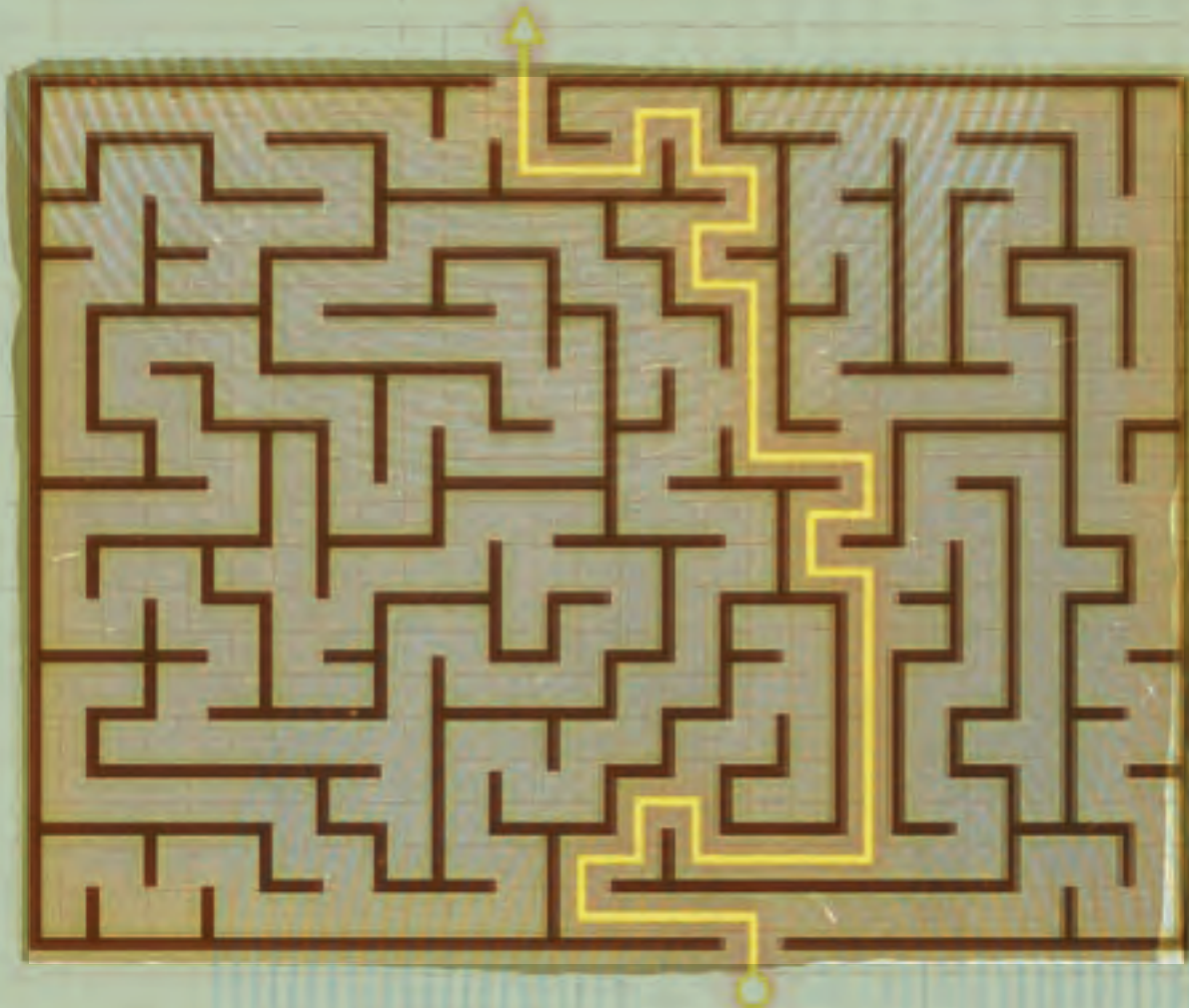


Staying Focused on Fundamentals

BY STEVE GOO

My first teacher in rocketry had a saying: “Pointy end up and fire out the bottom.” His description of a perfect takeoff didn’t mean that the execution was simple. It requires a lot of difficult engineering to get a rocket into space and keep it on course. But it also requires that many talented people stay focused on the fundamentals.



Most days, program management seems a lot like rocket science. At Boeing, we execute very well on many complex programs, but not without problems. The typical troubles found in our programs—and in other companies inside and outside the aerospace industry—occur because we lose our discipline and forget to focus on the basics.

Ten years ago, Boeing chartered a team to investigate why some of our programs did well and others struggled. It discovered the high performers used management strategies the other programs didn't. This finding led to the creation of the Boeing Program Management Best Practices, a management system for successfully leading a program through the twists and turns that invariably occur during its life span.

The eight best practices the team identified represent the fundamentals of program management. They serve as a road map for creating a focused, disciplined, and integrated approach to leading a program team.

Boeing has made use of these practices a top priority and put in place policies, processes, tools, and metrics to help our program managers employ them successfully. We built our best practices into an implementation model that is like CMMI (Capability Maturity Model Integration). It has 134 attributes, each with five maturity levels. Every year programs assess their implementation of the best practices, and every year we raise the bar a little, improving the model by incorporating new approaches and lessons learned. Refining and sharing the best practices allow us to replicate our successes and take maximum advantage of what we have learned as a company.

Of course, our best practices offer no guarantees. But over the past decade, they have demonstrated their value time and again. They have helped healthy programs see better results and reduced problems in programs that were overcommitted or at high risk because of technical, schedule, or budget challenges.

The first best practice, *Create and Review Business Plan*, starts with the program's strategy. It gets at the heart of what the customer is trying to accomplish: what customer needs you are trying to fulfill with your program. Program managers must understand both requirements and strategy. That way, when

THE BIG 8: BOEING PROGRAM MANAGEMENT BEST PRACTICES

- **Create and Review Business Plan:** Set strategic objectives and measure progress throughout the life of the program.
- **Business Offer:** Understand customer, regulatory, and other requirements. Prepare executable and profitable proposals and contract changes.
- **Organization:** Develop a product-based organizational structure with clearly documented team responsibilities.
- **Supplier Integration:** Establish and maintain a collaborative working environment with suppliers from the earliest stage through program end.
- **Program Execution and Control:** Use a formal concept of operations to manage technical, quality, schedule, cost, and other activities.
- **Risk, Issue, and Opportunity Management:** Use an integrated method to grasp opportunities and mitigate or correct risks and issues.
- **Help Needed and Independent Reviews:** Promote a culture of open communication and continuous improvement.
- **Program Communication:** Develop and maintain strong relationships with internal and external stakeholders.

changes occur, they can better manage their impact on cost, schedule, and other aspects of the program. We make this the number-one best practice because it focuses on the customer.

The second best practice is the *Business Offer* or proposal: what you are going to commit to. This is important because it is much easier to successfully execute a program that is actually doable. This sounds fundamental, doesn't it? But how many times have we seen programs that cannot get there from here? The business offer makes sure you take a scientific, rigorous approach and are grounded in reality by experts in scheduling and cost accounting. The goal is to make commitments you can keep.

Organization comes next. How are you going to organize the program? Many program managers have trouble with this one. There should be a tight linkage between the work breakdown structure and the organization charts. What you have to build must be aligned with who is responsible for building it. A product-based organization helps the program manager because he or she can point to who is working on every one of those things you have committed to deliver to your customer.

Suppliers are the people who know the most about those things they are building for you. Program managers must integrate

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them into the overall team so absolute transparency exists up and down the contracting chain. Good *Supplier Integration* keeps you from getting surprised because it tells you what's going on. Failing to manage and communicate requirements with suppliers usually leads to cost overruns, missed deadlines, and rework. When we understand and properly manage our supply chain, we can seize opportunities or take corrective action quickly.

Program Execution and Control is where a program manager “lives” most of the time. This best practice helps you to consistently manage the seven baselines—requirements, organization, cost, schedule, configuration, information technology, and technical performance measures—as an integrated set. It is about having a plan and looking at metrics with real data every week. To manage effectively, you must have a plan that tells you where you should be and information about current status that tells you where you really are.

Risk, Issue, and Opportunity Management gives program managers the ability to look around corners, anticipate what might become a problem, and prepare to deal with it. A risk is something that could go wrong but hasn't yet, while an issue is something that is going wrong. At Boeing, we manage risks and issues as integrated sets because so many issues were risks that we were unable to mitigate successfully. Opportunities are the opposite of risks; they are the things that allow you to perform better than planned. Your team will likely say you don't have any opportunities. That just means they haven't been identified yet. When a team has problems, it creates opportunities to get out of trouble. This best practice is about seizing opportunities before there are problems. You also need opportunities to offset the risks and issues you were unable to predict so you can end up on plan.

Help Needed and Independent Reviews promote a team approach to problem solving and finding better ways to get the job done. In aerospace, we deliver products that are hard to build, so it is unreasonable to expect that all your teams are going to be able to solve every problem they encounter on their own. “Help needed” is about openly communicating, finding out what teams need, and getting them help to make sure they can succeed. At Boeing we require the last chart of any briefing to be titled “Help

Needed” and to describe what outside help, if any, you need. We then use a “Help Provided” system for tracking and reporting the actions we take in response to the request.

The *Program Communication* best practice requires program managers to keep everyone inside and outside the program aligned with its vision, strategy, and status. Program managers don't actually build hardware, release drawings, or analyze performance. We lead the people who do. You've got to communicate with your employees and contractors to keep them motivated. When I was on the space station program, we would get the team together and talk about our vision and how someday we would be able to go out into our backyards, look at the sky, and show our grandchildren what we built. That helped when the going got tough and we had to work some incredibly long hours. You also have to communicate with your external constituents—your senior management, your contractor's senior management, and Congress—who need to know your plan and how are you doing so they will keep funding the program.

Boeing's eight Program Management Best Practices are not rocket science. They are the basics, as fundamental to a program manager as blocking and tackling are to a football team. Without these basics, your program is at risk. With them, a capable leader has a good shot of being successful.

In aerospace, we expect our products to be perfect. We don't seem to have that same expectation about the way we *manage* our programs, but perfection is certainly within our grasp. As we continue to take on inherently risky development programs, program managers must not lose sight of the fundamentals. We must require them to be disciplined in the basics of program management so the performance of our programs is as predictable and as good as the performance of the products we build. ●



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