

IE 101 | Innovation and Entrepreneurship 101

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Front Matter

Copyright and Use

Prototype edition v3.1. This working manuscript is intended for instructors, students, and teams using IE 101 as a practical project guide.

The book is designed to be free to use in courses and downloadable by chapter as the material continues to be refined.

Source Lineage

IE 101 brings together behaviors from the Berkeley Method of Entrepreneurship with execution methods from Innovation Engineering, adapted for current project-based learning courses.

Acknowledgments

Before we go any further, this book would simply not have been possible without the contributions of so many executives, technical leaders, entrepreneurs, colleagues, and friends.

This book builds on years of teaching, experimentation, and collaboration across UC Berkeley, the Sutardja Center for Entrepreneurship & Technology, Innovation Engineering, Data-X, IE University, and many project-based courses and programs.

The material reflects the work of students, teaching teams, industry partners, entrepreneurs, researchers, and colleagues who tested these methods in real projects and helped make the framework more practical.

Special thanks are due to the communities that shaped the Berkeley Method of Entrepreneurship and to the Innovation Engineering work that provided the original execution framework for this version. This includes the innovators in the cases studies Richard Din co-founder of Caviar, Imprint Energy Co-Founder Christine Ho, Nir Merry from Applied Materials, Andrew Laffoon co-founder of Mixbook, Jayanta Dey at VMWare, Michael Shebanow IEEE Fellow and engineering leader, and Luke Kowalski Oracle executive and Berkeley instructor. I would also like to add thanks to executives who have taught within my programs including Charlie Giancarlo former chief product officer at Cisco, Mike Olson co-founder of Cloudera, author & entrepreneur Steve Blank for his many supportive conversations, Rich Redelfs formerly Foundation Capital, 3Com, and Qualcomm, Jerry Fiddler founder of WindRiver, Michael Marks former Flextronics CEO, Jim Davidson co-founder Silver Lake, Charles Fan former VMware executive and entrepreneur, Tesla co-founder Marc Tarpenning, venture capitalist Shomit Ghose, Mai Le from Uber and Yahoo, and many more. I can recall at least one important concept from each of them that has been synthesized into this book.

Further, adding to this list, are our major benefactors of the Sutardja Center at Berkeley, In Sik and Isabelle Rhee and Pantas Sutardja and Ting Chuk. And thanks to my colleagues including Phil Kaminsky former department chair and associate dean, who actually advised me to write this book, Ken Singer with whom I developed the Berkeley Method of Entrepreneurship pedagogy, our former deans during the development of the Center, Shankar Sastry and Richard Newton, our current Dean Tsu-Jae King Liu for her support during its current growth, IEOR department heads in this period Lee Schruben, Rhonda Righter, Ken Goldberg and Max Shen, co-founders of the Center Jon Busrgstone & Stacey Lawson, Tom Byers at Stanford for a long term support and collaboration, Paris de L'Etraz at the IE Business School whose expertise includes mindset & comfort zone and with whom I've collaborated on many real life technology business projects, Alfred Tan at HKBU who inspired a global educational application for this text, Bjorn Hartmann as a collaborator and head at Berkeley's Jacobs Institute of Design Innovation, and the team within the Sutardja Center including Jocelyn Weber who worked with me to develop our executive leadership programs, Alex Fred Ojala who co-developed Data-X, Keith McAleer our communications expert, Victoria Howell who continually provides great feedback, and Kyle Giffin who led the editing process.

Foreword by Tom Byers, Stanford University

Adapted from original Innovation Engineering book, 2019

Over the past several decades, we have revolutionized our understanding of entrepreneurship and technological innovation. Widespread technological progress has allowed innovation to expand beyond the start-up world and into a wider sphere of society. These developments continue to change lives for the better.

Thus, we are brought to the purpose of this book. IE 101 will help students and teams create and innovate, building upon lessons developed in Silicon Valley, at the University of California, Berkeley, and now in an expanded context at IE University. Whether the creation is a new company, a start-up within a larger firm, a government project, a company capstone, or a new technology, the principles here provide a practical framework for innovation and execution.

Most innovative projects still fail to accomplish their goals. Many fail to launch even when the teams are intelligent and highly skilled. What missing piece could give these teams the edge to succeed? The answer is a practical framework for ideation and execution. This book lays out common roadblocks and provides solutions in a manner that is direct and simple to use.

Ikhlaq Sidhu has been a colleague and partner of mine for many years, working extensively with collaborators to develop innovation programs at UC Berkeley and beyond. I feel fortunate to have collaborated in support of this work since the early days of the Sutardja Center for Entrepreneurship & Technology.

The concepts in this book have been iterated, tested, and improved through a large journey that includes technical innovations, new venture creations, corporate research projects, and project-based learning. IE 101 should be understood as Innovation Engineering revised and expanded: it preserves the Berkeley lessons while extending the viewpoint for current innovation and entrepreneurship courses.

Tom Byers Founding Faculty Director, Stanford Technology Ventures Program (STVP) Bass University Fellow in Undergraduate Education Stanford University

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