FAIL BETTER

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Design Smart Mistakes and Succeed Sooner

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DEDICATION

To Mark, Kiran, and Harry,
who teach me every day.
–Anjali

To Adit, my partner in all things,
and to Ava and Kayla, my purpose.
–Kara

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INTRODUCTION

This book is about inspiration's overlooked but essential companion, the perspiration-soaked work needed to deliver on genius. No matter how great your ideas, in the end your impact will be measured by the effect you have on the world. Unless you're gambling on being incredibly lucky—a risky bet, we'd say—if you want your ideas to materialize, you need to be smart in your actions.

We're talking about bringing a new form of intelligence to your everyday efforts. You can't avoid missteps, of course. Yet there's scope for your mistakes to be *smarter*. With the right methods applied to their design, execution, and analysis, even the most unglamorous activities can yield new insights and fuel innovation. Workaday life may seem like an unlikely birthplace for brilliance, but it's where your ideas are hammered out, tested, and refined.

Join us, and you'll discover why we see great potential for you to remake your work practices so that you, your team, and your organization can do better. Your projects provide the sandbox for your actions. Using our method, you'll orchestrate your team's activities to enable smart mistakes and avoid uninstructive ones. You'll work your way toward impact, step-by-step. As you go, you'll be assembling the insight, knowledge, and evidence required for your ideas to succeed in practice. And as you learn to choose your path wisely and let go of false starts before they bog you down, you'll reach your goals sooner.

Don't get us wrong about the other stuff. We're all for inspiration—the cracking-the-puzzle, eureka-moment flash. Chances are, you've heard stories of brilliant discoveries that altered the course of history. But let's disentangle such tales from the realities on the ground. The truth is, that to make something excellent happen, there's work, more work, and then still more work. If you're fortunate, only *some* of it is inefficient.

We can't change the fact that innovation entails risk and that for anything novel or creative, you'll encounter failure en route to success. But because any movement from waste to value could pay off handsomely, we are looking to shift the balance of results toward the productive and away from the useless.

Our starting point is the idea that the right kind of failure—small-scale, reversible, informative, linked to broader goals, and designed to illuminate key issues—paves the way to success. The wrong kind entails waste, discouragement, rigid thinking, and reputational damage. For every potential good failure, the world presents us with many more ways to fail badly.

We know you can do better than simply accepting the hand you're dealt. You can benefit from failure by orchestrating the right kinds of actions, then figuring out what you have learned from every step, whether or not it is immediately seen as successful. To profit from both happenstance and planned failures, you need an effective method for extracting insights.

We mined our own experience to design and test the Fail Better approach.

About Us

Personal experience stands us in good stead as your guides: like you, we've encountered failure firsthand. As sometime change agents with an interest in social impact, we may have engaged in more failure-prone efforts than many. One of us even published papers on her own failures (which, we can tell you, is rare for a business-school academic).

Our interests extend beyond our own change efforts. We've worked closely, often over the stretch of years, with hundreds of students and managers. We've advised CEOs and leadership teams and stood outside organizations looking in as researchers and analysts. Along the way, we've seen teams blindly execute project plans, going along with the schedule and turning in assignments even as they come to realize that their work will never be implemented. We've seen people struggle to learn from their visible failures. Some dismiss them, others point fingers, and still others become mired in doubts or unproductive discussion. Yet we've also encountered individuals at all levels who relish failure's lessons. We've even seen people orchestrate effective mistakes to benefit their companies and organizations. To develop our ideas, we sought out these exemplars, interviewing them and watching them at work, to glean how they design projects, spend their time, and frame their work.

Our shared drive to understand how to create success when confronting the risk of failure has nurtured our own decade-long professional partnership. Together, we designed dozens of iterations of courses, trainings, and workshops that combine the classroom and the real world. By framing real-world, complex challenges, then supporting participants in tackling them, we've been able to link classroom and textbook learning with action inside organizations. We've used these innovative platforms to test ideas, gather data, and build our own evidence base.

For instance, since 2008, our framework has underpinned a unique effort that put hundreds of MIT students to work on real-world problems amid some of the most complex and challenging settings—on the front lines of health-care delivery in Africa and South Asia.

The MIT effort, dubbed GlobalHealth Lab, aims to help organizations delivering health care to the poor to tackle extreme need amid pressing resource challenges. Guided by the ideas you'll soon learn, advanced master's, PhD, and MBA students put their skills and toolkits to the test in Sierra Leone, Kenya, Malawi, Zambia, South Africa, Mozambique, Haiti, India, Botswana, Uganda, Tanzania, Ghana, Nepal, and Bangladesh, each time collaborating with workers and managers in the setting over the course of hundreds of hours. Each project takes on a pressing challenge identified by the partner. By 2014, it was clear that the first seventy collaborative action projects had provided two benefits. Not only did they enable remarkable learning and growth opportunities for students, but they also delivered positive impact on the ground.

When teams were expected not just to turn in great assignments but to generate enduring improvements for the organizations with which they were partnered, they began to think differently. For instance, they tended to be willing to challenge their own plans—which in turn helped them to identify and test core assumptions and hypotheses. We credit the built-for-learning design of the course that linked the students' action loops with their own research and an ongoing stream of collaborative inquiry enabled by peer and faculty interactions. This dual-track method leveraged classroom sessions and mentor meetings designed to refine and improve project plans and deliverables as well as deep partner engagement that included on-site work and field tests.

A follow-on study revealed some of GlobalHealth Lab's benefits. In close to seventy systematic semistructured retrospective interviews with project partners, the strongest result was that the staff, managers, and leaders sought more interaction with MIT, not just for the collaboration with student teams but for the methods, materials, and findings that underpinned each project. That the professionals who had worked with GlobalHealth Lab sought the same supports that the course provided to its students provided one of the sparks for this book.

Through this effort and others, we've built an in-depth understanding of the value of iterating via action steps before, during, and after collaborative improvement efforts. Our field experience reveals that extreme constraints provide fertile ground for innovations, and that seeking to improve management systems with the goal of enabling scale and sustainability helps to turn good ideas into positive impact.

To inform and extend our academic grounding, we both work directly with enterprises to identify where and how they can do better. Our professional experience also includes stints in corporate, government, philanthropic, and non-governmental sectors. We've worked at or with organizations as diverse as Bain & Company, the Bill & Melinda Gates Foundation, the Rocky Mountain Institute, Oxfam America, Lawrence Berkeley National Laboratory, a plumbers and pipefitters union, Management Sciences for Health, and the United Network for Organ Sharing, as well as political campaigns, local government institutions, airlines, software companies, and a range of technology-focused start-ups.

All told, our methods have been refined through our experience as professional consultants and collaborators with more than one hundred organizations. Over the years we've lined up others—from clients and collaborators to smart and willing students—to aid in the task of developing the methods for extracting the most learning from every project. In doing so, we discovered the power of recognizing that projects provide a crucible for development and innovation. Focusing on projects directs attention at the unit of work by which every organization innovates, solves problems, or changes.

The method you're about to discover is designed to not only make your current project more effective, but also to enable you to apply that learning in future projects while helping your team to develop.

The Questions We Aim to Answer

As we take you through the book, we'll be guided by a handful of questions at the crux of the fail-to-succeed dilemma. Our advice is designed to help anyone who wonders how to make progress on multiple fronts simultaneously. If you've ever asked the following questions, *Fail Better* is for you:

- How do I deliver on my work—get my "real job" done—and *at the same time* innovate and improve?
- How do I help my team develop the skills and capabilities that are most needed for the work at hand without squandering time and resources on training that misses the mark?
- How do I help my team to root out and test the most critical assumptions and explore the most important open questions while making progress on the project's deliverables?
- How can I learn from previous experience, within our organization or more broadly?
- How do I improve my own personal practices and habits to enable even better impact?
- How could I enable others across the organization to benefit from the lessons offered by our team's hard-earned experience?

Our Hopes for You

We have in mind an ambitiously broad audience because we think that such questions are common across sectors, organizations, and levels of hierarchy. We imagine that ideas about how to fail better will be valuable to all kinds of consultants, team members, entrepreneurs, executives, and managers. We'd be glad if our suggestions were to reach academic and policy-making colleagues, too. In short, we are hoping for readers who are interested in failure as a mechanism for higher-order success.

Through this book, we aim to empower you with the knowledge, tools, and inspiration to design your actions so that they yield success. But, as we've already mentioned, failure is an omnipresent possibility. If you must fail, we'd like to help you do so at the scale, scope, and visibility that in turn will enable better overall outcomes and deliverables, achieve the task at hand, build individual and team capacity, and assist others within the organization and beyond to learn from your experience.

As you'll see, although the overall method is integrated, it's not an all-or-nothing proposition. We hope you'll find that you can make progress right away, using our advice to shape your own practices. You may find a muse or two in our sample of real-world managers and organizations who have developed their own ways of enabling step-by-step improvement, and draw on their inspiration to guide your own practice. Real examples help to illustrate and teach, and can also inspire you to envision yourself as an expert Fail Better practitioner.

And, as you make your way through the book, we hope you will realize how much scope you have to lead positive change. We'd like you to appreciate that you have a great deal of influence within your current context, even if you have little formal power, because you can shape how you carry out your own work. To adopt our advice, you need not wait for a new organizational initiative, line up lots of extra resources, obtain special training, or even get permission to start implementing the approach. You can begin tomorrow within the laboratory of your own work, with the position you currently occupy. Begin where it's feasible, in imperfect fashion, and you can learn and revise as you go. The only requirement is that you must, in fact, begin.

Our book presents ideas that are practical and field-tested. Taken one by one, you may find that the elements of our approach are familiar. Our discovery of their usefulness in practice lies in drawing them together and connecting them in new ways, drawing on our grounding in systems thinking. At the end, we hope you will feel ready to take action and confident that you know what to try. Our vision is that you'll create better results, enjoy a richer work life, and maybe even acquire some new wisdom along the way.

And if our biggest hopes for you materialize, you'll take things further. You'll make the method your own, documenting and sharing what you do. You'll let us know what works and what you've tweaked. If you're willing to do this, we want to help to build a collective dialogue. Imagine a community of practitioners that shares advice, inspirations, and innovations, helping each other along the way. A more nuanced and wider discourse about planning for, designing, and learning from failure could help many to address the practical challenges of the fail-to-succeed dilemma. Along the way we could all discover more meaningful ways to work, develop, and collaborate.

Overview of the Book

Throughout the book, you'll discover plenty of practical advice for laying the project's groundwork at launch, then building and refining your products through action so that at the end you can deliver a great result, wrapping up by embedding and disseminating what you've learned so as to pave the way for even better future results.

Part I provides a foundation for your exploration of the Fail Better ideas. We start with a firm grounding in reality: you can't escape failure. A systems-based examination of failure's roots helps to establish why. Yet, as we'll argue, failure is not necessarily a bad thing. Accepting that smart mistakes could even be desirable moves us into more nuanced discussions about learning, failure, and success. Enabling productive failures calls for a systematic method, hence the Fail Better approach. We introduce it in chapter 2, previewing its three steps and providing real-world examples to illustrate the main ideas behind each component. Chapter 3, which concludes this section, offers you some very practical guidance on how to apply book's ideas to your work to start failing better right away.

Part II tells how to do it. Chapter 4 addresses the launch phase, explaining how to lay the groundwork for a new project in a way that enables effective learning. In chapter 5, we describe and illustrate the three essential elements of iteration—planning, taking action while capturing data, and examining results to decide on and plan the next action step. We show you how small steps can yield big results when action is designed carefully, explaining how to build in room for experimentation while still completing the work at hand. In chapter 6, we focus on how to embed this learning—for yourself, the team, the organization, and beyond.

In part III, we explore the practice of the Fail Better method. We begin by describing the Fail Better mind-set, a way of approaching challenges that you'll draw on as leader, manager, and change agent to refine your own personal principles and approaches. We then delve into the design-for-learning principles behind the Fail Better method to help you understand the foundation on which the approach is built, which in turn will set you up to improvise as you go. To ground all this advice in a detailed real-world example, we take an in-depth look at BRAC, an organization that over the course of four decades has achieved global change with limited resources. Building on our ideas about how the most ambitious of change efforts could benefit from the core aspects of our method, we take a look at how the Fail Better approach could help make the world a better place. We illustrate its potential with an example from the present and an inspiration from the past. We conclude with some parting advice for creating even bigger change in the world.

PART I

The Antidote to Failure

Part One equips you to embark on the Fail Better approach. We begin by looking at why you need a structured way to benefit from failure, exploring a few key ideas to make the case and introduce the method:

Everyone will fail, someway, somehow. A systems-based examination of failure's roots helps establish why.

Failure is not necessarily bad. Accepting that it's inevitable, and maybe even desirable, sets the stage for a more nuanced discussion of learning, failure, and success.

Not all failures are useful. The key is to enable the productive ones. You'll need to know what makes some failures worthwhile and others useless.

A systematic method helps you to benefit from productive failures. The three elements of the Fail Better approach work together. Real-world examples help show how, as you:

- Launch your project with the right groundwork.
- Build and refine your ideas and work products through iterative action.
- Identify and embed the learning.

You can start right away. Practical guidance on how to use the book equips you to apply it to your own work.

CHAPTER 1

Failures Are Inevitable

Failure is the new black. Blog posts and articles extol its virtues. Venerated CEOs, famous celebrities, and star athletes tell come-from-behind stories of horrible setbacks that led to happy endings. Accounts of success extracted from the jaws of failure are part of business lore: think of the marketing and product development legends about Post-it Notes, Apple products, Viagra, and New Coke. Today, a growing collection of books advises business leaders to adopt pro-failure philosophies. Entrepreneurs and would-be executives polish their "failure résumés," nonprofits issue failure reports, companies throw parties to celebrate their flops, and industry groups organize fail fairs. Every year scores of graduation speeches urge young people about to enter the workforce to embrace failure. "Failure," novelist J.K. Rowling told Harvard graduates in 2008, "gave me an inner security that I had never attained by passing examinations."

The idea allured us, too. Six words from Samuel Beckett—"Try again. Fail again. Fail better."—inspired our book's title, even though its source, *Worstward Ho*, reflects Beckett's fascination with futility. Cast as a mantra that turns failure into success, the phrase caught on with tennis players, tech entrepreneurs, and many more, infusing it with an optimism that no literary critic would credit to "the twentieth century's most depressing writer."[1]

If failure is all the rage, why does so much of the advice on failing seem to fall short?

Failures, Small and Good, Big and Bad

At one level, it's obvious that failing is bad. You wouldn't want your next project to be labeled "A Failure." Think of what it would do for your reputation, motivation, and sense of self, let alone your ability to attract customers, workers, resources, partners, and job offers.

Yet there can be value in falling short. Small failures enable discovery and learning. They help rule out options, unearth flaws in reasoning, and disconfirm incorrect hypotheses. Freedom to fail is linked to creativity and boldness. Stretch goals, by definition, run the risk of failure. Yet their very audacity encourages people to reach for radically new ideas and novel solutions. And we know that failure often proves less fatal than imagined. Over time, people recast their own failures and losses—even those that they would have at an earlier time predicted to be unbearable—to find meaning in them, in a sense eventually relabeling them as successes.

Such benefits, however, are far from guaranteed. Sometimes the right lessons are not gleaned: window-dressing a failure story with an after-the-fact gloss may make people feel better about the experience, but it obscures its lessons. Too often, potentially valuable failures go to waste because extracting their lessons is fiendishly difficult in practice. At the same time, truly wasteful failures are allowed to perpetuate, slowing progress, derailing projects, and fueling cynicism. Why? Managers lack methods for designing processes and leading teams through the right sequence of small failures that could pave the way to subsequent success. Amid the current pro-failure hype, you'll find plenty of enthusiastic exhortations to fail early and often, but little advice about how to do so when you're in the trenches. Retrospective accounts of how others created new products or turned around organizations may be fun to read, but it's difficult to glean, and much less to decipher how to apply, their lessons for your own work. No matter how compelling they are, these vivid stories do not provide reliable evidence that if you do the same things you will get similar results. There are few places to turn to for guidance on what to try, and even fewer sources of advice on how to appropriately adapt any given approach for your particular situation.

Our book aims to remedy this problem by offering practical ideas for you to make your own. Despite the lack of instruction manuals for good failure, there is much to inform our present effort. We draw on a rich base of knowledge of how adults learn at work, which is increasingly informed by neuroscience along with organizational and behavioral research on shaping and adaptation, as well as a growing body of documented professional improvement practices and academic research on innovation.

Project and Product Failures Are Common

There's plenty of evidence that most of us will encounter failure at some point, though it's hard to come by good data on how often projects, products, teams, and companies fail. Measurement methods are inconsistent and source data difficult to find. In 2013, the Project Management Institute reported that 17 percent of projects fail completely, part of an astounding two-thirds of projects that the institute said fall short of expectations.[2] A 2012 study of 5,400 projects found that half of all large IT projects came in well over budget, with one in six overrunning costs so badly that they threatened to put the firm out of business.[3] Change management programs are notorious for failing two-thirds of the time.[4] Across industries, the rate of failure of new products is thought to be around 40 percent.[5]

In some industries, failure risks are inherent. Pharmaceutical development companies, consumer products firms, and venture capital firms routinely invest resources and effort in new prospects, whether a novel drug, new supermarket item, or start-up. Each time, they are making a risky bet. They know that every year a good proportion will fail. That's simply the reality.

Yet despite the knowledge that failure is a possibility for projects aiming to accomplish something new in all kinds of industries, its acceptance is far from widespread. Even in pharmaceutical and venture capital firms, too often good failures go to waste and the right lessons are not learned. Perhaps our lack of understanding about the underlying causes of failure is to blame.

It's Not You, It's the System Complexity

You live and work in a social and economic system that is fundamentally complex. Think of how much information is available to you today, how many people you can learn about and even connect with, and how many ideas, products, and services are yours to explore. The sheer number of choices available to you as a decision maker is astounding.

Detail Complexity

Consider your choices when you buy a new car. In reality, there are literally millions of different options: brand, model, trim line, color, accessories and extras, used or new, price and financing options, bundled maintenance and roadside assistance services, and much more. Multiply the number of options across each dimension, and what experts would call the search costs—a measure of the difficulty of grappling with all of them—is daunting. No wonder so many drivers simply buy the same car again!

All of these options add up to what's called *combinatorial* or *detail complexity*, the product of the multiplicity of components and attributes, along with the relationships between them. But detail complexity, daunting though it is, can be managed through tools including decision trees, spreadsheets, search engines, and personal and professional recommendations. Of course, the actual version of any of these tools that you use may be flawed, leading to suboptimal decisions.

This provides us with one reason you may fail in a complex world—by investing too much or too little in searching across all the options. This widespread problem is likely already familiar, from your own experience as a consumer and manager, and it has been explored in recent studies of the downside of excessive choice.[6] Like others, you have worked out ways to address the plethora of options offered by the modern economy. As a car buyer, you may visit a trusted website to select a few options you explore in depth. Or you may base your choice on the brand you love and the model you can afford. In other words, most people are already aware of the challenge posed by combinatorial complexity and have settled on ways to tackle it, even if their methods aren't perfect.

Dynamic Complexity

There's another form of complexity that's harder to pinpoint and in many ways more difficult to handle: *dynamic complexity*. Systems that are dynamically complex are challenging to understand and manage because their behavior is shaped by hard-to-predict relationships that play out in different ways when conditions vary. As we'll see, when causes are separated from their effects in time (and in space), it's tough to draw a straight line from action to result. Nonlinear factors can dramatically change behavior with only small changes in their inputs, once a threshold or inflection point is reached. Simple heuristics, such as linear rules-of-thumb, don't apply in such cases. And more sophisticated statistical techniques are ineffective when the situation shifts into new regimes outside historical bounds, such as when a new technology dramatically changes costs or when environmental conditions result in previously unseen weather patterns.

Dynamic complexity is inescapable in today's organizations and markets. It's inevitable that you'll encounter lags and biases in noticing, measuring, and responding to the effects of this type of complexity. Let's take a closer look at why this matters.

Behavioral research is shedding light on human limitations in predicting and understanding complex systems—and their implications. For example, studies of decision making show that individuals, organizations, and markets consistently overlook the effects of delays and cumulative effects.[7] Scholars are not immune to these challenges; dynamic complexity may contribute the difficulty of inferring patterns of behavior from verbal theories.[8] Thanks to such factors, individuals and social systems encounter profound difficulties in learning from experience; persistent underperformance, unaddressed problems, and catastrophic failures result.[9] The tendency of social systems to resist attempts to improve performance has been traced to cognitive limitations in understanding dynamics.[10]

Mutual influence, or feedback, is a hallmark of dynamic complexity. Any system with feedback involves the temporal factors we mentioned: delays, adaptive updating of beliefs and expectations, accumulations, and other features that give rise to dynamics. To avoid getting blindsided by dynamic complexity, decision makers need to understand the interplay of these factors. This means paying attention to processes that unfold over time:

- **Cognitive processes** include noticing, altering perceptions, or elaborating mental models. Biases in these processes shape how beliefs are updated or adapt over time to new information coming in, in turn affecting the quality of decisions.

- **Affective and other emotional responses** shape how new information is processed; for example, when data that conflicts with a long-standing belief is ignored or downplayed.

- **Physical and social processes** account for the influence of quantities that build up or draw down over time. When materials, technical experience, market knowledge, or resources accumulate or deplete, they can change the equation of how efforts lead to results.
- **Delays** interrupt responsiveness. For example, when information is gathered on an ongoing basis but acted on only periodically, or when shipments or production occur in batches, the situation is set up for over or under responsiveness. The stage is set for secondary and side effects to proliferate. Responses are also subject to the timing of scheduled decision-making or strategy-setting cycles, as well as variable spacing of more sporadic opportunities for change, such as when new managers join the organization.

These aspects of dynamic complexity stymie learning from experience.

A quick example illustrates why. Today's decision to put off scheduled maintenance has an immediate consequence—the cost saved by avoiding the disruption—and a consequence at some point in the future, when your car, computer server, or factory machinery breaks down. But the manager who put off the maintenance may have moved on by the time this happens, perhaps even as a reward for saving on costs. Who learns the lesson about the need for holding the line when it comes to preventative maintenance if the negative effects are always in the future?

Let's look at another example.

A Start-Up Story

Imagine a successful start-up. "FlameTech" has come up with a brand new technology: a foldable device that collects and stores solar energy for sparking a campfire in the dark or on a cloudy day.

Outdoor enthusiasts love the product and its appealing design. Early on, FlameTech does well. Growth comes relatively easily as word of mouth builds, bloggers buzz, and magazines feature it. In this phase, it's all about managing the upswing. The limits of market size and the bounds of the new product's appeal to customers are simply not evident to the firm's decision makers, because everything is starting off a small base. At this stage, growing the company's market share consumes everyone's focus. Not only are managers, production staff, and salespeople busy handling the challenges of increasing their activities, but the forces that will slow the rise of FlameTech are not evident. By and large, the limiting factors that will eventually come into play are not easy-to-find, fixed properties that can be simply measured.

Nevertheless the seeds for an inevitable slowdown are being sown. The firm's prospects for future growth are shaped by the reverberating effects of its own past actions. Study after study reveals that initially successful new companies can be undone by the unfolding consequences of their early achievements.

In this example, several effects unfold. In part due to FlameTech's success, its rivals step up their attempts to compete, copycat firms enter the market, governments start to respond with new taxes and other restrictions, the press increases its scrutiny of the firm, its own consumers become more sophisticated and demand more, and needed inputs become scarcer.

The scene is set for a classic boom-and-bust experience. Just as things seem to be going better than ever, business collapses as the combined effects of these constraining forces come into play. By the time FlameTech's decision makers recognize that the company has encountered growth-limiting factors, it's too late. To those who led the growth phase, it really seems as if the downturn came out of nowhere.

For such a company, it's tempting—and typical—to blame the downfall on one specific development, even if the event is simply a proximate symptom of developments that have been unfolding over time. The analysis may purport to explain failure, but instead settles on a simplistic account. Something *outside* the organization is a convenient target: fickle consumers, interfering governments, unprincipled competitors, a recalcitrant supplier. Pinning the blame on things outside your control reflects an exogenous perspective—one in which you are at the mercy of forces beyond your reach.

A more sophisticated systems analysis would take the explanation further, looking at how the dynamics of growth, saturation, and slowdown arise from interacting forces within the industry, market, and society, including responses triggered by the firm's own actions.

Systems thinking teaches us that it's more fruitful to take an endogenous view that seeks to explain how the results are a product of factors in which you play a part as well. You have much more power to shape outcomes if you can better understand how the problems and opportunities you face today are connected to your own past actions and are influenced by the structure of the industry, society, and ecosystem in which you play a role.

Dynamic Complexity and the Likelihood of Failure

When cause and effect are separated in time, drawing the right inferences is difficult. You need not be an entrepreneur navigating a boom-and-bust market to suffer its effects.

Not only is the separation in time a barrier to learning, so too is the separation in space. Actions in one part of the system play out elsewhere. Competition among Western mass retailers has consequences for factory workers in Vietnam, and demand for organic food in American supermarkets affects farming practices in Mexico.

We touched on yet another effect: nonlinearities that mean history cannot always guide. If humans, markets, and ecosystems respond in ways that vary, the future cannot be predicted by extrapolating from the past. For example, once a critical mass of consumers started choosing iPhones over BlackBerrys, the entire market shifted dramatically. BlackBerry's past experience was not a useful guide to its future once these defections reached a critical level.

Nonlinearities arising from multiple factors that interact and unfold over time are the hallmark of dynamic complexity. As in most of human life, developments in markets and society are the result of multiple factors operating together in ways that cannot be teased apart, analyzed separately, and then added up. The assumption of separability is an analytical convenience that makes study more tractable, even as it yields less insightful understanding. But let's not forget that in the real world, things are not neatly separable: actions cause effects; effects set the stage for actions and shape them. Mutual simultaneous influences are the rule, not the exception, even if your spreadsheet software complains about "circular references."

All of this means that when you are trying to accomplish anything novel, chances are that you will not get it right the first time. You may even find that your attempts to solve a problem actually worsen it, thanks to unanticipated consequences.

The Benefits of Accepting That You Will Fail

As we noted, failure's inevitability could be a good thing. Unpredictability makes life—and work—interesting by adding an element of suspense and raising the stakes, which in turn drives engagement and enables meaning. It allows discovery, surprises, and novel solutions to emerge. Under the right circumstances for learning (which we discuss in chapter 8), the experience of failure sparks new rounds of problem solving, unleashing innovation and creativity. People think more deeply when wrestling to explain failed results than when accounting for their successes. As we'll show in the chapters ahead, once you accept that failure is a given, you can design work to incorporate experimentation, variation, and iteration, creating small failures designed to prevent bigger ones.

In many industries and fields, we think that work would benefit from embracing the inevitability of failure. This line of thinking leads us to two important considerations. If you can connect systems thinking with actions, your activities can help to illuminate the relationships and processes that shape your project's outcomes. Acknowledging dynamic complexity is one thing, but to enable superior results you'll need to update your plans in keeping with what you discover along the way about your organization and market. Ongoing thinking and ongoing action are both needed.

But before we talk about how to link thinking and action in your project, we have a pressing dilemma to address.

Discerning the Acceptable from the Unacceptable

Even if you aim to tolerate failures, clearly not all failures are beneficial. You'll need to figure out which failures are warranted and which ones are blameworthy.

New efforts fail for many reasons. Some are smart failures that end up saving resources or delivering better solutions. These are the failures we seek to enable. Others are the product of random unpredictable forces. These failures need to be tolerated and managed. Unfortunately, some failures are just plain dumb. Such failures need to be avoided. If they do occur, you need to call them out, or run the risk of encouraging poor performance.

Researcher Amy Edmonson offered a taxonomy of failure drawn from her field studies.[11] At the blameworthy end of the spectrum are failures that result when people deviate from rules or practice. Safety violations are a prime example of such failures. Slightly more understandable are the failures that arise from lack of attention or ability, when people are not up to the task at hand. When failures are the consequence of poor process or overly challenging work goals, managers are more to blame than team members. It may make sense to shift the response from punishment and prevention to inquiry and understanding.

When the failures are due to uncertainty about the situation that is revealed only in the course of events, they can be instructive. Edmonson calls these "intelligent failures at the frontier" and notes that they can guide next steps and future choices.

In the most laudable cases, failures emerge from planned exploration of unknowns. Her advice is to avoid blame altogether in such cases, instead reward failures that result from a planned risk, such as hypothesis testing or a deliberate exploration of a promising but uncertain possibility.[12]

Harness Failure's Benefits: Link Action and Thinking

If you cultivate a clear-eyed understanding of the implications of dynamic complexity, you'll recognize that prediction and analysis may go wrong. Accounting for the limits of forethought in turn argues for a discovery-driven approach. Redesigning your projects to enable trial and error, thereby ensuring that failures are small and instructive, is part of the solution. Just as important is building the team skill of surfacing assumptions, making proposed linkages between cause and effect more explicit, and identifying the critical ideas to test, then discussing results when they come in.

As you do this, you will be choosing a new way forward.

Every time you and your colleagues face a new and challenging project that involves uncertainty and system complexity, you have a choice about how to proceed. You can stick to standard procedure and stay the course (even when people claim to be attempting change, this often ends up happening). You can choose safe, incremental tweaks to the norm—shifts that cannot alter the status quo, but that you can plausibly defend should things go wrong. Or the team could charge on, acting on whims, implementing the first idea it comes up with, or blindly copying others. Another apparently safe choice is to work back from the deliverables, executing a logical plan generated by deciding early on what the result should be, then simply developing the required components. Working to a plan without reflection can preclude potentially useful surprises, because your team is seeking only to support and not test its original ideas.

There is one more option. You could use our approach to design your team's work to reveal useful surprises and insights along the way. In doing so, you raise the chances you'll generate smart failures and avoid the uninstructive ones. And in the end, you could increase your successes, with fewer time-wasting false starts, better-designed end points, and more learning along the way.

The link to action offers a practical antidote to dynamic complexity that goes beyond just thinking about the system. Of course, it's still necessary to map and analyze interactions, feedback loops, and nonlinearities and to talk about and understand the important aspects of the systems in which we operate. But we've come to believe that the value of systems thinking is realized only when it informs and is informed by a series of iterative actions, allowing teams to make progress where success is not guaranteed for any given step. It's the *thinking combined with action* that provides an antidote to challenging situations—and projects are the domain where this all takes place.

Projects Are the Crucible

Any effort to make things better is a project of sorts. We think it's time to claim a more elevated spot for the humble project. Projects are the way we change the world.

If you are looking to do something specific that improves efficiency, solves a problem, innovates, or creates something new, you're working on a *project*, even if you don't give it that label. Our conception of projects expands on the more traditional, technical domain of project management by bringing in ideas related to learning, developing, and seeking epiphanies. Let's make sure that we agree on what kind of projects are right for the Fail Better approach.

By our definition, projects aim to create novel products, services, or results within constraints. These constraints include limited resources, specific timelines, scope boundaries, such as focusing on a given market, and the requirement to meet external standards for success. Projects also involve multiple people. When the goal is to do something that's urgent, ambitious, or complex, you need to work with others. Within organizations, new efforts are often built on projects that involve people who do not routinely work with each other. These sorts of projects—temporary collaborative work that entails deadlines, criteria for success, uncertainty about what course of action to select, and a set of inputs and constraints—provide ourfocus.

Thinking Broadly about Projects

In some fields, projects are widespread. New product development, information technology upgrades, building and infrastructure construction, manufacturing improvement, and software development all hinge on projects. Accumulated experience in these domains has given rise to professional project management expertise that includes formalized bodies of knowledge and communities of practice.

But even if the dialogue on projects is less visible in other domains, it's clear that projects are the unit of work and improvement for professionals in many fields. Today, a firm setting out to expand into a new market will use a project to make the strategic and operational move. A contractor may lead a project team to clean up a decommissioned chemical weapons site. A consumer products firm may harness a project to relaunch its line of shampoos. Management consulting engagements, new drug development, and retailer logistics improvement efforts—all entail projects.

Projects are the vehicle for innovation. Companies are trying out new approaches to innovation that are based on a strategy of harnessing projects. Google famously enables its employees to conduct their own projects on the side. Others from Lockheed to Procter & Gamble to Apple have used skunkworks, or separate innovation projects, to challenge their existing businesses with the hope of fueling innovation and avoiding becoming trapped by past success. Microsoft, 3M, and LinkedIn are just a few of the companies we found that offer internal venturing opportunities that support innovation projects, then select the best to develop. Even relatively small, young organizations are trying out employee-led projects. To encourage employees to develop new business ideas, Tough Mudder, which offers extreme obstacle course experiences, set up an internal business plan competition along with its own modest angel fund.[13]

Here's a more typical corporate example. In early 2010 the global financial firm Société Générale launched a challenging project. The original intent was to replace the company's cumbersome back-office software platform with state-of-the-art technology. Partway through its work, the project team was handed an additional task: enabling the start-up of the company's new US primary dealer business. With a staff of forty and $20 million dollars in investment, the project was done within eighteen months. Because they had successfully completed such a large-scale project with minimal business disruption, the team was much lauded and their project management approach documented so that it could be studied by others.[14]

Projects also abound in creative and social sectors. A team working to line up a new Broadway production or to make a movie; a disaster relief effort; a nonprofit agency developing a new program to support the region's elderly; and a parent-led effort to increase arts programs in local schools are all projects.

Our Mission to Make the World Better, One Project at a Time

What if every project enabled you, your team, and your organization to learn and at the same time to accomplish the work at hand? We see great potential for projects and learning to be linked. If you could embed systems thinking, skill building, and experimentation into the projects that you are on the hook for delivering, your own professional development would connect to your actual work instead of being seen as something separate. The promise of aligning the work that needs to be done with development of capabilities offers an antidote to the pervasive problem that learning, improvement, and development detract from the *real* work. As a result, products, services, and workplaces could all benefit.

Our aim is to deliver on this promise.

A Fail Better Declaration

The right kind of failure instructs, refines, and improves ideas, work products, skills, capacities, and teamwork. We aim to support your efforts to generate small, smart mistakes that enable your team to meet its work requirements (a first-order performance goal) while building capacity, habits, and insight (the second-order, deeper change). In other words, we want to help you harness the right kind of failure to get your day-to-day work done while you learn.

Now, we'll show you how to do this.