, “What, exactly, are ‘better decisions?’ How can we recognize them when we see them?” Achieving progress toward the goal of making better decisions is exceedingly difficult if we cannot cleanly specify and measure the criteria. Rousseau (this volume, p. xx) aptly recalls the old business saying that “What gets measured gets managed.” The converse almost certainly holds, too: That which is not measured (e.g., decision quality) is done poorly or neglected altogether. After all, if a decision manager cannot tell whether (and how) his efforts have fallen short, how can he make necessary adjustments? So, in this
section, we consider in turn and describe functional conventions about quality and quality assessment with respect to decisions, judgments, decision makers, and decision processes.

**Decisions: “Is This Decision Good Enough or Do We Need to Try Again?”**

In everyday conversation, people often speak of a decision as being either “good” or “bad.” More than anything else, they mean that a “good” decision is one that has outcomes they like and a “bad” decision is one whose outcomes displease them (Yates, Veinott, & Patalano, 2003). Questions about a decision’s quality can have enormous practical significance. Consider, for instance, lawsuits filed against physicians by patients (or their families) when their treatments result in injury, disability, or death. Or take consumer shunning of airlines whose pilots have made decisions leading to fatal crashes. There has been considerable controversy about the legitimate use of the terms “good decision” and “bad decision.” To avoid being unproductively distracted by that controversy, we advocate a characterization of decision quality that follows directly from the previously presented definition of a decision as “a commitment to a course of action that is intended to serve the interests and values of particular people,” the intended beneficiaries. Specifically, we recommend avoiding the terms “good decision” and “bad decision” altogether and, instead, speaking of “effective decisions” as ones that in fact serve the interests and values of the intended beneficiaries.

There are many distinct ways in which a decision may (or may not) serve intended beneficiaries’ interests and values. It is important for a decision
manager to recognize key dimensions along which decision effectiveness can vary. The main reason is that different types of effectiveness tend to result from distinctly different causes. They therefore point toward different actions the decision manager should consider to address effectiveness shortfalls.

---------- Insert Table 3 about here ----------

Table 3 summarizes important distinctions among decision making consequences that implicate separate decision effectiveness dimensions. The first distinction turns on whether the consequences in question result from (a) the action that is pursued as a result of the decision -- the outcomes per se -- or instead (b) the activities by which the decision was reached -- the decision’s process costs and benefits, irrespective of the effects of the resulting action.

For the decision to build the Lincoln Facility, the outcomes per se included, for instance, the costs of building the facility, the degraded customer satisfaction engendered by the lower-quality components built there, and the increased production costs at that site. As suggested by Table 3, outcomes per se come in several varieties. Outcomes that either satisfy or fail to satisfy the decision maker’s “aims” are an especially important class; as we shall see, every decision episode begins with such aims, the intended “point” of the decision. Another key category includes outcomes that affect the extent to which the decision meets the beneficiaries’ emerging needs or “requirements,” whether the decision maker deliberately aimed to meet those requirements or not. A concrete
example might be the suitability of the Lincoln facility’s technology for a newly developed and profitable product line that was never envisioned before the fact. Yet another outcome class encompasses the host of “side effects” or unintended consequences -- good and bad -- that inevitably accompany every decision. The Lincoln technology applicability just mentioned would be an example. A final noteworthy outcome class consists of comparisons between the outcomes actually experienced as a result of the selected action and the outcomes that would have been experienced had some other, rival action been pursued. The regret and other emotions instigated by such counterfactual comparisons are known to influence how people feel about their decisions (e.g., Mellers, Schwartz, Ho, & Ritov, 1997).

The opposing top-level class of consequences -- process costs and benefits -- encompasses experiences peculiar to one special category of decision beneficiary: the decision makers themselves. They are the beneficiaries who are directly affected by the decision process itself. These consequences fall into two categories themselves, material and non-material, as suggested by Table 3. The former include costs and benefits that can be translated more or less directly into money, as in the case of consulting fees and committee members’ time and effort spent in meetings. The latter emphasize psychological effects, including process costs such as the personal worry and stress often engendered by the uncertainty inherent to many decision problems. They also include the pain sown by the “fights” that are inevitable in deliberations of decisions that affect the competing interests of different parties. Process benefits are illustrated by the heightened
sense of power or autonomy generated by responsibility for a significant decision, the learning gained by the junior members of a decision making group, or the bonding created by committee members’ shared experiences when collaborating on a major decision project, such as a search for a new CEO.

“Emergence time,” not represented in Table 3, is a significant reality that is, oddly, almost never mentioned in discussions about decision quality. Consider outcomes per se. Some outcomes appear immediately after a decision is made. Others, however, can take years to emerge. Moreover, although the outcomes that are experienced during one epoch may be favorable, those experienced at other times could be dreadful. In such instances, according to what principles should the decision be declared effective or ineffective on the whole? Suppose that, during the early stages of his tenure, the Northern Manufacturing CEO clearly performs marvelously but falters badly in later periods. Was his selection an effective or an ineffective decision? (Marriage decisions are a clear parallel in personal life.) To make such questions manageable, it is advisable to condition their discussion on particular periods of time, e.g., “Was the CEO decision effective for the first five years of the appointee’s tenure?”

**Judgments: “Would that Really Happen?”**

Recall that a judgment is an opinion as to what was, is, or will be some decision-significant state of the world. Forecasts of demand for the components slated for production at the Lincoln Facility would be a good example. The main quality concept for judgments is “accuracy,” the degree of correspondence between the judgments in question and the pertinent true states of the world. Various specific
accuracy measures are simply concrete instantiations of this concept. Suppose that Consultant A predicted a quarterly demand of 225,000 units while Consultant B’s prediction was 241,000 units. And suppose that actual quarterly demand was 237,000 units. One commonly used accuracy measure would be the absolute deviation between forecasted and actual demand, 12,000 units for Consultant A and 4,000 units for Consultant B. So, by that metric, Consultant B’s judgment was more accurate. And to the extent that such accuracy differences are reliable, we could expect decisions predicated on Consultant B’s judgments to be better than those informed by Consultant A’s opinions. To anticipate later discussions, a judge is said to be accurate to the degree that the judgments produced by that source are accurate. Thus, in the present example, we would describe Consultant B as a more accurate judge than Consultant A. We can speak of the quality of judgment processes, e.g., algorithms within computer programs for diagnosing medical conditions, the same way.

A side note: In some decision making literature, authors occasionally speak of decisions as being “accurate” or “inaccurate.” Again, in the interests of avoiding ambiguity, we recommend the more traditional custom of reserving the accuracy term for indications of judgment quality rather than decision quality. As we have seen, decision quality is difficult to assess. Decision Beneficiary X, receiving the very same decision outcomes as Beneficiary Y, quite legitimately could be considered to have experienced a decision that is either more effective or less. This can happen because, given their distinct needs and hence their distinct interests and values, the personal impacts of those very same outcomes are
different. In principle and in practice, things are usually much simpler when assessing judgment quality. That is one reason that judgment problems are as popular among researchers as they are; they are relatively easy to study.

Decision makers: “Is she a good enough decision maker, or should we keep looking for someone stronger?” In concept, the notion of decision maker quality is straightforward: A decision maker is good to the extent that the decisions that he or she renders tend to be effective ones. Note that this characterization is statistical -- “tends.” It assumes representative and sufficient sampling from the universe of the decisions of interest. Suppose that Northern Manufacturing’s executive board wants to assess the adequacy of Lincoln general manager candidate Lucy Jackson as a decision maker. Then, ideally, the board should base that assessment on the appraisal of a sizable and representative sample of her decisions in previous similar situations.

Decision processes: “How good is our process for making these decisions? Is that good enough?” Conceptually, quality considerations for decision processes are the same as those for decision makers: A decision process is a good one to the degree that it has a strong track record of yielding effective decisions, ones that serve the interests and values of the intended beneficiaries.

Practical questions about decision process quality arise in several ways. A particularly straightforward example concerns making large numbers of decisions that are seen as highly similar to one another. Certain kinds of “people decisions” are illustrative. Consider, for instance, processes for making college admissions decisions or those for choosing entry-level employees at large corporations. In
such circumstances, evaluators often specify straightforward outcome criteria for the decisions (e.g., freshman-year grade point average or supervisor performance ratings). The decision process in question is considered good to the extent that summary criterion measures are favorable (e.g., mean GPAs and performance ratings are high). If the decision making system is maintained by, say, an independent contractor, the decision managers in question could simply replace the current contractor if the process is concluded to be deficient.

Other common situations where decision process quality assessments are required concern assigning responsibility (and liability) for specific, individual decisions -- usually blatantly ineffective ones. Take, for example, medical decisions that result in patients being disabled or investment decisions that result in investors losing their money. Everyone recognizes that there is an element of chance involved in such situations. Thus, it would seem unreasonable to expect every decision made by any given decision maker to be an effective one. On the other hand, it indeed would be reasonable to demand that the decision maker (e.g., a physician or a portfolio manager) decide according to a good process (see, for example, Hammond, Keeney, & Raiffa, 1998). In a very particular way, that is precisely the kind of perspective taken in medical malpractice cases, wherein the issue before the court is articulated something like the following (cf. ‘Lectric Law Library, 2010): “Did the physician in question exercise the normal standard of care practiced by a reasonable physician under similar circumstances?”

So how should we draw conclusions about whether the decision maker in fact followed a good process when reaching a specific decision? Our notion of
decision process quality described above, couched in terms of the rate at which
the process yields effective decisions -- its “track record” -- is fine conceptually.
Yet, there are often formidable challenges to our ability to estimate such rates
defensibly in given cases. Most of these challenges amount to there being too few
cases available to inform sound conclusions about the effectiveness rates of
interest. Consider physicians’ common contention that, in significant respects,
every patient is unique. That is, those patients differ with respect to factors that
plausibly can imply different outcomes from the very same treatments. Or
consider the task of evaluating the quality of the decision process used by a
corporate board of directors. Each of the high-level decisions the board makes is
so special -- and there are so few -- that there is little resemblance among them.
Moreover, the pertinent consequences of those decisions often take such a long
time to emerge that making process assessments on the basis of outcomes is
simply infeasible.

So how are and should these challenges be met in practice? Three major
approaches all rest on inspection of the decision process in some manner or
another:

• Professional assessment: Medical malpractice cases exemplify this
approach. As suggested previously, in a typical malpractice suit,
third-party medical professionals, presumed to be experts, are
asked to examine the process by which the physician in question
went about deciding what to do, say, through a review of medical
charts (see, for instance, Caplan, Posner, & Cheney, 1991). (Some
malpractice cases, of course, turn on how well the physician carried out a given treatment, not how that treatment was selected.)

The requested assessment is unconstrained in the sense that the professionals who are consulted are not limited or instructed about which aspects of the process they should or should not examine; they can consider any features they personally believe to be appropriate. The consultants then report their own professional opinions about, for instance, the extent to which the physician being sued decided in a manner similar to how typical well-trained physicians would have decided.

It is of some interest that the U.S. legal system appears reluctant to demand similar concordance with professional consensus for business decisions. For several decades, U.S. legal practice has followed the so-called “business judgment rule.” This principle, derived from case law, says that key decision makers in a corporation are immune from liability as long as they make the decisions at issue “in good faith and with reasonable skill and prudence” (West’s Encyclopedia of American Law, 2010). Thus, in practice, U.S. courts are disinclined to question the quality of decisions by corporations’ board members, officers, and managers provided that the decision makers had honest intentions and they were diligent.

How likely is it that the professional assessment approach yields “valid” decision process quality assessments? To the best of our knowledge, there have been no studies examining this question where the ultimate validity criterion has
been something obviously akin to the welfare of intended decision beneficiaries, e.g., patient health states. However, there is a vast literature documenting an array of specific weaknesses in the human judgment processes on which professional assessment rests (e.g., Gilovich, Griffin, & Kahneman, 2002). And there have been a few studies more or less directly indicating that the kinds of substantive professional experts asked to conduct professional assessments are indeed subject to those hazards (e.g., Caplan et al., 1991).

- Coherence appraisal: Suppose that a decision maker’s behavior is logically inconsistent. For instance, imagine that Decision Maker 1 (DMR1, for short) prefers Shirt A to Shirt B, Shirt B to Shirt C, but Shirt C to Shirt A. That is, her preferences violate the transitivity principle, which says that, if A > B and B > C, then it must be the case that A > C, too, a principle that DMR1 has said that she would like her preferences to respect. Or consider Decision Maker 2 (DMR2). He says that it is more likely that both Company X and Company Y will enter a certain market than simply that Company X will do so. That is, DMR2’s judgments contradict the conjunction rule of probability theory. This principle, which DMR2 heartily endorses, says that the probability that both event E and event F will occur can be no greater than the probability that event E will occur, i.e., P(E & F) ≤ P(E). These are instances of “incoherence” in these people’s decision making and judgment behavior. Scholars have long held that coherence is
an important standard that decision makers should strive to meet (see discussions by Yates, 1990, Chapters 5 and 9). By extension, one reasonable way to evaluate a decision process is to examine it for indications that it protects against incoherence, as in the case of expected utility-based decision analysis (e.g., Vlek, Edwards, Kiss, Majone, & Toda, 1984).

Why would anyone put a premium on coherence in decision making? Three reasons are discussed (see Yates, 1990, Chapters 5 and 9). The first is “logical esthetics.” As might well have at least partly motivated DMR1 and DMR2, the decision makers involved might simply feel uncomfortable with the very idea that their decisions violate logical principles such as transitivity and the conjunction rule of probability theory. A second potential reason for a desire to honor coherence is an expectation that coherence somehow is likely to pay off materially because the world itself is fundamentally coherent. As an example, a decision maker may cite the fact that relative frequencies of events in the real world must obey the usual rules of probability theory. Therefore, when considering drawing on the services of two potential consultants who might provide judgments to inform decisions, the consultant whose opinions are more coherent somehow should be more accurate in the long run, too. A third common argument for respecting coherence is that it protects the decision maker from being victimized in so-called “Dutch books,” which are series of ruinous transactions that exploit instances of incoherence. A fanciful scenario illustrates the idea.
Recall DMR1 from above. Suppose that DMR1 buys Shirt C and is observed by conspiring Exploiters 1 and 2, whom we can just call X1 and X2 for brevity. X1 and X2 are aware of DM1’s pattern of intransitive preferences, that is, that she prefers Shirt A to Shirt B, Shirt B to Shirt C, but Shirt C to Shirt A. Realizing that DMR1 likes Shirt B more than Shirt C, X1 approaches DMR1 and easily persuades her to accept the Shirt B he happens to own in exchange for DMR1’s Shirt C + $1, say. Knowing that DMR1 likes Shirt A more than Shirt B, X2 then approaches DM1 and has no trouble getting her to take his Shirt A in exchange for her Shirt B + $1. Next comes X1 again, who, we recall, now owns Shirt C. Recognizing that DMR1 prefers Shirt C to Shirt A, X1 has little difficulty convincing DM1 to take his Shirt C in exchange for her Shirt A + $1. Note that DMR1 is right back where she was after she bought Shirt C for the first time, but is now also $3 poorer. In principle, this clever but cruel cycle of transactions -- a Dutch book -- could continue indefinitely, with DMR1 playing the role of what is known as a “money pump.”

All of these arguments for respecting coherence have some appeal to most people. Nevertheless, many practically minded people consider that appeal to be limited. They wonder: “How secure should I feel that assuring coherence will help us greatly in paying the bills?” More specifically, they might well express doubt about how often the real world presents conditions that are equivalent to having exploiters such as X1 and X2 lurking in the background waiting to entangle their companies in Dutch books built on their incoherence. Unfortunately, there has been no research intended to estimate such risks.
Decomposition assessment: Consider the development of a new airplane. How is it determined when a plane is “safe enough” for even its first test flight? Or take the case of constructing a nuclear power plant. How can regulators determine that the chances of a catastrophe are low enough to warrant allowing a reactor to begin operating, even though in the U.S. there has never been a single catastrophic incident, and thus track records seem meaningless?

“Probabilistic risk analyses” are an essential tool for solving such problems, and they entail the following basic steps (cf. U.S. Nuclear Regulatory Commission, 2009): First, analysts construct a model of how an event of interest might happen (e.g., life-threatening reactor core damage occurs), identifying all the significant contributors to that event -- “components” of the model -- and how those contributors relate to one another. Second, they evaluate the risk associated with each of those contributors. And, finally, they “insert” those assessments into the model and thereby derive an assessment of the risk of the overall focal event (e.g., core damage). The approach is considered credible because, although there is no track record for the process as a whole (e.g., for a reactor with a new design), there are often extensive track records for the components (e.g., the various parts used in a reactor’s construction).

This same kind of logic guides the third approach to assessing decision process quality via inspection, the “decomposition” variety. Such an approach begins with a model of the overall decision process in question. Models of this type amount to empirically documented -- evidence-based! -- claims concerning
essential elements of the decision process as a whole. In any given real-life instance, the process evaluator estimates how well each component of the process performs. To the degree that each component is concluded to be sound, the entire decision process is concluded to be sound, too. In probabilistic risk analyses in engineering, as in the design of airplanes or power plants, one of the major payoffs has little to do with overall risk assessments perse. Instead, the value is in isolating specific elements of an entire system that are too risky and thus need special attention for improvement. By analogy, the decomposed models of decision processes presumed in decomposition assessments promise the same advantages. They point toward specific things that decision managers can and should do in order to craft decision process improvements with maximum impact.

For many years, researchers have used the decomposition assessment approach in partially evaluating real-life decision processes, although without using that term. Perhaps the most obvious examples are studies of the validity of tests used in various admissions and job selection procedures (e.g., Powers, 2004). These are only partial instantiations of the approach because few such selection procedures rely solely on test scores; they invariably also involve other elements, too, such as essay reviews and interviews, whose adequacy, in practice, is often unquestioned (van der Zee, Bakker, & Bakker, 2002). Recently, though, Yates and his colleagues (e.g., Yates, 2003; Yates & Tschirhart, 2006) have sought to develop a conceptual theory of how decision making proceeds in virtually any domain, a theory that is intended to be broadly comprehensive and to point toward explanations for the effectiveness of the resulting decisions. Decomposition
assessment according to the constructs of such a theory in principle should allow for process appraisals that are highly informative for evaluations as well as other purposes. Most of the remainder of this chapter is devoted to that theory -- the “cardinal issue perspective” on decision making (the CIP) and its uses.

The Cardinal Issue Perspective on Decision Making

The CIP contends that, in some form or another, every decision problem presents the decision maker with several challenges or “issues.” In this view, the decision maker’s means for addressing those issues constitute the decision maker’s “decision processes.” It is worth noting that sometimes the decision maker may fail to acknowledge particular issues. In those cases, the issues are resolved by default, according to the circumstances that happen to present themselves.

A core assertion of the CIP is that most, if not all, decision successes and failures can be traced to particulars of how and how effectively the decision maker resolved one or more of the cardinal decision issues. In some respects, the CIP is most useful as a means of organizing one’s thinking about decision making and decision scholarship. The latter includes the ever-growing number of specific and detailed theories and findings -- “evidence” -- about how people decide, which have grown markedly in recent years. The CIP can also serve as a guide for decision makers, decision managers, decision researchers, and decision educators as they go about their work:

• Decision maker and decision process appraisal: As just implied, the appraiser starts by determining what each cardinal issue looks like for the decisions in question. The appraiser then characterizes
how well the decision maker or the decision process addresses (or addressed) each of those issues. Those elemental assessments constitute the real substance of the appraisal per se, for instance, for a physician’s treatment decision or the adequacy of a company’s process for choosing suppliers.

• Guiding major decision making efforts: When the stakes are high, as were those surrounding the Northern Manufacturing Lincoln Facility, it is especially important that decisions be made effectively. Decision managers in such situations do well to guide their efforts according to checklists specialized to the specific decisions at hand. Thus, for example, as in decision process appraisals, such a checklist requires the identification of the form taken by each issue. It then demands that the decision manager assure that measures are taken to make certain that that issue is addressed adequately.

• Establishing decision research priorities: A striking and reliable occurrence often occurs as a by-product of systematic decision management efforts, particularly ones guided by the cardinal issue perspective: the limitations of current knowledge about decision making become glaringly obvious. These gaps point directly to research efforts whose products have high practical and purely scholarly impact -- something every researcher craves.
Let us turn to details. Figure 1 provides a heuristic that makes it easier for practitioners to discuss and use the CIP to manage decisions in an evidence-based way. We will refer to this depiction repeatedly as the occasion requires. A quick overview is useful. The figure’s next level highlights the “point” of decision making, as implicit in the definition of a “decision”: the welfare (“interests”) of the intended beneficiaries of a decision as well as the satisfaction (“values”) of those people. Recall that in the case of the Lincoln Facility decision problem, the intended beneficiaries included Northern Manufacturing’s customers and shareholders as well as the decision makers, including executive vice president June Ward. The next level in the schematic highlights the fact that the beneficiaries’ welfare and satisfaction are products of not only the decision but also “Other Contributors” sometimes considered unrelated to the decision in question, e.g., economic conditions for the Lincoln decision. In practice, we normally de-emphasize “Other Contributors.” The reason is that typically, one can legitimately argue that other conditions ought to be taken into account in a truly comprehensive and sound decision process. For instance, the Northern Manufacturing executive board arguably could (and should) have factored potentially changing economic conditions into their analysis of the Lincoln decision problem.

The middle portion of Figure 1, the “Decision Processes” section, is where the work of arriving at a decision takes place. Observe that the 10 cardinal
decision issues are partitioned into three categories. Those categories correspond to phases that occur in every decision episode, in some way or another, whether acknowledged by the decision maker or not. Issues in the “Preliminaries” phase concern preparation for what many consider to be the primary tasks of working through a decision problem. The issues in the “Core” directly concern how those primary tasks are accomplished. And the “Aftermath” issues are about events that normally occur after the decision has been made. The phases are depicted in an orderly sequence: Preliminaries \(\rightarrow\) Core \(\rightarrow\) Aftermath. In real life, however, the activities entailed in those phases can recycle and recur for some time. For instance, implementation difficulties in the Aftermath phase might easily induce the decision maker to begin the entire decision process anew, from scratch.

The bottom part of Figure 1 highlights the fact that decision processes do not acquire their character arbitrarily. With one exception, “Natural Resolution Contributors” encompass all the current and prior forces that shape the decision processes applied to the problem at hand, e.g., the tools available to the decision maker, the decision maker’s biological constitution (e.g., temperament or health state), and the decision maker’s culture. The exception singled out in this discussion consists of the actions taken by the decision managers on the scene. Observe that some of those actions are directed toward what the decision maker does in the current moment, how the decision maker copes with the cardinal issues as they present themselves “right now.” Other decision manager actions are more indirect. That is, they are applied to “Natural Resolution Contributors” which, in turn, help shape how the decision makers deal with various cardinal
issues for any number of decision problems that might come along in the future. The provision of tools, resources, and learning experiences is a good example.

In the brief survey that follows, we sketch and discuss each cardinal issue. First, after its label, the focus of that issue is identified. Then the issue is articulated in the voice of a “generic” collective decision maker, such as a committee. We next indicate how that issue translates into specific missions the decision maker and the decision manager might seek to carry out. As the reader will recall from our discussion of the decision manager’s portfolio, decision managers exercise their influence in several ways. The specific missions assumed here focus on facilitating the collaborative decision making of a number of people, such as an executive board. We also offer a brief example of the kinds of insights and evidence the literature offers as guidance for principles for how one might proceed with accomplishing those missions. To make things concrete, in every instance we make reference to how things might have appeared in our fictional example of Northern Manufacturing’s decision to build its Lincoln Facility.

Issues in the Preliminaries

Cardinal Issue 1 -- “Need”: Determining Whether a Decision Effort Gets Started - - Or Not

In the Decision Maker’s Voice: “Is something happening that merits a decision on our part?” For example, a member of Northern Manufacturing’s executive board at some point might well have observed: “For some time now, incoming orders
have been growing so large that we’ve had to run overtime to just halfway keep up. Is that OK, or should we be considering other measures?”

The Decision Maker’s Mission: Determine whether current or impending circumstances warrant launching an effort to decide how to deal with those circumstances. Thus, members of the Northern executive board, like the one above, sometimes notice situations that seem potentially important to the company’s interests -- either threats or opportunities. If they are deemed to be real and significant enough, they spur efforts by the committee to make decisions that address them. That is how Northern in due course formed the committee chaired by June Ward and eventually launched full-scale deliberations about whether to build a new facility. Suppose that no one on the committee had ever noticed anything suggesting a threat or opportunity that might be addressed by a new-facility decision. Then there would have been no discussion of such a decision and, of course, no decision to build a new facility, and no new facility.

The Decision Manager’s Mission: Somehow assure that the decision makers recognize true threats to the interests and values of the people for whom they are responsible -- their “charges” and prospective decision beneficiaries. The same should be done for opportunities, all the while assuring that the decision makers do not make decisions addressing what prove to be illusory, false threats and opportunities. When an organization faces actual threats, it has a “need” to deal with them, and when real opportunities arise, there is a “need” to exploit them, too. In turn, under those conditions, it makes sense to say that the organization has a “need” to make decisions that address those threats or opportunities. On the
other hand, when decision makers mistakenly make decisions focusing on misleading “phantom” threats and opportunities, there are several reasons that this is a bad thing, including the fact that it wastes decision making resources. So, at Northern Manufacturing, presumably, some or all the executive board members assume responsibility for discriminating true from false threats and opportunities for the company and inspiring decision making efforts only for the former. Presumably, one or more of those individuals perceived such a threat or opportunity within the repeated large orders the company struggled to meet.

Illustrative Insight and Evidence: Research on “regulatory focus” has shown that there are consistent differences among people in their relative concern with the presence or absence of positive vs. negative occurrences (Higgins, 1997). “Promotion-focused” individuals have the former emphasis while “prevention-focused” ones are preoccupied with the latter. It is therefore reasonable to expect that promotion-focused people would be particularly sensitive to opportunities that might warrant decision efforts to exploit them. Conversely, prevention-focused people’s attention should be especially sensitive to threats that might merit decision making consideration. Studies have also shown that individuals who differ according to regulatory focus also differ in the level of detail at which they examine their surroundings (e.g., Förster & Higgins, 2005). Specifically, there is evidence that people with strong prevention foci are highly sensitive to small details while those who emphasize promotion are more attuned to broad features of their situations -- the “big picture,” as it were. Findings like these suggest that a decision manager would do well to take regulatory focus into
account when seeking to assure that the organization’s decision makers
desately address the need issue. Thus, the chair of Northern Manufacturing’s
executive board would be wise to explicitly solicit board members’ observations
as to impending threats and opportunities to the company. In addition, though,
the chair could also profit from a strategy that seeks to recruit a board that
includes a mix of individuals who are promotion focused and others who are
prevention focused. In addition, the chair should be prepared to develop the
facilitation skills that are required to manage meetings among people who have
such markedly different perspectives and emphases, meetings that can be highly
contentious and unpleasant.
Cardinal Issue 2 -- “Mode”: Settling on Who (or What) Becomes Involved in
Making the Decision, What Their Roles Are, and How They Approach Their
Work
In the Decision Maker’s Voice: “What ‘decision modes’ (qualitatively distinct
ways of deciding) should we apply in this situation? Specifically, which people
(or devices) should we have working on this decision problem? What roles
should they play, and what approaches should they employ?” At Northern
Manufacturing, at some point someone on the executive board asked: “How many
board members, and which ones, should we ask to develop recommendations
concerning what, if anything, the executive board should do about our difficulties
keeping up with the demand for certain components?” And the eventual
committee chair, executive vice president June Ward, had to consider questions
such as the kinds of consultants and analytical tools, including devices such as computer programs, the committee should employ.

The Decision Maker’s Mission: Match the vital aspects of the decision problem to the available people or devices that are best equipped to assure that the required tasks are accomplished most effectively. Thus, the Northern Manufacturing executive board had to think through the mode “metadecision” (decision about deciding) of picking a committee to develop proposals for solving the company’s component demand problem and then to designate June Ward as that group’s leader. The board fulfilled this mission well to the extent that it got every one of the cardinal decision issues “covered” by the right people and the right tools.

The Decision Manager’s Mission: Verify that the authorized or assigned parties (people or devices) are capable of rendering a sufficiently high-quality decision solely by themselves. If they are not, then see that the at-risk decision tasks are reassigned such that they can, in fact, be carried out effectively and efficiently. At Northern Manufacturing, ideally someone on the executive board took on the responsibility of determining what capabilities -- human and otherwise -- were required to achieve reasonable assurance that the component-demand decision problem could be solved well. The appointment of June Ward and the rest of her committee was part of the outcome of that exercise -- for better or worse.

Illustrative Insights and Evidence: Alternative decision modes can be distinguished at several levels (Yates, 2003), as suggested by the “mode tree”
shown in Figure 2. First is the distinction between “individual” and “collective” modes, i.e., whether one person or more than one person, such as a committee, has the authority to make a decision. As implied in Figure 2, deliberation of the mode issue begins with some prior “history” in which someone designated who has the authority or responsibility for making the decision at hand. At Northern Manufacturing, its founding board of directors might have established that the executive board was responsible for making facilities decisions and the tradition has simply continued. In any given situation, the historically determined authority or responsibility might be changed; hence the first mode choice point, “Reauthorization.” There, the originally authorized decision makers could retain at least a partial role in the decision making effort -- “Retained/Shared Responsibility” in Figure 2 -- or that responsibility could be “Delegated” to someone (or something) else, an “Agent.” License is granted to a decision agent to decide as the agent sees fit, without involvement or interference from the principal who awarded that agency.

At the second mode choice point, “Work Assignment,” work required in the decision making effort is either carried out by the authorized or responsible decision maker, in modes described as “Primary,” or else they are assigned to other parties, in which cases the modes are referred to as “Secondary.” Particular primary decision modes, especially at the individual level, are a major subject of contemporary decision scholarship, and thus deserve special attention.

---------- Insert Figure 2 about here ---------
Three broad classes of primary modes, selected at the “Work Details -- Primary” choice point, can be recognized. First is “Analytic” decision making, in which the decision maker deliberately tries to think through what makes sense to do in the given situation, what most people think of first when they hear the expression “decision making.” A high-stakes, largely unique decision such as whether Northern Manufacturing should build the Lincoln Facility would certainly be made analytically. The second primary mode consists of “Rule-Based” decision making. This mode entails rules of the form “If Conditions C1, C2, … hold, then take Action A.” Every organization must solve at least some of its recurring decision problems via such rules; otherwise, it simply could not function. (“Paralysis by analysis,” as it is sometimes described, would set in.) Consider, for instance, the criteria that are used by most organizations to winnow down large initial pools of job candidates into smaller pools that are examined more carefully and analytically.

Finally, there is “Experience-Driven” decision making (cf. Klein, 1993). The qualifier “experience” is meant in two distinct but sometimes related senses. The first implies that the decision making in question rests more of less directly on learning. One such example is “automatic” decision making, such as that involved in maneuvering a vehicle into traffic on the highway. Such automaticity evolves gradually as a result of repetitions to the point where the decision maker makes the decisions virtually effortlessly, uncontrollably, and outside awareness. The second sense of “experience” implicates the decision maker’s reliance on
feelings, conscious or otherwise (consider the “somatic marker hypothesis,” Bechara, Damasio, Tranel, & Damasio, 1997). So-called “intuitive” decision making is an illustration (see, for example, Potworowski, 2009). In contemporary scholarship, experience-driven decision making is sometimes characterized as an instance of “System 1” thinking while analytic and rule-based decision making are described as cases of “System 2” thinking (Evans, 2008), with the former being considered more primitive in evolutionary terms.

Primary decision mode distinctions have considerable decision management significance. Suppose, as is common, that assembly line supervisors at Northern Manufacturing assume that, if line employees are making too many operational decision errors, it is because they are not trying hard enough to decide properly. Implicit is the additional assumption that the employees’ decisions are being made analytically. But many such decisions are likely to be experience driven, even automatic. If that is indeed the case, then exhortations or incentives to work harder at deciding well would be useless. Instead, the first sensible (actually, necessary) task for the supervisors as decision managers would be to disrupt the employees’ faulty, uncontrolled decision routines and only then seek to replace them with new, better ones.

Effectively, three varieties of secondary decision making are commonly recognized, too. We have already discussed “Agency,” in which the authorized decision maker delegates complete authority and responsibility for the decision problem to the agent. Such would have been the case had the Northern Manufacturing executive board completely relinquished to June Ward’s
committee its authority to decide what to do about the company’s component demand problem. In contrast, in “Consultation,” the authorized decision maker retains responsibility for making the ultimate decision. Nevertheless, one or more “consultants” perform some of the work involved in making that decision. This could include arriving at certain essential judgments, such as what future product demand levels will be. Or it could entail making specific recommendations for what the overall decision ought to be, as was the case with June Ward’s actual committee. Finally, there is “modeling,” whereby the decision maker pursues the same or an analogous course of action that some other decision maker selected in a similar situation, without examining the details carefully. This is common in some cases of casual benchmarking, whereby companies adopt the practices of industry leaders uncritically because they are, after all, the leaders.

It is useful to recognize that in actual practice, decision makers often use several different decision modes in the same decision episode. In effect, they apply what can be called “hybrid” modes. Such is the case when a decision maker decides mainly analytically but relies on consultants -- human and otherwise -- to perform certain elements of the decision work, such as generating alternatives or formulating relevant judgments.

There is considerable current interest in secondary decision modes, such as advice giving and advice taking. A common finding in such research is that advisors often recommend actions for others that are systematically and reliably different from actions they would take themselves. Stone and Allgaier (2008) showed that an important driver of such differences is the nature of social norms
in the situation. For instance, if there is a local norm for risk seeking, then advisors will tend to recommend decisions that are riskier than options the advisors themselves would pursue. So suppose that there is such a norm on the Northern Manufacturing executive board. Then we could expect June Ward’s committee to recommend component demand proposals that entail more risk than the committee would consider acceptable if they made the final decision on their own. As a good decision manager, therefore, the chair of the executive board would be wise to acknowledge this bias in the recommendations the board receives and to make sure that the board compensates appropriately in making its decisions.

Cardinal Issue 3 -- “Investment”: Gathering and Allocating the Resources Devoted to the Process of Making the Decision

In the Decision Maker’s Voice: “In order to make this decision well, what do we have to spend on the process, and on what, exactly?” Thus, after June Ward was selected to lead the component demand committee of the Northern Manufacturing executive board, her colleagues on the board asked her: “So, what do you need?”

The Decision Maker’s Mission: Make sure that the key elements of the decision process receive the resources, material and otherwise, that they require to yield an adequate decision, but no more than that. So, at Northern Manufacturing, June Ward had to determine what she and her colleagues on the component demand committee needed in order to craft their recommendations to the executive board. At the same time, she also had to assure that their efforts were
not overly costly, for instance, undercutting committee members’ other responsibilities to the company.

The Decision Manager’s Mission: Ensure that the decision makers have the resources -- material and otherwise -- needed to carry out the tasks required for a sound decision, but that resources beyond that are not wasted. Clearly, this mission speaks most directly to the “Providing Resources” component of the decision management portfolio (Table 1) and the “Process Costs and Benefits” dimension of decision quality (Table 3). At Northern Manufacturing, June Ward ideally should develop a plan for assuring that her committee adequately covers every cardinal decision issue when crafting its component demand decision recommendations. She should then determine what is essential for doing that, e.g., the minimum number of committee members possessing particular skills and qualities. This is what guides her response to the executive board’s question, “What do you need?”

Illustrative Insight and Evidence: People differ in their indecisiveness, that is, whether they tend to decide slowly or are prone to changing their minds (cf. Potworowski, 2010). This has decision process cost implications in several ways. First, by definition, indecisive people take a long time to come to their final decisions, if they get to that point at all, and this translates directly into financial costs (which are often unrecognized). The more time a person devotes to making any one decision, the less time she has to devote to her other duties. The same is true of making decisions and then later changing them. These effects snowball in group decision making, where several people, not just one person, are
prevented from getting on with their obligations elsewhere. Moreover, when decisions are part of a sequence of decisions needed to get an organizational initiative underway, indecisiveness ultimately delays the implementation of that initiative. There are non-material costs, too. There are indications that indecisive individuals experience anxiety when making decisions and that decision making is especially unpleasant for them (Potworowski, 2010). Observations such as these imply that a decision manager, such as June Ward at Northern Manufacturing, would do well to take people’s apparent indecisiveness into account in assembling decision making groups and in coordinating the activities of those groups.

**Issues in the Core**

Cardinal Issue 4 -- “Options”: Assembling the Pool of Alternatives that Are Considered

In the Decision Maker’s Voice: “What are reasonable alternative actions we should consider as potential solutions to this decision problem we have?” From one perspective, addressing this issue was the Northern Manufacturing executive board’s charge to June Ward’s committee: “Provide us with recommendations for what we might do to deal with our component demand problem.” (The committee was expected to provide rationales for their recommendations, too.)

The Decision Maker’s Mission: Assemble a collection of alternative actions -- a “consideration set” -- that includes at least one that would be a suitable solution to the decision problem at hand. At the same time, though, constrain the size and character of that collection in order to minimize
deliberation costs and risks. Thus, June Ward’s committee set out to employ any means at its disposal to bring to mind reasonable approaches to Northern Manufacturing’s difficulties keeping up with demand for particular components. Yet, they also sought to avoid being overwhelmed with the task of appraising options that had little chance of being “The One.” In the committee’s role as consultants, the aim was to resolve the options issue for the executive board as the decision maker. That is, their goal was to provide the board with a set of alternatives that: (a) was small so as to not overburden the board with the chore of appraising them; (b) consisted of alternatives such that each was likely to yield at least reasonably favorable outcomes; and (c) would not tempt the board to select options that were superficially attractive but were actually “bad news” for the company.

The Decision Manager’s Mission: Check and see that the decision makers are employing effective methods for identifying or creating small collections of alternatives, each of which has good odds of adequately solving the decision problem. Ideally, those options should also facilitate the process of appraising all options and should certainly avoid compromising the decision maker’s ability to perform such appraisals. So an important part of June Ward’s job as committee chair was to provide committee members with techniques that are known to be effective at producing small but promising option pools for problems similar to Northern Manufacturing’s component demand challenge.

Illustrative Insight and Evidence: Many methods for addressing the options issue are discussed these days; they are a popular subject, especially for
companies hungry for profitable innovations. Consider, for instance, approaches such as “co-creation” (Ramaswamy & Gouillart, 2010), whereby, in effect, companies and customers collaborate to design products that serve the personal desires of individual consumers. But almost undoubtedly, brainstorming remains the most widely used social technique for generating decision alternatives. The approach retains its popularity despite decades of research contesting its efficacy relative to that of the “nominal group technique” (NGT).

In conventional brainstorming, several people meet face-to-face and work collaboratively to identify or create what are hopefully innovative and viable options for the problem in question. They do so following a small set of simple rules, including a prohibition against criticizing one another’s efforts and an appeal to try to “piggyback” or build on others’ ideas. If they were applying the NGT, the same individuals would each work alone (and might not even know of one another’s existence, constituting a “group” in name only). Each of those individuals would be implored to work hard to try to come up with good ideas. It seems that most people expect that, if brainstorming and the NGT were compared head-to-head, brainstorming would win. However, decades of research (perhaps best illustrated by the classic studies of Diehl & Stroebe, 1987) have demonstrated convincingly the opposite, that the NGT tends to yield more and better alternatives. This happens for several reasons. One is that, despite the instructions for participants to avoid being critical of one another, they are often apprehensive about seen as stupid. So, it appears that a decision manager seeking lots of creative options would be well advised to suggest that decision makers
pursue the NGT approach. It is worth noting, though, that a common result of applying either brainstorming or the NGT is that they typically produce many low-quality options as well as good ones. Thus, if such approaches are adopted, they need to be accompanied by highly efficient screening procedures too.

Cardinal Issue 5 -- “Possibilities”: Identifying Obvious and Non-Obvious Potential Occurrences -- Ones that Matter

In the Decision Maker’s Voice: “Suppose we were to pursue this course of action. What events—especially non-obvious ones—could occur which, in combination with this action, would result in consequences that are significant for key parties?” June Ward’s component demand committee created by the Northern Manufacturing executive board considered a host of alternative actions. It was obvious to the group that future demand for the components in question would matter to just about everyone involved, regardless of the action pursued. But other, not-so-obvious events could matter, too. And if they were overlooked yet actually materialized, then the company would be caught painfully unawares, “blindsided” by them. Hence the committee’s question to itself: “What specific non-obvious things could happen (or be true) that would affect the wisdom of pursuing each of these courses of action we are pondering?”

The Decision Maker’s Mission: Bring to the surface obvious and, most importantly, non-obvious potential occurrences which, if they actually came about, would matter greatly to particular parties, perhaps depending on the course of action pursued. For the Northern Manufacturing component demand committee, the task was to somehow force themselves to see beyond what was
immediately apparent to them, to recognize obscure possibilities whose actual occurrences would greatly affect the sensibleness of options such as building the Lincoln Facility. Although that did not actually happen, a competitor’s technological breakthrough that renders Northern’s components immediately obsolete would be an example of such a possibility.

The Decision Manager’s Mission: Assure that the decision makers employ procedures and tools that have good chances of bringing to the surface readily apparent and especially not-so-apparent decision-significant potential occurrences. Thus, it was incumbent upon chair June Ward to make certain that her committee members at minimum actually tried to bring to mind non-obvious potential future events that would affect the wisdom of the alternative actions they considered. In addition, though, it was in her (and, more importantly, the company’s) interests to steer them through procedures that reduced the odds of blindsiding. One known contributor to “possibility neglect” is inexperience in the pertinent domain. Recognition of this fact would have led June Ward to make certain that her committee discreetly consulted with a wide spectrum of local people in each of the communities deemed to be serious contenders for a new Northern Manufacturing facility.

Illustrative Insight and Evidence: As suggested above, there are myriad reasons that decision makers sometimes overlook significant potential events associated with their options. One is “stress,” an unpleasant emotional state instigated by perceived threats to one’s welfare (Yates, 1990, p. 376). A long-established, reliable effect of stress on cognition is that it restricts the scope of
attention (see Yates, Klatzky, & Young, 1995, for a review, and Booth & Sharma, 2009, for a recent illustration). There have been numerous demonstrations of such effects on people’s decision making. One is possibility neglect. That is, stress can be expected to reduce a decision maker’s chances of bringing to mind particular non-obvious decision-relevant occurrences, thereby increasing the chances of blindsiding. It is easy to imagine circumstances in which this can happen, as during, say, a catastrophic industrial accident. Any given employee under such conditions is likely to have a significantly narrowed scope of attention. Thus, a good decision manager on the scene would find it beneficial to attempt to counteract such effects by relying more heavily than usual on collaborative deliberation of alternative actions, e.g., structured discussion. That is because, although any single member of the collective has a high probability of overlooking any particular consideration, there should still be a much smaller chance that every member will.

Cardinal Issue 6 -- “Judgment”: Arriving at Opinions as to Whether Particular Relevant Events Actually Would Occur

In the Decision Maker’s Voice: “If this event actually happens, then the action we have chosen would be really good (or bad) for us. But would it happen? What are the chances?” In the Northern Manufacturing case, building the Lincoln Facility would be highly beneficial for the company if demand for Northern’s components turned out being high enough, more than 100,000 units per month for at least three years. Hence, at the time the decision was being deliberated, the key question was whether demand would be maintained above that critical level.
The Decision Maker’s Mission: Formulate or otherwise acquire accurate and inexpensive judgments for the various occurrences that matter to the decision problem on the table. In the current illustration, a most critical task of the decision makers on June Ward’s committee was to acquire an accurate prediction -- a judgment -- of demand for the components that would be produced at the prospective Lincoln Facility. If predicted demand were high, the decision makers would be inclined to decide in favor of a new facility to meet that demand. But if that prediction proved to be overly optimistic, then such a decision could prove disastrous.

The Decision Manager’s Mission: Appraise the likely accuracy and cost of the requisite judgments currently available to the decision makers. If those judgments appear to be too inaccurate or costly, help the decision makers identify better judgment sources or methods. There are actually many different ways of obtaining judgments to inform decisions, approaches that are sometimes called “judgment modes,” in parallel to the broader decision modes discussed in connection with the mode issue, sketched in Figure 2 (Yates & Angott, 2009). In one example of a judgment mode, the decision makers rely on judgments essentially purchased from consultants considered to be experts. In another, companies rely heavily on well-established statistical (e.g., time series) techniques for making demand forecasts from, say, one month to the next (Makridakis, Wheelwright, & Hyndman, 1998). These methods essentially amount to using past occurrences of similar events as predictors of future ones, e.g., through extrapolation. Rightly and sometimes wrongly, decision makers often believe that
the future will be subject to forces significantly different from previous ones. They therefore feel justified in adjusting the statistically-derived predictions in the direction of their personal, psychologically-driven judgments of what the future holds (Dawes, 1979).

Illustrative Insight and Evidence: More often than many people realize, the judgments people use in arriving at their decisions come from other people -- or even devices, such as computer programs -- rather than solely themselves. Thus, when June Ward’s committee on the Northern Manufacturing executive board seeks accurate forecasts to inform their decision about whether to recommend building a new facility, we could expect them to go beyond the committee members themselves. Ideally, they should pay attention to the judgments of potential consultants, internal or external, who have good accuracy track records and ignore the assessments of consultants who do not. But therein lies a significant problem. Studies have shown that people’s subjective notions of judgment expertise deviate systematically from what is required by established formal accuracy indicators (Yates, Price, Lee, & Ramirez, 1996). For example, at the expense of other, more defensible, and evidence-based, considerations, decision makers are often inclined to rely on how confident their potential informants appear (Price & Stone, 2004). This suggests that a decision manager such as June Ward in her role as chair of the component demand committee at Northern Manufacturing could provide a valuable service by putting in place routines whereby potential judgment consultants’ track records are vetted for
accuracy per objective methods rather than easily faked mere images of competence.

It is worth noting that the judgment issue is at the core of most calls for evidence-based practice of all kinds. Consider the case of medicine, where such calls sparked the current emphasis on evidence (Sackett, Richardson, Rosenberg, & Haynes, 1997). The impetus for those calls came from instances in which practicing physicians judged that particular treatments were in the best interests of their patients yet those judgments were contrary to the available or eventually emerging scientific data. Advocates of evidence-based practice in management can similarly point to numerous instances in which managers routinely take actions based on efficacy judgments that are at odds with scientific facts. Continued reliance on unstructured job interviews, mentioned earlier, provides an illustration (van der Zee et al., 2002).

Cardinal Issue 7 -- “Value”: Anticipating How Much Key Parties Would Like or Dislike Various Outcomes and Other Aspects of the Decision Situation

In the Decision Maker’s Voice: “Would they (and even I) like or dislike that if it actually happened? How much?” At Northern Manufacturing, there were three major alternative locations for a new facility, including Bartonville, the eventual site of the Lincoln Facility. In each location, June Ward’s committee crafted a request for tax abatements from the local authorities as incentives for Northern to build in that community, with specific job-creation guarantees. In every instance, before proceeding, Ms. Ward and her colleagues asked: “How would they feel
about this proposal? Would they welcome it wholeheartedly, or would they be insulted and therefore resist further overtures from Northern?"

The Decision Maker’s Mission: Make accurate judgments of how key parties to the decision problem -- perhaps including the decision makers themselves -- would feel about potential outcomes and other facts surrounding the eventual decision. Framed this way, it is apparent that the value issue is a special case of the judgment issue. It is worth distinguishing from the general case because the focus is on what makes decision problems themselves special -- the fact that what Person X likes, say, a particular color for a house, might easily be abhorred by Person Y (perhaps Person X’s spouse). Valuation judgments are also special because they are often really hard to make accurately, and deceptively so. That is, people frequently think that it is easy to anticipate people’s feelings (especially their own) when it can be anything but. On June Ward’s Northern Manufacturing component demand committee, when they were planning their strategy for negotiating tax abatements, one of the group’s chores was anticipating local officials’ reactions to alternative proposals the company might offer. Among other reasons, this was a hard problem because none of the committee members knew any of the local officials personally.

The Decision Manager’s Mission: As in the case of judgment more generally, anticipate the accuracy and cost of currently used valuation judgment sources and techniques. Then, to the extent that they are deficient, encourage and assist the decision makers in applying better approaches. So, in meetings when the Northern Manufacturing component demand committee was trying to
anticipate local authorities’ reactions to tax abatement overtures, June Ward ideally would have first sought to gain a fix on how good the committee itself was at making such assessments, relative to other potential sources. Then, to the extent that there were more accurate and cost-effective alternatives, she would have done well to steer the members in their direction.

Illustrative Insight and Evidence: Consumer-focused marketing research provides excellent illustrations of often well-reasoned approaches to resolving the value issue as it arises in marketing decision problems. Among the most popular methods are various survey techniques and more laboratory-like conjoint analysis methods. It is noteworthy that such methods typically rely heavily on people’s assessments of their own values (e.g., “I would really like that product and therefore buy it”). A popular recent topic in valuation judgment research focuses on “affective forecasting,” which addresses people’s predictions of their own feelings (Wilson & Gilbert, 2005). A key finding in such work is the “impact bias,” the tendency for people to overestimate the intensity and longevity of their emotional reactions to events that occur to them, e.g., being promoted or being denied a promotion. To compensate for this bias, it would make sense for a decision manager to moderate actions predicated on people’s self-reported expectations of how much they will like or dislike certain experiences, particularly ones for which they have little direct prior familiarity. That is, they would avoid “going out on a limb.”
Cardinal Issue 8 -- “Tradeoffs”: Arriving at a Final Decision, Recognizing That Every Alternative Has Both Strengths and Weaknesses, Therefore Appearing to Demand Tradeoffs

In the Decision Maker’s Voice: “Every one of our options has drawbacks as well as advantages relative to its competitors. So which of those courses of action should receive our commitment, which should we pursue?” When June Ward was deciding on the last person to invite to join her component demand committee at Northern Manufacturing, she winnowed the options down to two: Joe Wilson and Floyd Chambers. Then the decision problem got really tough. Wilson was more experienced and broadly knowledgeable than Chambers, but Chambers had the edge in terms of technical expertise. She wondered: “Whom should I pick?”

The Decision Maker’s Mission: Determine which alternative course of action should (or at least will) receive the decision maker’s commitment despite its comparative weaknesses. For her committee, June Ward’s task was to figure out whether it made sense to select Joe Wilson and his experience and broad knowledge while sacrificing Floyd Chambers’s technical expertise, or the opposite. Three major classes of tradeoff dilemmas occur. First are outcome × outcome dilemmas, as in the case of Wilson vs. Chambers. In such instances, in the decision maker’s mind, at least, the outcomes in question are known for sure. For example, for June Ward, there was no doubt that Wilson had more experience than Chambers. Then there are outcome × uncertainty dilemmas. Eventually, Northern Manufacturing was faced with, in effect, the gamble described in our
earlier discussion of the judgment issue. If demand for particular Northern components was sustained above a specified threshold (an uncertain event), then building a new facility would be advantageous for the company (a very favorable outcome). But if that failed to happen (also an uncertain occurrence), then the company’s interests would be seriously compromised (an unfavorable outcome). Finally, there are outcome × time dilemmas. In a conceptually simple illustration, Judy Jones is confronted with a choice between two assignments in her company. On the one hand, she could accept a moderately attractive assignment that makes good use of her strengths in experience and broad knowledge, right now. On the other, she could take what is essentially a grueling technical training assignment that would shore up her technical capabilities but would pay off only after a couple of years. Typically, decision makers recognize and confront tradeoff dilemmas after they have done all their other thinking about the decision problem at hand, and after resolving these dilemmas, they take the plunge and decide; they commit to one particular course of action.

The Decision Manager’s Mission: Ensure that the decision makers are skilled in the use of defensible methods and tools (e.g., software) for resolving tradeoff dilemmas. This includes understanding the methods’ rationales and the benefits they can and cannot assure. Tradeoff dilemmas almost certainly have been studied longer and more intensively than any other topic in the history of decision research. And that scholarship has led to numerous tools that are standard fare in business schools and actual business practice. For instance, outcome × outcome tradeoffs are the province of multiple criterion methods such
as multiattribute utility theory (MAUT) procedures (e.g., von Winterfeldt & Edwards, 1988) and also the analytic hierarchy process (AHP) (e.g., Saaty, 1980). Standard expected utility (EU) theory-based forms of decision analysis focus on outcome × uncertainly tradeoffs, as do (implicitly) various portfolio management procedures (e.g., Winston & Albright, 2009). And net present value (NPV) techniques are standard tools for evaluating alternative investment opportunities whose cash flow streams differ -- classic outcome × time tradeoff challenges (e.g., Higgins, 1998). Unfortunately, all too often, each of these methods is applied uncritically. This is perhaps because they appear to provide unambiguous and authoritative answers to tough questions although sometimes they do not. Moreover, the instructions given for the methods rarely even discuss how the decision maker can tell when and whether the needed tradeoffs are being made properly. A good decision manager contributes to the company’s welfare by encouraging and guiding the requisite critical thinking.

Illustrative Insight and Evidence: Extensive scholarship on tradeoffs continues. However, it has changed in focus somewhat. One of the most interesting and practically significant areas of work concerns “coherence shifting.” MAUT analyses are used in some form or another in many arenas, from product design routines to product recommender systems, such as those at Consumer Reports, to employee performance appraisals. The decision maker does the following: (a) identifies several options, none of which “dominates,” that is, is uniformly superior to, any of the others (e.g., Bartonville, Lexington, and New Stanton as potential sites for the prospective Lincoln Facility); (b) specifies
the important dimensions that distinguish the alternatives (e.g., distance from major markets, tax rates, employee quality of life); (c) indicates the relative importance of the dimensions in terms of weights; and (d) assesses the standing of each alternative along each dimension. Every alternative is assigned a score that is the sum of each dimensional assessment for that alternative multiplied by that dimension’s importance weight: \[ S = w_1 \times a_1 + w_2 \times a_2 + \ldots + w_k \times a_k. \] The choice rule for MAUT, which implicitly makes the required outcome \times outcome tradeoffs, specifies that the alternative that has the best score is the one that should be selected.

It has always been assumed that the decision maker’s importance weights and feature assessments are fixed “truths” that are to be discovered during the analysis, thereby pointing toward wise choices. This assumption prohibits the decision maker from any sort of fiddling around with the weights and assessments (“cheating?”). But for the past several years, there have been persistent indications that, left to their own devices, as their deliberations proceed, decision makers reliably (and perhaps non-consciously) shift the importance they attach to various dimensions and also their perceptions of the standing of the alternatives along those dimensions (e.g., Simon, Krawczyk, & Holyoak, 2004). And those shifts are “coherent” in a particular way. Suppose that, early in the deliberations, one alternative, say, Alternative A, becomes slightly favored over its competitors, even if for arbitrary or chance reasons, e.g., Alternative A just happens to be seen first. Then, as the deliberations progress, the decision maker comes to feel that the dimensions on which Alternative A is strong become more important and
those on which it is weak are seen as more trivial. Similar shifts occur with the assessments. Thus, as the deliberations move to the choice point, all considerations become more and more consistent -- “coherent -- with the selection of Alternative A.

Exactly why coherence shifting occurs is the subject of current fundamental research. But the practical, including decision management, implications seem apparent. Unless somehow prevented from doing so, decision makers will allow their perceptions of alternatives and their senses of dimensional importance to be co-opted by their initial, possibly ill-founded intuitions. In principle, at least, tools such as formal MAUT procedures, perhaps applied under the guidance of a seasoned decision manager, seem capable of counteracting such effects.

Issues in the Aftermath

Cardinal Issue 9 -- “Acceptability”: Achieving Key Parties’ Acceptance of the Decision That Was Made As Well As the Procedure Used to Make That Decision

In the Decision Maker’s Voice: “How can we cope with or, ideally, preclude negative reactions to our decision -- and how we made it -- by key parties, especially powerful ones?” Eventually, June Ward and her component demand committee settled on several alternative actions they were prepared to recommend to the entire Northern Manufacturing executive board. One of the committee’s greatest fears was that key executive board members would denigrate one or more of the recommendations out of hand and perhaps even ridicule the committee’s
work. (Such occurrences were not unknown in the company.) The committee therefore wondered how it could prevent that from happening.

The Decision Maker’s Mission: Make the decision “iron-clad,” unlikely to be resisted or sabotaged by key parties because they object to the decision itself or to how it was reached. Thus, June Ward and her colleagues on the component demand committee set out to take actions that would reduce the odds that Northern Manufacturing executive board members would be dissatisfied with the committee’s proposals or how they arrived at those proposals.

The Decision Manager’s Mission: Check that the decision makers follow procedures that anticipate objections to prospective decisions and how they are crafted. Then, when necessary, assure that the decision makers refine any tentative decision accordingly before it is finalized. So, in the Northern Manufacturing case, June Ward ideally would have her committee members search for all significant parties who might object to prospective decisions, not just executive board objectors. Then, before the committee’s proposed actions are finalized, they would be tested and refined according to an acceptability review, perhaps making judicious use of evidence-based persuasion techniques (Cialdini, 2009).

Illustrative Insight and Evidence: An emerging body of research explores connections between decision making and culture (see, for instance, Yates, 2010). A central theme that has emerged in culture research generally cites the distinction between collectivism (sometimes called interdependence) and individualism (sometimes known as independence). Implicit is a recognition that
the acceptability issue often arises and is played out differently in collectivistic
and individualistic cultures. A study by Briley, Morris, and Simonson (2000)
provides a good example. Suppose that Product A is highly durable but has an
unattractive appearance, whereas Product B is the opposite, highly fragile yet
beautiful. The “compromise effect” is the phenomenon whereby, when given the
choice between options such as Products A and B, decision makers seek out and
select a less extreme “compromise” alternative, say, Product C, which has
moderate durability and middling physical appearance. Briley et al. found that
their East Asian participants were significantly more susceptible to the
compromise effect than were their North American participants. This was
anticipated on the basis of greater collectivism in East Asia and the fact that
seeking compromises (the “Middle Way” in Chinese tradition) is more broadly
accepted there. Indeed, Briley et al. found some evidence that accepting
compromises is actually devalued and discouraged in Western cultures. The more
general principle here is that, in today’s more culturally interconnected world,
decision managers would find it useful to be cognizant that several aspects of
their companies’ decision procedures are subject to different forces, depending on
the decision makers’ cultural backgrounds.

Cardinal Issue 10 -- “Implementation”: Making Certain That Selected Courses of
Action Can Be and Are Actually Pursued

In the Decision Maker’s Voice: “We chose Action A. Now, let’s get it done —
assuming that we can get it done.” Some decision problems are such that making
the decision is tantamount to implementing it. Choosing a shirt to buy at the mall
is an example. But other decisions, such as deciding to lose weight, entail executing a project. In those instances, decision implementation can be far from given. Such was the case for Northern Manufacturing’s Lincoln Facility decision. Even after the executive board decided to proceed with building the facility, any number of things might have prevented it from ever opening, e.g., financing falling through. June Ward and her colleagues would hope to prevent such implementation failures.

The Decision Maker’s Mission: Make the decision in a fashion such that it is virtually guaranteed to be implemented. Note that, as with the acceptability issue, the decision maker’s focus should be on what happens before the decision is reached, not after. That is, the decision maker does not wait until after a possibly ill-conceived decision is made before addressing predictable challenges to its implementation. Thus, during their deliberations, before June Ward and her colleagues on the Northern Manufacturing component demand committee finalize a recommendation to the full executive board, they would first test ease of implementation and revise their tentative decision such that the significant threats to such implementation are ironed out.

The Decision Manager’s Mission: Make certain that the decision makers’ procedures for handling “prior” cardinal decision issues (especially the possibilities, judgment, and acceptability issues) are unlikely to result in commitment to an action that contains impediments to its implementation. In the Northern Manufacturing case, in her role as chair of the component demand committee, Jane Ward had the opportunity to shape the topics and the direction of
discussions. In that capacity, it would have been straightforward for her to nudge her colleagues toward more “implementable” decisions (e.g., “Let’s spend a little time talking about …”).

Illustrative Insight and Evidence: Within the last couple of decades, there has been a growing literature on implementation outside what is traditionally considered decision making scholarship per se; e.g., work on “action psychology” and medical patient treatment adherence. Regardless of how it has been construed, however, that research has yielded insights that have been shown to improve decision implementation. One of the most robust effects has been that simply explicitly forming implementation plans improves the chances of implementation (e.g., Dholakia, Baggozi, & Gopinath, 2007). Implicit is the conclusion that decisions sometimes fail to be implemented because, when making those decisions, the decision makers failed to craft implementation plans. In effect, they did nothing more than conclude that the aims of the decision (e.g., losing weight) were worthy. Other work has shown that features of the deliberations themselves can significantly affect whether the resulting decisions are actually implemented. One such feature is how effortful those deliberations are: the greater the effort, the greater the chances of implementation (Dholakia & Bagozzi, 2002), perhaps through cognitive consistency mechanisms. (“If I did all that work, it only makes sense for me to follow through.”) The decision management prescriptions of such findings are straightforward, e.g., make sure that decision makers derive explicit implementation plans and, perhaps surprisingly, that the deliberations do not seem too easy.
Avoiding a Common Misconception: “Paralysis by Analysis”

When many readers first learn about the CIP and its implications for decision aiding and decision management, they often make a false interpretation that leads them to reject the ideas as hopelessly impractical. Specifically, they assume that proponents of the approach, like us, recommend that they replace their current ways of making every decision with a tedious, step-by-step routine for addressing every cardinal decision issue with some science-based prescription. They rightly recognize that such a recommendation would amount to what business people often describe as “paralysis by analysis.” Nothing would get done, and therefore, quite appropriately, potential adoptees of the approach would dismiss it out of hand. It is important to recognize that we wholeheartedly reject such a “process replacement” approach. For good reason, similar approaches in the history of decision aiding have failed repeatedly. As we hope was implicit in the preceding, we instead advocate an “assessment and tweaking” approach. Thus, for instance, a decision manager should assess how well the decision makers of interest are naturally inclined to address each issue. Only if their approach is clearly likely to lead to significant and costly errors should the decision manager intervene and recommend appropriate adjustments or “tweaks.” This strategy is imminently practical and acceptable to most decision makers.

Where to Next?

We have described and concretely illustrated a specific approach to evidence-based management, one that acknowledges the primacy of decision making in managerial practice. It is apparent, though, that true decision management
expertise requires much more. Nevertheless, the structure provided by the cardinal issue perspective can serve as a guide for efficiently and effectively developing that expertise. For instance, a manager would do well to pointedly practice facilitating actual major decisions, perhaps using the Northern Manufacturing Lincoln Facility illustration as a rough initial model. Ideally, the manager should do this in collaboration with one or more colleagues. An especially attractive feature of this approach is that it highlights the need for specific kinds of evidence, about decision making processes and also about the decision problem at hand. (“How exactly should we be making this decision, and what are the concrete facts that we need to know to make this decision well?”)

The manager and those around him should gradually notice that they have developed a functional common language for addressing decision problems generally and that, at minimum, their decision making proceeds faster and more smoothly than it did before.

In the best of circumstances, based on our experience, the suggested collaboration should extend beyond the manager’s organization itself. In particular, when possible, that collaboration should include faculty and students at a nearby university. These “extended” collaborators can provide the organization with direct access to current literature and cutting-edge thinking about decision processes, decision management, and problem-specific scientific knowledge. In return, the organization provides those collaborators with reality checks that are indispensable for the deep understanding that scholars seek. In addition, as suggested earlier, the collaborations invariably identify gaps in scientific
knowledge that provide the focus of scholarship that truly matters. It is a win-win arrangement all around.
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