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UNLOCKING OPPORTUNITIES FOR GROWTH

How to Profit from Uncertainty While Limiting Your Risk

ALEXANDER B. VAN PUTTEN
IAN C. MACMILLAN

Unlocking Opportunities for Growth

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How to Profit from Uncertainty While Limiting Your Risk

Alexander B. van Putten and Ian C. MacMillan

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To Lucinda, who makes all things possible.
—Alex van Putten

To Jean, who continues to put up with me—
I know not why.
—Ian MacMillan

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Alexander B. van Putten is an adjunct faculty member at the Wharton School of the University of Pennsylvania where he has been teaching graduate students since 1993. He is actively involved with Wharton's executive education programs where he lectures on issues surrounding innovation, corporate entrepreneurship, and strategic growth. He is a partner of Cameron & Associates LLC, which consults on strategy and business planning for clients ranging from Air Products & Chemicals, Shell Global Solutions to Seagate Technology, Novell, and Westcon. Prior to teaching at Wharton, van Putten was a general partner in equity and fixed income arbitrage and commercial mortgage securitization partnerships. He was also an SVP responsible for investments at Chrysler Capital Realty. Early in his career, he worked in the investment departments of Bankers Trust and Safeco Insurance Companies as well. van Putten has a BA in economics from Boston University, a MBA from the Wharton School, and is a DBA candidate at Edinburgh Business School. He has published articles in *Harvard Business Review* and *Research-Technology Management.*

Ian C. MacMillan is the academic director of the Sol C. Snider Entrepreneurial Research Programs at the Wharton School, University of Pennsylvania. He is also the Dhirubhai Ambani Professor of Innovation and Entrepreneurship in the Management Department. Formerly he was director of the Entrepreneurship center at NYU and taught at Columbia and Northwestern Universities and the University of South Africa. In 1999 he was awarded the Swedish Foundation for Small Business Research prize for his contribution to research in the area of entrepreneurship. Prior to joining the academic world, MacMillan was a chemical engineer and gained experience in gold and uranium mines, chemical and explosives factories, oil refineries, soap and food manufacturers, and the South African Atomic Energy Board. He has been a director of several companies in the travel, import/export, and pharmaceutical industries and has extensive consulting experience, having worked with such companies

as DuPont, General Electric, GTE, IBM, Citibank, Metropolitan Life, Chubb & Son, American Re-Insurance, Texas Instruments, KPMG, Hewlett Packard, Intel, Fluor Daniel, Matsushita (Japan), Olympus (Japan), and L.G. Group (Korea). MacMillan's articles have appeared in the *Harvard Business Review, The Sloan Management Review, The Journal of Business Venturing, Administrative Science Quarterly, Academy of Management Journal, Academy of Management Review, Academy of Management Executive, Management Science and Strategic Management Journal*, among others. His most recent book, *Discovery-Driven Strategy*, is published by Harvard Business School Press, and can be considered the sister book to this one.

Foreword

The book you are holding is deliberately as short as we could make it because we assume our readers are busy and do not have much time to read. Instead of a longwinded discourse, you want results and to grow the top line. Despite its brevity, we hope we get the point across that you can engineer the financial returns of business investments much as you can engineer a product. Using the concepts of Opportunity Engineering (OE), you no longer need to accept the outcome of investments in R&D, M&A, new markets, new products, and strategic plans, as being largely the hand you are dealt. Instead, OE allows you to stack the deck in your favor, by limiting the downside while letting the upside run. The OE methodology is simple to use, yet disciplined, which makes it an effective management tool. This book is intended for both general and financial managers. General managers will find in it new ways of planning and directing business investments that creates maximum returns with reduced risk. The result will be a more agile organization that embraces change through true innovation. The OE concepts are as much, if not more, about a mindset and a culture than numbers. The financial manager will find a new way to look at uncertain investments through the updated valuation techniques found in OE that foster more effective management. We welcome your comments, questions, and suggestions, so feel free to get in touch: alexvp@wharton.upenn.edu.

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Breaking the Go/No Go Vise Grip on Innovative Growth

This book is about extracting growing profits, sometimes big profits, from uncertainty while only marginally increasing business risk—by what we call *Opportunity Engineering*®.

A day does not go by without someone in the business media waxing eloquent about the pace of change, the increasing turbulence of technology, or the massive pressures of global competition. Writers and broadcasters go on and on about the increasing uncertainty this brings about, and all this uncertainty is generally couched as threatening. This foreshadowing is astonishing when you consider that boundless opportunities for big-win investments can lurk within uncertainty—uncertain yes, but with huge upside potential nonetheless.

We asked ourselves what causes firms and managers to generally regard uncertainty as a negative, when in fact opportunities for unusual prosperity lie in being able to exploit that very uncertainty. As we looked into the reasons why managers do not forge prosperity out of uncertain investments, we decided that it is really not their fault! We found that managers have not been given the right tools for investing in uncertain times. They are in the grips of a "Go/No Go vise," using tools for investment analysis that were created for more stable times. Discounted cash flow (DCF) calculations and net present value (NPV) analysis have them fixated on "making their numbers" or being treated as failures. These blinkers keep them locked into a Go/No Go decision-making pattern, either proceeding full steam ahead or

stopping in their tracks (which, in the face of uncertainty, is usually *No Go*), when in fact they could be engineering the risk out of uncertain opportunities and going for high potential wins by slicing out their downside and boosting their upside.

The problem with the traditional approach (i.e., NPV) is that after an idea for a new product or service has been assessed and given the green light by senior management, and the development team lays out a project plan, they are expected to turn the idea into an asset that delivers expected returns; otherwise, they have failed. Figure 1.1 is an example of this classic Go/No Go thinking. It seems logical, but it has the unintended consequence of stopping innovation dead in its tracks, and it often piles up large losses, too. Why? Because if an idea has to turn into an asset "or else," the logical response is to focus on low-risk ideas that are close to a company's current offerings—those that are a safer bet. This conservatism might make sense for the individual manager, but if it becomes the norm it keeps companies focused on what worked in the past rather than focused on the future, where the opportunities for high growth lie. This risk avoidance snuffs out the experimentation and innovation that lay at the heart of all great companies' history, when their entrepreneurial spirit ran high. Indeed, from our consulting work, we suspect that many managers self-select out high-potential, uncertain ideas because they are afraid of being wrong and being criticized for it. This fear causes a narrow focus on incremental changes to existing products. The question is, can anything be done to change this deadly dynamic?

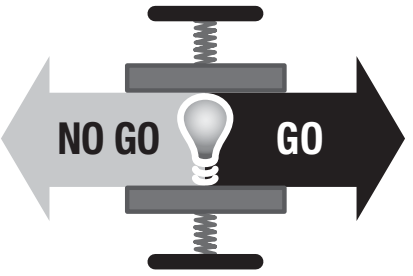

Figure 1.1 Go/No Go

Something can be done. For the past four years, we have been working on bringing you the right tool to manage beyond Go/No Go. We found it in something that we call Opportunity Engineering (OE), which allows you to assess uncertain opportunities and find ways of selecting only those where you can engineer the chance to capture their high upside potential *and* slice out the downside. OE allows you to select and pursue ideas that reach a long way into the upside potential and wrench out profits, while at the same time allow you to contain your risk to little more than your existing business risk.

Making Uncertainty Work for You

The key concept of OE is making uncertainty work *for* you rather than *against* you. In most uncertain projects, the potential profits have a probability distribution, as shown in Figure 1.2.

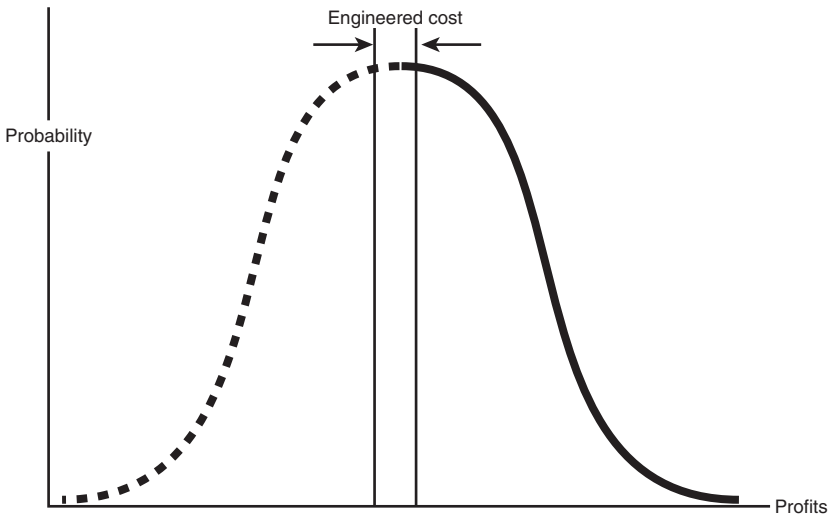

Figure 1.2 Probability of potential profits

If (and only if) you can Opportunity Engineer the project, you can in fact "slice out" the downside risk by engineering the opportunity so that the left tail of the distribution is removed, giving you an asymmetric