



Department of
Management

Department of Management public lecture

Staying Power: Six Enduring Principles for Managing Strategy & Innovation in an Uncertain World

Professor Michael A. Cusumano

Distinguished Professor of Management and head of the Behavioral Sciences Area, MIT Sloan School of Management, Professor of Engineering Systems, MIT School of Engineering

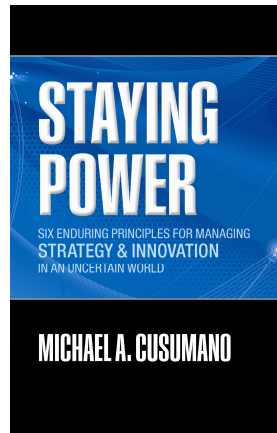
Professor Ignacio Palacios-Huerta

Chair, LSE

Staying Power

**Six Enduring Principles for Managing
Strategy & Innovation in an Uncertain World
(Lessons from Microsoft, Intel, Apple, Google, Toyota & More)**

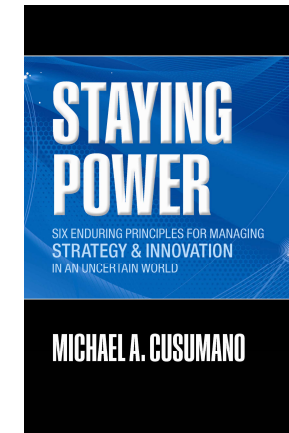
Oxford University Press 2010

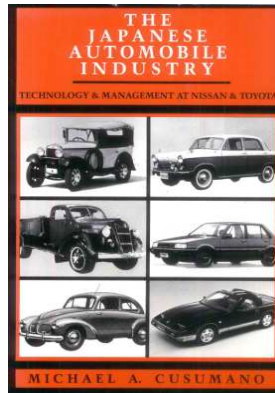


September 2010

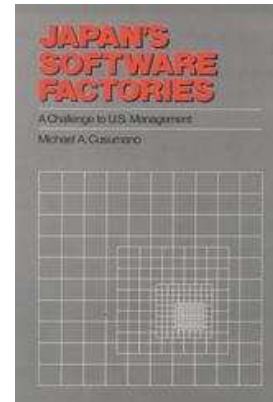
Michael A. Cusumano
**MIT Sloan School of Management
& Engineering Systems Division**

© 2010 cusumano@mit.edu





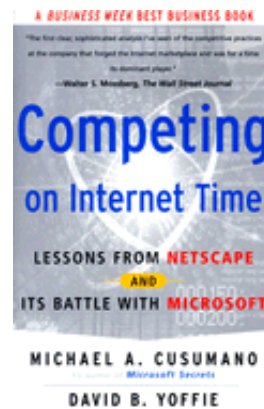
1985



1991



1995



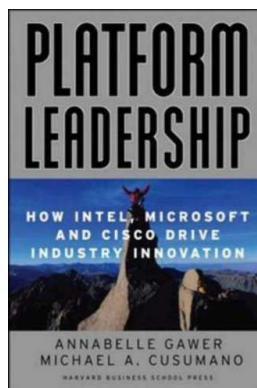
1998



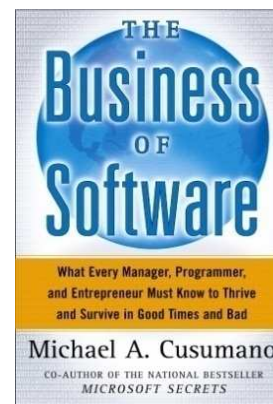
1998



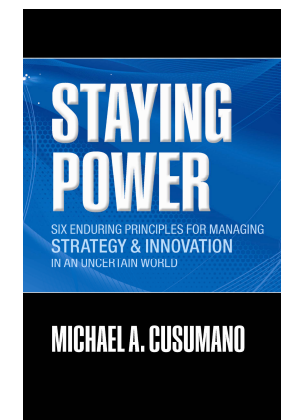
2002



2002



2004



2010

The Big Picture

- Now in an age of *innovation & commoditization* in high-tech businesses, both products & services
- Long history, recently accelerated
 - Hardware Products: Mainframes to minicomputers to PCs, cell phones and other devices
 - Software Products: Prices dropped for PC software products, but not for enterprises (products or services), until recently
 - Manufacturing: China's prices becoming the world's prices
 - Services: India's prices becoming the world's prices
- **No room for error in strategy or operations!**
- **Hard to separate “fads” from best practices!**

But the ideas underlying best practices should be observable and more enduring than faddish techniques or exemplar firms.

My Six ‘Enduring’ Principles

Not original to me, but underlie my work & with students and colleagues, as well as others’, with some 30 years of empirical & theoretical research behind them

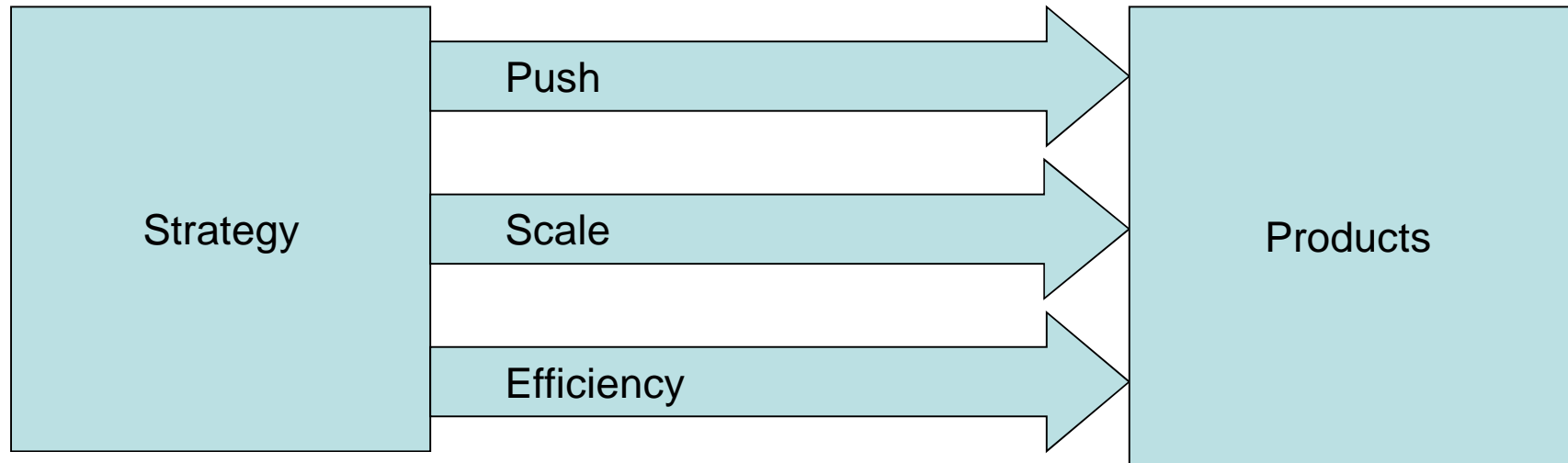
1. *Platforms*, Not Just Products
2. *Services*, Not Just Products (or Platforms)
3. *Capabilities*, Not Just Strategy
4. *Pull*, Don’t Just Push
5. *Scope*, Not Just Scale
6. *Flexibility*, Not Just Efficiency

Narrow Way of Thinking About Focus and Competitive Advantage at the Product Level

Examples:

- Ford in Model T Era
- GM in the 1920s

- Sony in Betamax era
- IBM before Open Source
- Apple before mid-2000s

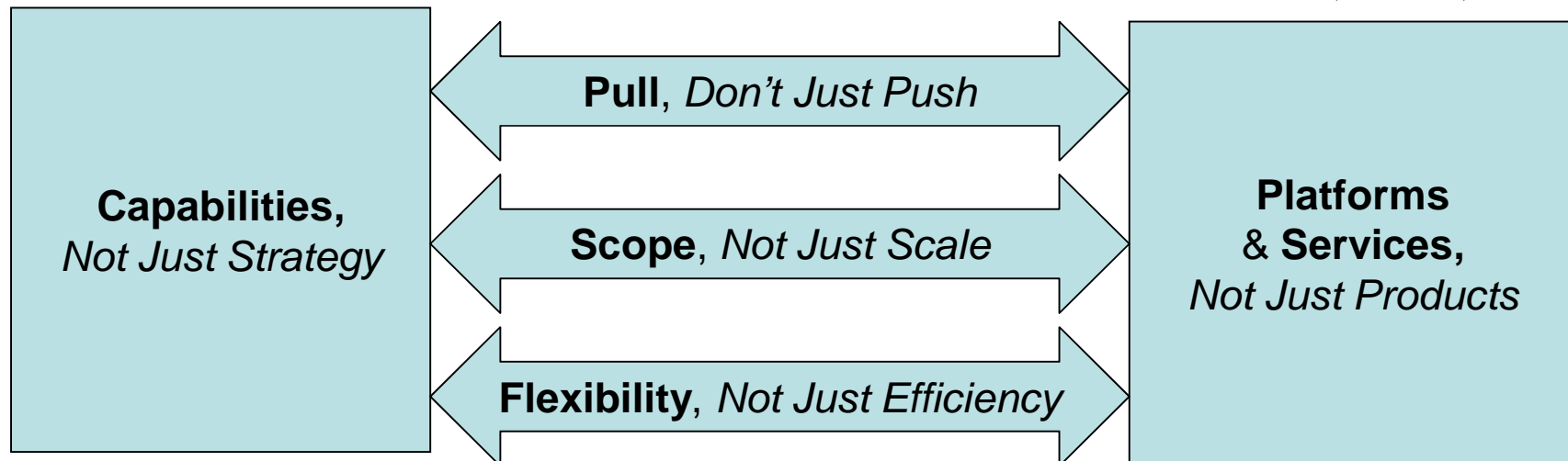


Broader Way of Thinking About Agility and Competitive Advantage at the Ecosystem Level

Examples:

- Toyota
- Microsoft
- Intel

- JVC in VHS Era
- Apple after mid-2000s
- Google, Adobe
- Cisco, Qualcomm, et al.



“Platforms” Intellectual History

In-House Product Platforms & Product Modularity

Meyer & Utterback (1993), Ulrich (1995), Sanchez & Mahoney (1996), Cusumano & Nobeoka (1998), Meyer & Lehnerd (1997), Baldwin & Clark (1999), etc.

Product then Industry-Level Platform Standards, Dominant Designs or Technologies, with Complements + Network Effects

Utterback & Abernathy (1975), David (1985), Farrel & Saloner (1986), Arthur (1989), Katz & Shapiro (1992), Shapiro & Varian (1998), Bresnahan & Greenstein (1999), Gawer & Cusumano (2002), Gawer, ed. (2009), etc.

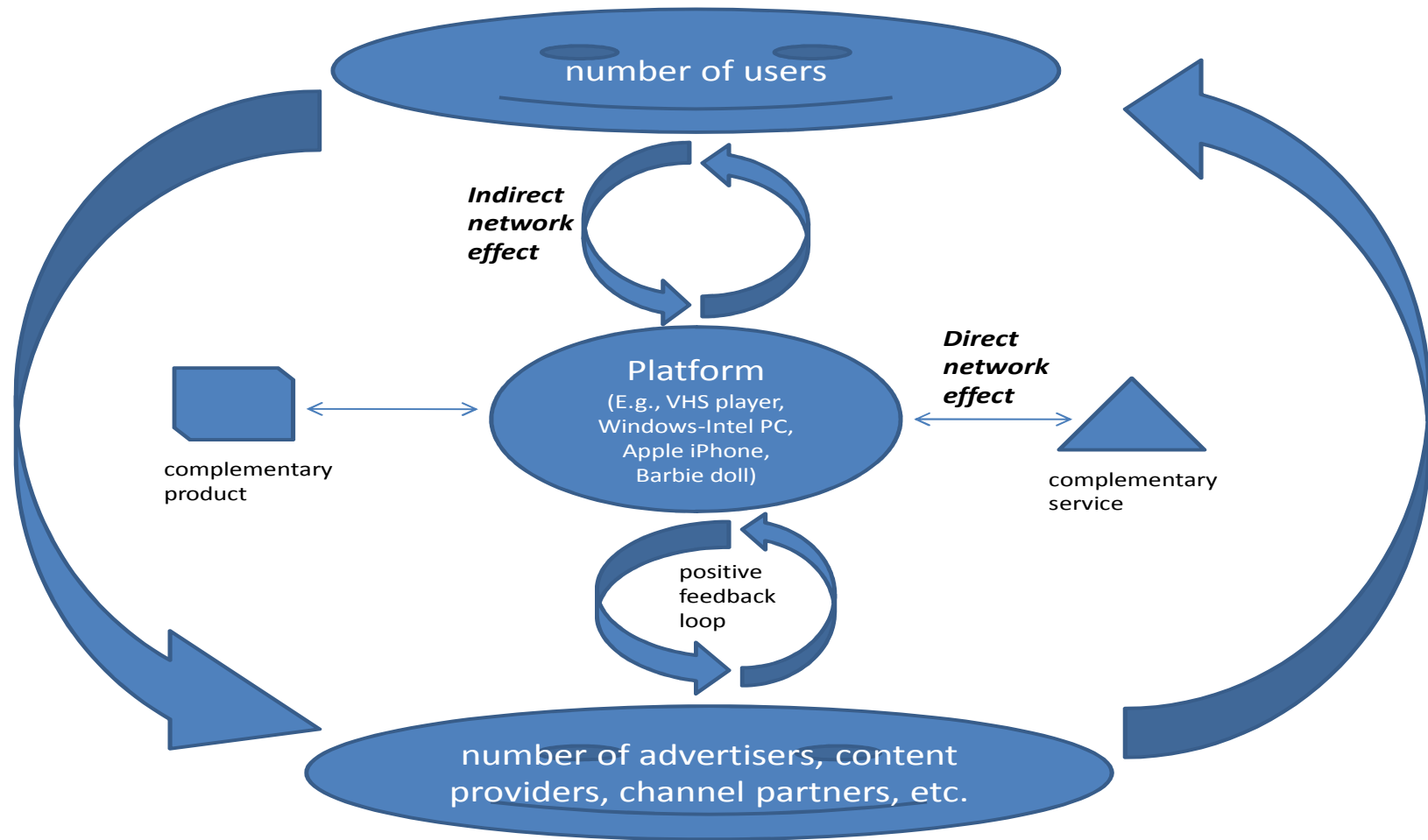
Forum for Multi-Sided Markets (*Industry Platform + Many Types of Complementors*; and Winner-take-all dynamics)

Parker & Van Alstyne (2005), Eisenmann (2006), Evans, Hagiu & Schmalensee (2006), Eisenmann, Parker & Van Alstyne (2006), Yoffie & Kwak (2006), Adner (2006), etc.

Industry Platform Definition

- A foundation technology (or service) used beyond a single firm, whose value increases geometrically with the addition of more users and complementary products & services
 - A phenomenon known by various names:
positive feedback, bandwagon effect, network externality or network effect
- Historical Examples: Railroad Network, Telegraph, Electric Power System, Radio, TV, Mainframe Computers, VCRs, PC OS, CD/DVD, Browsers, etc.

Platform Ecosystem: Platform + Complements + Network Effects



Source: M. Cusumano, *Staying Power* (2010)

Ongoing Platform Battlegrounds

- **Web Search** Google vs. Bing/Yahoo, foreign engines
- **Smart PhoneOS** Apple vs. RIM, Nokia/Symbian, Android, Microsoft, Palm, Linux, ARM, Intel Atom)
- **Digital Media** Apple (iPod, iPad & iTunes) vs. Microsoft (Media Player, Zune) vs. Real?
- **Social Network'g** Facebook, Twitter, LinkedIn, etc.
- **Video Games** Sony, Nintendo, Microsoft
- **Enterprise s/w** SAP vs. Oracle/Sun, Microsoft, IBM
- **Micropayments** Sony Felica vs. PayPal, credit cards
- **Displays** E-Ink vs. LCD (Sharp, Sony, Samsung, others)
- **Batteries** Sony vs. Panasonic, Sanyo, A123, others
- **Power systems** Toyota hybrid vs. traditional gas vs. hydrogen

And many more platforms, or platforms within platforms, in smaller or emerging markets

Key Questions in Ch. 1

- **Possible for firms to think “platform first” and still develop “great” products?**
 - Sony and Apple –traditionally have thought “product first”
 - JVC, Microsoft, Intel – generally have thought “platform first”
 - Google, Qualcomm, EMC, Cisco, Facebook, et al.?
- **When does a “product” or product platform have “industry platform” potential?**
- **How best use the different levers and concepts in the emerging “platform strategy toolkit” to:**
 - Formulate and maintain a platform leadership position,
 - overtake an existing leader, or
 - create a platform where one has not existed before?

A Platform Strategy Toolkit

- **Product or Platform?** – The key strategic decision
- **4 Levers** (Scope, Technology, External, Internal) – broad categories for implementing platform leadership
- **Coring & Tipping** – How create a platform market where one does not yet exist or encourage an existing market to adopt your platform when multiple compete
- **WTAoM** – Framework to analyze the dynamics of platform markets, potential for how much share is possible, and ways to influence outcomes

Apple:

Before = Product Over Platform
**Since 2003 = Product + Platform +
(Automated) Services!**

- Apple through 2009 still $\frac{1}{2}$ the sales and $\frac{1}{4}$ the profits of Microsoft, but catching up fast.
 - ***And surpassed Microsoft in market value on May 27, 2010***
- Enormous increase in Apple's sales, profits, and market value since introducing great new products and adopting more of an **open but not open (or closed but not closed)** platform-complements strategy with iPod, iTunes & iPhone, and now iPad, all working with the iMac

		<i>Microsoft</i>				<i>Apple</i>	
	<i>Revenues</i>	<i>Operating Profits (%)</i>	<i>Year-End Market Value</i>		<i>Revenues</i>	<i>Operating Profits (%)</i>	<i>Year-End Market Value</i>
2009	\$58,437	34.8%	\$246,630		\$36,537	21.0%	\$180,150
2008	60,420	37.2	149,769		32,479	19.3	118,441
2007	51,122	36.2	287,617		24,006	18.4	74,499
2006	44,282	37.2	251,464		19,315	12.7	45,717
2005	39,788	36.6	233,927		13,931	11.8	29,435
2004	36,835	24.5	256,094		8,279	3.9	8,336
2003	32,187	29.7	252,132		6,207	(loss)	4,480
2002	28,365	29.2	215,553		5,742	0.3	4,926
2001	25,296	46.3	258,033		5,363	(loss)	7,924
2000	22,956	47.9	302,326		7,983	6.5	5,384
1995	5,937	35.3	34,330		11,062	6.2	4,481

“Winner Take All” (or Most) if...

- 1) Very strong direct or indirect network effects
- 2) Little room to distinguish among different platforms (few niches or differentiation opportunities for your competitors!)
- 3) Difficult or costly to use more than one platform (“multi-homing” rare for users & app developers or advertisers)

Why Did VHS Win 100% of the Consumer VCR Market?

1. **Strong network effects?** – Yes. VHS and Betamax incompatible. More open licensing of VHS led to more vendors, more prerecorded tapes, then more sales to users, ad infinitum
2. **Little differentiation?** – Yes. Initial difference in recording time, but soon eliminated. Same prerecorded tapes available. Quality better with Betamax but not better enough.
3. **High cost of multihoming?** – Yes. Machines were expensive in the 1970s and 1980s, so users chose one.

Why Did Windows Win up to 95% of Desktop OS Market?

1. Strong network effects? – Yes. Many more apps for Windows; incompatibility of the Mac meant that Apple could not benefit from this broader PC ecosystem (until recently, with the switch to Intel chips & virtual s/w)
2. Little differentiation? – Yes, **eventually**. Growing similarity with the Mac; rivalry among PC manufacturers & low entry barriers brought PC prices down. *Mac survived in a niche – desktop publishing & extreme ease of use, e.g. for schools*
3. High cost of multihoming? – Yes. The Mac usually cost 2x a WinTel PC. Both are costly so users choose one.

Why No Permanent Winner in Video Game Console Market?

1. **Strong network effects?** – Yes. Strong direct network effects tying specific games to each platform (Sony PlayStation, Nintendo Wii, Microsoft Xbox). Some network effects tying game developers but often do multiple platforms.
2. **Little differentiation?** – No. *Each vendor different – Sony --high-end , Nintendo -- non-traditional and h/w innovations, Microsoft -- like PC/internet platforms. Also “hit” games or features vary by generation and vendor.*
3. **High cost of multihoming?** – No. *Consoles relatively cheap. Often subsidized by makers. Serious game users buy more than one platform. Some games on multiple consoles.*

Why Has Google Most (65%) But Not All the Search Market?

1. Strong network effects? – Yes, for search algorithm, and indirect for advertisers & app developers tied to Google search. Google portal (email, etc.) “stickier.” **No**, *for users – no direct network effects, easy to switch.*
2. Little differentiation? – Yes, **and no**. Search engines similar. *But some specialties or niches by geography and language (e.g. China, Brazil), and technology (e.g. video)*
3. High cost of multihoming? – **No**. *Users can easily use several search engines. Some multi-homing costs for advertisers, but not much. More for app developers.*

Will There Be One Winner in the Global Smart-Phone Market?

1. **Strong network effects?** – Yes. Direct network effects tying specific applications and some services to each platform (Nokia/Symbian, RIM/Blackberry, Apple iPhone , Google Android, NTT Docomo, Microsoft Windows CE)
2. **Little differentiation?** – No. *Different vendor strengths (e.g. business/email vs. consumer functions, computer-like, social networking, etc). Different operator strengths, politics, and bundles in different regions.*
3. **High cost of multihoming?** – Yes. Phones often subsidized, but service contracts expensive. Most users chose one vendor. *But users can and do switch over time.*

Lessons for Managers

- Huge potential differences in strategy & implementation for a *platform vs. product strategy*
- Huge potential differences in economic value creation
- **Staying Power** for platform leaders and wannabes requires understanding:
 1. Interrelationships: Between *product & platform* strategy
 2. How to win platform battles: The “**best platform**” should win: open interfaces & modular architectures easy to build on and extend, with the most **compelling complements**, generally the result of the **most vibrant ecosystem**)
 - *Starting with a **very good product** helps a lot, though the platform winner does not have to be the “best product”!*



STAYING POWER

SIX ENDURING PRINCIPLES FOR MANAGING
STRATEGY & INNOVATION
IN AN UNCERTAIN WORLD

MICHAEL A. CUSUMANO