1 — Products

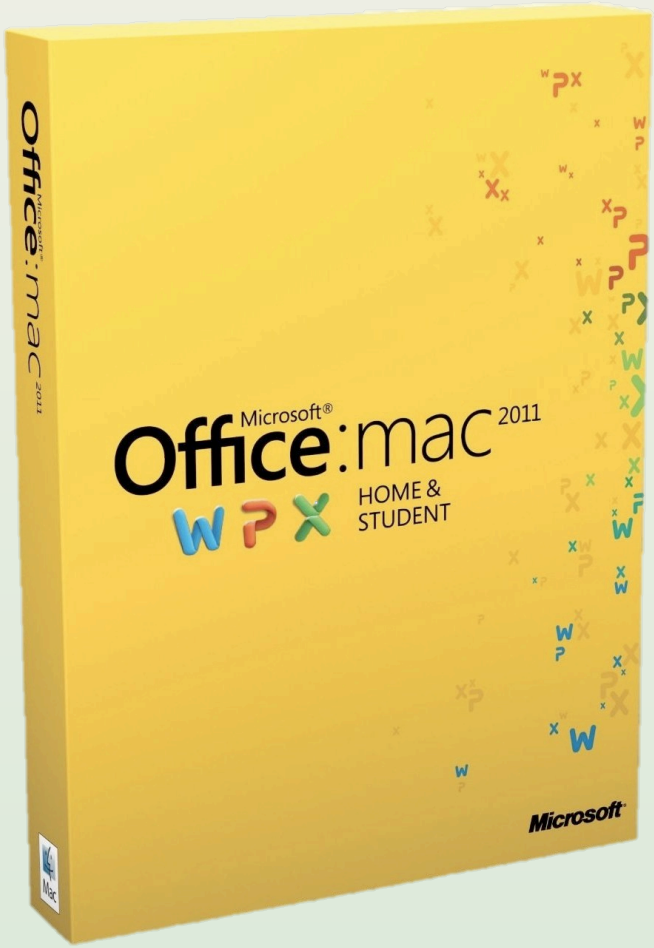
Software Development
From Code to Product

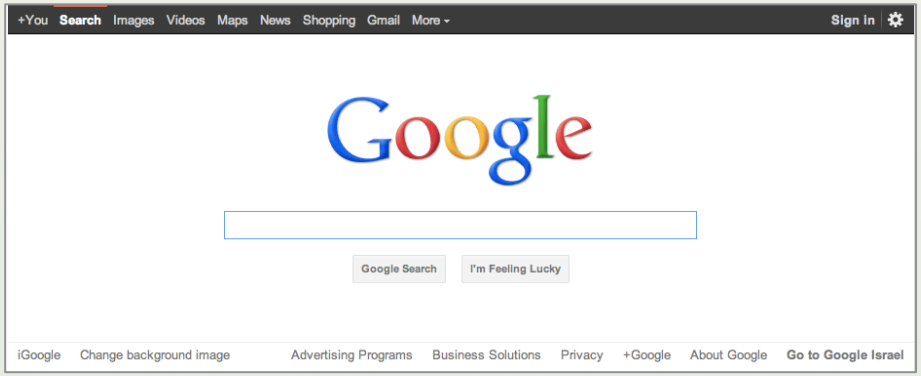
Is this a restaurant?

This is a restaurant

Is this a product?

Some leading products





Lecture 1

- About this course
- Products and people
- Layers of a product
- Startups and growth
- Software platforms
- Founders and goals
- External resources

Course objective

"Learn how to turn a core technology or idea into a software product which delights users, succeeds in the marketplace and becomes a profitable business."

Our assumptions

- You can program
- You are web savvy
- You know English, ish
- No other experience
- Technical founder(s)
- No investors (yet)

No coding!

Syllabus and Assessment

The big picture	Introduction to products The entrepreneurship process	Ex: Spec for MVP
User interface	User interface principles Practical interface design	Final project
Business model	Selling products and services Digital advertising	
Marketing	Marketing and retention Search engine visibility	
Technical stuff	Customer facing APIs Analytics and optimization	Ex: Design an API

Final Project

- Choose 2 competing products
  - Desktop/web/mobile (or a combination)
  - Lecturer approval required
- Explain problem
- Compare products
  - Functionality, UI, business model, marketing
- Conclusion
- **<u>Independent analysis</u>**

We won’t cover…

- Raising money
- Forming a company
- Recruiting
- Legal issues
- Enterprise sales
- Management
- Exit strategy

There is lots more to learn!

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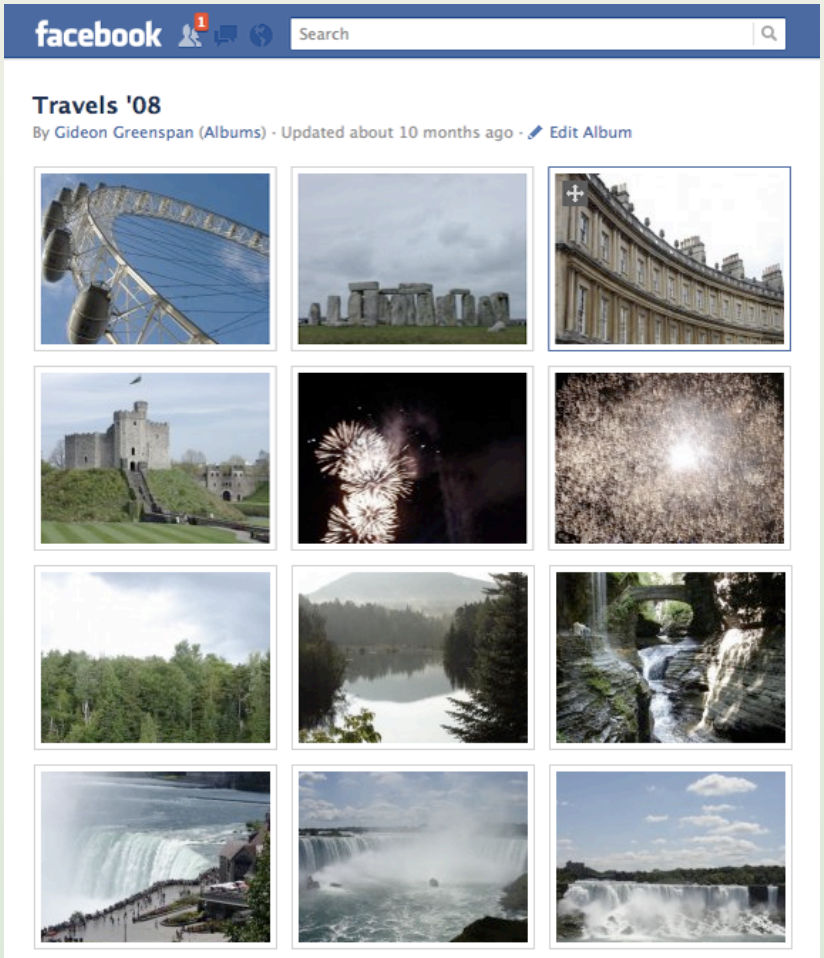
Products are for people



People are physical

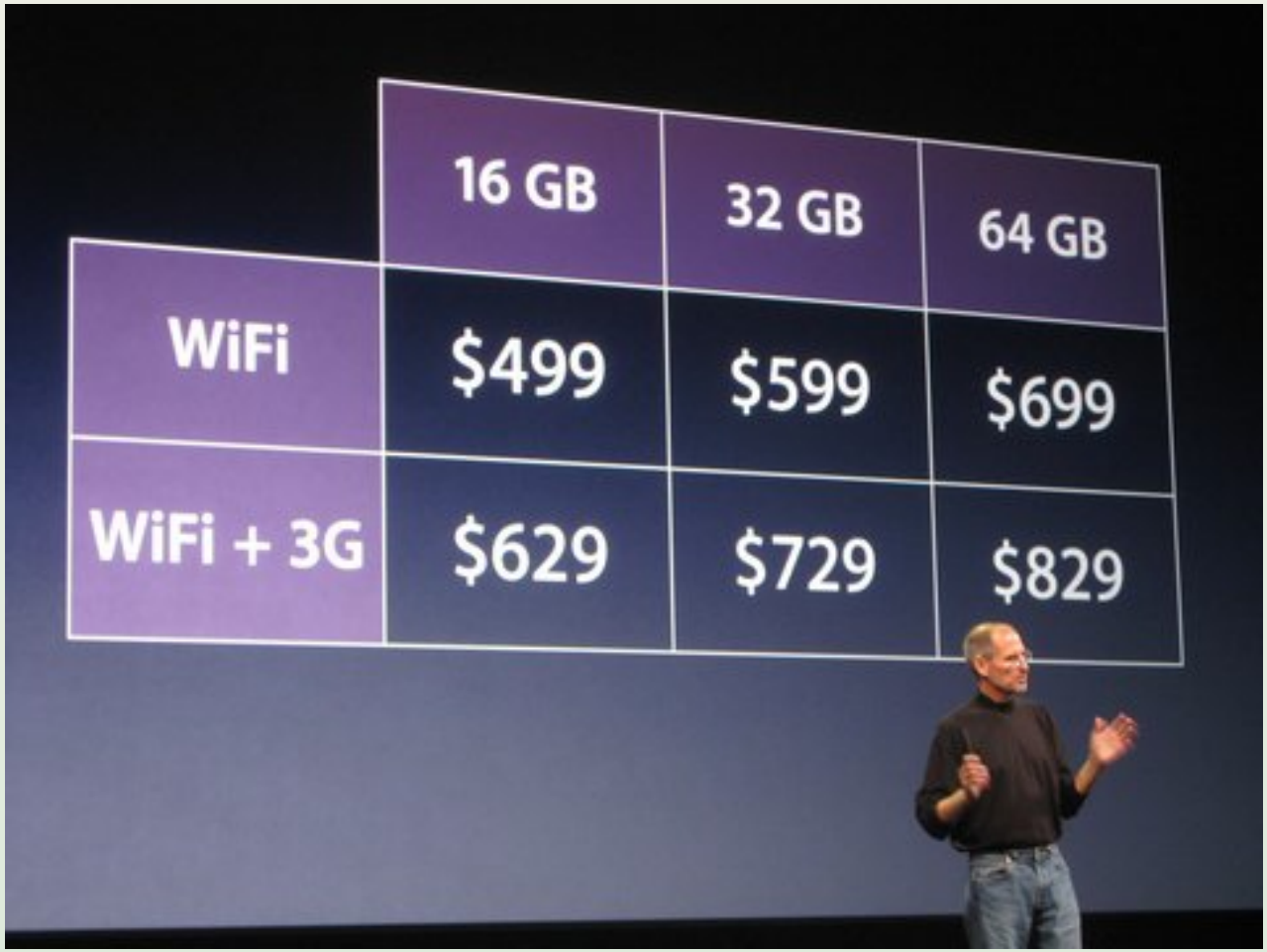
People are emotional

People are impatient

“The vast majority of people who visit your site… will arrive with their finger poised on the Back button… So your site has to say: Wait! Don't click on Back. This site isn't lame. Look at this, for example.”

— *Paul Graham, Y Combinator*

People are irrational



People are self-interested

People are skeptical

"The average American is exposed to several hundred ad messages a day and is trying to tune out."

— Prof. Philip Kotler, 2005

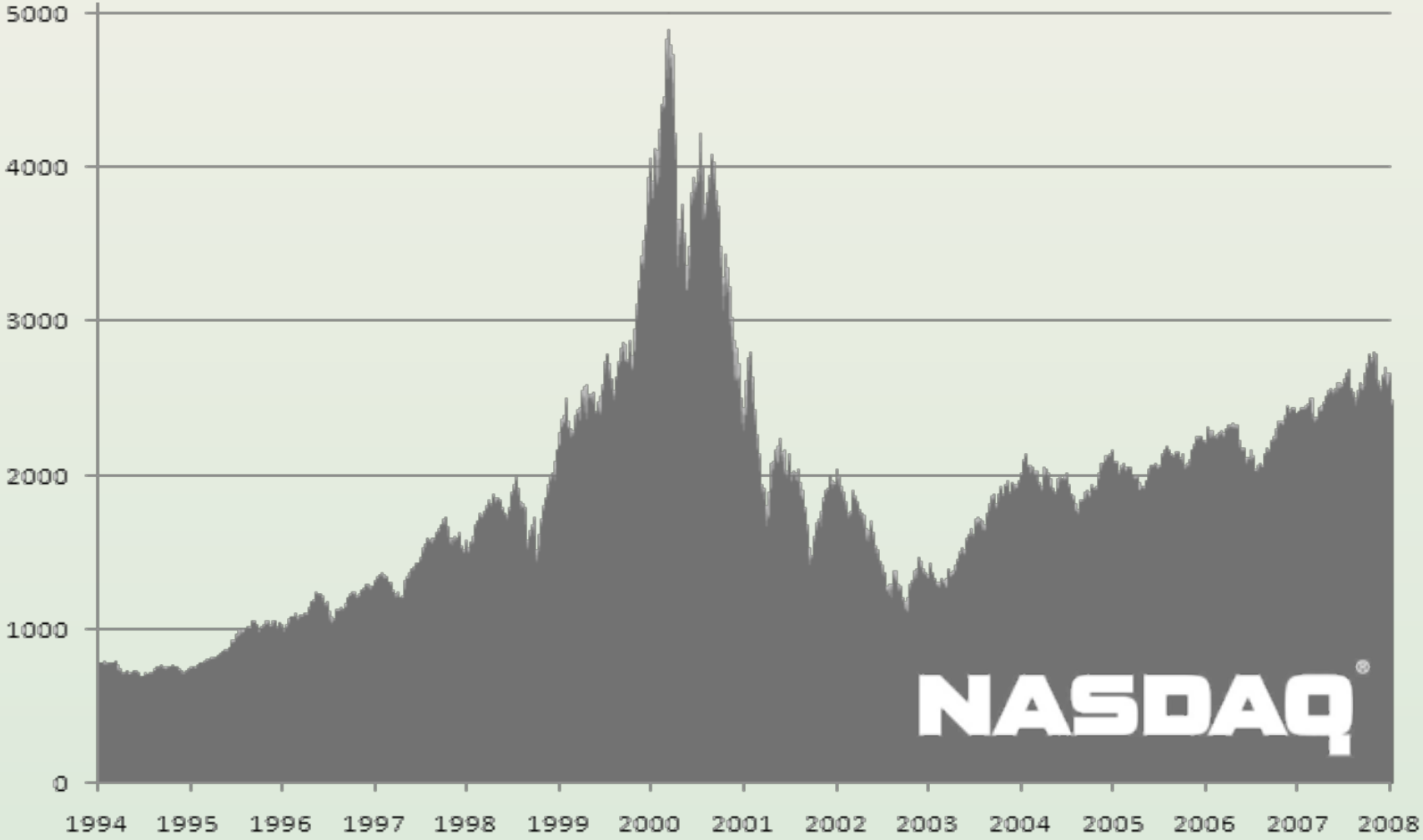
"On average, Americans are subject to some 3,000 essentially random pitches per day."

— Inc.com, 2005

"Not too long ago, the average American was exposed to over three thousand advertising messages in the average day. Today, you get that many before breakfast!"

— Newspaper Association of America, 2002

People are followers



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What is a software product?

Code that solves problem

+

Inputs and outputs

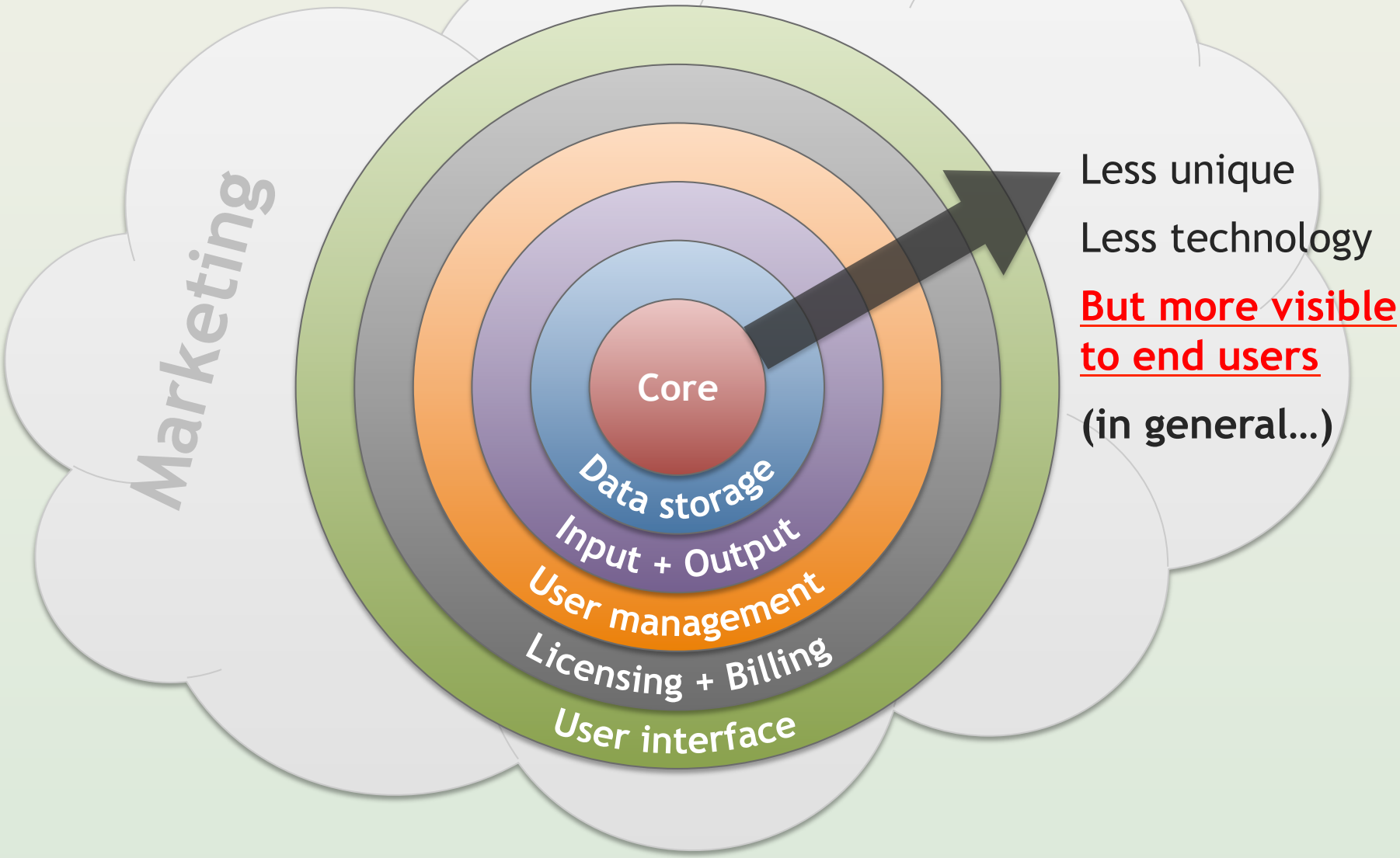
+

User packaging

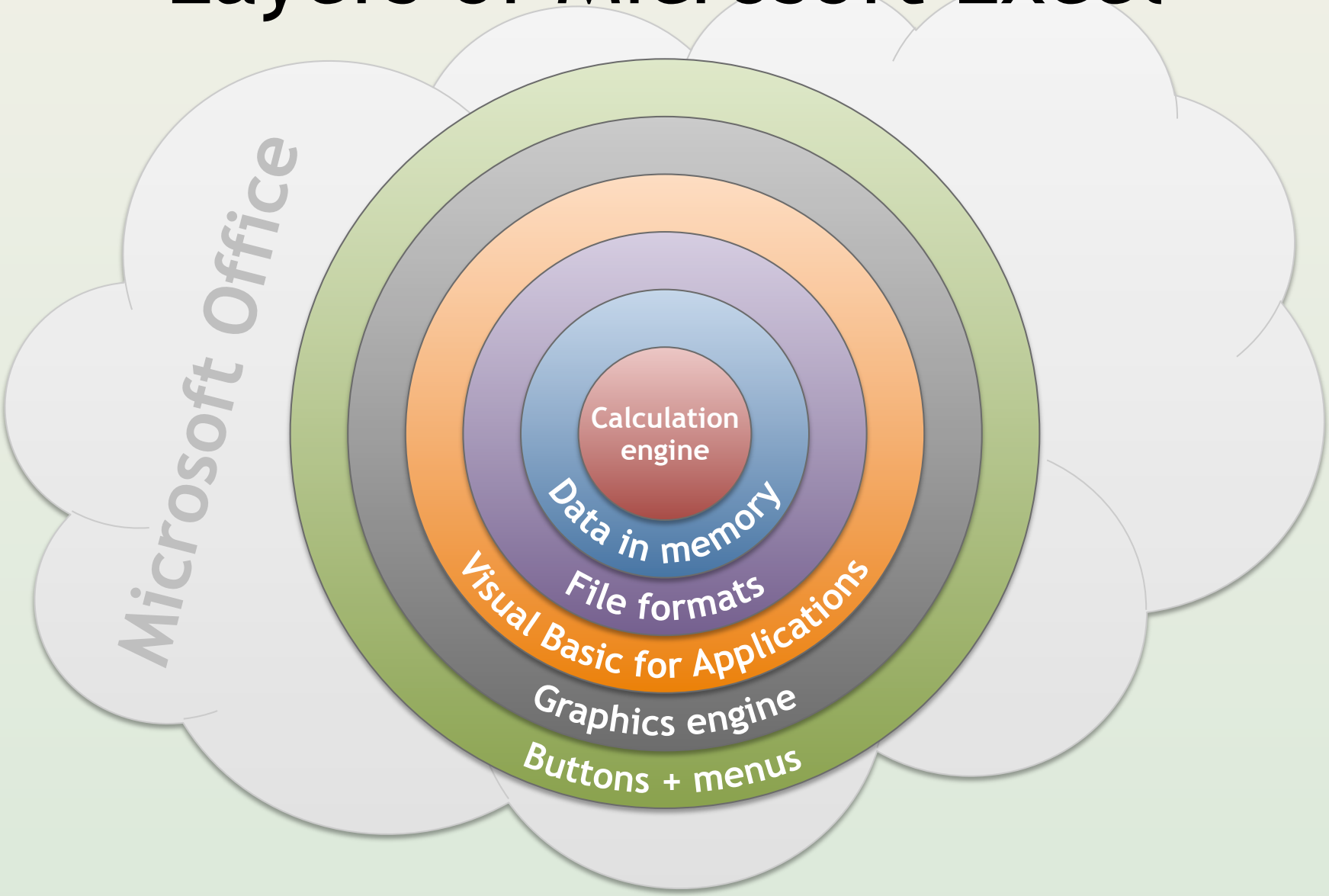
+

Can generate cash

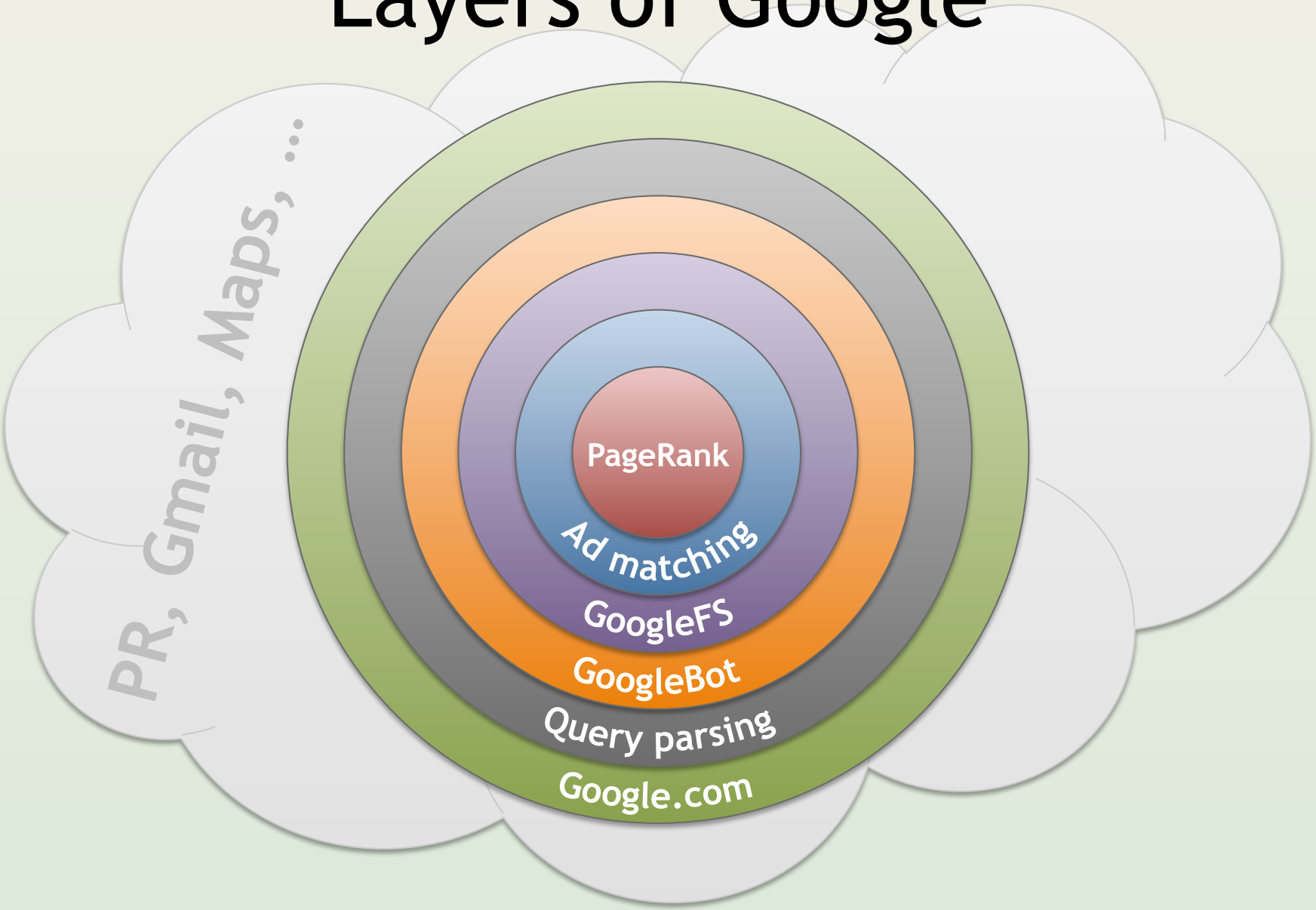
Layers of a product



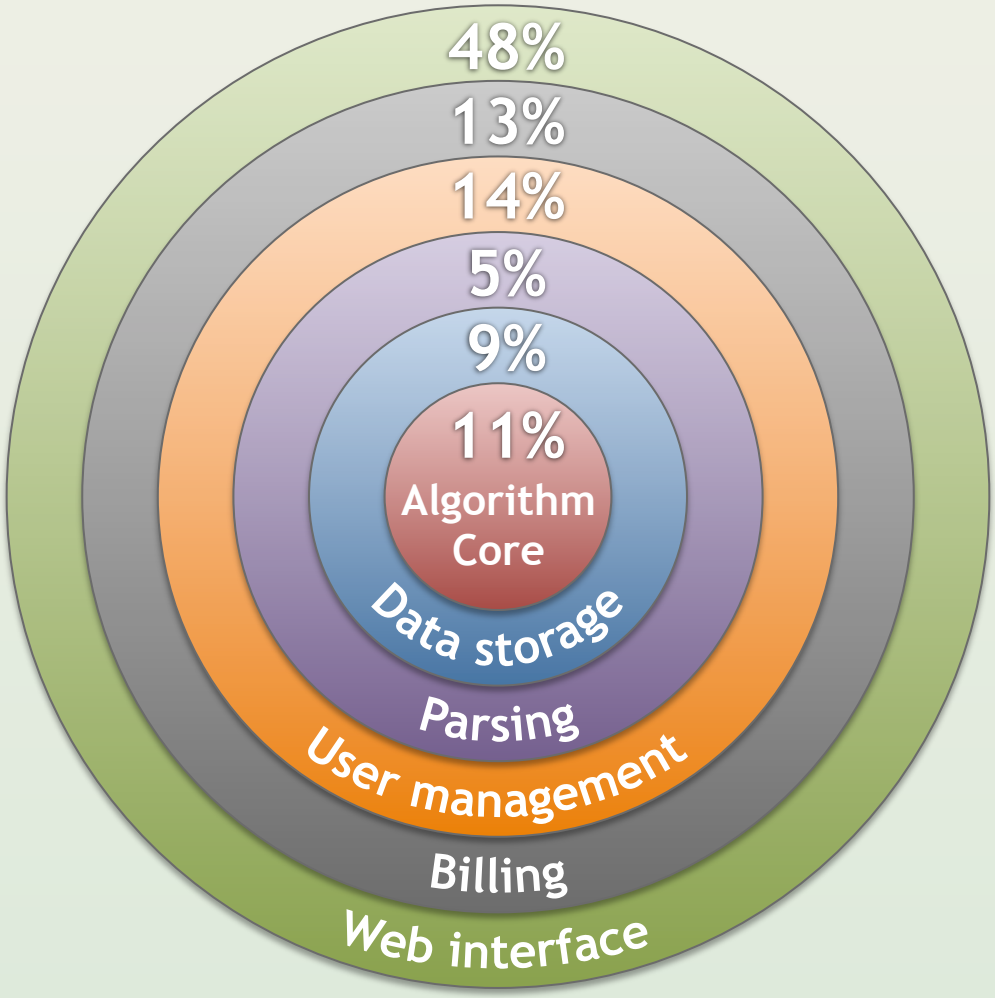
Layers of Microsoft Excel



Layers of Google



Code Breakdown Example



What’s the core of PayPal?

- High volume transaction processing?
- Integration with external systems?
- “…PayPal is: a security company pretending to be a financial services company” — *Max Levchin, Founder*

An ideal core

- New
- Clever
- Invisible
- Hard to reproduce
- Research-based
- Optimized for speed
- Improve with usage

An ideal ~~core~~ interface

- ~~New~~ Familiar
- ~~Clever~~ Simple
- ~~Invisible~~ Obvious
- ~~Hard to reproduce~~
- Research-based
- Optimized for speed
- Improve with usage

Combining the ideals

	Product	Technology	Interface
Desktop	skype™	P2P + VoIP	Config-free
Web	twitter	Messaging	140 characters
Mobile	Instagram	Super effects	Instant posting

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Startups vs (Real) Companies

Startups	Real Companies
No product	Existing product
Unknown market	Known market
No brand	Recognized brand
No customers	Existing customers
No revenue	Significant revenue
On life support	Financially independent

But just maybe…

The Math of Rapid Growth

$$Size = ae^{b \cdot Time}$$

$$Growth = \frac{dSize}{dTime} = abe^{b \cdot Time}$$

$$\Rightarrow Growth \propto Size$$

In other words…

Sustainable growth is characterized by one simple rule: *New customers come from the actions of past customers.*

— Eric Ries, The Lean Startup

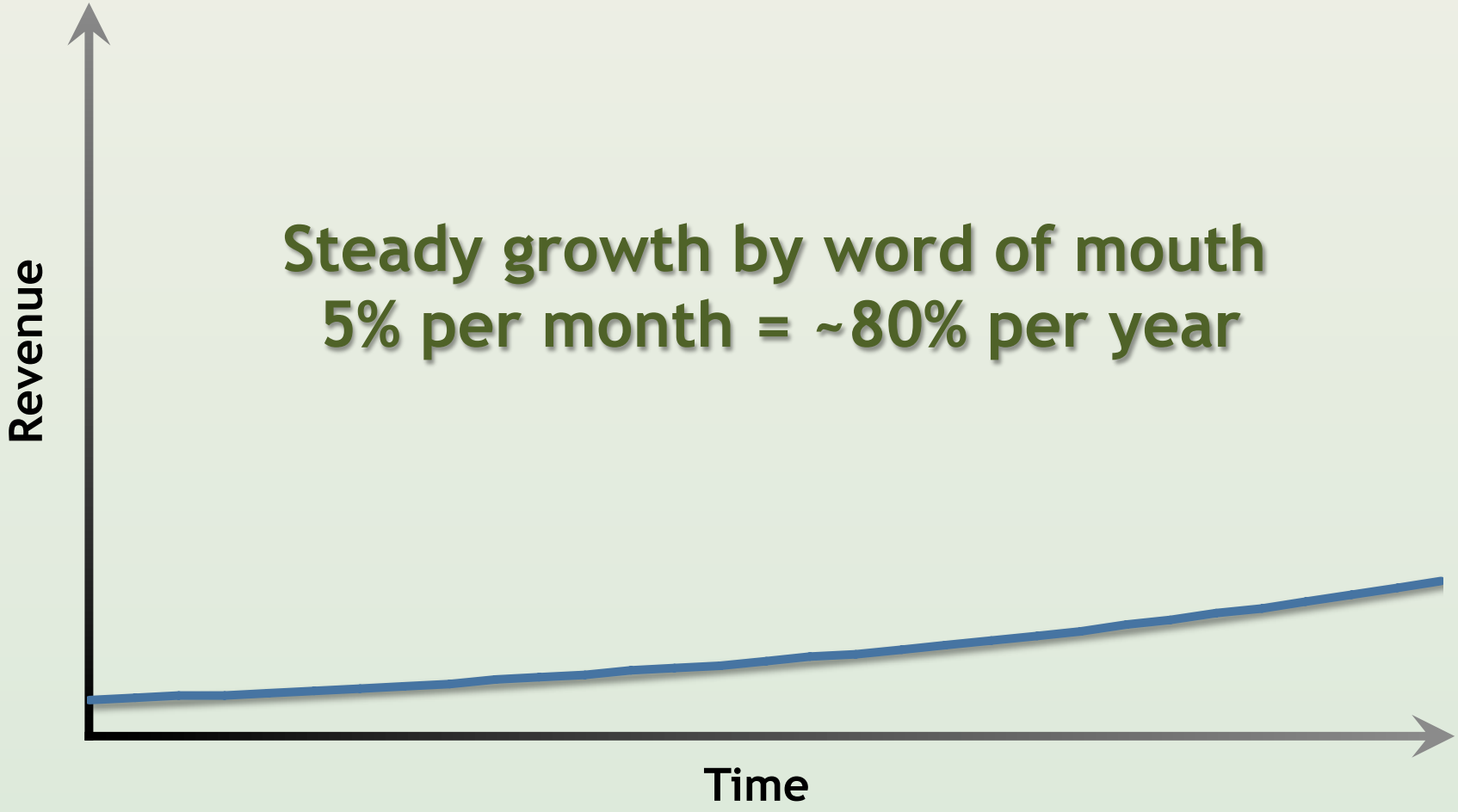
$$Growth \propto Size$$

What does a startup do?

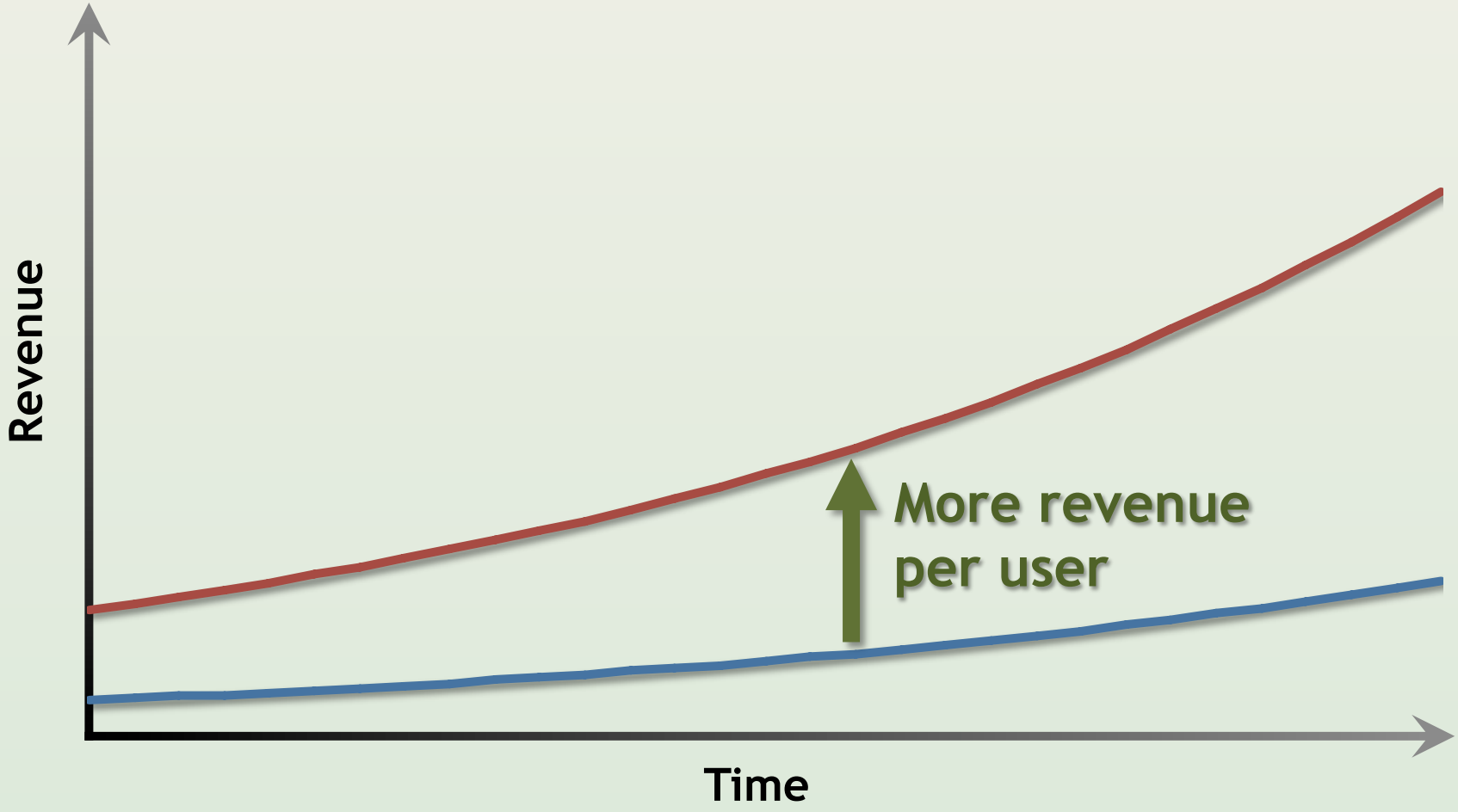
- (Raise money)
- Development
- Monetization
- Marketing
- Publicity
- Biz dev
- (Exit)

Where to focus?
(especially at the start)

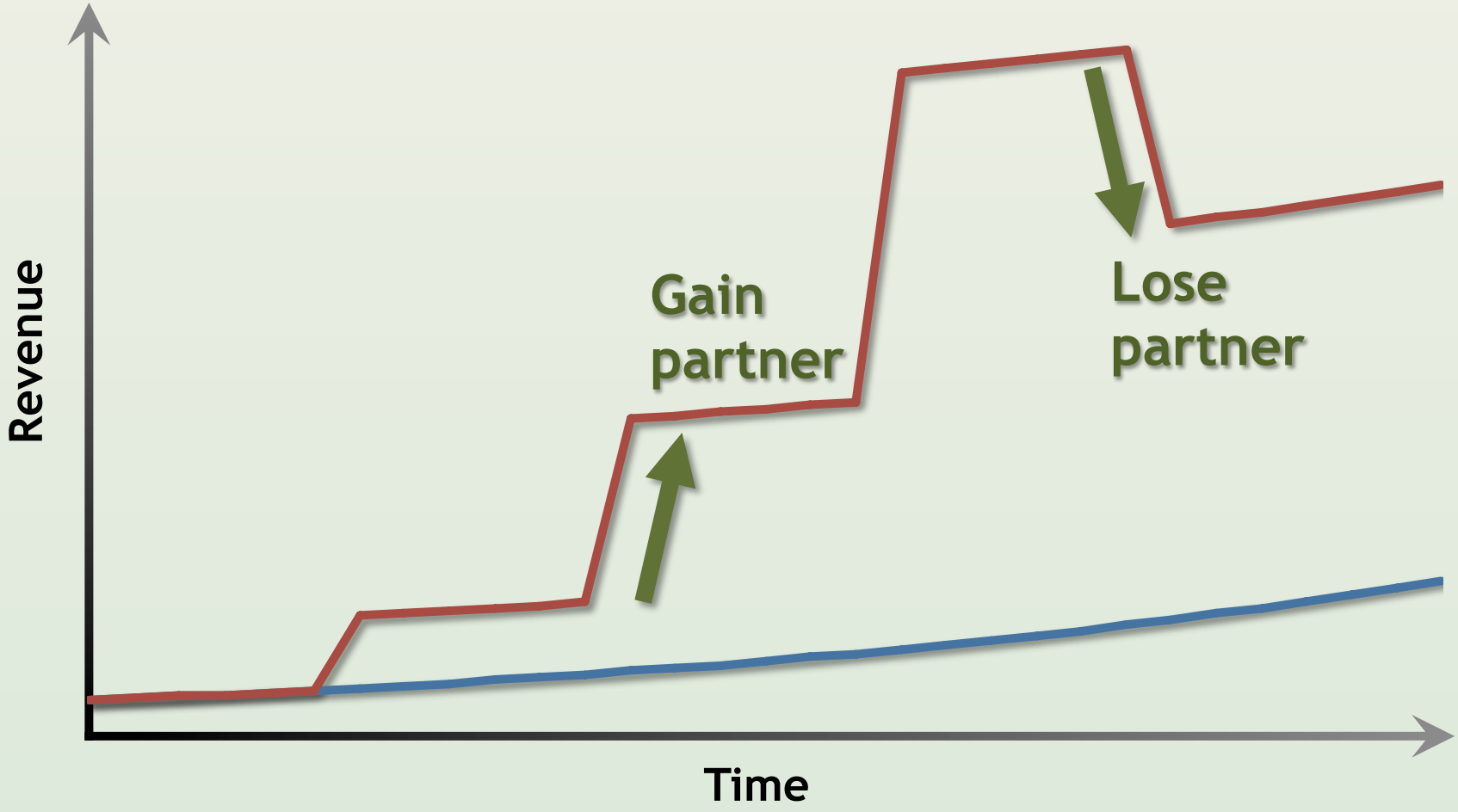
Baseline scenario



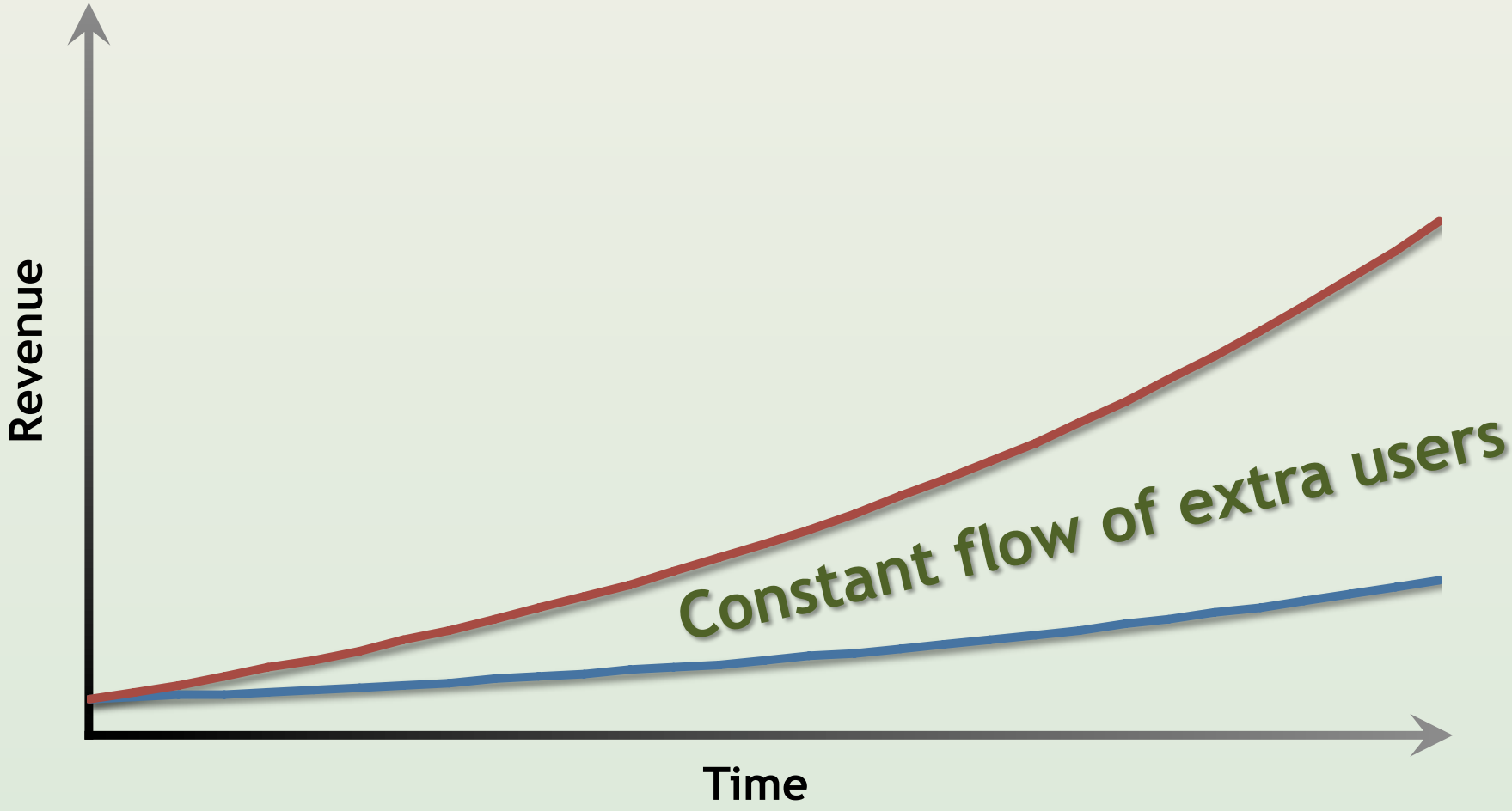
Monetization without buying ads



Business development

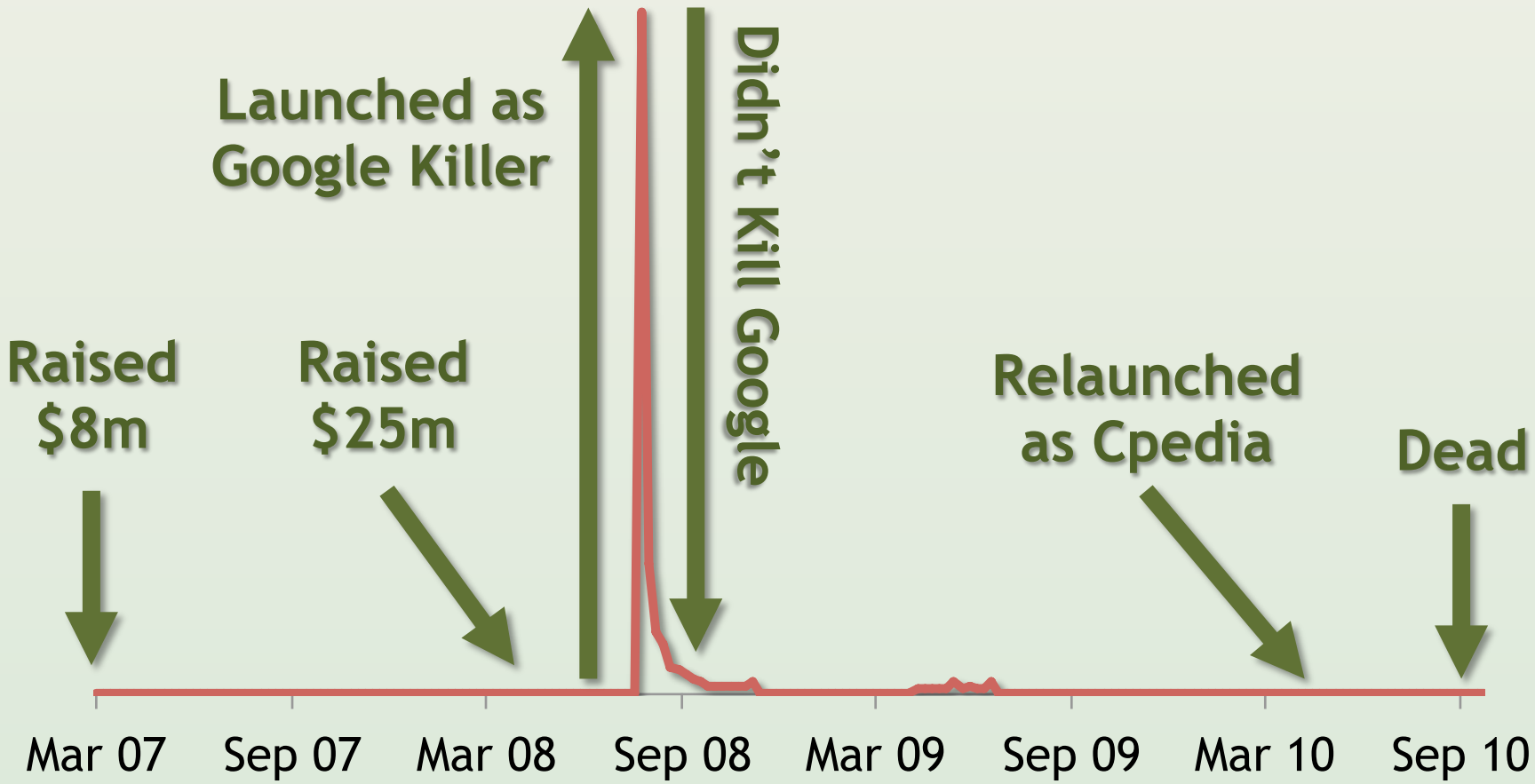


Marketing

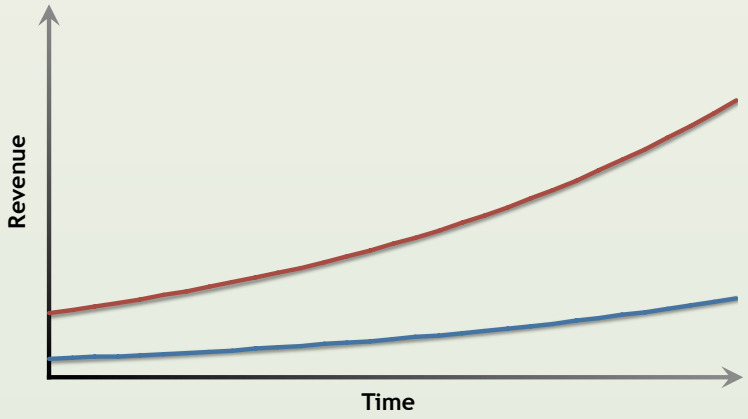


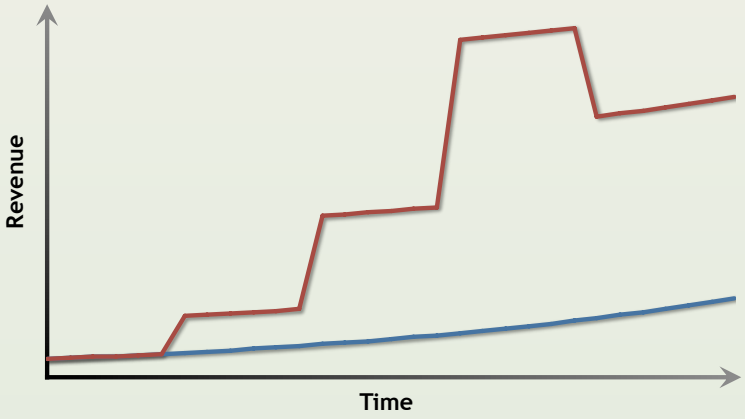
Publicity

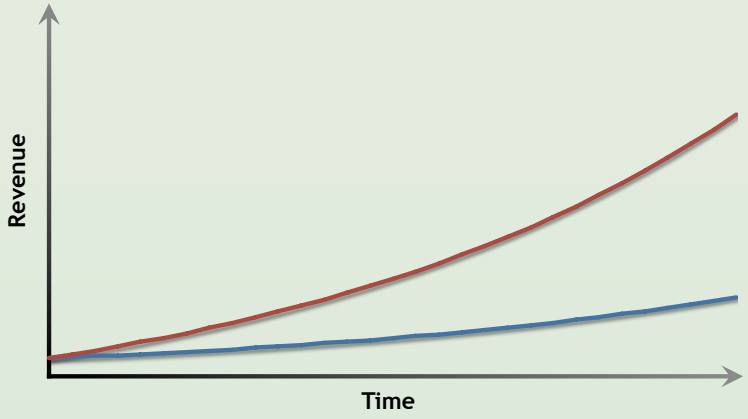
Example: Not so Cuil

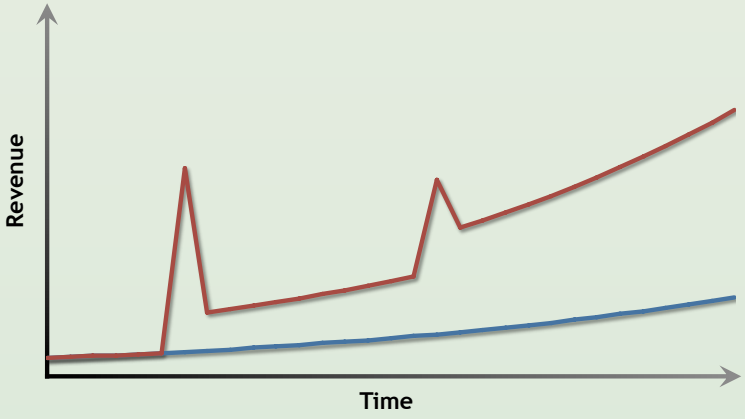


Everything but the Product

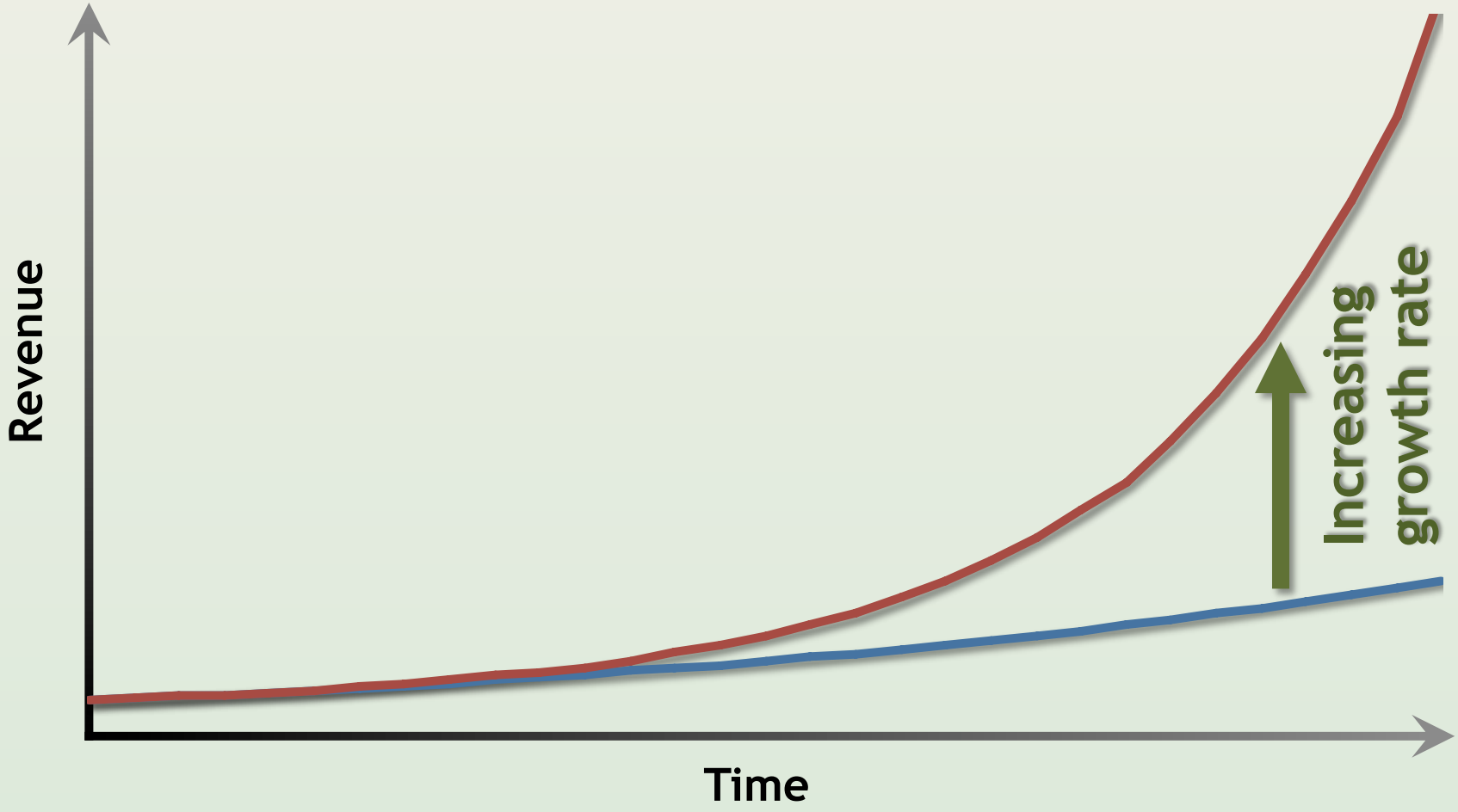








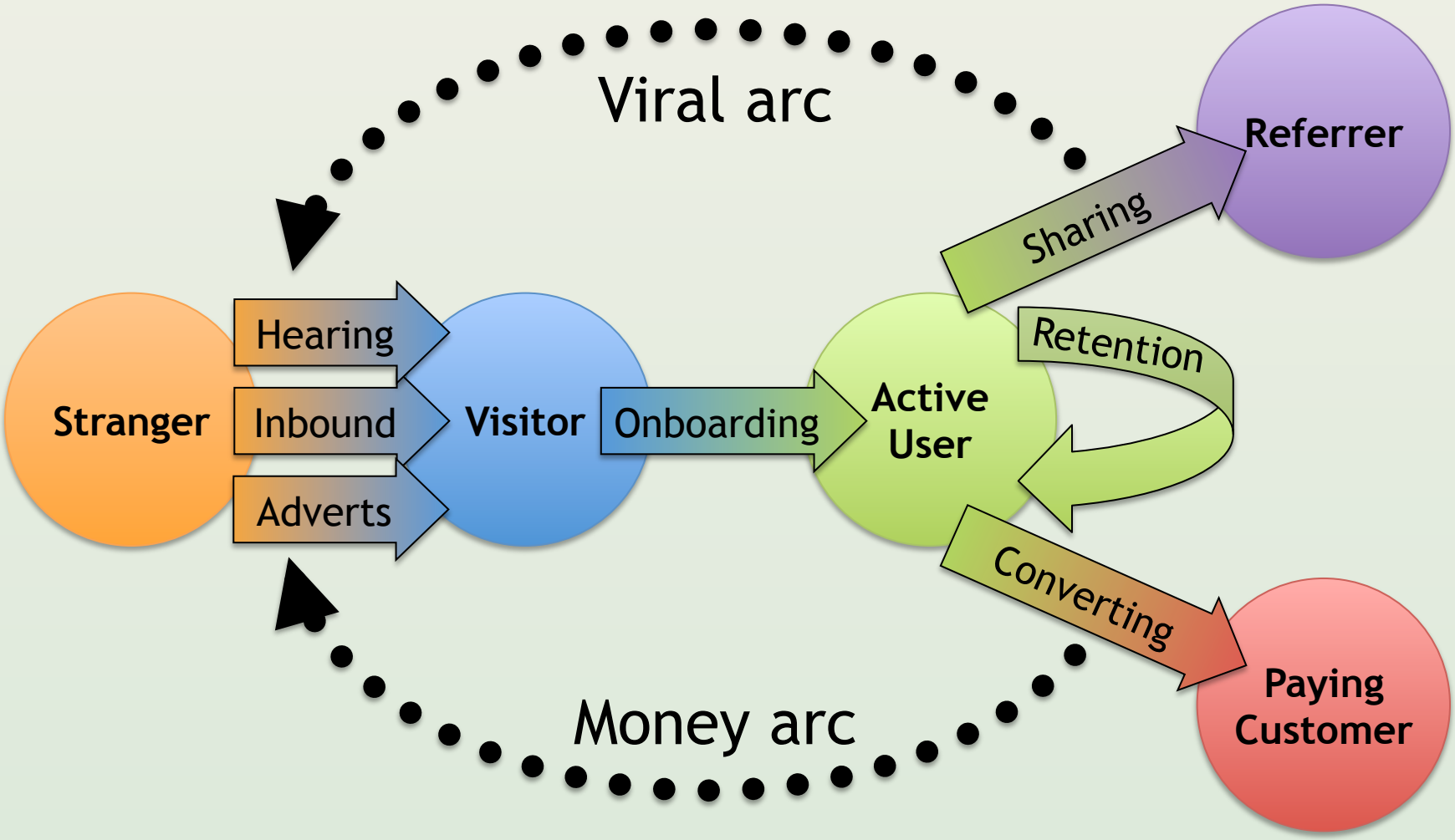
Product development



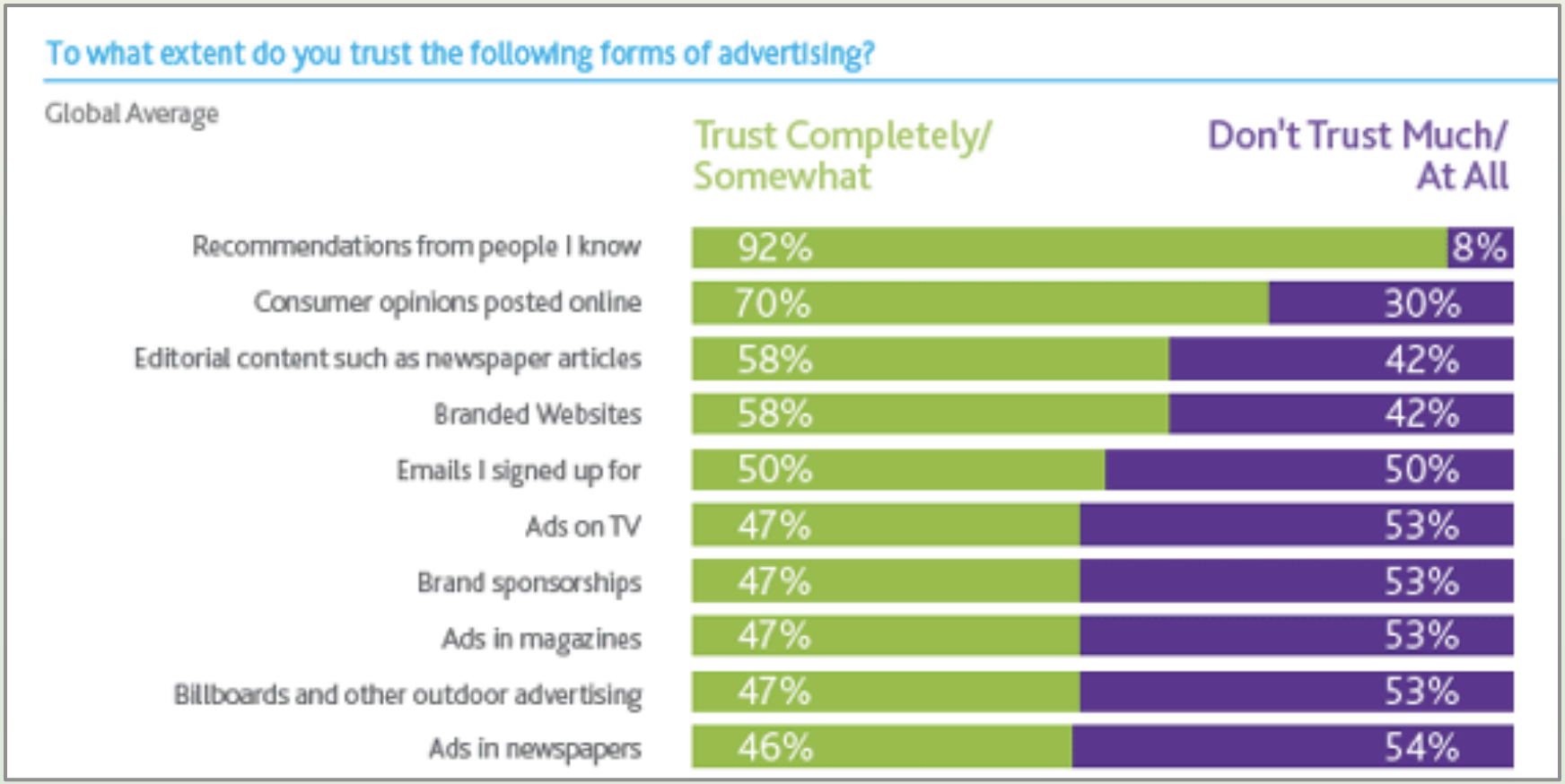
Compound Growth

Monthly	1 year	2 years	5 years	10 years
3%	1.4x	2.0x	5.9x	**35x**

Map of Startup Growth



Word of Mouth



Source: Nielsen Global Trust in Advertising Survey Q3 2011

On marketing schemes…

"The one thing we learned over 5 years is that *nothing* works better than just improving your product. Every minute, every developer hour we spent on any one of these crazy things… was nothing compared to just making a better version of the product and releasing it."

— *Joel Spolsky, Fog Creek Software*

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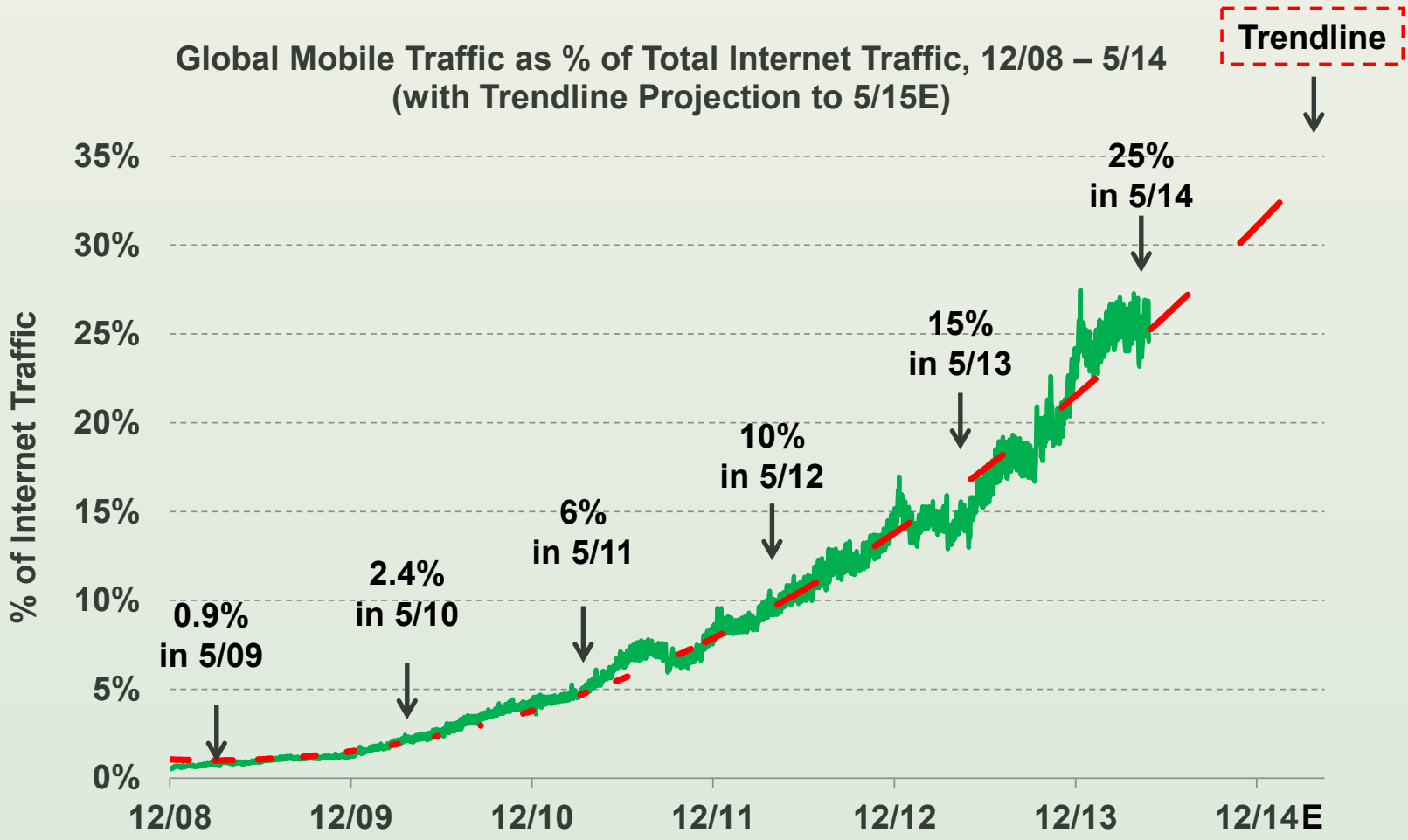
Software platforms

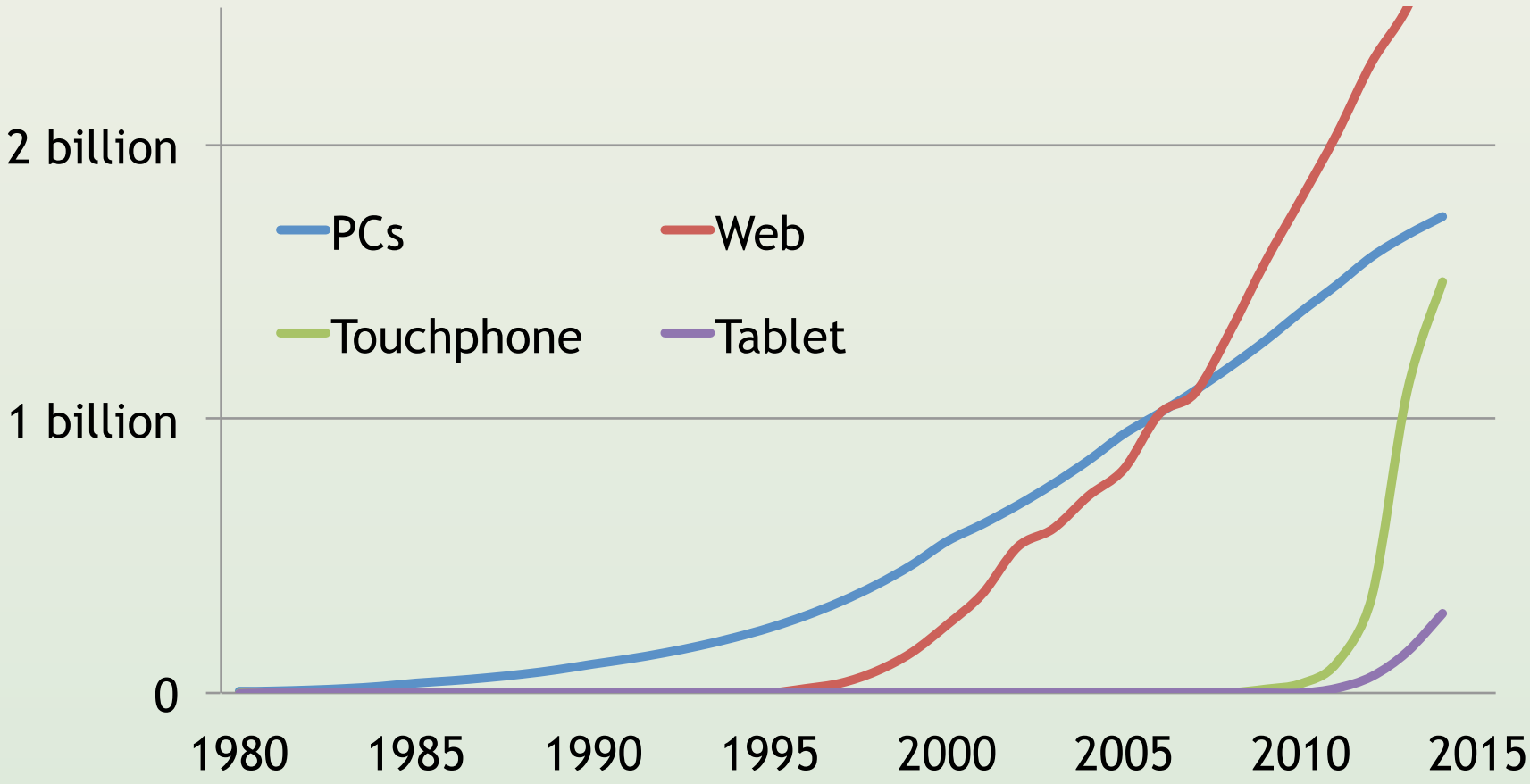
	PCs	Web	Smartphone	Tablet
Initial adoption	1977	1993	2007	2010
2013 shipments	316 million	—	1 billion	229 million
Annual growth	~10%	8%	39%	59%
Jan 2014 users	1.7 billion	2.8 billion	1.5 billion	290 million
Core platforms				

Web on Mobile

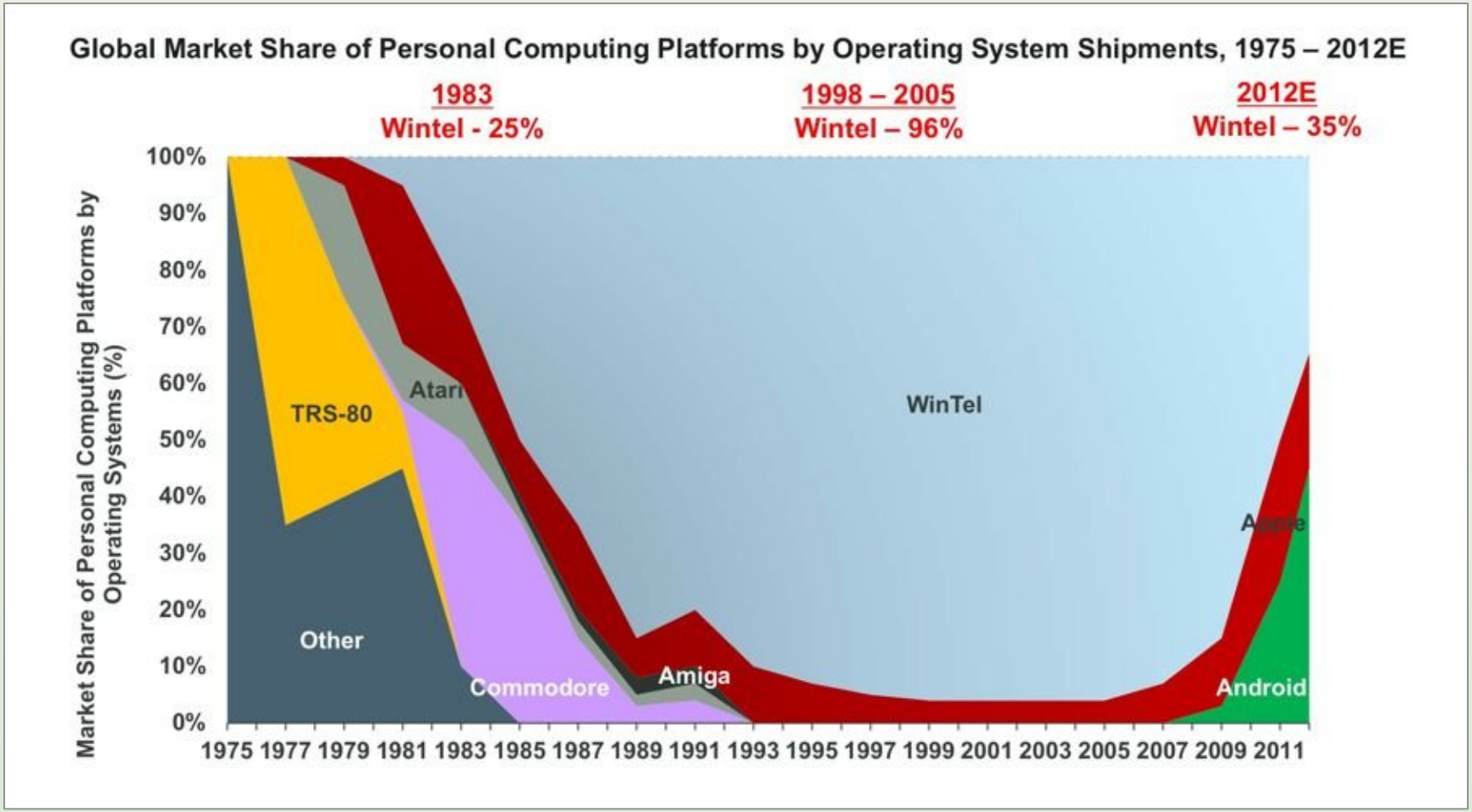


http://www.kpcb.com/internet-trends

Historical user growth



Operating system shipments



http://www.kpcb.com/insights/2012-internet-trends-update

Other platforms

- Mainframes
- Supercomputers
- PC servers
  - Linux, FreeBSD, Windows Server
- Game consoles
  - Wii, Xbox, PlayStation, handhelds
- Other mobiles
  - Blackberry, Symbian

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Startup founders

- 2 or 3 people
  - If just one, get lots of advice
- Complementary skills
  - Vision + Product
  - Technology
- Friendship + trust
- Shared goals
- Everyone vests

Founder goals

- ~~Make money~~
- ~~Have fun~~
- Be free
- Create something
- Do good
- Get famous
- Make money

How much annual income?

$1,000		Feel good
$10,000		Extra money
$100,000		Lifestyle
$1,000,000		Working rich

How big an exit?

$2 million	Something neat
$20 million	Team + technology
$200 million	Scaled business
$2 billion	Scare someone big

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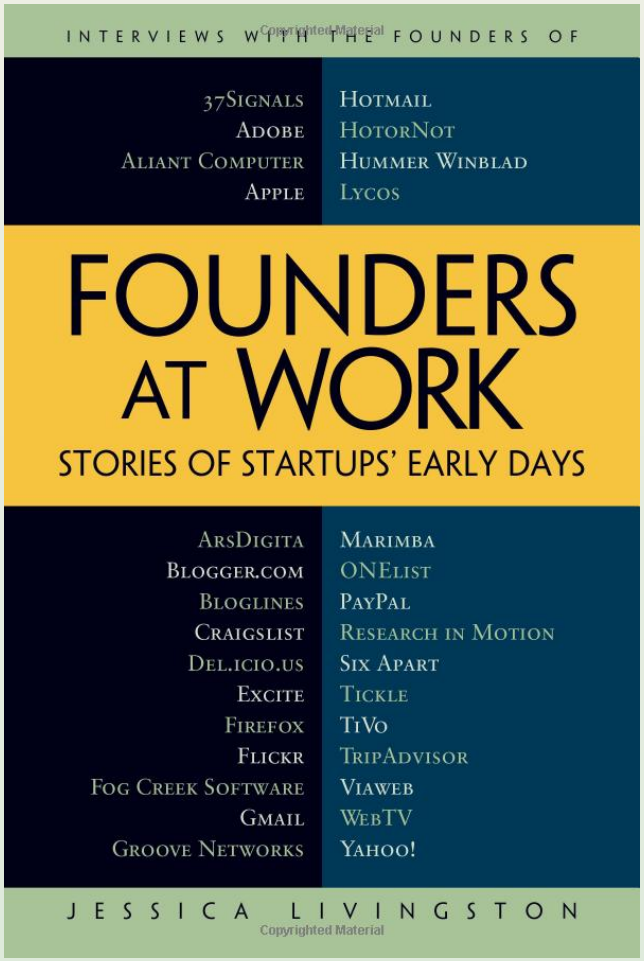
Books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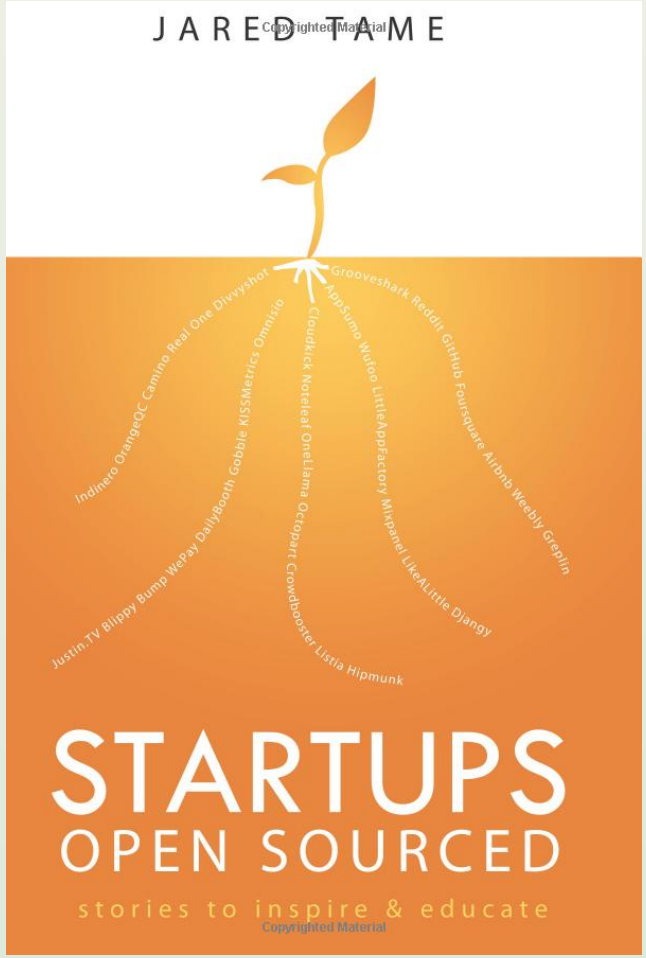
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Indinero OrangeOC Camino Real One Divvyshot
Justin.TV Blippy Bump WePay DailyBooth Gobble KISSMetrics Omniti
STARTUPS
OPEN SOURCED
stories to inspire & educate

Some websites

Hacker News	Links to news	news.ycombinator.com
Mashable	Social media news	mashable.com
Mixergy Interviews	Interviews with founders	mixergy.com/interviews
OnStartups Answers	Q&A for startups	answers.onstartups.com
Quora	Q&A popular with startups	quora.com
ReadWriteWeb	In-depth startup blog	readwriteweb.com
TechCrunch	Leading startup blog	techcrunch.com

Thought leaders — Entrepreneurs

37 Signals	Ruby on Rails	37signals.com/svn
Steve Blank	“Customer Development”	steveblank.com
Jason Cohen	SmartBear Software	blog.asmartbear.com
Seth Godin	“Permission Marketing”	sethgodin.typepad.com
Dharmesh Shah	HubSpot	onstartups.com
Joel Spolsky	Stack Overflow	joelonsoftware.com
Eric Ries	“Lean Startup”	startuplessonslearned.com

Thought leaders — Investors

Chris Dixon	Founder Collective	cdixon.org
Brad Feld	TechStars	feld.com
Paul Graham	Y Combinator	paulgraham.com
Guy Kawasaki	Garage Technology Ventures	blog.guykawasaki.com
Dave McClure	500 Startups	500hats.typepad.com
Mark Suster	GRP Partners	bothsidesofthetable.com
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