

Project Management

How Project Leaders Can Tame Unpredictability

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Summary. Today's business environment is characterized by constant change on a macro scale, but in our daily lives, it's often the smaller unpredictabilities that threaten to derail our projects and decisions. This article draws on the agile methodology to offer project... [more](#)

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If the past five years have taught us anything, it's that change is still the only constant in business. We've had to navigate a global pandemic, geopolitical crises, supply chain disruptions, a shift to hybrid work, and the rise of generative artificial intelligence. As former U.S. Secretary of Defense Donald Rumsfeld would put it, we're facing many more "unknown unknowns" than "known unknowns" nowadays. But in our daily work lives, it's often the

smaller-scale unpredictabilities that threaten to derail our projects and decisions, particularly under unfamiliar circumstances brought on by macro events.



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For the past 13 years, I've worked as an agile-product-development consultant in various industries, and I've found that new initiatives face unpredictability in four key areas: human behavior, interpersonal dynamics, technological change and interoperability, and organizational interdependencies. These unpredictabilities are routine in any initiative that aims to change the way people interact with one another, with data, and with organizational processes and teams.

The agile methodology offers an important tool for dealing with unpredictability: vertical slicing. Traditional project-management approaches are all about running tests, analyzing results—and then implementing the project. The slicing technique is different: It delivers the project test by test. Each slice builds on the previous one to flesh out the larger-scale initiative. Think of the project as a cake—each slice has layers of frosting, filling, and cake, representing the different components of the project. Using the slicing technique, managers can run many small tests in different areas of uncertainty, and use the findings to make better decisions and deliver final products more quickly. An early slice of a new dating app, for example, might be a simple website to sign up customers and a psychologist in the back office who manually proposes matches to the first 100 people and connects them by email. For users, the app tastes like the whole cake, so to speak: They sign up, get matched, and connect with other users. Product managers use the findings about what makes a successful

match to continue to build out the app, focusing new slices on becoming more appealing to female users, for example, or introducing messaging within the app.

Whether you are revamping a marketing plan, overhauling a distribution system, or implementing a new protocol for interviewing job candidates, you can slice the work in different ways to speed up the pace of learning and delivery. Here's how it's done in each of the four areas of unpredictability.

Human Behavior

Human behavior is unpredictable, especially when it comes to change. Most new initiatives require that people do certain things differently than they did before, so it's important to begin with a narrowly defined test group that is representative of your broader one before committing your resources to a particular plan. The slice allows you to implement the change you eventually want to see across the board and observe how the people in the test group react.

Consider Kirsten, a transportation company executive embarking on a brand awareness initiative. Her firm wanted thousands of its drivers—employed by external service providers—to wear T-shirts featuring its corporate logo. Some project managers might have started out by designing the shirts and ordering the total amount needed. But Kirsten knew that her success would require behavior change from three different groups: executives at the transport providers, who would need to agree to new contract terms; drivers, who would have to consistently wear the new shirts; and customers, who would have to notice the logo and remember the brand. She realized that it would be prudent to confirm whether such behavioral shifts were possible before making a large investment.

So Kirsten printed a small run of shirts and collaborated with one

transport provider in her company's largest geographic region to get a commitment that its 15 drivers would wear the shirts at work every day for a month. This slice allowed her to gather valuable insights about the initiative: Drivers wanted a selection of styles to choose from (some wanted T-shirts; others, polos), and all the drivers needed double the number of shirts initially provided. The test also revealed guidelines for usage that had to be hammered out, including pickup and drop-off locations, laundry services, and what to do when substitute drivers filled in or routes changed. And she learned that the material chosen for the shirts was not suitable for long-term use (many shirts looked worn out very quickly). Most important, through customer surveys she confirmed that the effort had led to a small but measurable increase in brand awareness.

Kirsten's second slice involved three larger service providers, one of which operated in a different country. This slice revealed the challenges associated with scaling up the initiative: It took longer to negotiate processes with the larger service providers, and drivers' compliance in wearing the shirts was spotty. It was clear that a lot more time and effort would be needed to advance the project more broadly.

Interpersonal Dynamics

Unpredictability increases significantly when strong interpersonal dynamics exist among the people whose behavior you're trying to change. This is particularly the case when changes to organizational structures or processes affect incentives, careers, or areas of shared responsibility. Unpredictability also goes up whenever network effects are important for your product or service, or when a range of employees, consumers, and other stakeholders will be interacting within the system you're building or fixing.

In such cases, you don't want to start with a narrow group.

Instead, your first slice should encompass a sample large enough to exhibit the dynamics at play while tackling a smaller but still representative behavioral change.



Vicki Turner

Oliver, the head of sales at a large European medical-device provider, wanted his hundreds of reps to be able to more quickly shift recommendations among a range of offerings when selling to client doctors, hospitals, and patients. His goal was to adapt to price and availability changes, supporting the company's profits while ensuring top-notch care. Transitioning sales reps from selling one product to another normally took more than a year of

conversations, by which point the shift might no longer be beneficial. Oliver needed to come up with a slice that would test ideal tactics, his reps' behavior, and clients' reaction. He started by focusing on one type of device and introducing a point system to reward salespeople for moving customers from one to another in appropriate cases with no negative impact on patient outcomes. The test allowed him to carefully gauge the risks of speeding up the process and to gain acceptance for it. He continued with different slices, and after a year, he had a more flexible recommendation system in place.

Technological Change and Interoperability

It is now almost impossible to find a product or service that doesn't rely on modern technology. And as technology continues to advance at an exponential rate, we are bombarded with dramatic changes in what we consume and how it's delivered. To reduce uncertainty when launching new tech initiatives or products, it's important to focus from the start on integration—within the business, with legacy systems, and with external technologies.

The best way to test this category of unpredictability is to create a slice called a “tracer bullet.” Just as gunners use incendiary ammunition to see the trajectory of their shots, you create and test a minimum viable version of the future solution that integrates with all necessary technologies.



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Take Peng, a manager at an online travel company. He is responsible for collating the schedules of hundreds of plane, rail, and bus services to help customers plan travel between cities. He always starts with a tracer bullet when onboarding new bus providers, which tend to be small businesses with nonstandardized, often self-made scheduling systems. Peng's team manually retrieves and integrates the data for a single bus route into the company's system to test the provider's schedule system and integration protocols. The slice is complete when the route is searchable on the company's consumer-facing website. This process helps Peng anticipate the challenges associated with integrating the provider's full schedule. For more complicated use cases, like multileg trips using an existing service and a newly added one, he conducts additional tests. Sometimes these slices reveal the need for system changes on the provider's side. Only after thorough testing does he greenlight a full integration.

Organizational Interdependencies

Most projects require collaboration across multiple teams within an organization, and some also involve outside stakeholders. Each of these groups can introduce their own elements of unpredictability, which may increase your risk in ways you can't control. However, you can slice the interdependencies with an "organizational tracer bullet" that tests, for a single scenario, all the connections among the teams responsible for providing and receiving goods or services. This approach allows you to identify

the hurdles that must be overcome to achieve larger-scale collaboration.

For example, Anna, a compliance manager at a major financial institution, was facing new regulations that required her organization to prepare rapid and targeted responses to many potential risk scenarios. Previously she might have engaged in a lengthy analysis, planning, and contracting process with the firm's many partners and service providers, only to find that they weren't able to help her pass the stress tests. This time, she used slicing: She ran through each individual risk scenario within her own firm and with relevant partners after only a few weeks of preparation. With each slice, she and her counterparts learned what new processes were needed, making it easy to agree on next steps and necessary contract changes.

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When asked for advice on how to make decisions under uncertain conditions, Daniel Kahneman, the pioneering behavioral economist and psychologist, recommended “delaying” one's intuitive response to a question by breaking the decision down into smaller parts. Slicing is that art. It may seem counterintuitive to managers who are accustomed to starting with “low-hanging fruit” to ensure quick, low-cost gains. But in the early stages of most initiatives, there are so many areas of unpredictability that forging ahead without first slicing into the murkiest parts of the project often results in costly changes at a later stage.

Astro Teller, who leads Alphabet's “moon shot” division, illustrates this problem with a funny question: If your end goal is to have a monkey standing on a pedestal reciting Shakespeare, do you start by building the stand or teaching the animal how to talk? The answer, of course, is to tackle the most challenging part of the project first to see if it's doable before you invest any time or resources in the easier part. That's why Kirsten evaluated the

behavior of partners, drivers, and customers before she designed and ordered thousands of branded T-shirts; why Oliver introduced incentives for reps one device at a time; why Peng integrates a single bus route into his company's system before adding a whole fleet; and why Anna carried out test runs for each risk scenario prior to finalizing new arrangements with external partners.

Once you have tested several slices, identified and overcome challenges, and verified success (or failure), you can proceed with traditional project management. You've turned your unknown unknowns into known unknowns.

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