

Creating Channels with Application Programming Interfaces



APIs

A Strategy Guide

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*Daniel Jacobson,
Greg Brail & Dan Woods*

APIs: A Strategy Guide

Programmers used to be the only people excited about APIs, but now a growing number of companies see them as a hot new product channel. This concise guide describes the tremendous business potential of APIs, and demonstrates how you can use them to provide valuable services to clients, partners, or the public via the Internet. You'll learn all the steps necessary for building a cohesive API business strategy from experts in the trenches.

Facebook and Twitter APIs continue to be extremely successful, and many other companies find that API demand greatly exceeds website traffic. This book offers executives, business development teams, and other key players a complete roadmap for creating a viable API product.

- Learn about the rise of APIs and why your business might need one
- Understand the roles of asset owners, providers, and developers in the API value chain
- Build strategies for designing, implementing, and marketing your product
- Devise an effective process for security and user management
- Address legal issues, such as rights management and terms of use
- Manage traffic and user experience with a reliable operating model
- Determine the metrics you need to measure your API's success

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Daniel Jacobson, Greg Brail, and Dan Woods

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APIs: A Strategy Guide

by Daniel Jacobson, Greg Brail, and Dan Woods

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Preface

Conventions Used in This Book

The following typographical conventions are used in this book:

Italic

Indicates new terms, URLs, email addresses, filenames, and file extensions.

Constant width

Used for program listings, as well as within paragraphs to refer to program elements such as variable or function names, databases, data types, environment variables, statements, and keywords.

Constant width bold

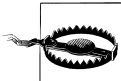
Shows commands or other text that should be typed literally by the user.

Constant width italic

Shows text that should be replaced with user-supplied values or by values determined by context.



This icon signifies a tip, suggestion, or general note.



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Sam Ramji gave us his time and thought leadership in his interviews and reviews. Brian Mulloy also gave of his time and talents in this way. Harold Neal broke away from a busy schedule at the Center for American Progress to participate in interviews and reviews, and Shanley Kane gave us her insight on API community management. We particularly want to thank Chet Kapoor of Apigee for his perspective on the market and his support for the project.

We’d also like to thank the folks from the front lines of the API world who let us interview them, including Derek Willis and Derek Gottfrid, both of whom worked on *The New York Times*’ API, Steve Smith and Chris Patti from AccuWeather, Tim Madewell from Innotas, Jason Sirota at XO Group Inc., and Kin Lane, the API evangelist himself. To all of you, your quotes bring this book to life and bring theory right down to the trenches of execution.

We would like to express our gratitude to Sophie Jasson-Holt, Deb Cameron, Dan Safarik, Deb Gabriel, and Henry Coupet from the Evolved Media team, all of whom provided the editorial and project management support that helped bring the book to life quickly and to a high degree of quality.

Daniel would also like to thank Michael Hart who started the Netflix API program and whose impact is implicitly referenced throughout this book in various Netflix examples. We’d also like to thank Zach Brand, who provided us with recent images and stats for NPR’s API.

Although this book is largely drawn from our personal experiences in the API world, those experiences are enriched by our interactions with many great leaders in this space.

In particular, all of us have and continue to work with some of the brightest, most talented people in the industry, all of whom have influenced this book in subtle and not-so-subtle ways. Moreover, our perspectives have morphed over time due to some of the influential writings, presentations, informal conversations, and other interactions with myriad others who have pushed API innovation to where it is today. To all of these people (you know who you are), thank you for your indirect contributions and we look forward to seeing how this field develops moving forward.

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The API Opportunity

APIs are a big deal and they are getting bigger. Pioneering companies such as Google, Facebook, Apple, and Twitter have exposed amazing technological solutions to the public, transforming existing businesses and creating new industries. Central to these companies' successes are the APIs that link people and their computing devices to the underlying platforms that power each business and that tie these companies together behind the scenes.

The world is already changing. Consider the following examples:

- Salesforce.com built a large, rich partner ecosystem by opening core services for partners to innovate and extend. Today, more traffic comes through the Salesforce API than through its website. As of mid-2011 more than 60 percent of the traffic to Salesforce.com comes through APIs.
- Amazon opened its core computing infrastructure as Amazon Web Services (AWS), accessed via number of APIs, and now serves more bandwidth through AWS than through all of its global storefronts combined.
- Twitter is the most visible example of a business almost entirely based on an API and an ecosystem of developer applications.
- Netflix has completely reinvented how we consume movies and TV shows with streaming to hundreds of different devices, upending not just the video rental industry but also impacting large adjacent markets such as cable TV. APIs allow Netflix to support a multitude of devices in an affordable manner.
- NPR has infused its API into the engineering culture of the digital media division. The API drives the website, mobile apps, and all other forms of distribution and syndication for the company. The API has also transformed the company's relationship with its member stations and the way that NPR shares content with them.

Now consider these industry trends:

- Smartphone sales passed new PC sales in early 2011, and Morgan Stanley predicts that by the end of 2012, there will be more connected mobile devices in the world than PCs.

- CTIA (the wireless industry association) has determined that there are already more wireless devices in the United States than people.
- Analysts are competing to predict how many mobile devices will exist in the future. The GSMA (another wireless industry association) predicts that there will be 20 billion connected mobile devices by 2020, and Ericsson CEO Hans Vestberg predicts 50 billion. Meanwhile, Marthin De Beer, Senior Vice President of Cisco's Emerging Technologies Group, projects that count to be over a trillion by 2020.
- Cisco predicts that while Internet traffic originated by PCs will continue to grow at 33 percent per year, traffic originated by non-PC devices will more than double each year by 2015.
- Facebook accounts for over 25 percent of total Internet page views at this writing, and APIs drive both the Facebook products and its ecosystem.
- Over 30 percent of Internet traffic during US prime-time hours comes from Netflix streaming, which is delivered and managed via APIs.

These statistics point not only to an explosion of overall Internet traffic, but also to a huge shift in the distribution of this traffic towards apps and devices. Looking at these accelerating trends, it's very easy to imagine that APIs will likely power most of your Internet traffic within a few years.

Why We Wrote This Book

As authors, we are coming at this topic fresh from our experiences in the trenches. Daniel Jacobson led development of the NPR content management system and the API that draws from that system. The NPR API is now the centerpiece of NPR's digital distribution strategy, transforming NPR's ability to reach its audience on a wide range of platforms.

Today, Daniel leads the development of APIs at Netflix, whose API strategy is in the critical path of the Netflix streaming service. Netflix's ability to provide rich video experiences on hundreds of devices is powered by this service and has dramatically increased the rate at which new implementations can be built and delivered to new devices. Through this program, Netflix's user base has grown tremendously, resulting in API growth from under one billion requests per month to more than one billion requests per day, in one year.

Greg Brail writes based on his work as CTO of Apigee, where he has helped implement dozens of API programs and been exposed to many more. In this role he is also able to draw from the collective wisdom of the Apigee team, who has met hundreds of developers and also learned from hundreds of enterprise API programs.

We wrote this book to help people understand the potential of APIs. Additionally, we want you to go into creating an API with your eyes wide open. This book is not a

programming manual but a best practices manual. You need to understand both the opportunity and the tactical issues related to creating an API.

This book will also introduce business executives and technologists to the land of API opportunity. To be sure, the world of APIs involves lots of technology, but what often gets lost in the shuffle is the business impact of APIs. This book is about how to think about APIs from a business perspective and how APIs can have a positive impact on your business.

We also want to educate you on what you're getting yourself into when you decide to develop an API. What are the implications of offering an API, not just from a technology standpoint but also in terms of business strategy, legal and rights considerations, and relationships with partners?

What we are going to demonstrate is that APIs are having a profound impact on the world of business—and that the time to act is now.

Unlike many other discussions of APIs that exclusively look at the way that large Internet-based companies use APIs publicly, this book also emphasizes the private use of APIs, which we believe has an even greater impact than many of the more prolific public API programs you often read about.

As authors, we must keep one foot in the world of technology and one foot in the world of business. To that end, we hope to educate creative executives and technologists about how to put APIs to work in the context of their own businesses.

In this book, we'll talk about:

- The business opportunity for APIs
- Examples of companies using APIs to transform their business and in some cases their industries
- Business models being used for APIs
- What an API value chain looks like and how to enable the different pieces of that value chain
- Considerations for crafting your API strategy and responding to concerns and objections
- Issues around API design, especially how to make adoption easy for developers
- What to do about API security, including coverage of OAuth
- The legal implications of running an API business, including privacy and data rights
- Considerations for operating your API at scale
- How to think about metrics and measuring your API program
- Engaging developers and building community to drive adoption of your API

In summary, this book offers a roadmap for using APIs to transform your business.