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by Loren Gary

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Want Better Results? Boost Your Problem-Solving Power

by Loren Gary

THE ABILITY TO IDENTIFY the most important problems and devise imaginative responses to them is crucial to superior performance in the modern workplace, where workers at all levels of the organization are called upon to think critically, take ownership of problems, and make real-time decisions. But problem solving can never become a core competency unless the company prioritizes it.

As more and more firms recognize that problem-solving skills form the invisible structure that undergirds high performance, they also realize that there's no quick fix—no intensive program to give your organization rock-hard problem-solving muscles in six weeks.

Today, firms across a broad range of industries are seeking to supply their managers with the tools and training they need to excel in problem solving. In doing so, they aim to embed problem-solving proficiency in the organizational fabric so that it becomes a competitive differentiator. To accomplish this, they must do three things well:

- Help employees master the basics of problem solving and move beyond routinized approaches.
- Foster more resilient thinking styles.
- Continually underscore the importance of taking human dynamics into account.

Let the goals be your guide

Just as you can't isolate the muscle group you want to strengthen while exercising if your body isn't properly positioned, so, too, a company can't improve its problem-solving skills if it lacks fundamental strategic alignment.

At an annual meeting of Stamford, Conn.–based Pitney Bowes' top 150 managers, Vice President of Human Resources Catherine Pica stated: "We use the company's mission, vision, brand, operating principles, and leadership behaviors to create a common lens for looking at the key challenges ahead." The company's response to difficulties in the execution of its current horizontal growth strategy is predicated on this shared understanding about what matters most. Once the foundational perspective is in place, the following recommendations come into play.

Understand the methodology's potential as well as its limits

A manager's ability to solve problems consistently requires a clear, repeatable methodology. Most approaches include the following five steps:

1. Define the problem. To ensure that you're looking at the real problem and not just a symptom of the problem, isolate the root cause.
2. Specify your objectives.
3. Identify alternatives, evaluate them, and choose one.
4. Implement the solution you've chosen, adjusting it as needed.
5. Verify that the problem has been solved.

But as all good problem solvers know, you can't arrive at a high-quality solution by just going through the motions. Rote thinking can undermine even the best problem-solving methodology. If you want exceptional results, bring a greater level of sophistication to the table.

Critical thinking at the outset.

At the problem-definition stage, meticulous thought about the problem's real constraints can save you a lot of time. Suppose you've been given the assignment of deciding when to conduct a three-month market test of your company's new software product. If you determine that the test doesn't have to last three months, you have eliminated one of the problem's constraints.

"You need to check out each constraint to see if it is real or not," says Barry Nalebuff, coauthor with Ian Ayres of *Why Not? How to Use Everyday Ingenuity to Solve Problems*

Big and Small (Harvard Business School Press, 2003). By identifying a problem's true constraints, you'll learn a lot about what the solution must look like. To illustrate this point, the authors use a brain teaser: Plant four seeds so that each is equidistant from the other seeds. "Starting by defining the box helps focus your search," says Nalebuff. "Even if you can't solve the whole problem, figure out what you do know about the answer and stick with it" (see "The Four-Seed Puzzle," p. 5).

Critical thinking throughout.

Even with a well-defined problem, generating and evaluating alternatives can be tricky, so lively thinking must continue throughout the problem-solving process. Don't get so intoxicated by a possible approach that you fail to analyze its consequences, advise John S. Hammond, Ralph L. Keeney, and Howard Raiffa in *Smart Choices: A Practical Guide to Making Better Decisions* (Harvard Business School Press, 1998). Carefully weigh each alternative against the objectives. "Because objectives frequently conflict with one another," the authors write, "set priorities by openly addressing the need for tradeoffs." And make sure to factor in your unit's risk tolerance; after all, the anticipated consequence may not be the one that results.

When the methodology can let you down

Despite the importance of good problem-solving methodology, it's also essential to be on the lookout for situations in which the methodology itself can be a hindrance. Problems that are so vexing it's not clear they even have a solution should be classified and dealt with differently, says David A. Schmaltz, author of *The Blind Men and The Elephant: Mastering Project Work: How to Transform Fuzzy Responsibilities into Meaningful Results* (Berrett-Koehler, 2003) and a project management consultant with True North in Walla Walla, Wash. Schmaltz calls these problems dilemmas, because there seem to be no good alternatives for resolving them. "Dilemmas present the illusion of choice," he says. "You feel like you're damned if you do and damned if you don't." And the standard problem-solving methodology "doesn't help you deal with them because it focuses your attention on the search for a root cause. Dilemmas don't really have root causes; instead, they are the result of previously unacknowledged contradictions."

For example, a construction firm was going to renovate an old building when the plumbing subcontractor found a problem with the blueprints. No one had an accurate plan showing how the plumbing system had originally been built or altered—and there was no way of getting one.

"Addressing this situation using the standard problem-solving methodology would have led the construction firm to focus on the conditions in the past that made for the present," Schmaltz continues. "The firm would have felt that it had only bad alternatives and that the renovation effort would have to cost more and take more time. But instead of wasting time trying to fix the past, the firm adopted what I call a 'radical acceptance of the situation as it is.' It took the lack of accurate plans not as a problem to be solved but as a feature of the challenge it was presented with. It reorganized the project so that it could do some exploratory work before beginning the renovation." And it even hit the original target date for completing the renovation, even though it didn't fix the problem's root cause.

All problems are resolved more quickly when you take ownership of the situation, but this is especially true for

DISSECTING A PROBLEM AT MILLENNIUM

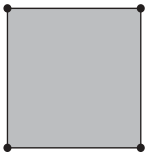
At the Cambridge, Mass.–based biotech firm Millennium Pharmaceuticals, much of Interim Vice President of Learning and Development Susan Ennis's work focuses on improving higher-order problem-solving skills. In short, intensive sessions, cross-functional teams tackle real-world scenarios such as whether to move two molecules in the company's drug portfolio forward to the next stage of development. "This is a very expensive proposition," says Ennis, who is also an executive coach. "Should we move forward on one or both?"

R&D department team members, aware that not all drugs in the pipeline make it to market, would probably favor moving both molecules forward. But team members from finance and investor relations would be concerned that doing so might lead to net operating losses in the next few years, when the company has promised Wall Street it will turn profitable. Team members from the commercial functions, knowing that different drugs require different distribution mechanisms, would focus on how much retraining or additional hiring in the sales, marketing, and medical affairs departments would be needed.

Grappling with such issues forces members from different disciplines to blend rigorous analysis of which alternatives best meet the company's prioritized objectives and risk tolerance with an emotionally intelligent consideration of what the practical consequences of their decisions will be on people in their organization. It also forces them to develop what Ennis calls "optimistic tenacity—the belief that any idea or solution, no matter how good, can be made better."

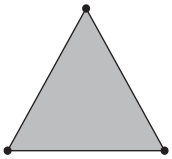
THE FOUR-SEED PUZZLE

Faced with the challenge of planting four seeds so that each seed is equidistant from the others, many people make a first stab at an answer by drawing a square and planting one seed at each corner:



But a square is not the solution, write *Why Not?* authors Barry Nalebuff and Ian Ayres, because "the seeds at the opposite diagonals are farther from each other than they are from the seeds in the vertical and horizontal directions" (p. 139)

Another move is to try placing one seed at each of the three apexes of an equilateral triangle. Even though this isn't the complete solution, it does uncover a principle that must be true: since all four seeds must be equidistant, so must any three of them.

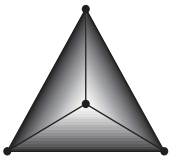


But what to do with the fourth seed? Placing it at the center of the triangle won't work because then the seed in the center would be closer to the other three seeds than they are to each other.

At this point many people abandon the triangle approach and start looking for a solution from scratch. *Resist that temptation,* urge Nalebuff and Ayres. What they call the lesson of "principled problem solving is to take something you know is right and build on it, even if that is not enough to answer the problem" (p. 139). The problem is not with the location of the first three seeds, because you know that three of the seeds must form an equilateral triangle.

"The discipline of putting the three seeds down and focusing on just the fourth helps direct you to that one leap, that one small breakthrough to come up with the answer," the authors continue. Since the first three seeds are fixed in their locations, we can "extend our initial principle to say something about where the fourth seed must go." Not only must three of the seeds form an equilateral triangle, but *any* three seeds must form an equilateral triangle.

"So where does the fourth seed go? The constraint that isn't really there, but that we often impose with our mind, is the requirement that all the seeds must lie on a single surface." Thus, imagining that there's a hill in the middle of the triangle, you could put the fourth seed at the top of that hill. In effect, you're placing one seed at each of the four apexes of a pyramid.



Applying what Nalebuff and Ayres call the "principle of symmetry" (p. 35)—taking an existing solution in a given context and turning it around to get a new perspective—leads you to an alternative solution: planting the fourth seed in a hole beneath the plane of the first three seeds.

It's only by making explicit that a two-dimensional solution is not one of the constraints of the problem that the solution space opens up in your mind. "Once you've isolated what the real constraints of the problem are, then everything else is free—it's easier to see the areas of freedom for solving the problem," says Nalebuff, a professor at the Yale School of Management.

"It's a matter of thinking inside the box," he continues. "Define the problem as carefully as you can; try to articulate as much as you can about the solution even though, at the outset, you don't know all of what's required to solve the problem."

dilemmas. "By rejecting outright the damned-if-you-do, damned-if-you-don't alternatives that a dilemma seems to present, you open up space for a choice that may yield something other than damnation," says Schmaltz. For example, "imagining how the dilemmas will look a year from now can have amazing choice-proliferating potential. After pursuing this line of thought, many groups I've worked with have determined that the dilemma they were facing didn't need to be addressed right then." Another option: consider changing the payoff. Look for alternatives that will put you in a better position down the road even if they don't resolve the difficulty now.

Increase the flexibility of your thinking

Often the source of the problem-solving deficiency doesn't lie with the methodology, but with the individual's thinking. No matter how well the company's leadership is able to articulate the mission, vision, strategy, and foundational principles, "these messages get filtered—and sometimes blunted or distorted—by employees' thinking styles," says Dean Becker, president and CEO of Adaptiv Learning Systems in King of Prussia, Pa. "Moreover, individuals' thinking styles can impair their root-cause analysis, causing them to gravitate toward some possible causes and to ignore others completely, regardless of the evidence."

An important part of thinking style is explanatory style, a habitual way that we explain to ourselves what caused a problem. It has three dimensions, says Becker:

1. The degree to which we personalize problems (see them as being our responsibility).
2. The degree to which we assume that a problem is permanent (will always be a problem).
3. The degree to which we assume that a problem will be pervasive (will affect other areas of our life).

Firms such as Adaptiv help individuals recognize their tendencies along each of these dimensions. Thus, when a problem arises, they're more aware that their first beliefs about the cause may not be accurate. They also learn to generate alternative beliefs that run counter to their habitual style. The next step is to analyze the evidence for and against these beliefs—the instinctive ones as well as those that have been consciously generated.

The result is a more flexible, realistic approach to causal analysis and a more robust solution landscape. "We've found that as a person's skill at causal analysis improves, her sense of self-efficacy and optimism also improve," says Becker. Individuals become more resilient, more confident that they can persevere through difficulties, and better able to bounce back from adversity. John Fontana, an executive coach, corroborated these findings in his work with wedding consultants at the retail chain David's Bridal (Conshohocken, Pa.). "The consultants in the stores that went through resilience training were able to recover more quickly after losing a sale," he says. Sales in those stores were noticeably higher than in stores without the training.

Remember the human dimension

Beware the unseen consequences of your problem-solving actions, says Millennium's Susan Ennis. "A seemingly small change can have huge repercussions for people farther down in the organization."

As you think about an alternative, consider the organization's readiness to implement it and how the culture will affect that implementation. When face-to-face interactions among employees are the primary mode of knowledge transfer, for example, people may balk at an efficiency initiative that requires them to rely more on numbers and reports than on contact with other people.

"What will a particular solution require people to let go of? What new behaviors will they have to take on? Who is going to gain, and who is going to lose? And how will all this affect your ability to implement the solution? You always have to play out these scenarios as you weigh the alternatives," says Ennis. ◆

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