

Praise for **UNBUNDLING THE ENTERPRISE**

“To find novel value (digital treasure), CIOs must dive deep, beyond the surface of websites, and connect the dots in this ever-evolving network of possibilities. *Unbundling the Enterprise* will help you navigate these vast digital seas.”

—**Esat Sezer**, cofounder of Ritmus, former CIO of Coca-Cola

“I recommend this book for business folks looking for the ‘aha’ moment on APIs, and who want to make the business case for APIs in their organization.”

—**Mark O’Neill**, Gartner Chief of Research for Software Engineering

“A phenomenal read! Stephen and Matt captivate you from the start. This book will challenge you to re-evaluate your perspective on how you can differentiate yourself in the modern data ecosystem.”

—**Jason Beyer**, VP Data & Analytics, Bridgestone

“It’s no accident that Stephen and Matt have written a book that clearly lays out a path for success in the digital economy. For years, they have been helping organizations drive new business value through the use of APIs. Not only do they show why the world’s most innovative companies have a knack for creating repeatable digital success, but they also identify patterns that every business can emulate to reach their goals.”

—**Steve Lucas**, Chairman & CEO of Boomi, author of *Engage to Win*

“In an age where the pace of change is faster than ever, this book offers a road map for leaders to harness the power of digital transformation, bridging the gap between high-level strategy and day-to-day operations. It’s about creating a resilient organization that thrives on innovation, ready for the future’s challenges and opportunities.”

—**John Rowell**, cofounder and CEO, Revenium

“*Unbundling the Enterprise* provides a blueprint for leveraging APIs to not

only achieve seamless integration and enhanced flexibility but also to foster an ecosystem of innovation that can significantly amplify your market reach and financial outcomes.”

—**John D’Emic**, cofounder and CTO, Revenium

“*Unbundling the Enterprise* speaks to the imperative of digital data strategy for exponential value creation. Written in an approachable and easy-to-understand detail, it is an essential guideline for non-technical business leaders and executives responsible for growth.”

—**J. Ignacio Puente**, CEO, Uility, and VP Digital Transformation,
Mobility & Subscription Platforms, Global Business Strategy
& Operations, Santander

“Fishman and McLarty make an undeniable argument for making more intentional choices today that open a whole world of possibilities tomorrow. The value dynamics chapter alone is worth the price of admission, but I think readers across business, design, and technology will see the wisdom in these pages and find new ways to collaborate, strategize, and win together.”

—**Patrick Quattlebaum**, CEO, Harmonic Design
and coauthor of *Orchestrating Experiences*

“With powerful, real-world examples drawn from both digital disruptors and well-established incumbent firms in a variety of industries, *Unbundling the Enterprise* is an essential read for leaders striving to build an antifragile, thriving business poised for sustainable growth.”

—**Mahesh Motiramani**, Head of Enterprise Customer Success, Workato

“I reckon this book will be on the desk of all digital leaders and aspirants soon. The new math weaves optionality, opportunity, and optimization beautifully. While value dynamics is a powerful technique, the economic framing of APIs through the lens of optionality is refreshing.”

—**Dinkar Gupta**, Chief Information and Technology Officer,
KPMG Switzerland

Stephen Fishman

Matt McLarty

UNBUNDLING THE ENTERPRISE

—

APIs, Optionality
& the Science of
Happy Accidents

IT Revolution
Independent Publisher Since 2013
Portland, Oregon



Copyright © 2024 by Stephen Fishman and Matt McLarty.

All rights reserved. For information about permission to reproduce selections from this book, write to Permissions, IT Revolution Press, LLC, 25 NW 23rd Pl, Suite 6314, Portland, OR 97210.

First Edition

Printed in the United States of America

28 27 26 25 24 1 2 3 4 5 6 7 8 9

Cover design by Julianna Johnson and Kate Giambrone, Bologna Sandwich LLC.

Book design and illustrations by Devon Smith Creative LLC.

Library of Congress Cataloging-in-Publication Data

Names: Fishman, Stephen, author. | McLarty, Matt, author.

Title: Unbundling the enterprise : APIs, optionality, and the science of happy accidents / Stephen Fishman & Matt McLarty.

Description: Portland, OR : IT Revolution, [2024] | Includes bibliographical references.

Identifiers: LCCN 2024011612 (print) | LCCN 2024011613 (ebook) | ISBN 9781950508877 (paperback) | ISBN 9781950508884 (ebook) | ISBN 9781950508891 (pdf) | ISBN 9781950508907

Subjects: LCSH: Business--Technological innovations. | Application program interfaces (Computer software) | BISAC: COMPUTERS / Internet / Web Services & APIs | BUSINESS & ECONOMICS / Leadership

Classification: LCC HF5548.2 .F475 2024 (print) | LCC HF5548.2 (ebook) |

DDC 658/.0553--dc23/eng/20240514

LC record available at <https://lcn.loc.gov/2024011612>

LC ebook record available at <https://lcn.loc.gov/2024011613>

ISBN: 9781950508877

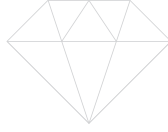
eBook ISBN: 9781950508884

Web PDF ISBN: 9781950508891

Audiobook ISBN: 9781950508907

The praise, quotes, and content in this book have not been endorsed by any of the companies or organizations mentioned throughout. All opinions of those companies/organizations and their operations within the book are the authors' or interview subjects' own and are not reflective of any of the companies' official positions.

For information about special discounts for bulk purchases
or for information on booking authors for an event, please visit our website at
www.ITRevolution.com.



Dedication

Stephen—To my amazing wife, Kathleen Kelly, who inspired me to find my voice and made it possible for me to be of service to the world around me. To my parents, who helped me get a world-class education. To my children, Marina and Abigail, for making me a better person. And to my many friends and colleagues who helped me develop into a professional contributor and leader with something to offer the community.

Matt—For Chris, for her patience, for her support, for her love. For Daniel and Josiah, for reminding me what's important in life.

Contents

Prologue	Astounding Pirate Innovation	xv
Introduction		xix
PART I INNOVATION BY ACCIDENT		
Chapter 1	Treasure in Transformation	3
	The Yegge Platform Rant	4
	Tim O'Reilly: The API Advocate	8
	Finding the Value of Google Maps	10
Chapter 2	The Science of Happy Accidents	15
	Combinatorial Innovation	16
	The Non-Rival Nature of Digital Products	19
	OOOps: A Science of Happy Accidents	21
	OOOps for Digital Settlers	27
Chapter 3	Optionality Through API Unbundling	29
	Controlling Context Is Everything	29
	The Search for a “New Math”	32
	Manufacturing Convexity Through Optionality	42
	Transforming Options into High-Value Interfaces	47
	Embracing Modularity by Default	50
Chapter 4	Opportunism Through Value Dynamics	53
	An Introduction to Value Dynamics	53
	Facebook: A Value Dynamics Illustration	57
	APIs as a Medium of Value Exchange	61
	Applying Value Dynamics	62
Chapter 5	Optimization Through Feedback Loops	67
	The \$10,000,000 Accident	68
	The Economics of Optimizing Your Feedback Loops	70
	Prioritizing the Digital Systems of Work	75

PART II SUCCESS STRATEGIES

Chapter 6 Strategies of Success #1: Exchange Optimization	83
You Can't Beat Finance...So Join Them	84
Cox Automotive Carves Its Own Road	87
Design with Disruption in Mind	92
A Platform Without a Business Owner Is Not Sustainable	104
Platform Maturity Follows Financial Maturity at Lowe's	106
Chapter 7 Strategies of Success #2: Distributed Innovation	111
Digital Demand Exceeds Builder Supply	111
An API Economy	113
Coca-Cola's Secret Formula for Innovation	115
Consumer-Driven R&D with Freestyle Fountains	119
Digital Transformation Takes Hold at Anderson Holdings	121
Chapter 8 Strategies of Success #3: Capability Capitalization	129
Less Is More Because Less Leaves Room for More	130
Amazon's Journey to Transform Muck into Money	131
Slack: Lessons Are Learned More by People Than by the Institutions That Employ Them	135
Capital One: Any Organization Can Capitalize on Capabilities...Even Ones That Did Not Create Them	142
Think Big, Start Small, Learn Fast, Go Far	144
Chapter 9 Strategies of Success #4: Value Aggregation	147
Data Economics	147
Data Can Connect Value Networks	150
From Mapping to Marketing at Google	151
From Upgrades to Inventory at Best Buy	154
 PART III PRACTICAL CONSIDERATIONS TO FINDING DIGITAL TREASURE	
Chapter 10 Getting Started on the Path to Scaled Results	163
Moving from Organization to Ecosystem	163
To Win the Game, You Have to Know the Rules	169
Just-in-Time Compliance	171
The Do's and Don'ts of Serial Optionality	174
A Model for Causing and Monetizing Happy Accidents	176
Transforming Speed into Cash	178

Chapter 11 Ensuring a Durable Transformation by Understanding the Risks	181
Increased Security Risk	182
Increased Performance Risk	183
Increased Risk to Quality Issues	185
Increased Operational Complexity	186
Misapplying the MVP Concept	187
Cannibalizing Existing Revenue	189
Technology-Centered Transformation	190
Misaligned Talent Model and Processes	191
Losing Discipline in Times of Compression	192
Choosing the Wrong Interface to Control	193
Pervasive Use of Performative Behaviors (AKA: Optionality Theater)	194
Chapter 12 Embracing Uncertainty	197
The Rise of Generative AI	197
Conclusion Set Sail to the Land of a Thousand Shovels	205
Making Your Own Luck	211
Bibliography	213
Notes	219
Acknowledgments	225
About the Authors	227

List of Figures

INTRODUCTION

Figure 0.1: The Role of APIs in a Rideshare Scenario	xxi
Table 0.1: Four Winning Strategies in the Digital Economy	xxv

CHAPTER 1

Figure 1.1: A Simplified View of the “Platform Approach” as Described by Steve Yegge	6
--	---

CHAPTER 2

Figure 2.1: Happy Accidents Through the Years	16
Figure 2.2: The Smartphone Innovation Was Enabled by Concurrent Capabilities	17
Figure 2.3: Concave vs. Convex Margin Curves of Rival and Non-Rival Products	20
Figure 2.4: OOOps: The Three Methods in the Science of Happy Accidents	21
Figure 2.5: A Monolithic Web Application for Self-Service Account Open	22
Figure 2.6: Self-Service Account Open Using Unbundled Capabilities via API	23
Figure 2.7: Simple Illustration of a Value Dynamics Map	24
Figure 2.8: Four Feedback Mechanisms	26

CHAPTER 3

Figure 3.1: Illustration of Contextualized vs. Decontextualized Products	31
Figure 3.2: Concave vs. Convex Valuation Models for Options	34
Figure 3.3: The Antifragility Edge (Convexity Bias)	36
Figure 3.4: Manufacturing Positive Black Swans	37
Figure 3.5: Convex vs. Concave Models for Options	37

Figure 3.6: Concave Optionality Due to Operational Rigidity	43
Figure 3.7: Partially Concave Optionality Due to Tightly Coupled Code	45
Figure 3.8: Increased Convex Optionality from Unbundled Capabilities	46

CHAPTER 4

Table 4.1: Value Currencies	56
Figure 4.1: Value Dynamics Illustration of Facebook Business Model in 2006	58
Figure 4.2: Facebook Business Model in 2011	59
Figure 4.3: Value Dynamics Concepts in the Facebook Value Network	60

CHAPTER 5

Figure 5.1: Headline from <i>Popular Science Monthly's</i> August 1927 Edition	68
Figure 5.2: A Life Cycle Model for Digital Experiments	78
Figure 5.3: Evolutionary Advancements Toward Scalable Optionality	78

CHAPTER 6

Figure 6.1: Cost vs. Revenue Centers	84
Figure 6.2: Cost + Value Centers	86
Figure 6.3: A Traditional Media Business Model Depicted Through Value Exchanges	88
Figure 6.4: Autotrader Business Model Depicted Through Value Exchanges	90
Figure 6.5: Partial View of Cox Automotive Ecosystem	92
Figure 6.6: Safety Boundary Model	97
Figure 6.7: Adapted Boundary Model with Disruption and Response	99
Figure 6.8: Traditional Enterprise IT	101
Figure 6.9: Stream-Aligned Model	102
Figure 6.10: Business-Centric Model	102
Figure 6.11: Cost/Value Continuum	103
Figure 6.12: IT vs. Business-Owned Platforms	105

CHAPTER 7

Figure 7.1: API Economy Categories with Notable Constituents	114
--	-----

Figure 7.2: Business Model for Coca-Cola's Soda Dispensers in 2008	119
Figure 7.3: Business Model for Coca-Cola's Soda Dispensers in 2013	120
Figure 7.4: Business Model for Coca-Cola's Soda Dispensers in 2018	120
Figure 7.5: Value Exchanges as a Result of Anderson's Unbundling	126

CHAPTER 8

Figure 8.1: Business Model for Amazon in 2000	131
Figure 8.2: Business Model for Amazon in 2003	132
Figure 8.3: Business Model for Amazon in 2006	133
Figure 8.4: Slack's Original Value Exchange Model	138
Figure 8.5: Slack's Evolved Value Exchange Model with a Greater Emphasis on Third-Party Partners	139

CHAPTER 9

Figure 9.1: The Economic Properties of Data vs. Oil	150
Figure 9.2: Google Maps Business Model in 2005	152
Figure 9.3: Google Maps Business Model in 2006	152
Figure 9.4: Google Maps Business Model in 2011	153
Figure 9.5: Best Buy Store Business Model in 2007	157
Figure 9.6: Best Buy Store Business Model in 2012	158

CHAPTER 10

Table 10.1: Considerations for API Providers	167
Table 10.2: The Do's and Don'ts of Serial Optionality	174

CONCLUSION

Figure C.1: The Three OOOps Methods	205
Figure C.2: Systematically Building Optionality	210

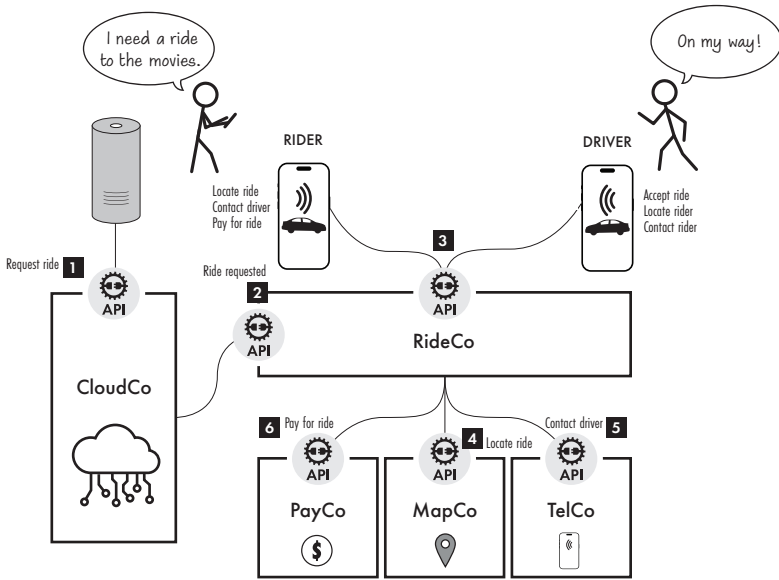


FIGURE 0.1 The Role of APIs in a Rideshare Scenario

TABLE 0.1: Four Winning Strategies in the Digital Economy

Exchange Optimization	Adapt analog business models for the digital world, thus increasing the speed and scale of value exchanges while lowering coordination costs.
Distributed Innovation	Put innovative technologies in the hands of business users and high option products in the hands of customers to run rapid, well-measured experiments that pay off.
Capability Capitalization	Unbundle and rebundle business capabilities to create new products, services, and even highly profitable operating units.
Value Aggregation	Connect disparate value networks to create an integrated business model whose whole is greater than the sum of its parts.

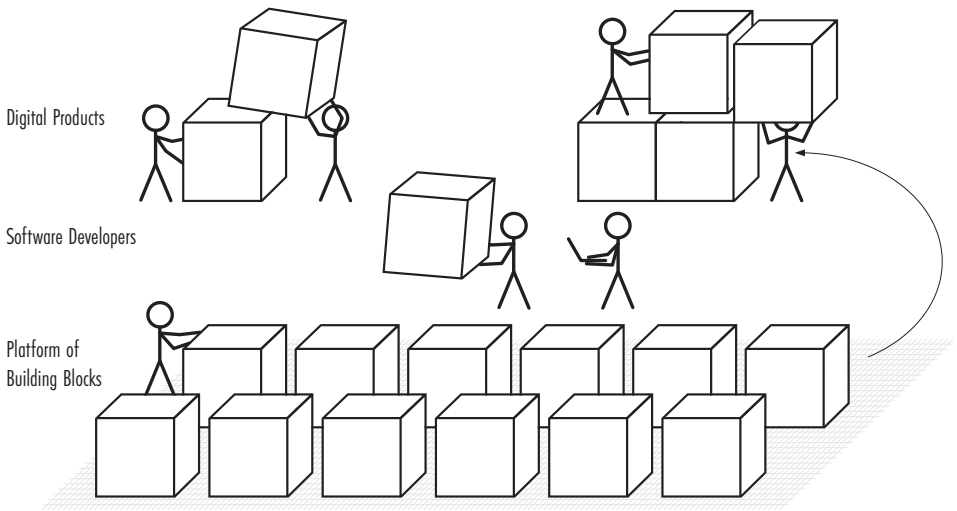


FIGURE 1.1 A Simplified View of the "Platform Approach" as Described by Steve Yegge

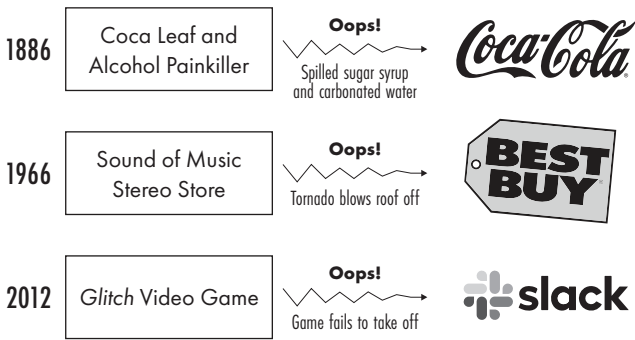


FIGURE 2.1 Happy Accidents Through the Years

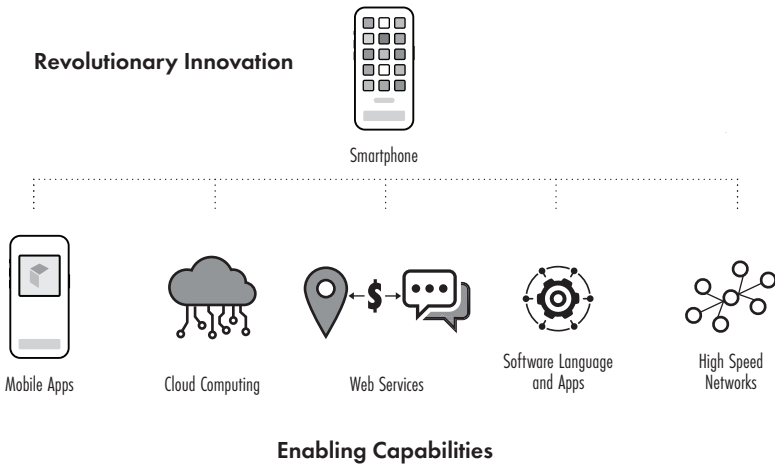


FIGURE 2.2 The Smartphone Innovation Was Enabled by Concurrent Capabilities

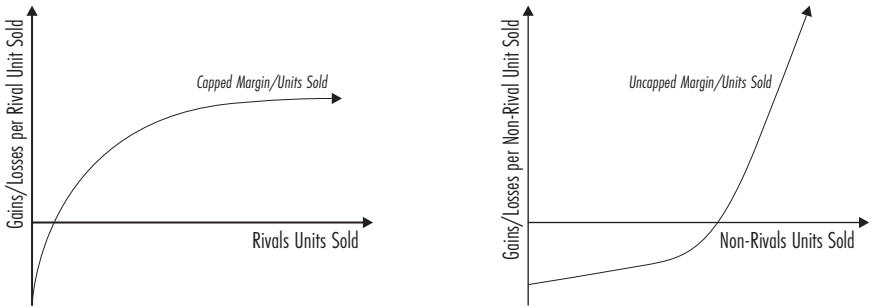


FIGURE 2.3 Concave vs Convex Margin Curves of Rival and Non-rival Products



FIGURE 2.4 OOOps: The Three Methods in the Science of Happy Accidents

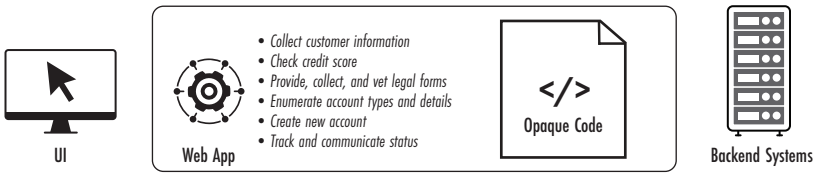


FIGURE 2.5 A Monolithic Web Application for Self-Service Account Open

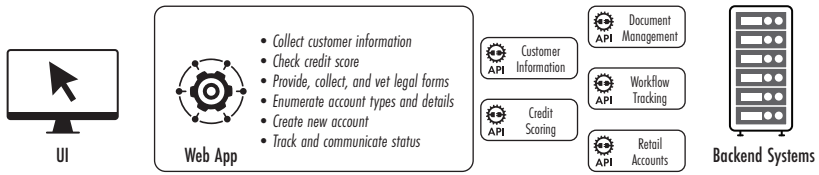


FIGURE 2.6 Self-Service Account Open Using Unbundled Capabilities via API

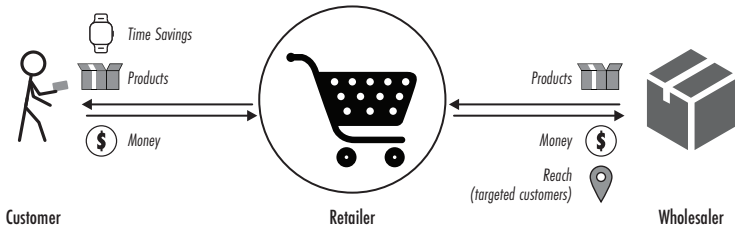


FIGURE 2.7 Simple Illustration of a Value Dynamics Map

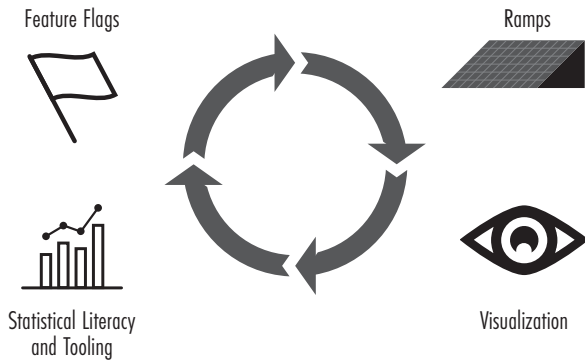


FIGURE 2.8 Four Feedback Mechanisms

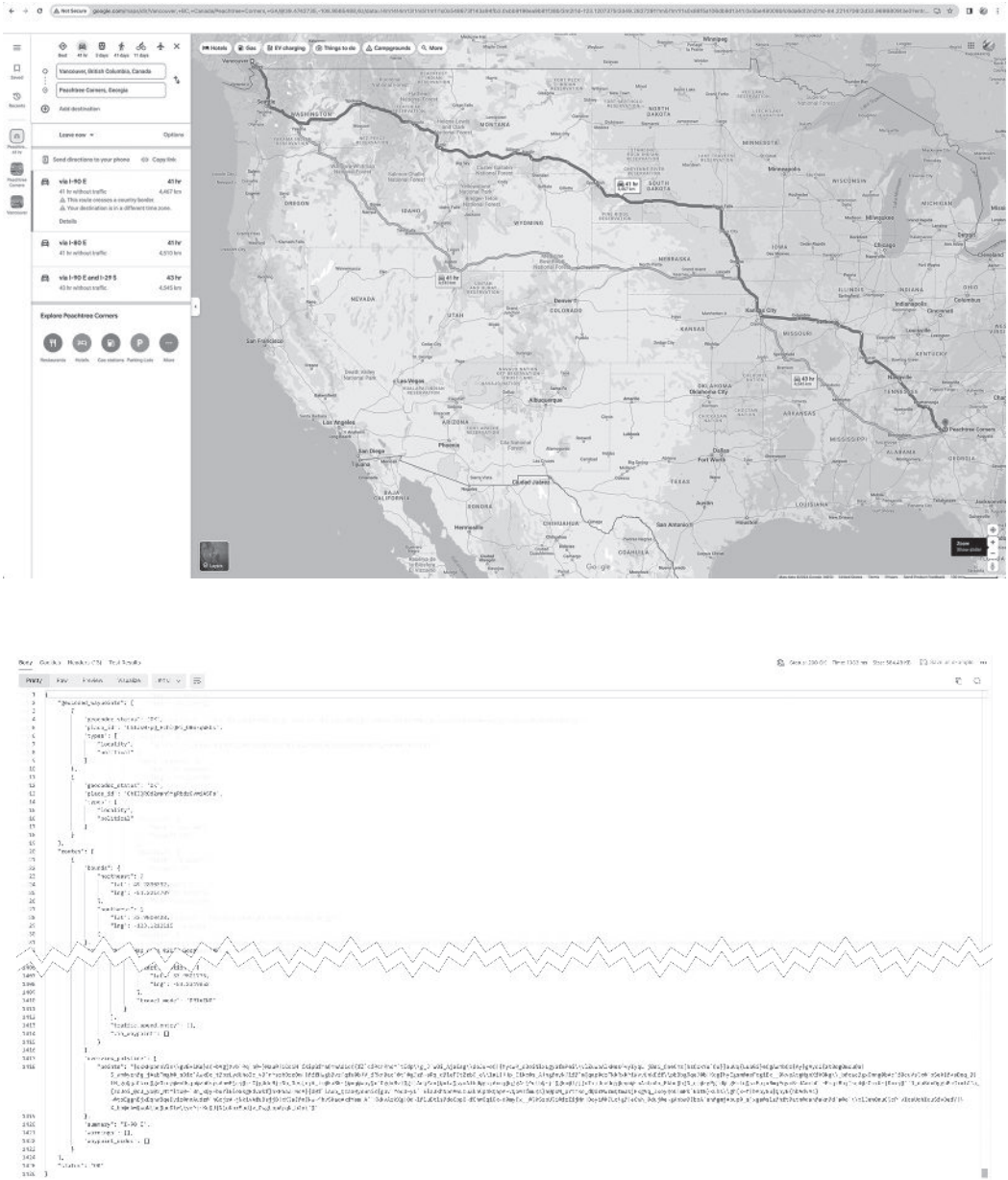


FIGURE 3.1 Illustration of Contextualized vs. Decontextualized Products

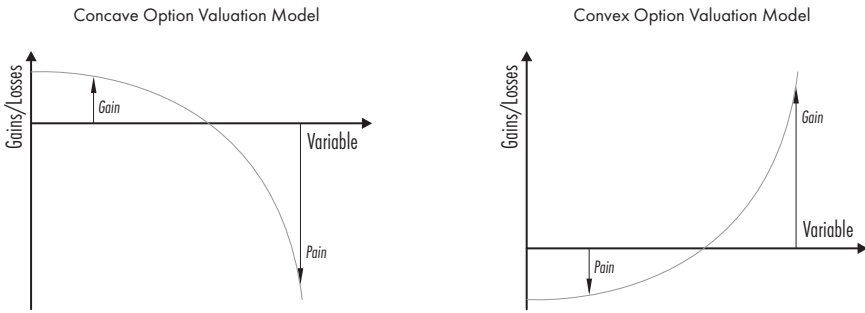


FIGURE 3.2 Concave vs. Convex Valuation Models for Options
Source: Nassim Nicholas Taleb. *Antifragile: Things That Gain from Disorder*.
New York: Random House, 2014: 273.

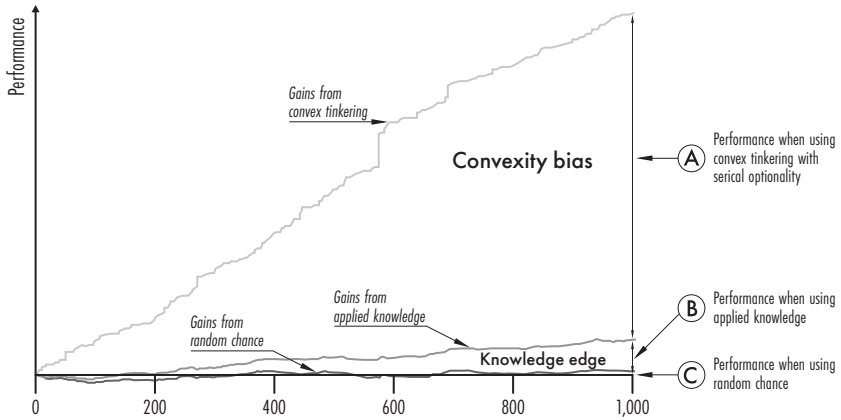


FIGURE 3.3 The Antifragility Edge (Convexity Bias)

Adapted from Nassim Nicholas Taleb. "Understanding Is a Poor Substitute for Convexity (Antifragility)." Edge. December 12, 2012. https://www.edge.org/conversation/nassim_nicholas_taleb-understanding-is-a-poor-substitute-for-convexity-antifragility.

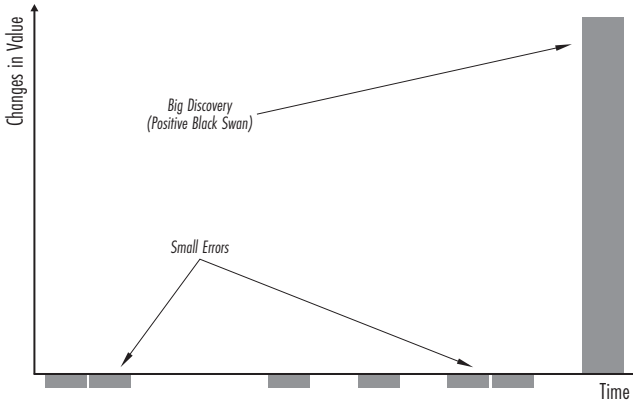


FIGURE 3.4 Manufacturing Positive Black Swans

Adapted from Nassim Nicholas Taleb. *Antifragile: Things That Gain from Disorder*.

New York: Random House, 2014: 182.

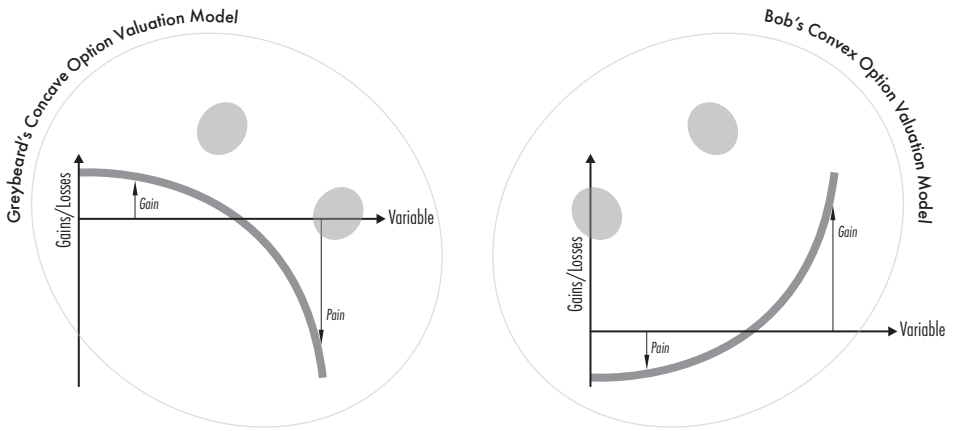


FIGURE 3.5 Convex vs. Concave Models for Options

Source: Adapted from Nassim Nicholas Taleb. *Antifragile: Things That Gain from Disorder*. New York: Random House, 2014: 273.

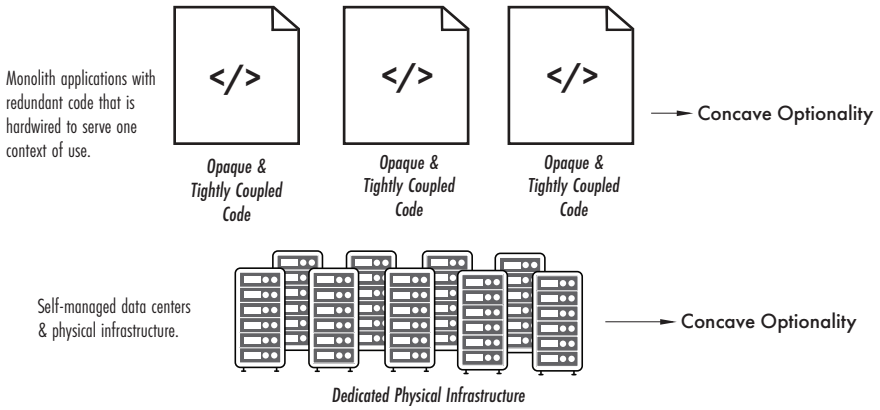


FIGURE 3.6 Concave Optionality Due to Operational Rigidity

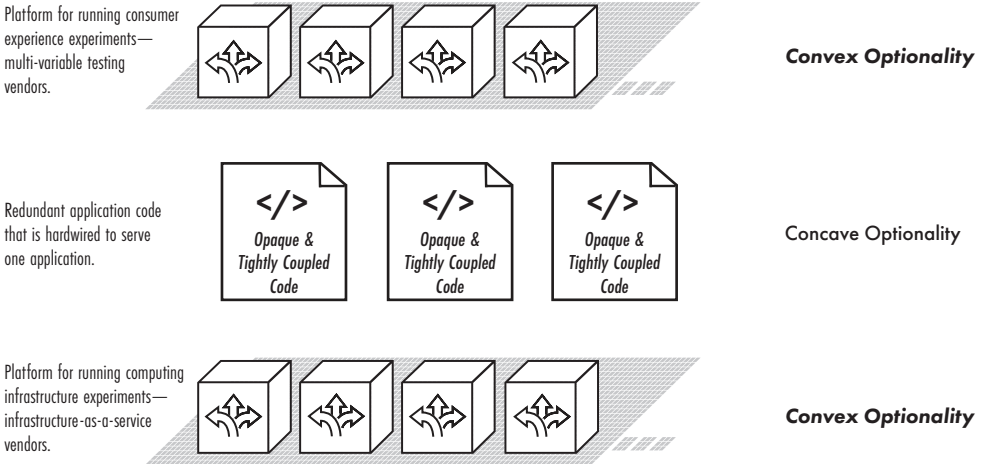
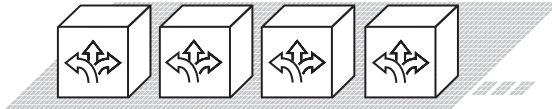


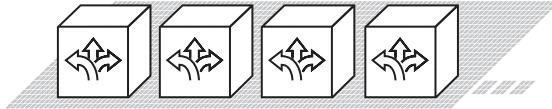
FIGURE 3.7 Partially Concave Optionality Due to Tightly Coupled Code

Platform for running consumer experience experiments—multi-variable testing vendors.



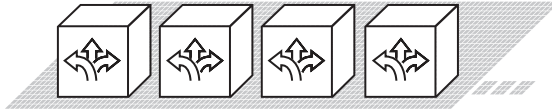
Convex Optionality

Platform for running experiments of unbundled capabilities—integration-platform-as-a-service vendors.



Convex Optionality









Platform for running computing infrastructure experiments—infrastructure-as-a-service vendors.



Convex Optionality

FIGURE 3.8 Increased Convex Optionality from Unbundled Capabilities

TABLE 4.1: Value Currencies

CURRENCY	SYMBOL	DEFINITION
Money		Money is actual financial value exchanged between constituents.
Product		A product is value that is packaged in a form that can be possessed and used by the receiving constituent.
Service		A service is value-added work that is delivered by one constituent for the benefit of another.
Content		Content is packaged information that can be consumed by a receiving constituent, such as print or digital media.
Data		Data is encoded information that can be interpreted and synthesized to derive valuable insights.
Reach		A constituent provides reach to another by opening up access to a customer group, to a supplier network, by providing scale, and more.
Time Savings		Constituents can provide time savings through smooth user experiences, automation, aggregation, abstraction, and more.
Risk Reduction		Constituents can provide risk reduction through improved security, operation stability, insurance provision, enhanced brand equity, and more.

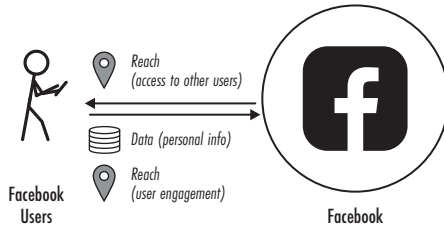


FIGURE 4.1 Value Dynamics Illustration of Facebook Business Model in 2006

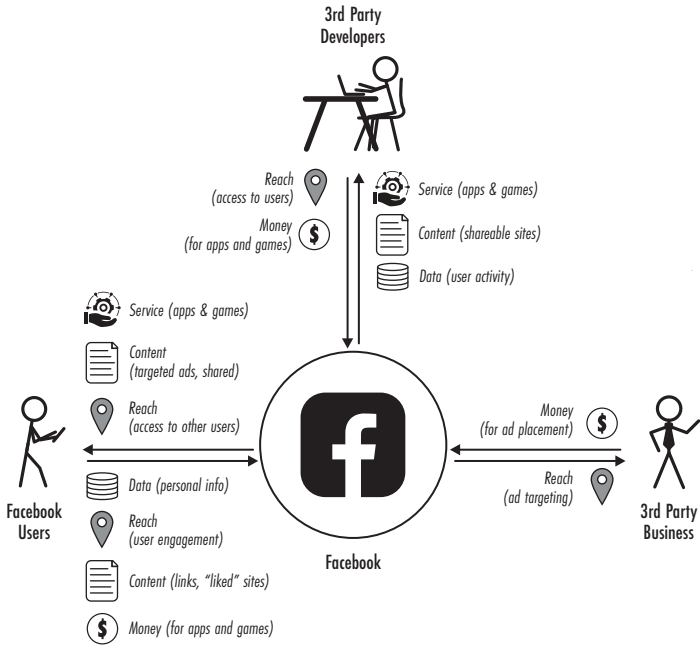


FIGURE 4.2 Facebook Business Model in 2011

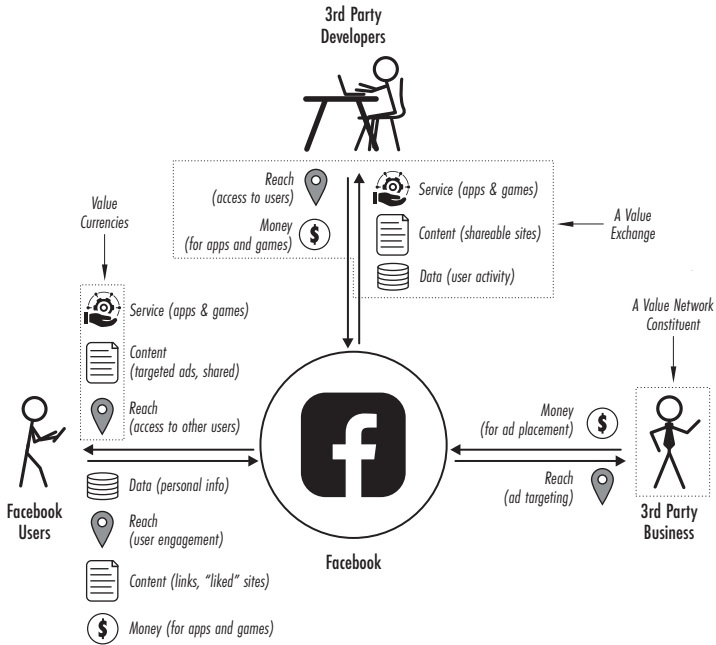
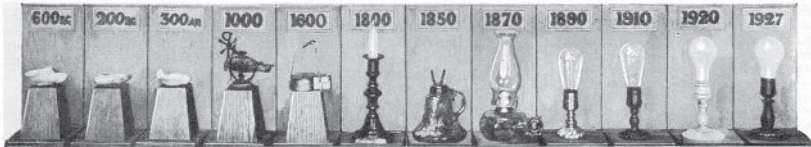


FIGURE 4.3 Value Dynamics Concepts in the Facebook Value Network

24

POPULAR SCIENCE MONTHLY

August, 1927



Steps in the progress of illumination in 2500 years. Left to right: saucer lamp (vegetable oil); early pottery lamp (vegetable oil); decorated pottery lamp (vegetable oil); bronze lamp (olive oil); "Betty" lamp (grease; brought to America by Puritans); candle; "Camphene" lamp; coal oil lamp; carbon lamp; clear Mazda lamp; white Mazda lamp; new standard lamp with inside frosted bulb

A \$10,000,000 "Accident"

*The 'phone rang, and Marvin Pipkin found the secret
of better lights for 16,000,000 homes*

FIGURE 5.1 Headline from *Popular Science Monthly's* August 1927 Edition

Source: Kenneth Wilcox Payne. "A \$10,000,000 'Accident.'" *Popular Science Monthly*. August 1927.



FIGURE 5.2 A Life Cycle Model for Digital Experiments

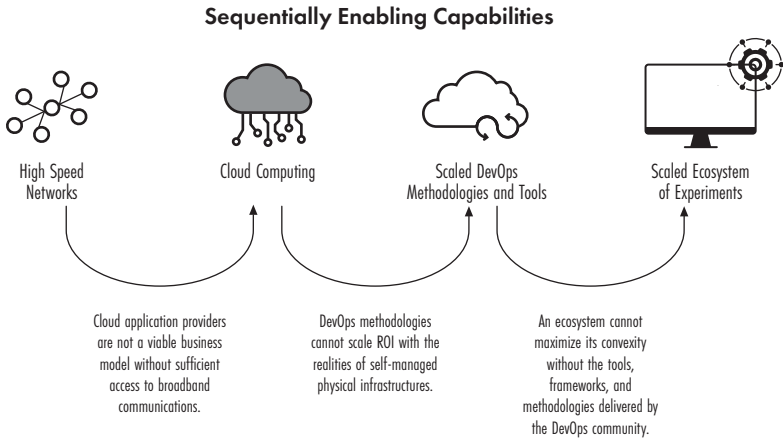


FIGURE 5.3 Evolutionary Advancements Toward Scalable Optionality

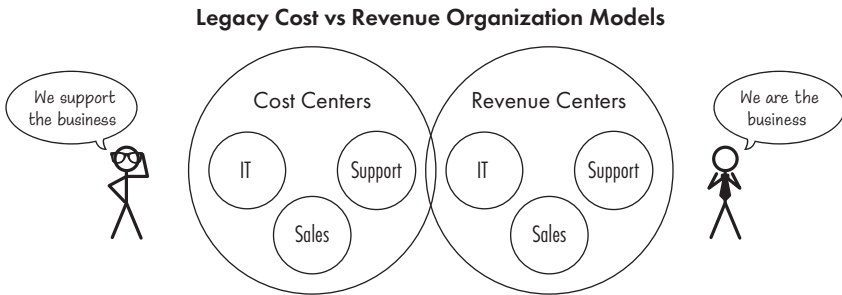


FIGURE 6.1 Cost vs. Revenue Centers

**Transformed Cost + Value Organization Models
All Departments**

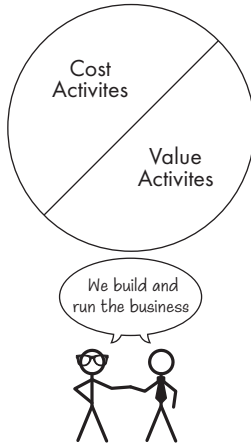


FIGURE 6.2 Cost + Value Centers

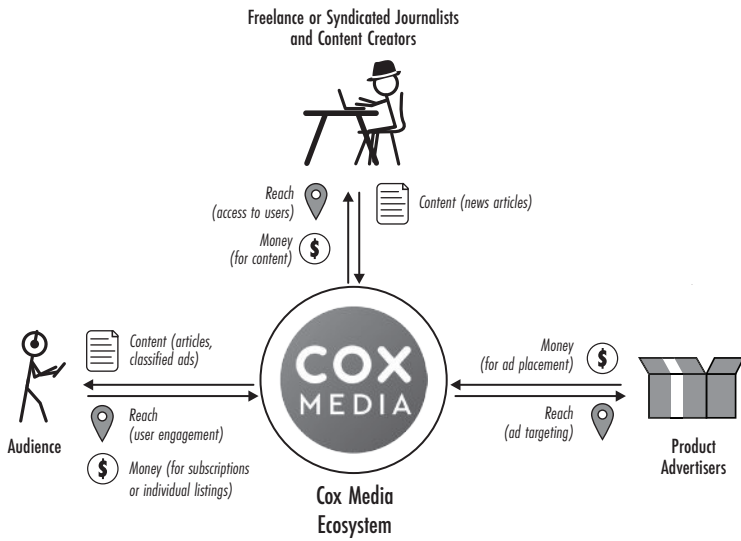


FIGURE 6.3 A Traditional Media Business Model Depicted Through Value Exchanges

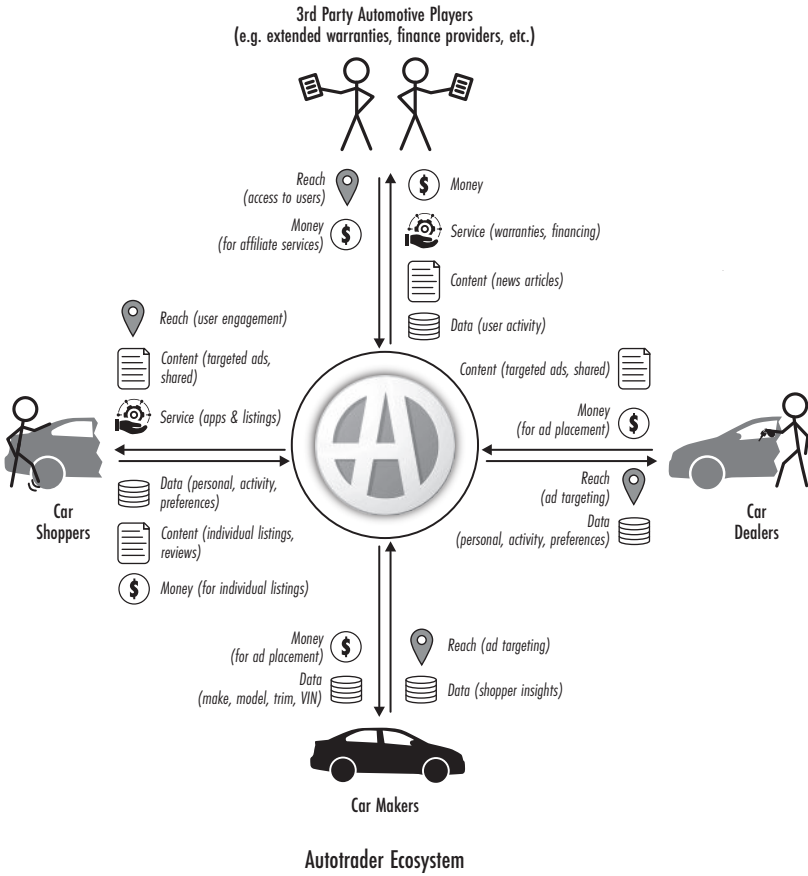


FIGURE 6.4 Autotrader Business Model Depicted Through Value Exchanges

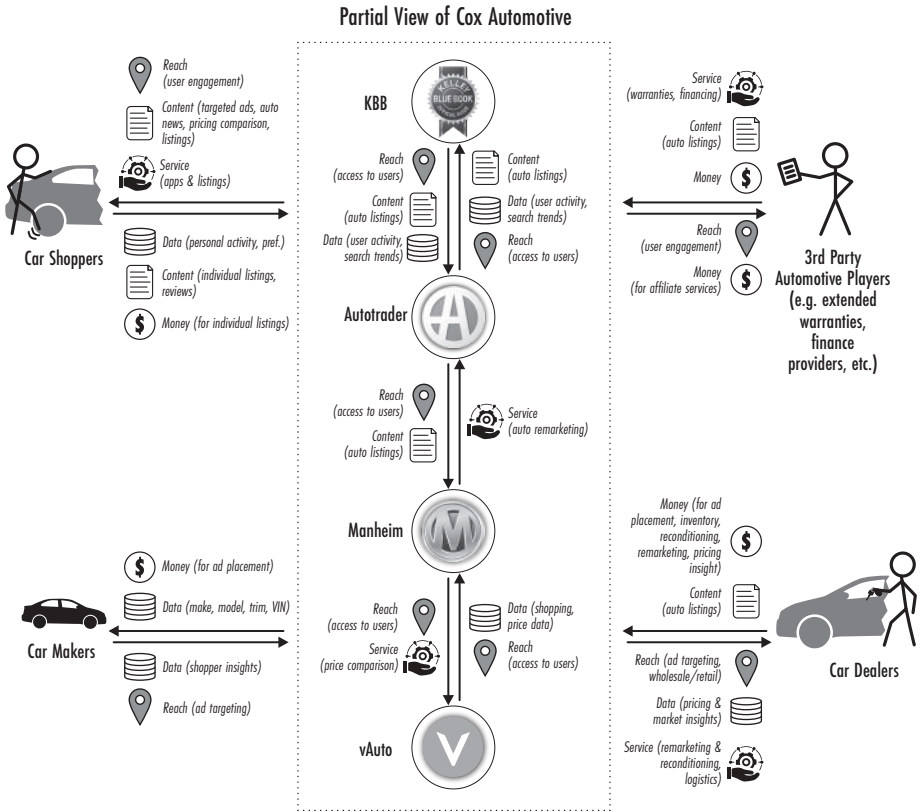


FIGURE 6.5 Partial View of Cox Automotive Ecosystem

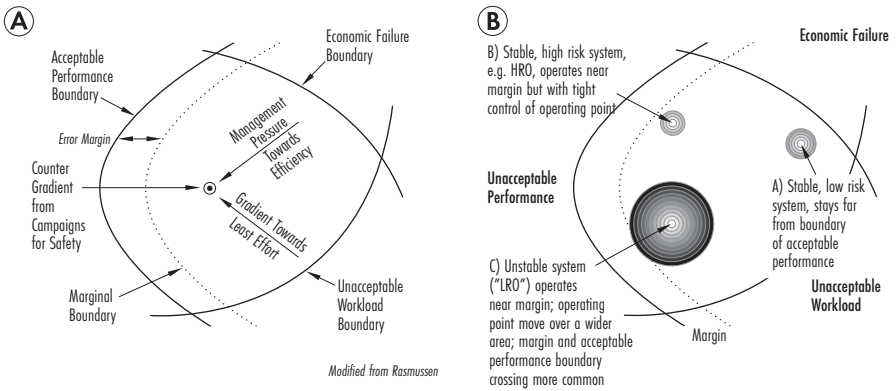


FIGURE 6.6 Safety Boundary Model

Source: J. Bradley Morrison and Robert L. Wears. "Modeling Rasmussen's Dynamic Modeling Problem: Drift Towards a Boundary of Safety." *Cognition, Technology & Work* 24, no. 1 (April 28, 2021): 127–145.

<https://doi.org/10.1007/s10111-021-00668-x>.

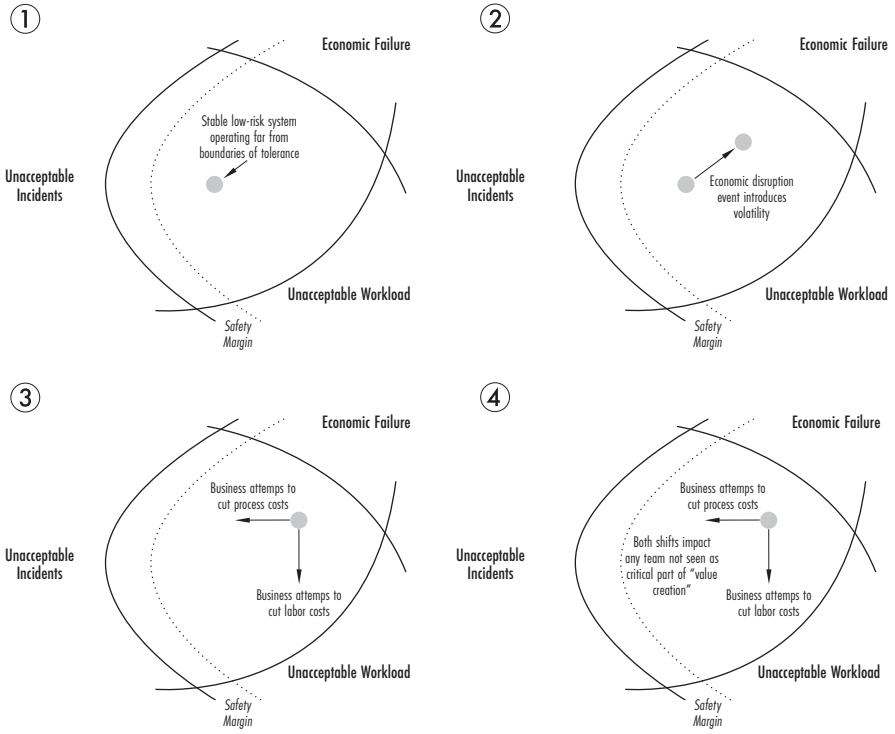


FIGURE 6.7 Adapted Boundary Model with Disruption and Response

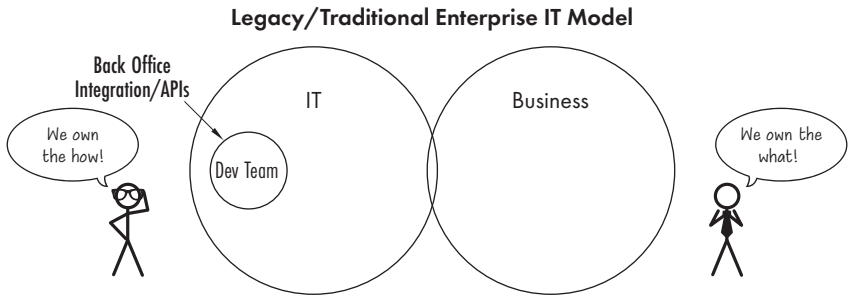


FIGURE 6.8 Traditional Enterprise IT

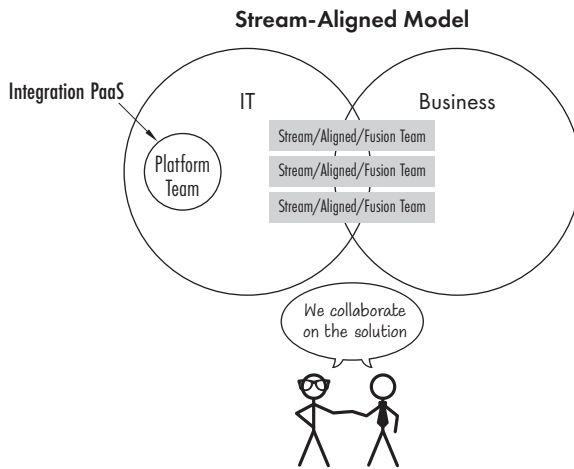


FIGURE 6.9 Stream-Aligned Model

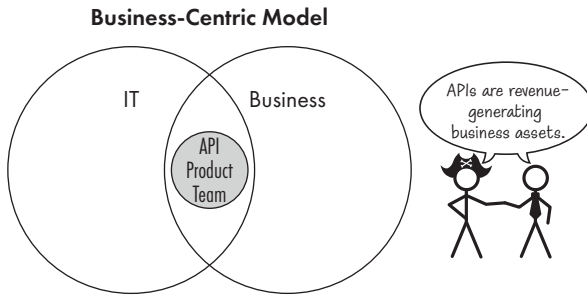


FIGURE 6.10 Business Centric Model

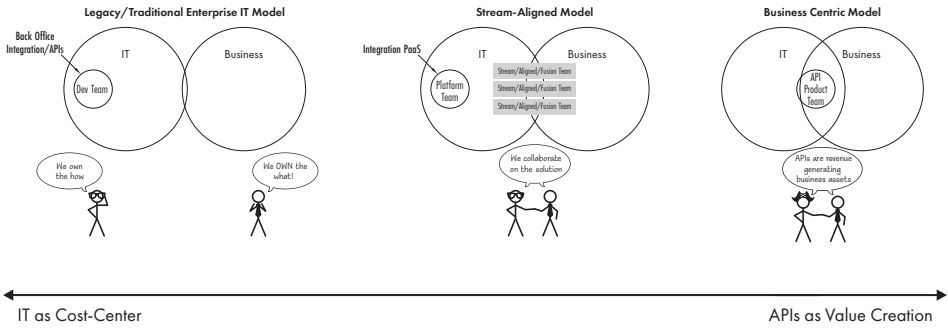


FIGURE 6.11 Cost/Value Continuum

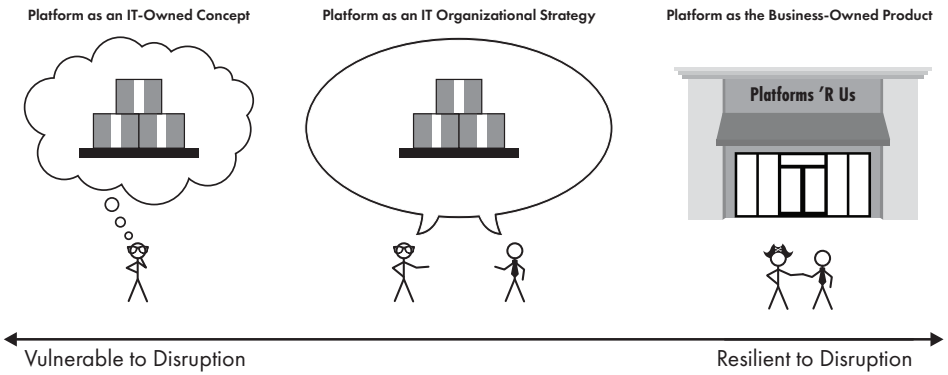


FIGURE 6.12 IT vs. Business-Owned Platforms

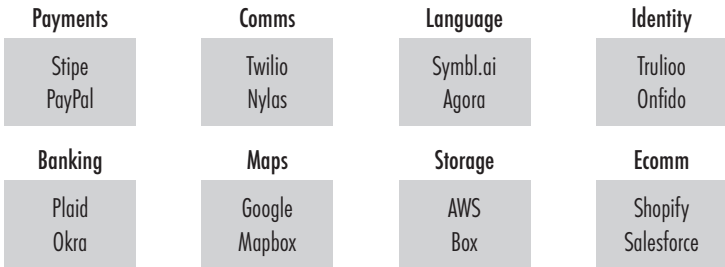


FIGURE 7.1 API Economy Categories with Notable Constituents

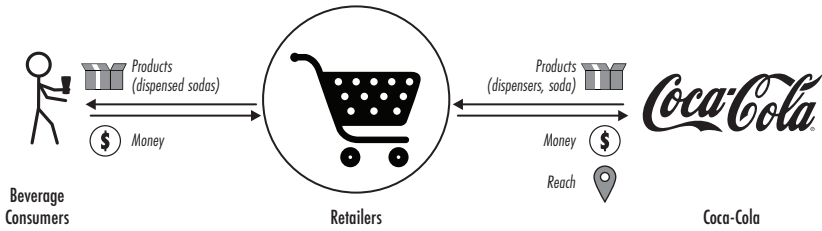


FIGURE 7.2 Business Model for Coca-Cola's Soda Dispensers in 2008

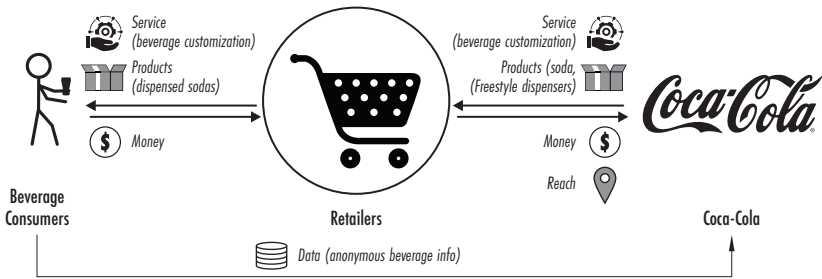


FIGURE 7.3 Business Model for Coca-Cola's Soda Dispensers in 2013

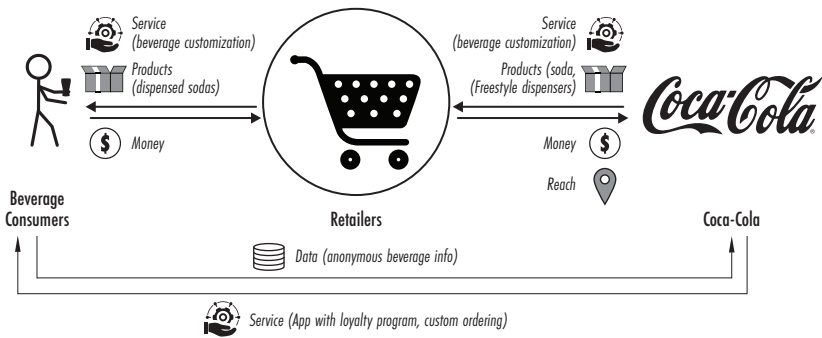


FIGURE 7.4 Business Model for Coca-Cola's Soda Dispensers in 2018

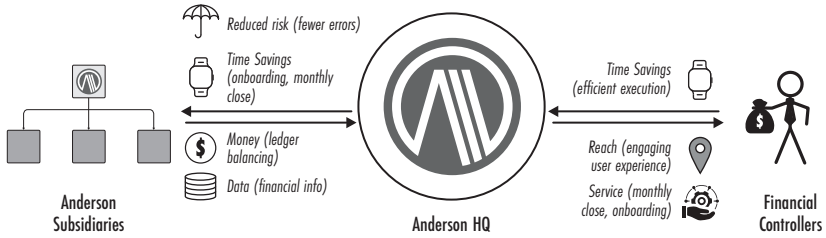


FIGURE 7.5 Value Exchanges as a Result of Anderson's Unbundling

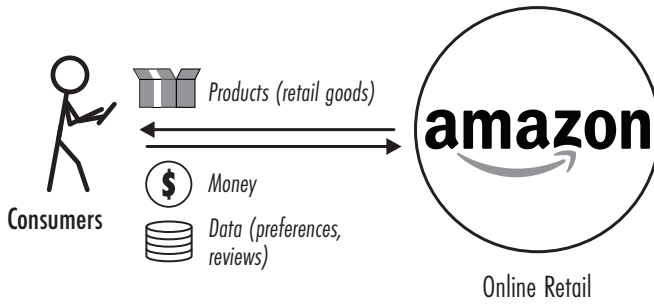


FIGURE 8.1 Business Model for Amazon in 2000

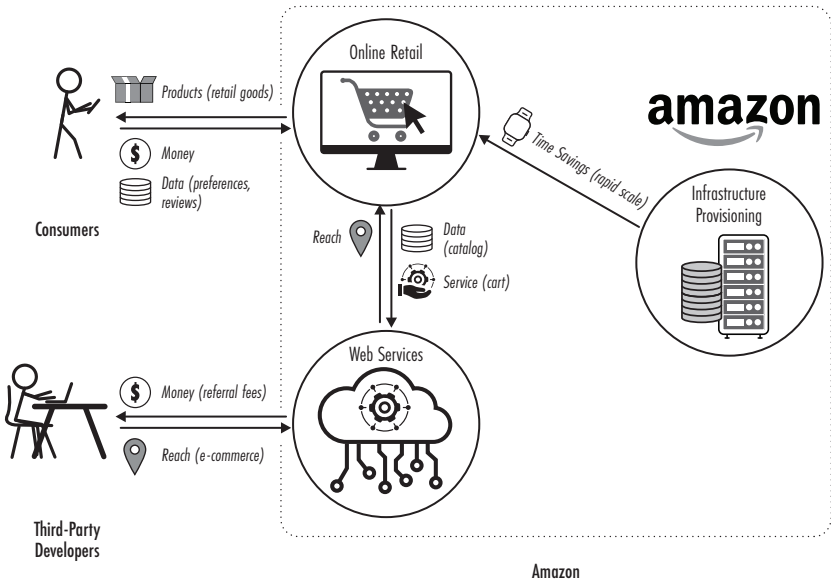


FIGURE 8.2 Business Model for Amazon in 2003

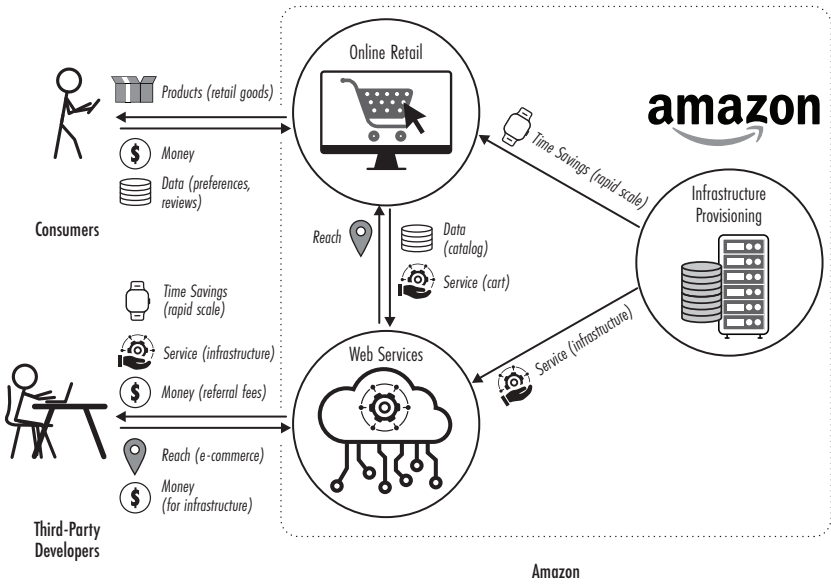


FIGURE 8.3 Business Model for Amazon in 2006

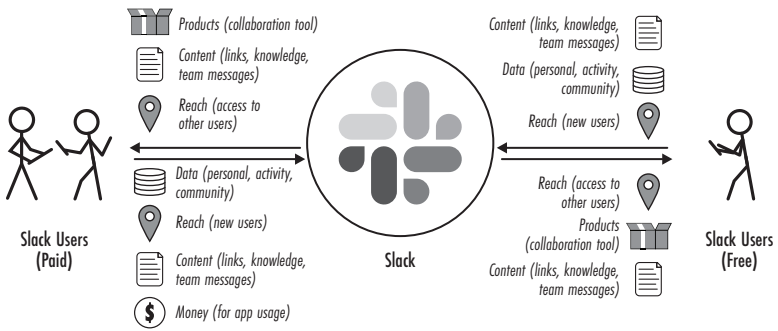


FIGURE 8.4 Slack's Original Value Exchange Model

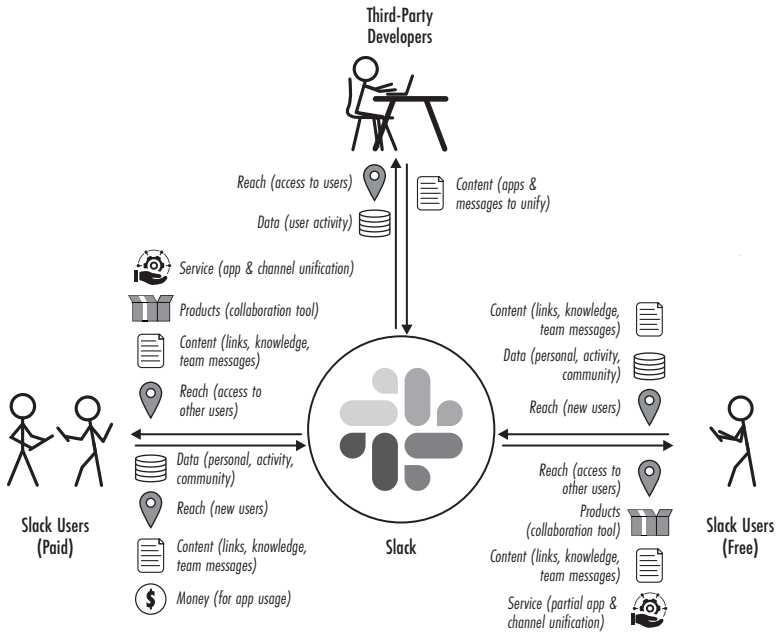


FIGURE 8.5 Slack's Evolved Value Exchange Model with a Greater Emphasis on Third-Party Partners

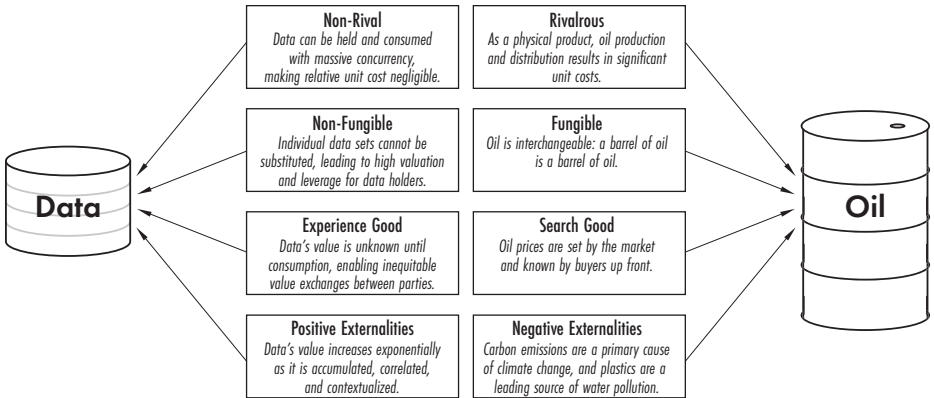


FIGURE 9.1 The Economic Properties of Data vs. Oil

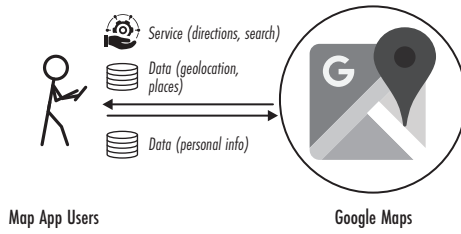


FIGURE 9.2 Google Maps Business Model in 2005

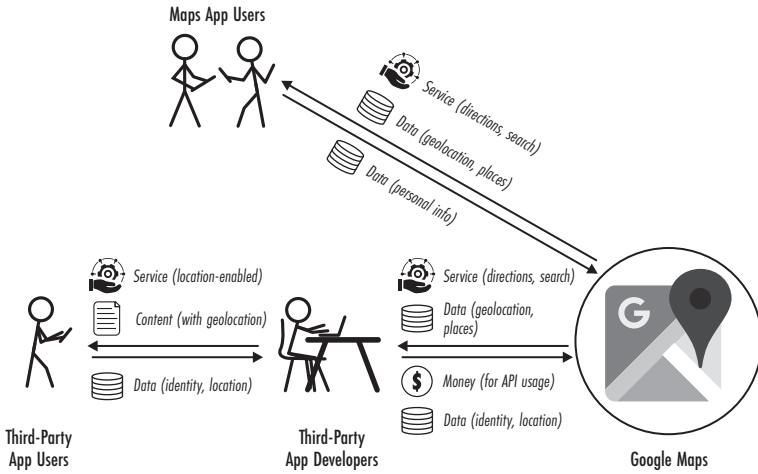


FIGURE 9.3 Google Maps Business Model in 2006

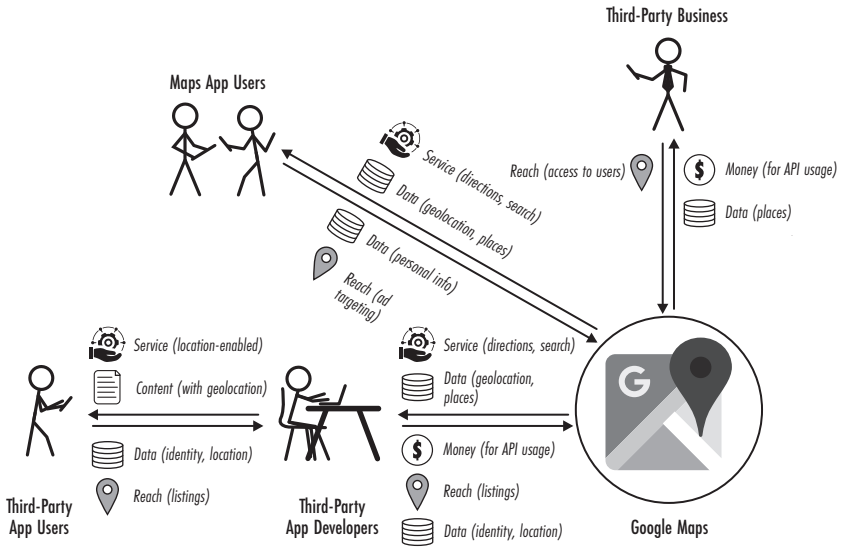


FIGURE 9.4 Google Maps Business Model in 2011

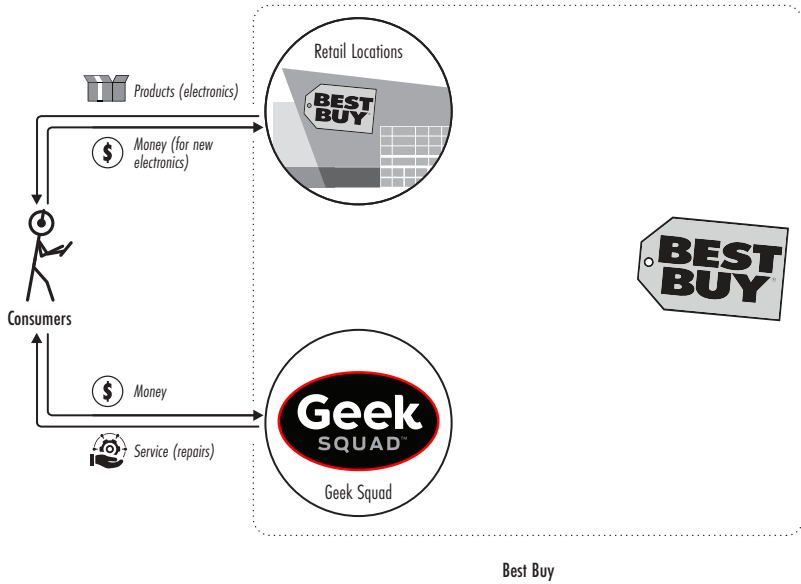


FIGURE 9.5 Best Buy Store Business Model in 2007

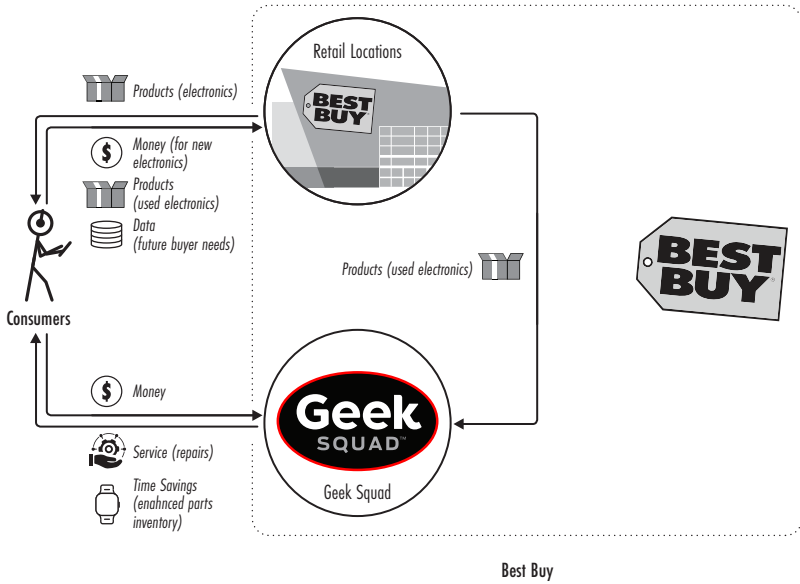


FIGURE 9.6 Best Buy Store Business Model in 2012

TABLE 10.1: Considerations for API Providers

<p>Public API Product Strategy</p>	<ul style="list-style-type: none"> • What consumers are you targeting with your API and why do they want/need it? • What is the vision for the capabilities offered by the API? • What value are you planning to deliver/capture? • Do you have internal alignment between your stakeholders and delivery teams? • What KPIs will you measure and track to optimize your products?
<p>Public API Launch Strategy</p>	<ul style="list-style-type: none"> • Do you have partners you want to launch with? • How and where will you market the API? • What functionality and features will be in the MVP?
<p>Pricing/ Finance Strategy</p>	<ul style="list-style-type: none"> • What is the business model for your API? • What type of pricing approach will you take? Tiered? Usage-based? Segmented? Free/freemium? • How does your ROI model account for the non-rival nature of your product? • Do you have internal alignment on investing to lower the cost of experiments?
<p>Developer Experience (DX)</p>	<ul style="list-style-type: none"> • How will developers discover the API? • How will your internal developers and business units make their APIs available? • How will you make the developer experience sticky yet seamless? • How will developers test your product and give you feedback? • What KPIs will you measure and track to optimize DX? • How will you communicate the need for future changes to the consumers of your APIs?

Continued on next page

TABLE 10.1: Considerations for API Providers, cont.

Persona Development & Use	<ul style="list-style-type: none">• Is there a difference between the users of your products and the buyers of your products?• What customer roles are influencers in the process of deciding to use and pay for your API products?• How do buyers see and quantify the value of your product when comparing your service to alternatives and substitutes?
Governance Model	<ul style="list-style-type: none">• How will you secure the API and protect your data?• What metrics are required?• How will changes be managed at the infrastructure level? At the product level?• How will your product and technology teams collaborate to align on and enforce a set of standards for your API products?

TABLE 10.2: The Do's and Don'ts of Serial Optionality

<p>Do's</p>	<p><i>DO commit to unbundling by default:</i> Always remember that maintaining a disciplined commitment to loosely coupled, decontextualized capabilities is a fundamental prerequisite to maintaining modularity, optionality, and the resulting speed that is necessary to adapt to changes in a volatile marketplace. Tightly coupled capabilities and monolithic applications will always result in calcification of your approach to a market and render you ripe for disruption by a nimble player.</p>
<p>Don'ts</p>	<p><i>DON'T engage in framing unbundled capabilities as exclusively internal or external:</i> Don't forget that framing capabilities as exclusively and forever for internal use cases will not only lock your enterprise out of potential asymmetric benefit from options that could be exploited in unforeseen market opportunities but also raise the probability that they won't be sufficiently secured to prevent an illicit breach by malicious insiders.</p>
<p>Associated Unbundling Methods</p>	<p><i>Optionality through APIs:</i> leverage new financial math and the high-margin power of non-rival products.</p>

<p>Do's</p>	<p><i>DO commit to being intentional when choosing which interfaces to control and expose:</i> Creating a discipline of mapping your value exchanges is a critical task for business and technology leaders to do together. Not only will this task help align the organization on the dynamics of the business model, but it will also force the organization to be thoughtful on which capabilities and interfaces to invest in and which to spin out or outsource.</p>
<p>Don'ts</p>	<p><i>DON'T allow business package design to be an afterthought:</i> Packaging and product design are best done in a single step. When digital products are designed and built from a perspective that is divorced from a go-to-market strategy, you're setting yourself up to have to choose between significant rework and leaving money on the table.</p>
<p>Associated Unbundling Methods</p>	<p><i>Opportunism through value dynamics:</i> approach APIs with a product mindset and leverage value dynamics.</p>

Continued on next page

TABLE 10.2: The Do's and Don'ts of Serial Optionality , cont.

Do's	<i>DO commit to lowering the cost of experiments:</i> Maintaining a “way-of-life” commitment to keeping the end-to-end cost of experimentation low is the key capability that allows for an approach to spread your bets across a wide range of options. When trials have low costs and cycle times, your organization will naturally align to data-driven approaches to develop market fit for its offerings. Conversely, when your cost and time to execute experiments are high, your enterprise will gravitate to experimenting only with a small number of options that are sponsored by those with status and power in the hierarchy.
Don'ts	<i>DON'T be afraid to shut experiments down:</i> In many enterprises, there is a culture where failure is not accepted. Organizations moving to an experimental, learning culture need to break that mental model. If an experiment proves its hypothesis wrong, it is still a successful experiment, not a failure. Make sure you don't spend too much time and money up front building scalability into the experiment assuming the hypothesis will be proven right. Instead, invest in making the experiment as accurately measurable as possible so you draw the right conclusion.
Associated Unbundling Methods	Optimization through feedback loops: create fast feedback loops by cheapening the bets; catalog negative results of experiments to support new financial math.



FIGURE C.1 The Three OOps Methods

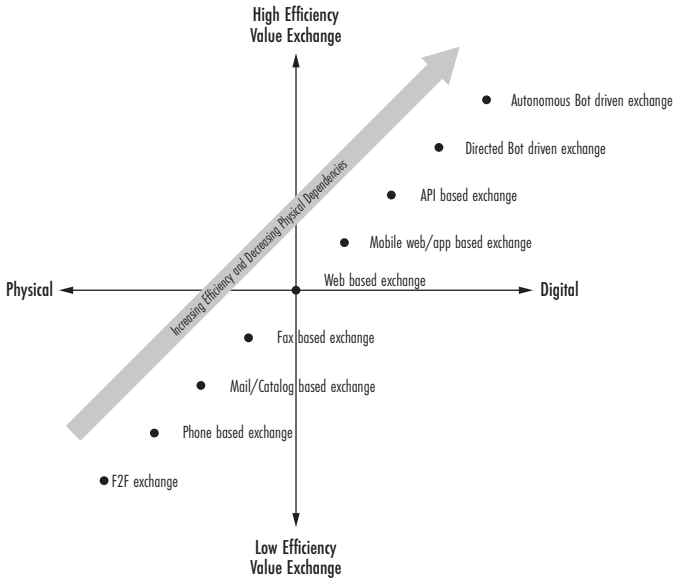


FIGURE C.2 Systematically Building Optionality

Bibliography

- Akamai. "Retail Attacks and API Traffic." [*State of the Internet*] / Security 5, no. 2. (February 2019). <https://www.akamai.com/site/it/documents/state-of-the-internet/state-of-the-internet-security-retail-attacks-and-api-traffic-report-2019.pdf>.
- "Amazon Web Services - Adam Selipsky at USI," YouTube video, 47:01, posted by USI Events, posted on September 6 2013. <https://www.youtube.com/watch?v=6PiyzyWXilk&t=300s>.
- "Amazon Web Services Launches." Amazon press release. March 14, 2006. <https://press.aboutamazon.com/2006/3/amazon-web-services-launches>.
- Andreessen, Marc. "Yo." Genius.com. Accessed March 8, 2024. <https://genius.com/Marc-andreessen-yo-annotated>.
- Andrzejek, David. "Becoming a Fintech: Capital One's Move From Mainframes to the Cloud." *CIO*, May 19, 2023. <https://www.cio.com/article/350288/becoming-a-fintech-capital-ones-move-from-mainframes-to-the-cloud.html>.
- Appleyard, Bryan. "Books That Helped to Change The World." *The Sunday Times*. July 19, 2009. <https://www.thetimes.co.uk/article/books-that-helped-to-change-the-world-qbhxgvg2kwh>.
- Arrington, Michael. "Facebook Launches Facebook Platform; They are the Anti-MySpace." *TechCrunch*. May 24, 2007. <https://TechCrunch.com/2007/05/24/facebook-launches-facebook-platform-they-are-the-anti-myspace/>.
- Arrington, Michael. "Facebook to Release a 'Like' Button for the Whole Darn Internet." *TechCrunch*. March 25, 2010. <https://TechCrunch.com/2010/03/25/facebook-to-release-a-like-button-for-the-whole-darn-internet/>.
- Associated Press, The. "Number of Active Users at Facebook Over the Years." Yahoo News. May 1, 2013. <https://news.yahoo.com/number-active-users-facebook-over-230449748.html>.
- "A Transformational Legacy." UCLA website. Accessed on March 8, 2024. <https://www.anderson.ucla.edu/about/our-history>.
- "Auto Innovators: New Data on Auto Industry's Economic Impact." Alliance for Automotive Innovation press release. November 30, 2022. <https://www.autosinnovate.org/posts/press-release/new-data-on-economic-impact>.
- Baldwin, Carliss Y., and Kim B. Clark. *Design Rules: The Power of Mudrarity*. Cambridge, MA: MIT Press, 2000.
- Baldwin, Carliss Y., and C. Jason Woodard. "The Architecture of Platforms: A Unified View." *Social Science Research Network*, January 1, 2008. <https://doi.org/10.2139/ssrn.1265155>.
- Barr, Jeff. "We Build Muck, So You Don't Have To." AWS News (blog). September 27, 2006. https://aws.amazon.com/blogs/aws/we_build_muck_s/.
- Bell, Melissa. "Google Engineer Steve Yegge Has His Jerry Maguire Moment." *The Washington Post*. October 14, 2011. https://www.washingtonpost.com/blogs/blogpost/post/google-engineer-steve-yegge-has-his-jerry-maguire-moment/2011/10/13/gIQATU1hkL_blog.html.
- Benzell, Seth G., Jonathan Hersh, and Marshall W. Van Alstyne. "How APIs Create Growth by Inverting the Firm." *Social Science Research Network*. September 30, 2022. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3432591.

- Berners-Lee, Tim. *Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web*. New York: HarperOne, 1999.
- Best Buy. *Best Buy Co., Inc.* Fiscal 2000 Annual Report. 2000. https://www.annualreports.com/HostedData/AnnualReportArchive/b/NYSE_BBY_2000.pdf.
- “Business Model Canvas.” Strategyzer (website). February 26, 2024. <https://www.strategyzer.com/library/the-business-model-canvas>.
- Carlier, Mathilde. “U.S. New and Used Car Sales 2010-2022.” Statista (website). August 29, 2023. <https://www.statista.com/statistics/183713/value-of-us-passenger-cas-sales-and-leases-since-1990/#:~:text=Sales%20of%20used%20light%20vehicles,and%20automobiles%20were%20sold%20here>.
- Castle, Scott. “Who Are Knowledge Workers and How Do We Enable Them?” *Forbes*. December 1, 2021. <https://www.forbes.com/sites/sisense/2021/12/01/who-are-knowledge-workers-and-how-do-we-enable-them/?sh=19be99296018>.
- Christensen, Clayton M. *The Innovator’s Dilemma: When New Technologies Cause Great Firms to Fail*. Boston, MA: Harvard Business School Press, 1997.
- Christensen, Clayton M., and Andy Jassy. “60. Overcoming the Capitalist’s Dilemma, with Andy Jassy, CEO of Amazon Web Services.” *The Disruptive Voice* podcast, 53:04. September 1, 2020. <https://thedisruptivevoice.libsyn.com/60-overcoming-the-capitalists-dilemma-with-andy-jassy-ceo-of-amazon-web-services>.
- Collins, Jim. “Return on Luck.” *JimCollins.com*. Accessed on March 8, 2024. <https://www.jimcollins.com/concepts/return-on-luck.html>.
- Collins, Jim, and Morten T. Hansen. “How to Manage Through Chaos.” *JimCollins.com*. October 2011. https://www.jimcollins.com/article_topics/articles/how-to-manage-through-chaos.html#articletop.
- Conway, Melvin E. “How Do Committees Invent.” *Datamation*. April 1968. https://web.archive.org/web/20190919111512/http://melconway.com/Home/Committees_Paper.html.
- Crosby, Jackie. “One Man’s Force of Will Built a Retailing Empire.” *StarTribune*. May 19, 2012. <https://www.startribune.com/one-man-s-force-of-will-built-a-retailing-empire/152098405/>.
- Curry, David. “Slack Revenue and Usage Statistics (2024).” *Business of Apps* (website). January 15, 2024. <https://www.businessofapps.com/data/slack-statistics/>.
- DevExchange, Capital One. “Behind the Scenes at Capital One DevExchange—Capital One Tech—Medium.” *Medium*. February 28, 2020. <https://medium.com/capital-one-tech/behind-the-scenes-at-capital-one-devexchange-2b0702f2399b>.
- Dixon, Stacy Jo. “Annual Revenue and Net Income Generated by Meta Platforms from 2007 to 2023.” *Statista* (website). March 4, 2024. <https://www.statista.com/statistics/277229/facebook-annual-revenue-and-net-income/>.
- Doyle, Noah. “Official Google Maps API Blog: Google Maps for Enterprise.” *Google Maps API* (blog), June 14, 2006. <https://googlemapsapi.blogspot.com/2006/06/google-maps-for-enterprise.html>.
- Drucker, Peter F. “The Theory of the Business.” *Harvard Business Review*. September-October 1994. <https://hbr.org/1994/09/the-theory-of-the-business>.
- “Facebook Reports Fourth Quarter and Full Year 2019 Results.” *Meta Investor Relations* (website). January 29, 2020. <https://investor.fb.com/investor-news/press-release-details/2020/Facebook-Reports-Fourth-Quarter-and-Full-Year-2019-Results/default.aspx>.
- “Facebook Unveils Facebook Ads.” *Meta* (website). November 6, 2007. <https://about.fb.com/news/2007/11/facebook-unveils-facebook-ads/>.
- “Facebook’s Sheryl Sandberg.” *Forbes*. August 20, 2009. <https://www.forbes.com/forbes/2009/0907/power-women-09-facebook-sheryl-sandberg.html?sh=3e8ec0963873>.

- Forsgren, Nicole, Jez Humble, and Gene Kim. *Accelerate: The Science of Lean Software and DevOps: Building and Scaling High Performing Technology Organizations*. Portland, OR: IT Revolution Press, 2018.
- Fox, Justin. "How to Succeed in Business by Bundling—and Unbundling." *Harvard Business Review*. November 2, 2014. <https://hbr.org/2014/06/how-to-succeed-in-business-by-bundling-and-unbundling>.
- Gibbs, Samuel. "Flickr Bought by SmugMug as Yahoo Breakup Begins." *The Guardian*. April 23, 2018. <https://www.theguardian.com/technology/2018/apr/23/flickr-bought-by-smugmug-yahoo-breakup>.
- Giles, Martin. "Exclusive: Banking Giant Capital One Enters B2B Software Industry With Launch of New Business." *Forbes*. June 1, 2022. <https://www.forbes.com/sites/martingiles/2022/06/01/capitsl-one-enters-b2b-software-industry/?sh=548229f2d6b1>.
- Gillen, Al, Arnal Dayaratna, Jevin Jensen, and Katie Norton. "VMware Explores Its Way into New Market Dynamics." IDC. September 6, 2022. <https://www.idc.com/getdoc.jsp?containerId=lcUS49661222>.
- Google. "Our Approach to Search." Google (webpage). Accessed March 18, 2024. <https://www.google.com/search/howsearchworks/our-approach/>.
- Gordijn, Jaap, and Hans Akkermans. "Designing and Evaluating E-Business Models." *Intelligent Systems*, IEEE 16 (2001): 11–17. <https://ieeexplore.ieee.org/document/941353>.
- Gray, Jim. "A Conversation with Werner Vogels." *acmqueue* 4, no 4 (June 30, 2006). <https://queue.acm.org/detail.cfm?id=1142065>.
- Hagel, John, III. "Out of the Box: Strategies for Achieving Profits Today and Growth Tomorrow through Web Services." JohnHagel.com (blog). Accessed March 8, 2024. <https://www.johnhagel.com/outofthebox/>.
- Hagel, John, III. "Unbundling the Corporation." *Harvard Business Review*. August 1, 2014. <https://hbr.org/1999/03/unbundling-the-corporation>.
- Harford, Tim. "Why Didn't Electricity Immediately Change Manufacturing?" BBC World Service. August 20, 2017. <https://www.bbc.com/news/business-40673694>.
- Hawkins, Andrew J. "Uber Ends the Year in the Black for the First Time Ever." *The Verge*. February 8, 2024. <https://www.theverge.com/2024/2/8/24065999/uber-earnings-profitable-year-net-income>.
- "Jeff Bezos at MIT Amazon - Earth's Most Customer-Centric Company." YouTube video, 1:21:54, posted by MIT Video Production, posted on April 13, 2018. <https://www.youtube.com/watch?v=J2xGBIT0cqY>.
- "John Pemberton, Coca-Cola." Lemelson-MIT (website). Accessed on March 8, 2024. <https://lemelson.mit.edu/resources/john-pemberton>.
- Kirkpatrick, David. "Facebook's Plan to Hook Up the World." *CNN Money*. May 29, 2007. <https://money.cnn.com/2007/05/24/technology/facebook.fortune/>.
- Koetsier, John. "Flickr Founder Stewart Butterfield's New Slack Signed Up 8,000 Companies in 24 Hours." *VentureBeat*. August 15, 2013. <https://venturebeat.com/business/flickr-founder-stewart-butterfields-new-slack-signed-up-8000-companies-in-24-hours/>.
- Kolakowski, Mark. "Slack IPO: What You Need to Know." Investopedia. June 20, 2019. <https://www.investopedia.com/slack-ipo-need-to-know-4685622>.
- "Largest Automakers by Market Capitalization." CompaniesMarketCap (website). Accessed March 11, 2024. <https://companiesmarketcap.com/automakers/largest-automakers-by-market-cap/>.
- Licklider, J. C. R. *Libraries of the Future*. Cambridge, MA: MIT Press, 1965.
- McKinley, Dan. "Design for Continuous Experimentation." McFunley.com (website). Accessed on March 8, 2024. <https://mcfunley.com/continuous-experimentation/>.

- McLarty, Matt. "The Emerging API Opportunity with Fara Ashiru Jituboh," API's Unplugged (podcast). Produced by Mulesoft. 2022. <https://soundcloud.com/mulesoft/apis-unplugged-s2-e8-the-emerging-api-opportunity-with-fara-ashiru-jituboh>.
- Metz, Cade. "How Yahoo Spawned Hadoop, the Future of Big Data." *Wired*. October 18, 2011. <https://www.wired.com/2011/10/how-yahoo-spawned-hadoop/>.
- Milch, Randy. "Uber GC Sallee Yoo on Comfort Zones and Seizing New Opportunities." In-House Legal (podcast). February 16, 2017. <https://legaltalknetwork.com/podcasts/in-house-legal/2017/02/uber-gc-salle-yoo-comfort-zones-seizing-new-opportunities/>.
- Miller, Ron, and Alex Wilhelm. "Salesforce Buys Slack in a \$27.7B Megadeal." *TechCrunch*. December 3, 2020. <https://TechCrunch.com/2020/12/01/salesforce-buys-slack/>.
- Murphy, Bill, Jr. "Want to Succeed in Life? Ask for Forgiveness, Not Permission." *Inc.com*. January 5, 2021. <https://www.inc.com/bill-murphy-jr/9-words-to-live-by-its-always-better-to-beg-forgiven>.
- O'Reilly, Tim. "Amazon Web Services API." O'Reilly Network. July 18, 2002. <https://web.archive.org/web/20020802192606/http://www.oreillynet.com/pub/wlg/1707>.
- O'Reilly, Tim. "The Network Really Is the Computer." O'Reilly Network. June 8, 2000. https://web.archive.org/web/20020618063515/http://www.oreillynet.com/pub/a/network/2000/06/09/java_keynote.html?page=1.
- Parker, Geoffrey G., Marshall W. Van Alstyne, and Sangeet Paul Choudary. *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You*. New York: Norton & Company, 2017.
- Payne, Kenneth Wilcox. "A \$10,000,000 'Accident.'" *Popular Science Monthly*. August 1927. https://books.google.ca/books?id=ICoDAAAAMBAJ&q=%22Marvin+Pipkin%22+awarded+the+Charles+A.+Coffin+award&pg=PA24&redir_esc=y#v=snippet&q=%22Marvin%20Pipkin%22%20awarded%20the%20Charles%20A.%20Coffin%20award&f=false.
- Perez, Juan Carlos. "Yahoo Opens Up Web Mail APIs." *ComputerWorld*. March 29, 2007. <https://www.computerworld.com/article/2817862/yahoo-opens-up-web-mail-apis.html>.
- "Peter Senge." Vanguard: Beyond Command and Control (website). Accessed March 8, 2024. <https://beyondcommandandcontrol.com/library/whos-who-system-thinkers/peter-senge/>.
- Roof, Katie, and Liana Baker. "Goldman-Backed Startup Optimizely to Be Bought by Episerver." *Bloomberg*. September 3, 2020. <https://www.bloomberg.com/news/articles/2020-09-03/goldman-backed-startup-optimizely-to-be-acquired-by-episerver>.
- Scott, Kevin. "When Your Teach Debt Comes Due." *LinkedIn* article. July 20, 2017. <https://www.linkedin.com/pulse/when-your-tech-debt-comes-due-kevin-scott/>.
- SE Daily. "Engineering Transformation at Scale with Chris Dillon." *Software Engineering Daily*. August 31, 2023. <https://softwareengineeringdaily.com/2023/08/31/engineering-transformation/>.
- Shrivastava, Rashi. "LaunchDarkly Raises \$200 Million, Hits \$3 Billion Valuation to Prevent Technical Catastrophes." *Forbes*. August 10, 2021. <https://www.forbes.com/sites/rashishrivastava/2021/08/10/launchdarkly-raises-200-million-at-3-billion-valuation/?sh=14db2ba24381>.
- Son, Hugh. "Here's Why Capital One Is Buying Discover in the Biggest Proposed Merger of 2024." *CNBC*. February 21, 2024. <https://www.cnbc.com/2024/02/21/why-capital-one-is-buying-discover-in-the-biggest-merger-yet-of-2024.html>.
- Statista. "Distribution of Unbanked Population 2011-2021, by Region," Statista (website). August 7, 2023. <https://www.statista.com/statistics/553180/distribution-of-unbanked-population-by-region/>.
- "Steve-Yegge-Google-Platform-Rant." *Gist.Github.com*. Posted by Kislayverma. Posted 2019. <https://gist.github.com/kislayverma/d48b84db1ac5d737715e8319bd4dd368>.

- “Stevey’s Google Platforms Rant.” Gist.Github.com. Posted by Chitchcock. Accessed March 8, 2024. <https://gist.github.com/chitchcock/1281611>.
- Taleb, Nassim Nicholas. *Antifragile: Things That Gain from Disorder*. New York: Random House, 2014.
- Taleb, Nassim Nicholas. “Understanding Is a Poor Substitute for Convexity (Antifragility).” Edge. December 12, 2012. https://www.edge.org/conversation/nassim_nicholas_taleb-understanding-is-a-poor-substitute-for-convexity-antifragility.
- Taylor, Bret. “The World Is Your JavaScript-Enabled Oyster.” Google (blog). June 29, 2005. https://googleblog.blogspot.com/2005/06/world-is-your-javascript-enabled_29.html.
- “Uber (UBER)—Market Capitalization.” CompaniesMarketCap.com. Accessed March 11, 2024. <https://companiesmarketcap.com/uber/marketcap/>.
- University of Virginia Press. “Founders Online: Advice to a Young Tradesman, [21 July 1748],” n.d. <https://founders.archives.gov/documents/Franklin/01-03-02-0130>.
- Upbin, Bruce. “Salesforce to Buy ExactTarget for \$2.5 Billion.” *Forbes*. June 4, 2013. <https://www.forbes.com/sites/bruceupbin/2013/06/04/salesforce-to-buy-exacttarget-for-2-5-billion/?sh=197a1a74cfcc>.
- Vlahovic, Tanya. “Celebrating 20 Years: eBay’s New APIs Enable Developers to Create Modern Buying and Selling Experiences.” eBay Tech Blog. July 13, 2020. <https://innovation.ebayinc.com/tech/engineering/celebrating-20-years-ebays-new-apis-enable-developers-to-create-modern-buying-and-selling-experiences/>.
- Zara, Christopher. “How Facebook’s ‘Like’ Button Hijacked Our Attention and Broke the 2010’s.” Fast Company. December 18, 2019. <https://www.fastcompany.com/90443108/how-facebooks-like-button-hijacked-our-attention-and-broke-the-2010s>.

Notes

Introduction

1. Arrington, “Facebook Launches Facebook Platform.”
2. Christensen, *The Innovator’s Dilemma*, 296.

Chapter 1

1. Harford, “Why Didn’t Electricity Immediately Change Manufacturing?”
2. Harford, “Why Didn’t Electricity Immediately Change Manufacturing?”
3. Bell, “Google Engineer Steve Yegge Has His Jerry Maguire Moment.”
4. “Steve-Yegge-Google-Platform-Rant.”
5. Bell, “Google Engineer Steve Yegge Has His Jerry Maguire Moment.”
6. “Steve-Yegge-Google-Platform-Rant.”
7. “Steve-Yegge-Google-Platform-Rant.”
8. “Steve-Yegge-Google-Platform-Rant.”
9. “Steve-Yegge-Google-Platform-Rant.”
10. “Steve-Yegge-Google-Platform-Rant.”
11. O’Reilly, “The Network Really Is the Computer.”
12. O’Reilly, “Amazon Web Services API.”
13. O’Reilly, “Amazon Web Services API.”
14. O’Reilly, “Amazon Web Services API.”
15. O’Reilly, “Amazon Web Services API.”
16. O’Reilly, “Amazon Web Services API.”
17. Christensen and Jassy, “60. Overcoming the Capitalist’s Dilemma.”
18. Christensen and Jassy, “60. Overcoming the Capitalist’s Dilemma.”
19. Christensen and Jassy, “60. Overcoming the Capitalist’s Dilemma.”
20. Christensen and Jassy, “60. Overcoming the Capitalist’s Dilemma.”
21. Google, “Our Approach to Search.”
22. Taylor, “The World Is Your JavaScript-Enabled Oyster.”
23. Interview with Thor Mitchell, February 2022.
24. Doyle, “Official Google Maps API Blog: Google Maps for Enterprise.”
25. Interview with Thor Mitchell, February 2022.
26. Interview with Thor Mitchell, February 2022.

Chapter 2

1. “John Pemberton, Coca-Cola.”
2. Crosby, “One Man’s Force of Will Built a Retailing Empire.”

3. Koetsier, “Flickr Founder Stewart Butterfield’s New Slack Signed Up 8,000 Companies in 24 Hours.”
4. Licklider, *Libraries of the Future*, 17.
5. “Business Model Canvas.”
6. Interview with Geoff McCormack, March 2022.
7. Interview with Geoff McCormack, March 2022.

Chapter 3

1. Baldwin and Woodard, *The Architecture of Platforms*, 19–20.
2. Appleyard, “Books That Helped to Change The World.”
3. Taleb, “Understanding Is a Poor Substitute for Convexity (Antifragility).”
4. Baldwin and Woodard, *The Architecture of Platforms*, 18–19.
5. Taleb, “Understanding Is a Poor Substitute for Convexity (Antifragility).”
6. “Amazon Web Services Launches.”
7. Taleb, *Antifragile*, 182.
8. Taleb, “Understanding Is a Poor Substitute for Convexity (Antifragility).”
9. Taleb, *Antifragile*, 181.
10. Taleb, “Understanding Is a Poor Substitute for Convexity (Antifragility).”
11. Taleb, “Understanding Is a Poor Substitute for Convexity (Antifragility).”
12. Bell, “Google Engineer Steve Yegge Has His Jerry Maguire Moment.”
13. Interview with Esat Sezer, February 2022.
14. Baldwin and Woodard, *The Architecture of Platforms*, 21.
15. Baldwin and Woodard, *The Architecture of Platforms*, 21.
16. Baldwin and Woodard, *The Architecture of Platforms*, 21.
17. Baldwin and Woodard, *The Architecture of Platforms*, 21.
18. Taleb, *Antifragile*, 180.

Chapter 4

1. “Business Model Canvas.”
2. “Facebook Reports Fourth Quarter and Full Year 2019 Results.”
3. The Associated Press, “Number of Active Users at Facebook Over the Years.”
4. “Facebook’s Sheryl Sandberg.”
5. “Facebook’s Sheryl Sandberg.”
6. Dixon, “Annual Revenue and Net Income Generated by Meta Platforms from 2007 to 2023.”
7. Drucker, “The Theory of the Business.”
8. Christensen, *The Innovator’s Dilemma*, 296.
9. Gordijn and Akkermans, “Designing and Evaluating E-Business Models.”
10. Kirkpatrick, “Facebook’s Plan to Hook Up the World.”
11. “Facebook Unveils Facebook Ads.”
12. Zara, “How Facebook’s ‘Like’ Button Hijacked Our Attention and Broke the 2010’s.”
13. Arrington, “Facebook to Release a ‘Like’ Button for the Whole Darn Internet.”

Chapter 5

1. Payne, “A \$10,000,000 ‘Accident.’”
2. Payne, “A \$10,000,000 ‘Accident.’”
3. “Jeff Bezos at MIT Amazon - Earth’s Most Customer-Centric Company.”

4. “Peter Senge.”
5. McKinley, “Design for Continuous Experimentation.”

Chapter 6

1. “Auto Innovators: New Data on Auto Industry’s Economic Impact.”
2. Gray, “A Conversation with Werner Vogels.”
3. Gray, “A Conversation with Werner Vogels.”
4. Gray, “A Conversation with Werner Vogels.”
5. Carlier, “U.S. New and Used Car Sales 2010-2022.”
6. SE Daily, “Engineering Transformation at Scale with Chris Dillon.”
7. Interview with David Rice, February 11, 2022.
8. Interview with David Rice, February 11, 2022.
9. Conway, “How Do Committees Invent.”
10. Interview with David Rice, February 11, 2022.
11. Interview with David Rice, February 11, 2022.
12. Interview with David Rice, February 11, 2022.
13. Interview with David Rice, February 11, 2022.
14. Interview with David Rice, February 11, 2022.
15. Scott, “When Your Teach Debt Comes Due.”
16. Interview with David Rice, February 11, 2022.
17. Interview with David Rice, February 11, 2022.
18. Interview with David Rice, February 11, 2022.
19. Interview with David Rice, February 11, 2022.
20. Interview with Steve Stone, March 7, 2022.
21. Interview with Steve Stone, March 7, 2022.
22. Interview with Steve Stone, March 7, 2022.
23. Interview with Steve Stone, March 7, 2022.
24. Interview with Steve Stone, March 7, 2022.
25. Interview with Steve Stone, March 7, 2022.
26. Interview with Steve Stone, March 7, 2022.
27. Interview with Steve Stone, March 7, 2022.
28. Interview with Steve Stone, March 7, 2022.
29. Interview with Steve Stone, March 7, 2022.
30. Interview with Steve Stone, March 7, 2022.
31. Interview with Steve Stone, March 7, 2022.

Chapter 7

1. Gillen et al., “VMware Explores Its Way into New Market Dynamics.”
2. Castle, “Who Are Knowledge Workers and How Do We Enable Them?”
3. O’Reilly, “Amazon Web Services API.”
4. Vlahovic, “Celebrating 20 Years.”
5. “Amazon Web Services - Adam Selipsky at USI.”
6. “Steve-Yegge-Google-Platform-Rant.”
7. Interview with Esat Sezer, February 2022.
8. Interview with Esat Sezer, February 2022.
9. Interview with Esat Sezer, February 2022.
10. Interview with Esat Sezer, February 2022.

11. Interview with Esat Sezer, February 2022.
12. Interview with Esat Sezer, February 2022.
13. Interview with Esat Sezer, February 2022.
14. Interview with Esat Sezer, February 2022.
15. Interview with Esat Sezer, February 2022.
16. “A Transformational Legacy.”
17. Interview with Brian Scwheen and Denny Pichardo, December 2022.
18. Interview with Brian Scwheen and Denny Pichardo, December 2022.
19. Interview with Brian Scwheen and Denny Pichardo, December 2022.
20. Interview with Brian Scwheen and Denny Pichardo, December 2022.
21. Interview with Brian Scwheen and Denny Pichardo, December 2022.
22. Interview with Brian Scwheen and Denny Pichardo, December 2022.
23. Interview with Brian Scwheen and Denny Pichardo, December 2022.
24. Interview with Brian Scwheen and Denny Pichardo, December 2022.
25. Interview with Brian Scwheen and Denny Pichardo, December 2022.
26. Interview with Brian Scwheen and Denny Pichardo, December 2022.
27. Interview with Brian Scwheen and Denny Pichardo, December 2022.
28. Interview with Brian Scwheen and Denny Pichardo, December 2022.
29. Interview with Brian Scwheen and Denny Pichardo, December 2022.
30. Interview with Brian Scwheen and Denny Pichardo, December 2022.
31. Forsgren, Humble, and Kim, *Accelerate*, 47–48.

Chapter 8

1. Collins and Hansen, “How to Manage Through Chaos.”
2. Collins, “Return on Luck”
3. Barr, “We Build Muck, So You Don’t Have To.”
4. Barr, “We Build Muck, So You Don’t Have To.”
5. Metz, “How Yahoo Spawned Hadoop, the Future of Big Data.”
6. Perez, “Yahoo Opens Up Web Mail APIs.”
7. Interview with Saurabh Sahni, March 4, 2022.
8. Interview with Saurabh Sahni, March 4, 2022.
9. Interview with Saurabh Sahni, March 4, 2022.
10. Interview with Saurabh Sahni, March 4, 2022.
11. Curry, “Slack Revenue and Usage Statistics (2024).”
12. Interview with Saurabh Sahni, March 4, 2022.
13. Interview with Saurabh Sahni, March 4, 2022.
14. Interview with Saurabh Sahni, March 4, 2022.
15. Interview with Saurabh Sahni, March 4, 2022.
16. Interview with Saurabh Sahni, March 4, 2022.
17. Interview with Saurabh Sahni, March 4, 2022.
18. Interview with Saurabh Sahni, March 4, 2022.
19. Interview with Saurabh Sahni, March 4, 2022.
20. Gibbs, “Flickr Bought by SmugMug as Yahoo Breakup Begins.”
21. Kolakowski, “Slack IPO: What You Need to Know.”
22. Miller and Wilhelm, “Salesforce Buys Slack in a \$27.7B Megadeal.”
23. DevExchange, Capital One, “Behind the Scenes at Capital One DevExchange—Capital One Tech —Medium.”
24. Andrzejek, “Becoming a Fintech: Capital One’s Move From Mainframes to the Cloud.”

25. “Steve-Yegge-Google-Platform-Rant.”
26. Giles, “Exclusive: Banking Giant Capital One Enters B2B Software Industry.”
27. Giles, “Exclusive: Banking Giant Capital One Enters B2B Software Industry.”
28. Giles, “Exclusive: Banking Giant Capital One Enters B2B Software Industry.”
29. Giles, “Exclusive: Banking Giant Capital One Enters B2B Software Industry.”
30. Son, “Here’s Why Capital One Is Buying Discover in the Biggest Proposed Merger of 2024.”
31. Roof and Baker, “Goldman-Backed Startup Optimizely to Be Bought by Episerver.”
32. Shrivastava, “LaunchDarkly Raises \$200 Million.”
33. Upbin, “Salesforce to Buy ExactTarget for \$2.5 Billion.”

Chapter 9

1. Best Buy, *Best Buy Co., Inc. Fiscal 2000 Annual Report*.
2. Interview with Ian Kelly, March 2022.
3. Interview with Ian Kelly, March 2022.
4. Interview with Ian Kelly, March 2022.

Chapter 10

1. “Steve-Yegge-Google-Platform-Rant.”
2. Hagel, “Unbundling the Corporation.”; Hagel, “Out of the Box.”
3. Parker, Van Alstyne, and Choudary, *Platform Revolution*.
4. Benzell et al., “How APIs Create Growth by Inverting the Firm.”
5. Benzell et al., “How APIs Create Growth by Inverting the Firm”
6. Fox, “How to Succeed in Business by Bundling – and Unbundling.”
7. Andreessen, “Yo.”
8. Statista, “Distribution of Unbanked Population 2011-2021, by Region.”
9. McLarty, “The Emerging API Opportunity with Fara Ashiru Jituboh.”
10. Benzell et al., “How APIs Create Growth by Inverting the Firm.”
11. Interview with Sanjna Verma, March 17, 2022.
12. Milch, “Uber GC Sallee Yoo on Comfort Zones and Seizing New Opportunities.”
13. Murphy, “Want to Succeed in Life? Ask for Forgiveness, Not Permission.”
14. “Stevey’s Google Platforms Rant.”
15. Fox, “How to Succeed in Business by Bundling – and Unbundling.”
16. “Largest Automakers by Market Capitalization.”; “Uber (UBER) - Market Capitalization.”
17. “Largest Automakers by Market Capitalization.”; “Uber (UBER) - Market Capitalization.”
18. University of Virginia Press, “Founders Online: Advice to a Young Tradesman.”
19. Hawkins, “Uber Ends the Year in the Black for the First Time Ever.”

Chapter 11

1. Benzell et al., “How APIs Create Growth by Inverting the Firm.”
2. Berners-Lee, *Weaving the Web*, 157–158.

Conclusion

1. Akamai, “Retail Attacks and API Traffic.”

Acknowledgments

First and foremost, we want to offer our sincere thanks and gratitude to the digital leaders who made time in their hectic schedules to talk with us about their experiences and insights. We never wanted to write a book that was effectively us pontificating from on high about our perspectives on APIs and digital transformation. From the beginning, we had the aim to engage leaders from around the globe and across multiple industries both to identify the biggest obstacles to creating value and to get at the root of what works in successful transformations. Without the time, engagement, and amazing insights from our interviewees, we would not have been able to create this work.

While most of the interviewees are credited in the book, some do not have full sections dedicated to their stories and insights. Our genuine thanks go out to Jason Beyer, Lorinda Brandon, John D’Emic, Darren Goodson, James Higginbotham, Fara Ashiru Jituboh, Mia Jordan, Ian Kelly, Kevin Matheny, Geoff McCormack, Thor Mitchell, Ronnie Mitra, Mark O’Neill, Denny Pichardo, David Rice, Saurabh Sahni, Brian Schween, Esat Sezer, Steve Stone, and Sanjna Verma.

As this book is not only an output of the interviews but also a product of the life and work experiences we’ve had in our educational and professional careers, there are thousands of people who’ve helped us along the way to get to the point where we’re now qualified to write this book. Parents, teachers, mentors, managers, peers, colleagues, friends, and staff we’ve had the privilege to lead have all contributed to making us the professionals we are today. Without a vibrant community with which to engage, we would not have been able to create this work.

We'd also like to thank Gene Kim; our editors, Anna Noak and Leah Brown; and the staff at IT Revolution for the support they gave and the belief they had in helping us develop and publish this work.

Last, without question, our spouses, Kathleen Kelly and Chris Cochran, not only created the space for us to develop this work but also supported us through decades of professional work and development. While neither of them may have helped build our technical acumen, more importantly they helped to form and temper our curious nature and apply it in the context of teams from where real innovation and insight springs.

About the Authors

Stephen Fishman (Fish) is the global practice lead for MuleSoft's success Architect practice. He is a practicing technologist who brings creativity, rigor, and a human-centric lens to problem-solving. Known as an expert in aligning technology and business strategy, Stephen places a premium on pushing business and technology leaders to embrace iteration and the critical need to collaborate across disciplines. Throughout his career, Stephen has consulted with organizations desiring to transform their technology-based offerings to better meet the needs of organizations and the people they serve. In addition to consulting with large organizations, Stephen is an in-demand speaker and adviser. Stephen has worked in retail, healthcare, financial services, consumer goods, travel, government, and the nonprofit sector with a wide variety of global organizations to mature their technology and design capabilities. He lives in Atlanta with his family and when he's not working can be found biking on the many trails in Georgia.

Matt McLarty is the chief technology officer for Boomi. He works with organizations around the world to help them digitally transform using a composable approach. He is an active member of the global API community; has led global technical teams at Salesforce, IBM, and CA Technologies; and started his career in financial technology. Matt is an internationally known expert on APIs, microservices, and integration. He is coauthor of the O'Reilly books *Microservice Architecture* and *Securing Microservice APIs* and cohost of the API Experience podcast. He lives with his wife and two sons in Vancouver, BC.

How to Contact Us

Both Matt and Stephen are excited and eager to be of service to curious practitioners and leaders from every sector of business and public service. We're relentless problem solvers and would be happy to hear feedback from anyone who's interested to engage in positive dialogue with us. If you want to reach out, feel free to drop us a line via LinkedIn (www.linkedin.com/in/mattmc-lartybc/, www.linkedin.com/in/stephenhfishman/), or through our publisher, IT Revolution (itrevolution.com/).