Gerald Nadler
William J. Chandon

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Learn to Ask the Right Questions for Powerful Results

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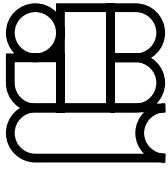

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Contents

To our wives,
Elaine and Bridget,
who support and inspire us,
and to our families, friends, and colleagues,
who encourage us

Preface

There is an easy solution to every human problem—neat, plausible, and . . . wrong.

—H. L. Mencken

Nothing shapes our lives so much as the questions we ask.

—Sam Keen

These opening quotations from H. L. Mencken and Sam Keen aptly frame this book.

On one side, *Smart Questions* is about a "radical" new framework for solving problems and creating solutions. As Mencken points out, easy solutions are often the wrong ones. As consultants with over fifty years of combined experience in problem solving, we know this to be true. We have worked with scores of companies, national and local government agencies, institutions, and associations throughout the world on a wide range of situations, and we have seen how frequently people misjudge problems and create faulty solutions—or worse, solutions that just create more problems!

There are many reasons that business leaders, managers, and private individuals go about problem solving in the wrong way, and we explain them in detail in this book. But as an overview here, let us simply say that most people have learned to use the wrong framework or paradigm for working through the issues of a problem. In essence, they approach problems using a reductionist thinking mode, which leads them to excessive, if not pointless, data collection, analysis paralysis, and static solutions that tend only to patch up the situation for a short period of time.

Smart Questions proposes a "new" framework for creating solutions. The Smart Questions Approach (SQA) is unlike any other method of problem solving you were taught or have read about. The rationale and thinking behind the approach are completely different, the process is different, even the vocabulary we use to talk about problem solving are different (which is why we actually call it "solution creation," not "problem solving"). Everything about SQA diverges from reductionist thinking. More important, SQA works. We have developed SQA over many years of research and field experience. The research mainly involves learning how the leading creators of solutions in almost every profession and walk of life think and approach their assignments (which is why we put "radical" and "new" in quotation marks above; it is not radical or new to these leading solution creators). SQA has been applied to a wide range of simple and complex situations in business, government, education, and even in families.

The second side of this book, relative to the quotation from Sam Keen above, is that the SQA is also about learning how to create solutions by asking questions rather than assuming answers. In addition to the fallacies of the reductionist approach that make solution creation go wrong, people too often analyze problem situations and quickly assume they know what actions to take. In their eagerness to make the problem go away, they leap to conclusions and take premature actions without considering a wide range of variables and options.

As the title of this book suggests, SQA emphasizes another aspect of creating solutions that the reductionist approach does not. SQA teaches you how to ask smart questions every step of the way. In particular, you will learn about the three fundamental questions that every situation requires and how these three guiding questions will automatically lead you to think of many other corollary smart questions whose answers will help you work far more effectively and innovatively in any solution creation effort.

Smart Questions will completely retrain you to become a more intelligent thinker, a better creator of solutions, and, in all likelihood, a more productive person. As you learn to apply SQA to your business and personal life, you will emerge with a radical change in your ability to develop creative, purposeful, long-term solutions in a wide range of situations.

HOW WE DEVELOPED SQA

Our personal stories reveal a lot about how we came into the field of methods for planning, design, development, problem solving, and systems thinking. In addition, they explain in large part why we believe that SQA is a far more effective framework for creating solutions than anything else we have been able to uncover in our years of research and consulting experience.

Gerry's Background

My work in this field began in 1948, when I was a young industrial engineer and a graduate student working during the summer at a food processing plant in Wisconsin. After a couple of days of orientation, the president of the company called me into his office for my first industrial assignment. He explained that a logjam on the loading docks was killing the company. Freshness is critical when processing foods, so every second of delay from the fields to the cans or to freezing created costly waste and hurt quality. He asked me to study the problem and give him a one-page report about what to do.

I believed at that time that my academic training in engineering was precisely what the company needed. I rushed off to prepare flowcharts, statistical analyses, measurements of work and productivity. I flawlessly applied many techniques I had learned, and to be sure not to miss anything, I performed exhaustive analysis and put it all together into my first professional report. Why do just one page? I thought. I'd do even better to impress my boss with my first project. I crammed in everything—data, recommendations, the works—and eagerly turned in a ten-page report.

The next day, the president called me into his office. "Gerry," he said, "you know what I think of this report?" I waited for his lavish praise, but he took it gingerly in his hands, tore it in half, and pitched it into the wastebasket. "What I need to know is this: If you were in my shoes, how would you solve the problem?" After the shock wore off, I went back to the drawing board and completely rewrote the report. The next day, I handed in a one-page set of recommendations and their justifications, as ordered. My recommendations were adopted, and they worked.

More important, this experience planted the seeds for my work in the field of solution creation. Because he had asked me "to study the problem" and then give him "a one-page report about what to do," that is what I did. I didn't "hear" the important part of the president's request about "what to do" in one page and had instead focused on his request "to study the problem." Since he asked about studying the problem, I "knew" he would want all the valuable analysis I had made.

From this point on, I began paying attention to how the effective and creative people around me went about examining problems and creating solutions. Noticing that they seemed to do things differently from what they and I had been taught, I talked about my tentative conclusions with many colleagues at the university where I was now a professor. I found that an anthropologist, a management behaviorist, a philosopher, a psychologist, and a sociologist also wondered, "How do the most effective people you know go about being so effective? How do the best problem solvers solve problems? How do the best planners and designers go about planning and design?" In other words, "How do they get great and creative results?" The six of us initiated the beginning of the continuing research that has exposed the methods and thinking we describe here.

I have continued to observe managers, engineers, and many others whom I believed to be the most creative and effective to find out what they did differently from the rest of the people. What I discovered provided the same results as the research did: that the most effective solution developers threw out almost everything they had learned in school about how to plan, design, develop, improve, and create solutions. They used a different type of thinking and a methodology based on asking different kinds of questions—and lots of them. The decades of research, observation, and practice have led to the concepts and practices of the SQA.

Bill's Background

I became part of the research and work on the concepts that led to this book twelve years ago, but my experience learning about the real way to create solutions was similar to Gerry's. It began in the late 1980s, at the height of the Total Quality Movement, when I decided that I could make more of a contribution and help people by leaving the Jesuit seminary where I had been studying philosophy for a couple of years in order to get into the business world.

I took a position as a training and development consultant with a large high-tech electronics manufacturing company. One of my early assignments was as a facilitator in a high-tech firm whose rapid expansion was forcing the company to continuously move people to different facilities. The company had three computer teams—telecommunications, networking, and desktop—that were having a hard time getting the moved computer systems to work right. Users often suffered problems with their network, their e-mail, and the phone systems. In fact, users had reached a point where they could not get anything to work at all. Every computer problem fixed seemed to create a host of others.

My first reaction was to put together a team of leaders from all three groups to get at the root problems. We all assumed that if they could find and fix those, then the other problems would go away. Unfortunately, these leaders did not want to see that each of their problems was part of a larger problem. They each resolved to solve the problems themselves. The desktop team made their own list of things to deal with, as did the networking people, as did the telecom folks. They attended team meetings more from a desire to look like good team players rather than to share information and work together.

Although there were some minor improvements, the three leaders refused to see that their individual departmental problems were part of a bigger issue, which had to do with not working together. In hallway conversations, they located the blame on each other. It seemed that their real goal was to look good to their bosses so they could keep their jobs. The leaders wanted to make sure that they looked good to their boss, so they all developed solutions only within their own areas that they could address or solve. They managed to solve minor problems within their own areas but left the most significant problems unaddressed.

I tried every imaginable technique to break through the logjam. But I failed to make any real impact. Finally, realizing that I could do nothing more with this team, I left the role of facilitator for the team. The team continued and the problems remained, and eventually, this way of doing business damaged the company so much that it lost business and was finally sold.

I became driven to find a better way to solve problems on my next assignment. I scoured the literature on problem solving and found Gerry's previous book, *Breakthrough Thinking.* This was an "aha!" moment for me, and it radically changed my approach to problem solving. On one of my very next assignments, I used the ideas from

Gerry's earlier book, teaching everyone to ask smart questions about the problem and using the completely different framework that Gerry was teaching.

Ironically, a similar problem arose about customer service issues with computer installation and telecommunications. I used Gerry's approach, and the result and the experience of working with the team were dramatically different. The team dealt with the real issues, refused to blame one another, and developed a creative way of identifying and solving issues collaboratively. Customer service (as measured by regular surveys) improved dramatically at first and then steadily over time until the service became a nonissue.

Gerry and I met after I read his previous book and have been working together ever since.

HOW TO USE THIS BOOK

Smart Questions requires you to read the chapters sequentially because this book is largely about a process of thinking and action. The chapters build off of one another in presenting the SQA framework, so the book will not prove meaningful if you skip around from phase to phase. You need to learn all four phases in sequence in order to truly understand and assimilate the SQA process. Chapter Six on cases could be read early, but you may not get the full meaning of the process described in the earlier chapters.

Chapter One explains why most people go about problem solving in the wrong way. The chapter details the origin of reductionist thinking and why people believe it is the only way to solve problems. We point out numerous fallacies with this thinking process and show why the paradigm is more often than not ineffective in producing good results when you follow it to solve problems. We then contrast this with an explanation of holistic thinking, the approach we learned about by studying people who could be considered the leading solution creators of the world. We noticed that these people evaluated and acted on problems in a completely different manner, abandoning the traditional methods of reductionism and using a radically different paradigm.

We next lay out the precepts of the SQA based on holistic thinking. The first of these precepts is the use of three foundation questions—focusing on uniqueness, purposeful information, and systems—that must be explored for every problem. These three questions are an

essential starting point for any work you do in creating solutions and exploring problems. We then provide an overview of the four phases of SQA—People Involvement, Purposes, Future Solution, and Living Solution—explaining what questions and actions each involves and why. We show how to go through each phase using three steps—list, organize, and decide—that are based on well-accepted practices of creativity and divergent and convergent thinking. This overview shows how creativity is sought throughout the SQA phases and provides you with the vocabulary of SQA, so you will likely immediately understand its significant benefits over reductionist thinking.

Chapter Two presents the first SQA phase: People Involvement. We discuss why getting a wide range of people involved from the start is critical in solution creation and how to ask smart questions about getting people involvement. Rather than the reductionist approach of getting buy-in usually in the last step of problem solving, SQA posits that problems are much more effectively and creatively solved and implemented when you tap into the knowledge and wisdom of the right people, using smart questions early in the solution creation process, who are affected by the problem or need to live with the solution. They are much more willing to get involved with SQA. We then go over the list, organize, and decide steps and show how to expand your thinking and asking questions about who to involve and how to select the right people.

Chapter Three presents the second phase of SQA, Purposes, which focuses on a concept unique to SQA, that of expanding your purposes. We explain why you need to explore the larger purposes of whatever situation you are dealing with. Organizations and individuals too often move ahead on problems without examining the larger purposes they are attempting to accomplish. We will teach you how to ask smart questions about purposes, and how to move from problems statements to purpose statements. Then we will walk you through the list, organize, and decide steps, showing you how to expand your understanding of your purposes and how to organize a "purposes hierarchy" from which you will select the most appropriate focus purposes for which you will then aim to create solutions.

Chapter Four discusses the third phase of SQA, Future Solution. The concept of a future solution for the selected focus purpose is unique to the SQA framework. It is a usable concept that we show goes far beyond the usual "flag-waving" admonition of traditional problem solving. A future solution is an ideal solution that you intentionally

define in some detail. We explain the many benefits you obtain when you devise a future solution, including an enormous increase in creative solution ideas and a forward-looking mind-set that helps you avoid short-term patches in favor of proactive long-term thinking. We then go through the list, organize, and decide steps to show how to fashion the most creative future solution ideas and how to choose the best one to guide you for your situation.

Chapter Five explores the last phase of SQA, Living Solution. We explain why this concept is unique to the SQA and why it is called a living solution (because any solution must be implemented with an eye to how it lives on in the future). We then detail the three components of it: a detailed plan for change today, a plan for future stages of changes, and an installation plan. As with the other phases, we will go through the list, organize, and decide steps showing you how to create ideas for living solutions and how to narrow your choices down to one living solution plan and its three components.

Each of these chapters contains numerous case studies that exemplify the points discussed in the chapter. We have made this a highly practical book so you can truly get different results in whatever area of practice you are in. We believe it is important to show you how large, complex problems are solved with SQA, so Chapter Six contains two significant case studies—one from business and one from government. These two cases show how the SQA process was applied in the situations, phase by phase, with impressive results. In both cases, we show how the traditional reductionist approach had produced the wrong ideas or had failed to work.

Finally, Chapter Seven discusses the significant benefits of using SQA in organizations to provide people with a language for innovation, a systems orientation, and a sense of empowerment over their problems to create what we call a Smart Questions Organization. In our view, using SQA in organizations of all kinds can become a true strategic advantage, bolstering your organization beyond your competitors.

WHO SHOULD READ THIS BOOK

Smart Questions is an important book for leaders and managers in business and government. We have also used the SQA process with enormously successful results in businesses of all types, education (such as primary and secondary school curriculum design, teacher

education, and classroom management), environmentalism, community work, and many types of personal and family problem solving and solution creation. As you read this book, we invite you to think about how you can apply SQA not just to your professional work life, but also to your marriage or other relationship, parenting, and community, association, and societal activities.

A NOTE TO READERS

The case studies and examples used in this book are drawn from our own and some of our colleagues' SQA practices. For simplicity, we discuss our cases using the word "I" without distinguishing which one of us worked on the case. When we talk about cases that other SQA practitioners have been involved with, we talk about the case in terms of "an SQA practitioner."

In order to avoid confusion, all cases and examples refer to using the SQA rather than to any of the other names from earlier versions of *Smart Questions.* Although the principles of the SQA in this book are similar to previous versions, the methods and techniques of the approach have been evolving. In addition, we continue to get smarter about the approach of using smart questions as an organizational change and development method.

Our use of the words "right questions" is to be interpreted as meaning "*significantly more* right questions" than those posed by using conventional reductionism.

January 2004

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Smart Questions

CHAPTER ONE

Introducing the Smart Questions Approach

Moving Beyond Problem Solving to Creating Solutions

The mind, once expanded to the dimensions of larger ideas, never returns to its original size.

—Oliver Wendell Holmes

Problems are an inescapable aspect of life. They are nothing less than impediments to the growth, happiness, and success of every individual and every organization on the planet.

We can't make all problems go away, but we must learn to deal with them. Businesses, governments, private associations, religious groups, and even families must be ready to solve the problems that interfere with their future. Whether it's what new product to develop, what new service to offer, what to do about global warming, how to fix a failing educational system, or how to resolve an international crisis, every person, organization, and institution has a constant need to know how to solve problems.

Solving problems may sometimes seem simple, but most personal, organizational, societal, and group problems are not simple. They are usually complex, involving numerous pros and cons, requiring difficult choices, and potentially affecting many people. As a result, many problems are not solved in an optimum manner and to everyone's satisfaction. Aspects of the problem remain: the new product fails to

generate profits in the way you expected, the children don't increase their test scores, and peace eludes two warring nations.

In many instances, the attempted solution to some problems only begets other problems. Like the domino effect, each apparent resolution creates new problems, which when solved give rise to yet other problems, and so on in a never-ending cascade of incomplete or failed solutions.

THE PROBLEMS WITH PROBLEM SOLVING

Why do problems vex organizations and individuals? Why can't our business leaders, managers, politicians, workers, and parents find intelligent, cost-effective, and continuing solutions to their problems? Why can't you solve the issues that plague your life?

The main reason is that most people approach problem solving the wrong way. As researchers and consultants in this field, we know this because we have been studying, writing about, and performing problem solving for more than fifty combined years. We have witnessed firsthand the most common methods of problem solving used in business, government, and society at large.

Our research has been extensive, involving thousands of individuals and hundreds of different circumstances, including corporate, governmental, and personal. Our research indicates that the majority of the population—around 92 percent of people—goes about problem solving using ineffective and unproductive techniques and thinking. You may be wondering how it could happen that so many people could have learned ineffective methods. The main reason is that they are taught and almost all organizations use reductionism to solve problems.

The Reductionist Approach

The reductionist (or "rational") approach derives from the Cartesian scientific thinking paradigm that took root in European society in the 1600s. Named after French philosopher René Descartes, the Cartesian method of thinking was originally an attempt to expand human knowledge beyond the dogma of the Church, which dictated and controlled what people believed about everything, from astronomy and medicine to social relations and politics. The problem was that the Church's faith-based dogma was increasingly running

counter to observations and learning in many fields. In an effort to create progress, particularly in science and math, Descartes and his compatriots—notably the English philosopher Francis Bacon (1561–1626) and the English philosopher and mathematician Sir Isaac Newton (1642–1727)—understood that a new paradigm of thinking was needed.

Descartes created an approach that relies extensively on the use of empirical evidence, logic, and reason. Problems in the reductionist approach are solved "scientifically," meaning through study aimed at identifying a key part or assumption, followed by collecting data about the part, then analyzing the data, proposing a hypothesis to explain what is "correct" about the part, testing the hypothesis, evaluating the results, and concluding what the "correct" knowledge about the part ought to be. The Cartesian method, which was developed to understand the smaller nature-based world that coexisted with the Church's heavenly based view, is based on four principles. First, everything can be divided into its component parts. Second, any of those parts can be replaced. Third, the solution of the partial problem can solve the entire problem. Fourth, the whole is nothing more than the sum of its parts. It sounds reasonable, doesn't it?

Most of us think and analyze problems according to this Cartesian scientific paradigm. We are schooled and trained in it exclusively as our analytic thinking style. We have been so steeped in this thinking style that we automatically gravitate to it like fish to water. As doctors, lawyers, politicians, businesspeople, educators, and even religious counselors, we use it every day to solve whatever problems we face in our organizations, institutions, and personal lives. Whenever there is a problem, we resort to reductionist logic.

Here's a little test to see if you are part of the 92 percent of the population who are reductionist thinkers. See if the following steps resonate with your current problem-solving approach (would you, for example, use this approach to improve an accounts payable system, set up a strategic planning process, fix a manufacturing problem, develop a community plan, or create a course syllabus?):

1. Something is not working right. The first thing we need to figure out is exactly what is broken.
2. We gather data about the current situation, especially the broken or missing element.
3. We analyze the data.

4. We model or chart the data in order for others to understand it also.
5. We attempt to determine logical conclusions about precisely what is wrong or what lies at the root cause of the problem, based on the data.
6. We try to be creative and develop a solution for correcting the root cause of the problem.
7. We implement the solution that best fits this problem.
8. We apply this solution efficiently and quickly.
9. We move on to the next problem.

How does this approach sound to you? Is it a similar sequence of steps you would likely use to solve a problem at your workplace or in your personal life or community? If it seems logical and comprehensive to you . . . sorry, you are one of the 92 percent who have been steeped in the traditional, reductionist approach that does not work. If it makes you feel any better, we were part of the 92 percent until we learned a different approach from studying the other 8 percent of problem solvers.

We have seen the reductionist pattern of logic over and over again as the one that most people automatically gravitate to. Most people cannot conceive that there might be another way. Almost all the professional literature on problem solving, planning, design, creativity, and related fields states that this logic is *the* way to proceed. They recommend that people begin their problem solving by seeking out what appears to be objective factual data, which then maps to some type of model of the situation and a representation of the solution. The solution is then finalized and implemented, and the problem is deemed to be over.

WHY REINVENT THE WHEEL? In addition to its reliance on rationality and logic, a corollary fallacy in the implementation of the Cartesian method of thinking is the notion that many problems or problem elements are identical or at least similar. This leads to the belief that many problems can be resolved in similar ways, usually by transferring, adapting, or grafting the solution used in one problem directly onto the solution of another problem. The thinking goes something like: "The elements of Problem B are similar to the elements of Problem A,

so let's borrow [reuse, graft, transfer, slightly modify] the solution from Problem A and apply it to Problem B. After all, why reinvent the wheel? Why waste time redoing something that has already been solved?"

This thinking is precisely what causes so many fads to occur in the problem solving and organizational change fields, such as reengineering, total quality, empowerment, and team building. An idea that works in one company takes root and spreads like wildfire among other corporations and businesses, which believe they can reuse the same solution with no changes.

This urge to adopt management fads is also an outgrowth of the last principle of reductionist thinking: that solutions must be implemented quickly and efficiently. We find that the rush to fix problems with mass-produced techniques is increasingly a factor in modern business and government because our society pushes us to move faster and faster in developing solutions to problems. For simple problems, such as a leaking faucet, a noise in our car, or a lack of letterhead stationery in our office, a mass-produced solution is fine. However, most of us need to address problems and issues that are far more complex, where the decision making is far more difficult for an individual or group.

Here's an example from our consulting experience that illustrates precisely the flawed application of reductionist thinking in business. I once worked with a hospital that wanted to improve its massive medical record-keeping system. The system was overloaded, slow to respond to requests, and inefficient. Following the reductionist line of thinking, the hospital initiated a lengthy study that collected data on how the medical records were kept, the turnaround time for a request of a patient's record, how many files were added per day, and a multitude of other data points. The people involved in the study then dissected the problem into its component parts regarding warehousing space needed, speed of record transfer between departments, accessibility, and a zillion other data points. It was then determined that the cause of the problem—the "broken" elements—were related to speed and accessibility.

Meanwhile, the hospital had heard about another hospital where I had previously consulted that had adopted a high-tech and award-winning solution to its own record-keeping problems. That hospital's solution had involved extensive use of computers and software. Because of my work with that second hospital, the CEO of the hospital in question hired me and told me that he assumed I would simply adopt the same high-tech solution for their medical record keeping

problem. In his mind, "there was no need to reinvent the wheel." He expected a quick solution to what he perceived as the same set of problems bedeviling his hospital.

However, my background with the research meant it would not be at all appropriate to assume that the two hospitals were the same with regard to the suitability of using the same high-tech solution. Although they were similar in size, medical services offered, socio-economic communities served, and financial condition, a great deal of time and effort might be wasted and resistance could be engendered if we immediately tried to graft the same technological solutions from my consulting job at the first hospital to this second one. As is so often the case, our research and previous practice indicated that the problem with their medical record-keeping system might require a very different solution, one tailored to their needs and to the capabilities of this hospital's staff. In fact, that turned out to be the case here: the medical records problem reflected much larger issues that had to do with several other processes within the hospital. This hospital's problem and the needed solution were not simply a matter of installing the technology-based system of the previous hospital.

As consultants, we see many businesses, institutions, and governments making the same mistakes: incorrect determination of what the problem is, incorrect development of what the solution is, and an impatient rush to implement a solution that is unsuitable, misleading, or inappropriate to that problem or creates significant resistance among the people involved because it was "not invented here." If you doubt this, just think about why so many management fads have come—and then gone. We think it is pretty clear: they didn't work because they cannot be applied in a mass-produced manner. Although most businesspeople try to be pragmatic, seeking out approaches that they think will work, it is usually too late that they find out that fad approaches don't work for their unique situation.

Clearly, the Cartesian method of thinking has contributed much to the world. Descartes' emphasis on analysis and empirical study led to the truly significant advances in the fields of medicine, architecture, engineering, astronomy, and life sciences that have brought us to our modern era. The reductionist method of thinking is so dominant today that most of us believe there is simply no other way to think about solving problems or even planning and designing solutions. In fact, if you are familiar with James Adams's classic book, *The Care and Feeding of Ideas* (1979), you will recall that it lists ninety-four types of