

 **No bullet points**

Stefan Fountain

What happens when
David Hasselhoff
meets the cloud.







Hassle-free contacts



The solution to the growing problem and mess
that is your address book.



soocial

Unified address book

Keep your address book sane, safe and clean.

Open address book platform

A large, dramatic cloud formation at sunset or sunrise, with a dark silhouette of trees and a lit lamp in the foreground.

1

Moving to the cloud

2 The cloud?



A scenic landscape featuring snow-capped mountains, a forested valley, and a paraglider flying in a blue sky with white clouds. The text "Consuming vs Offering" is overlaid in the center.

Consuming vs Offering

Being part of it is more exciting



A large, dramatic cloud formation at sunset or sunrise, with a dark silhouette of trees and a lit lamp in the foreground.

1

Moving to the cloud



The Hoff goes
into the cloud

Pre-ambule



Small team

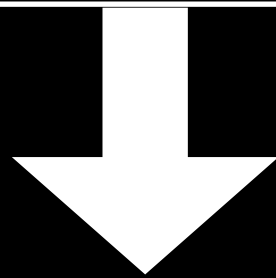
A man with a long, dark beard and curly hair, wearing a red t-shirt with a graphic, gesturing with his right hand. The background is a plain, light-colored wall.

Pre-ambble

Sys admin?

Pre-amble

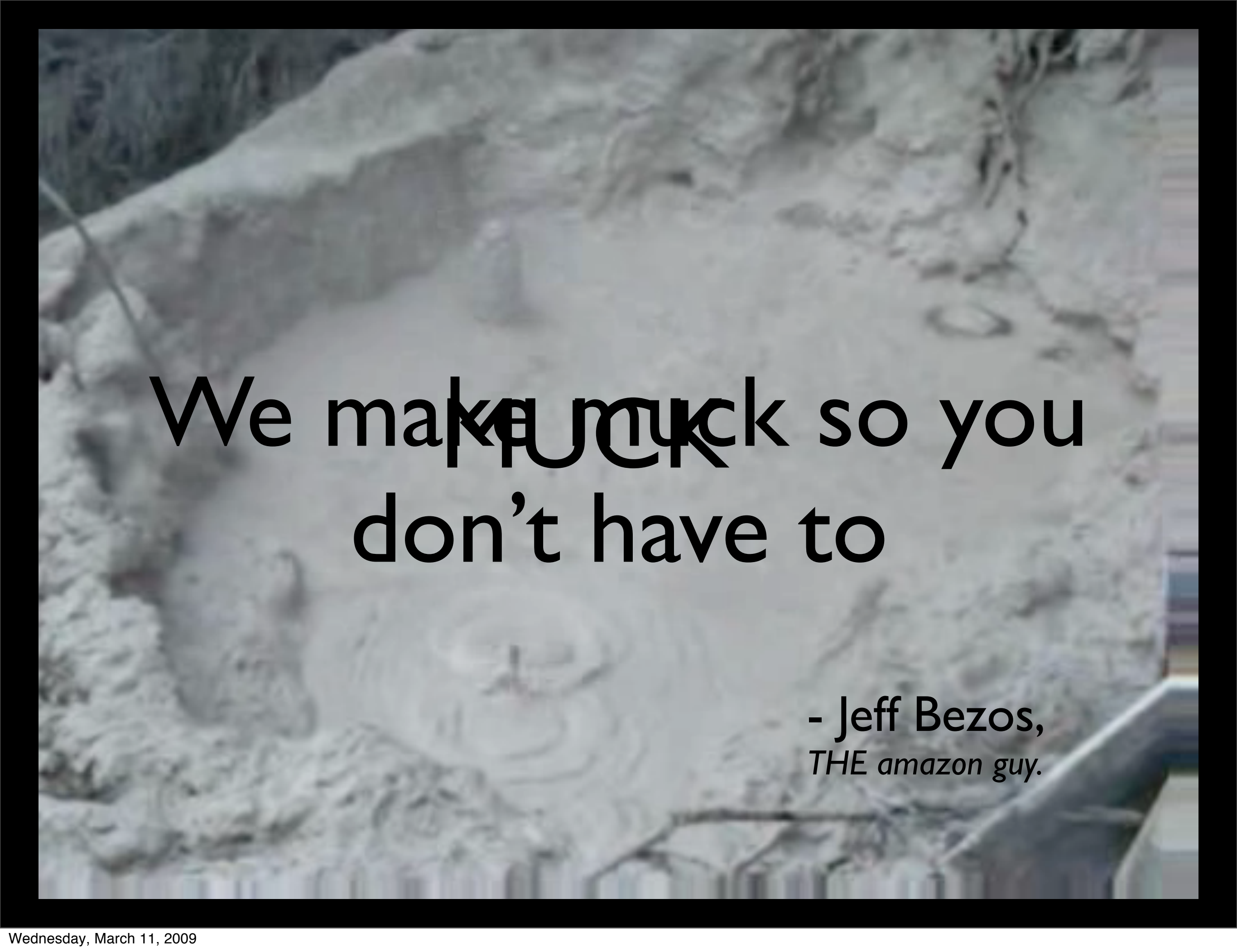
This guy knows nothing



Pre-amble



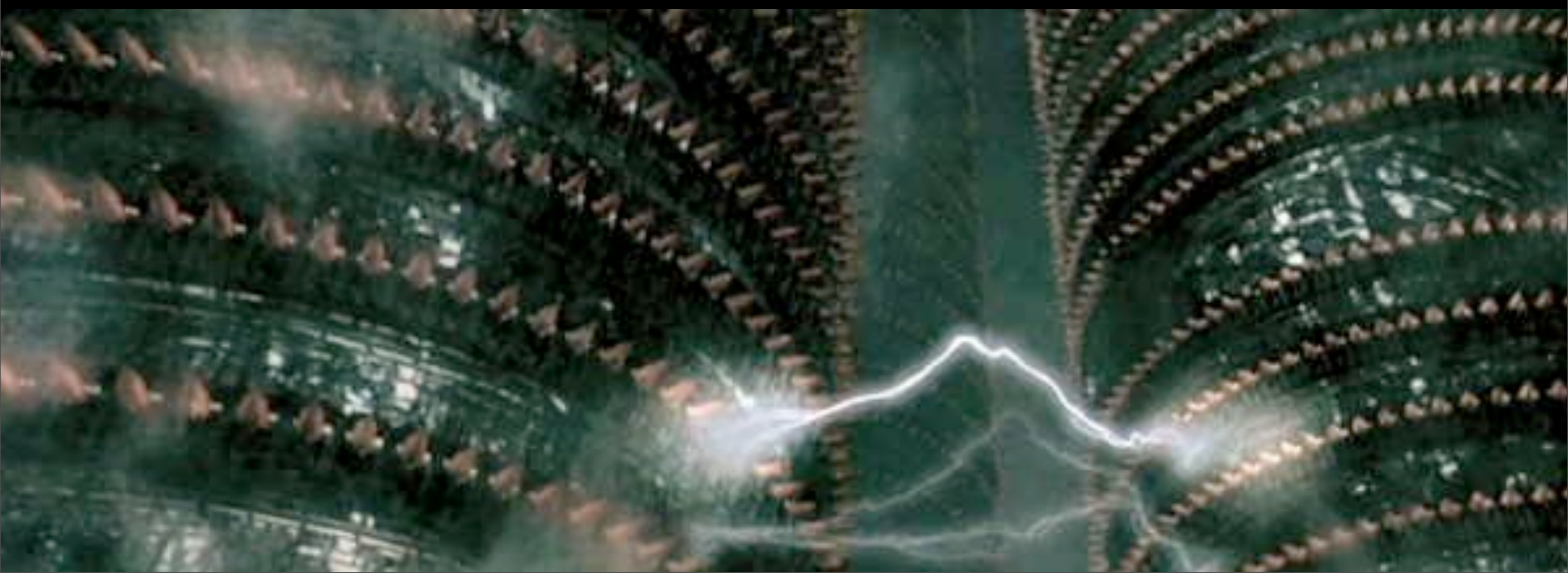
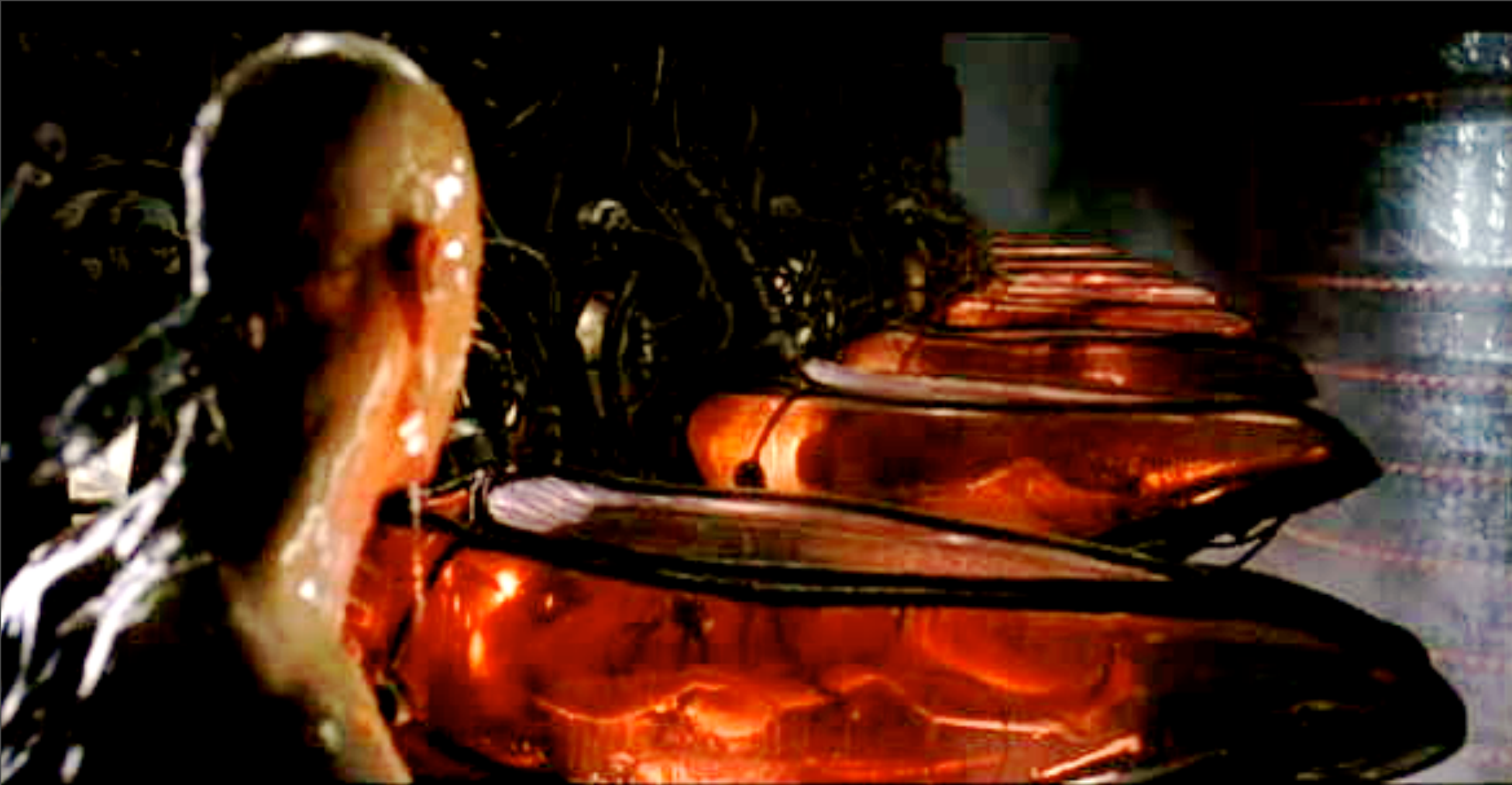
Why move?



We make youck so you
don't have to

- Jeff Bezos,
THE amazon guy.





Getting ready...



Be Prepared

Our process

Incremental

Pilot project

Prepare code for scaling

More live tests

Move

Upgrade

Functional parts

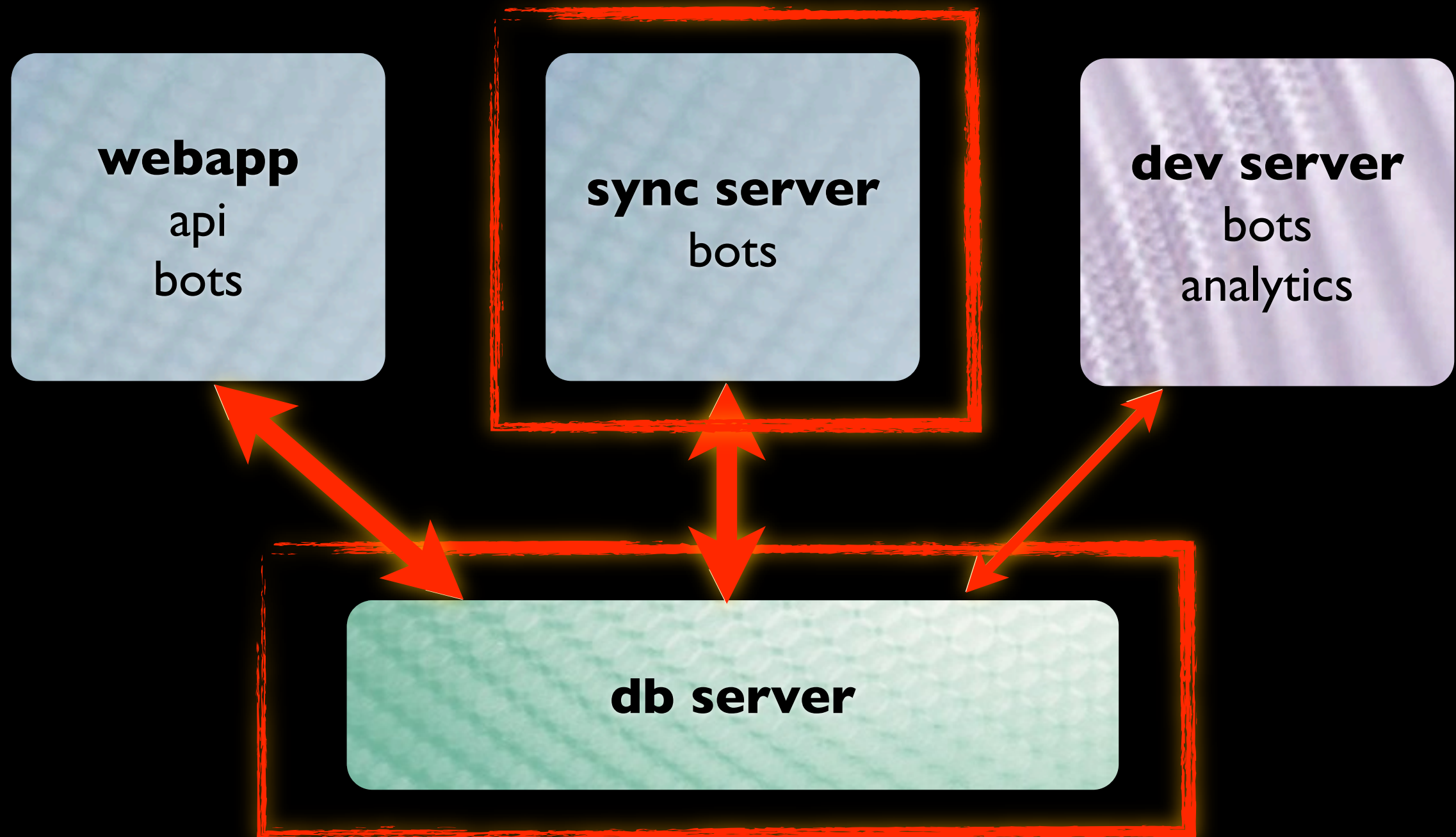
webapp:
online addressbook
user management

sync bots:
all syncs with online
services

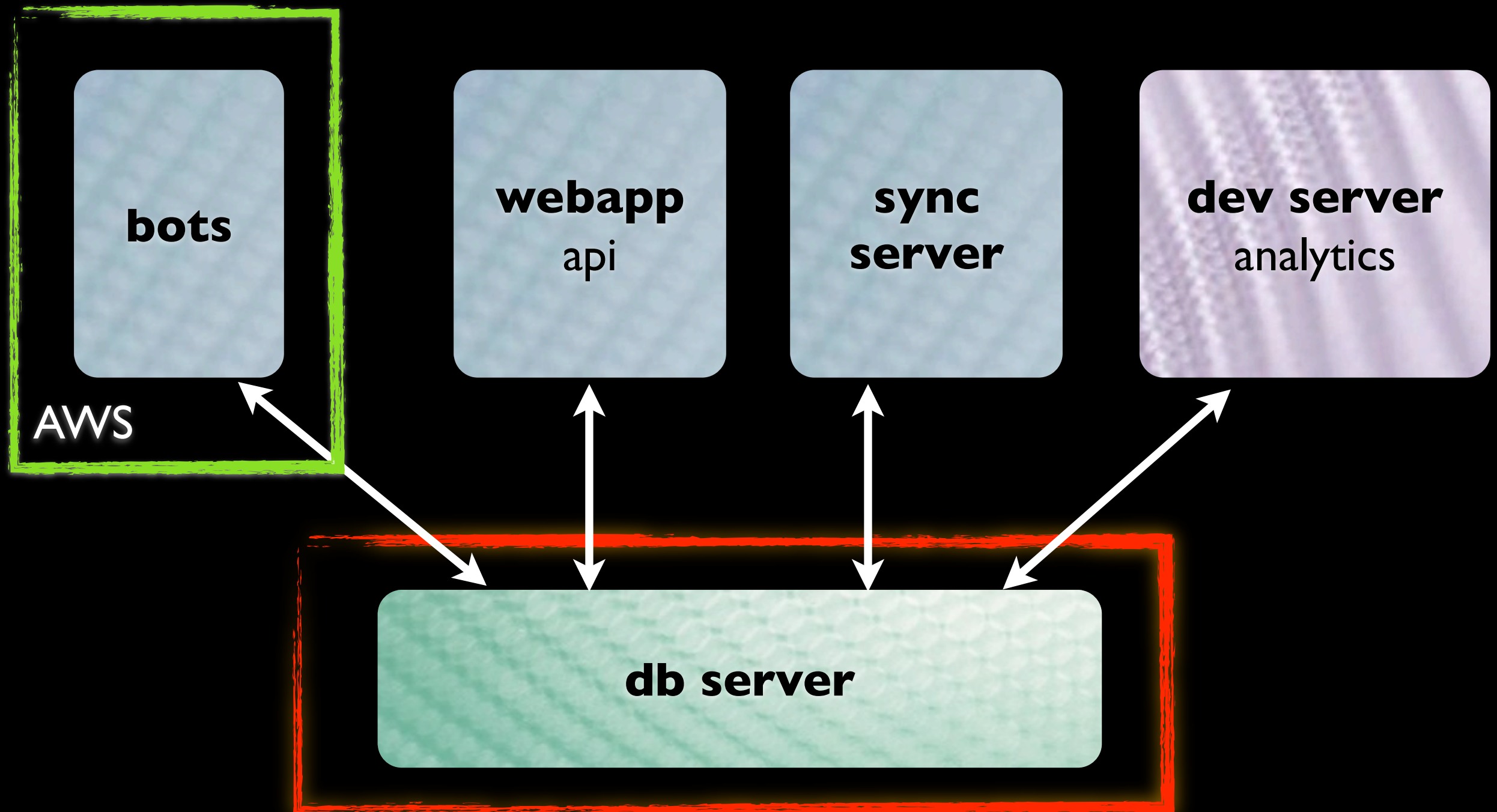
sync server:
all syncs with
devices

Hardware setup

- Large Server
- Medium Server
- Small Server



Pilot



Wish list

No single point of failure

Easily switch between any component

Easily increase capacity without downtime

Manageable (auto-scaling?)

Shopping list

Webapp multiple instances

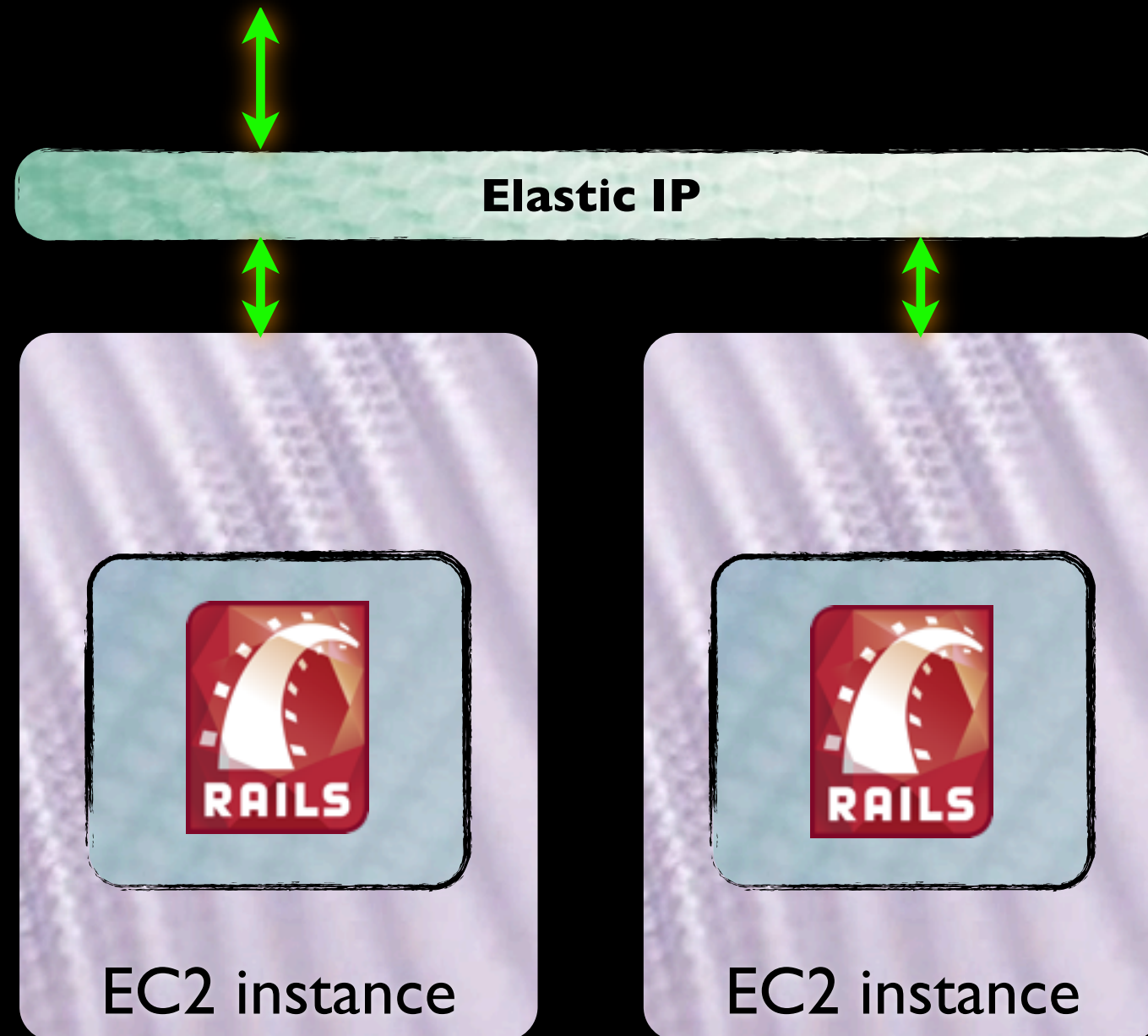
Sync server multiple instances

Bot multiple instances

Database instances, maybe sharding(?)

Multiple instances

Multiple instances



Elastic IP

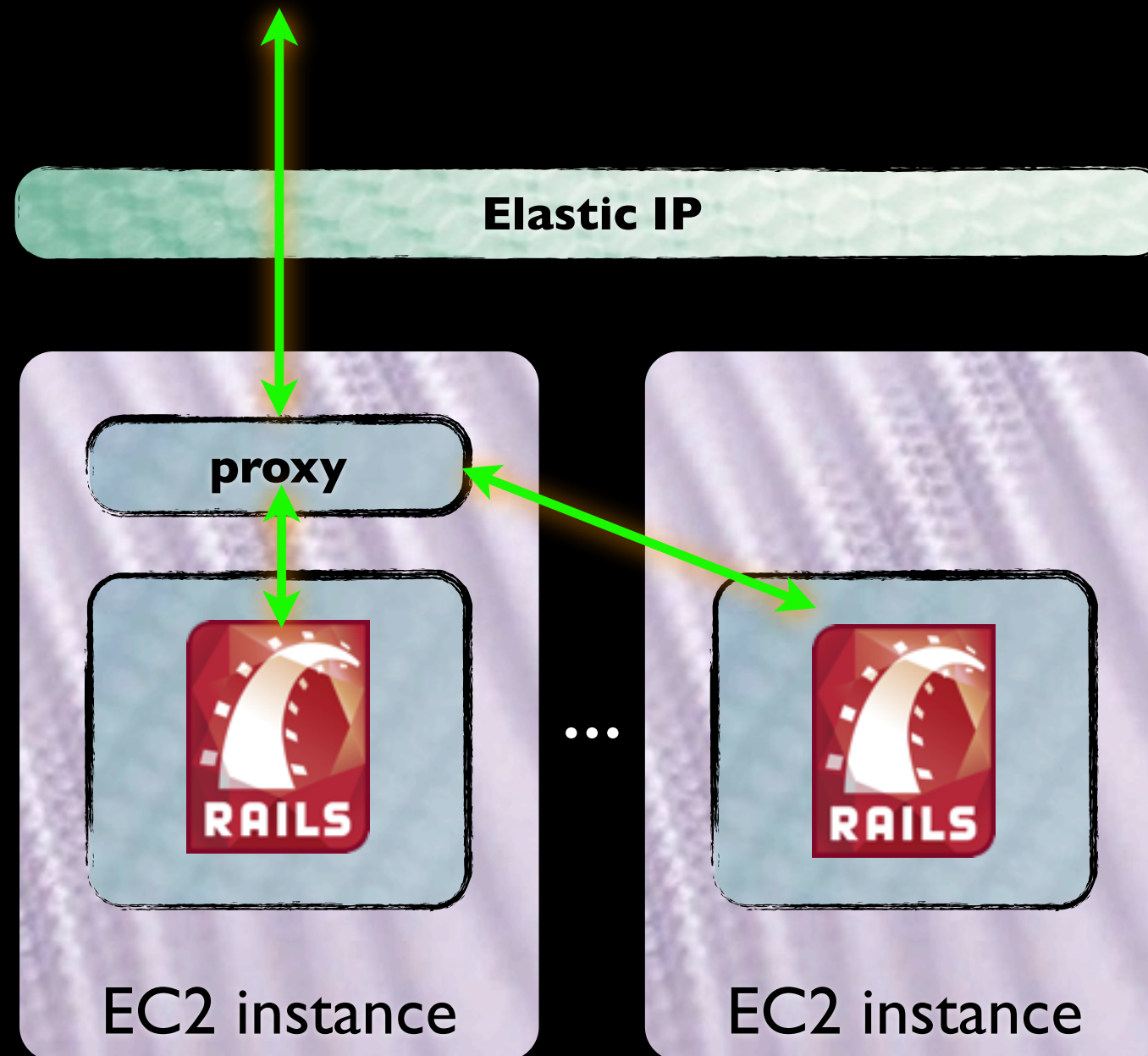
`soocial.com`

`ec2-75-101-165-114.compute-1.amazonaws.com`

`$ ping soocial.com:`

`PING soocial.com (75.101.165.114)`

Multiple instances



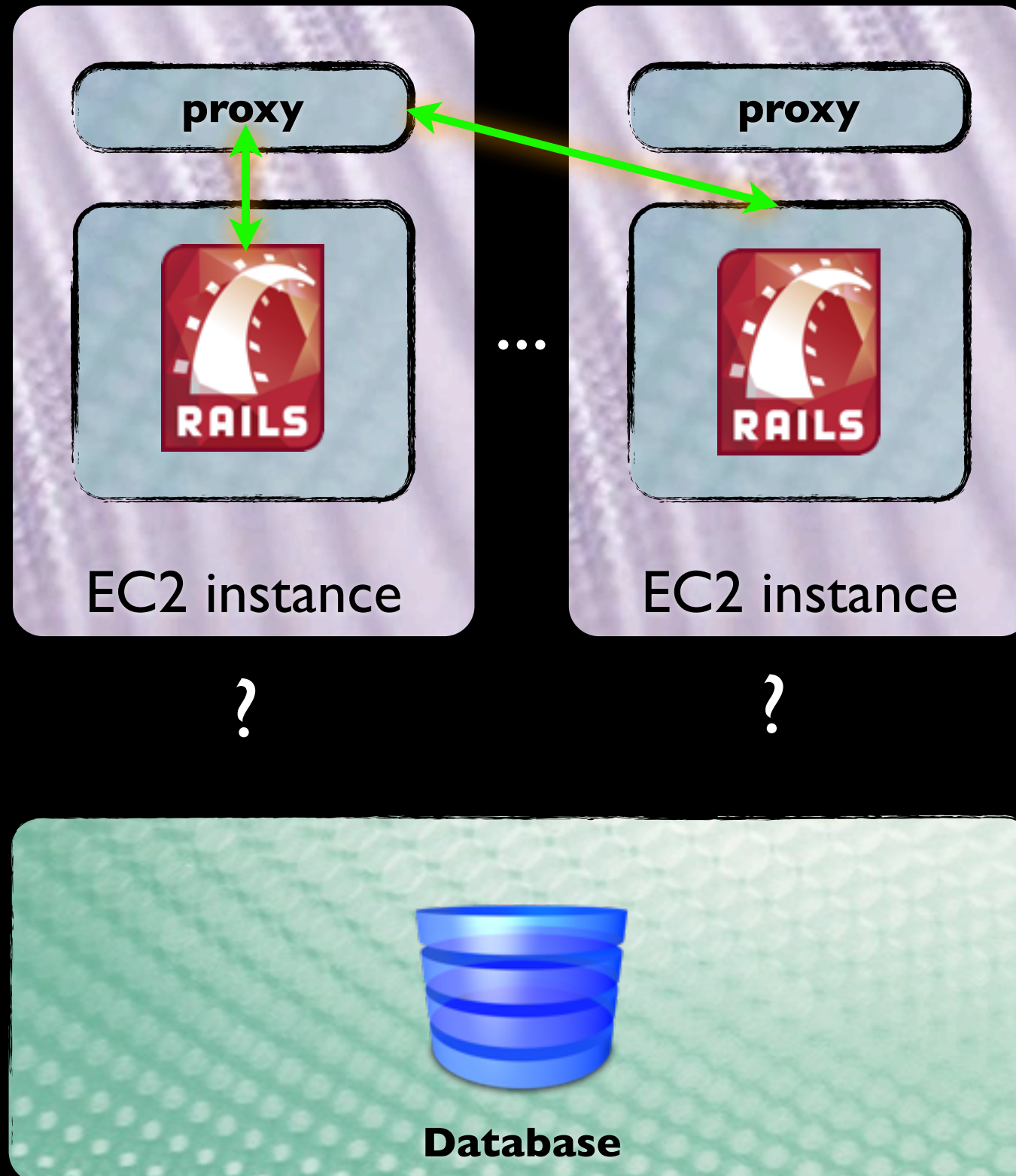
Config

main.vhost.conf

```
upstream haproxy {  
    server ec2-123-123-123-12.compute-1.amazonaws.com:81;  
    server ec2-123-123-123-13.compute-1.amazonaws.com:81;  
    server ec2-123-123-123-14.compute-1.amazonaws.com:81;  
    server ec2-123-123-123-15.compute-1.amazonaws.com:81;  
}
```

All webapp instances
Automate this

Elastic IP



Rails config: config/database.yml

production:

<<: *login

host: ec2-xx-xxx-xxx-xx.compute-1.amazonaws.com

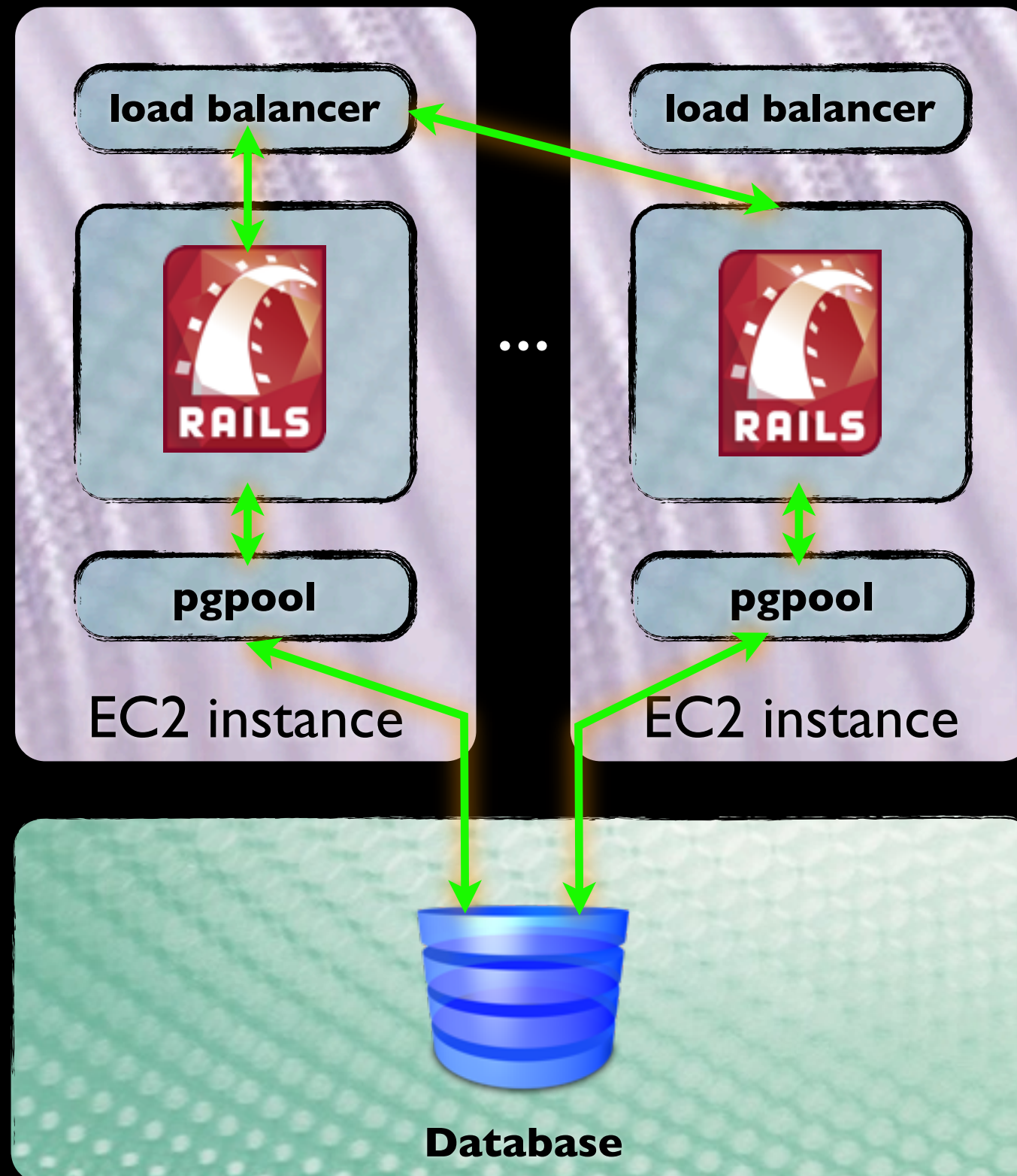
port: 9999

database: social_production

Rails config: config/database.yml

```
production:  
  <<: *login  
  host: localhost  
  port: 9999  
  database: soocial_production
```

Elastic IP



Database on EC2?

What if it goes down?

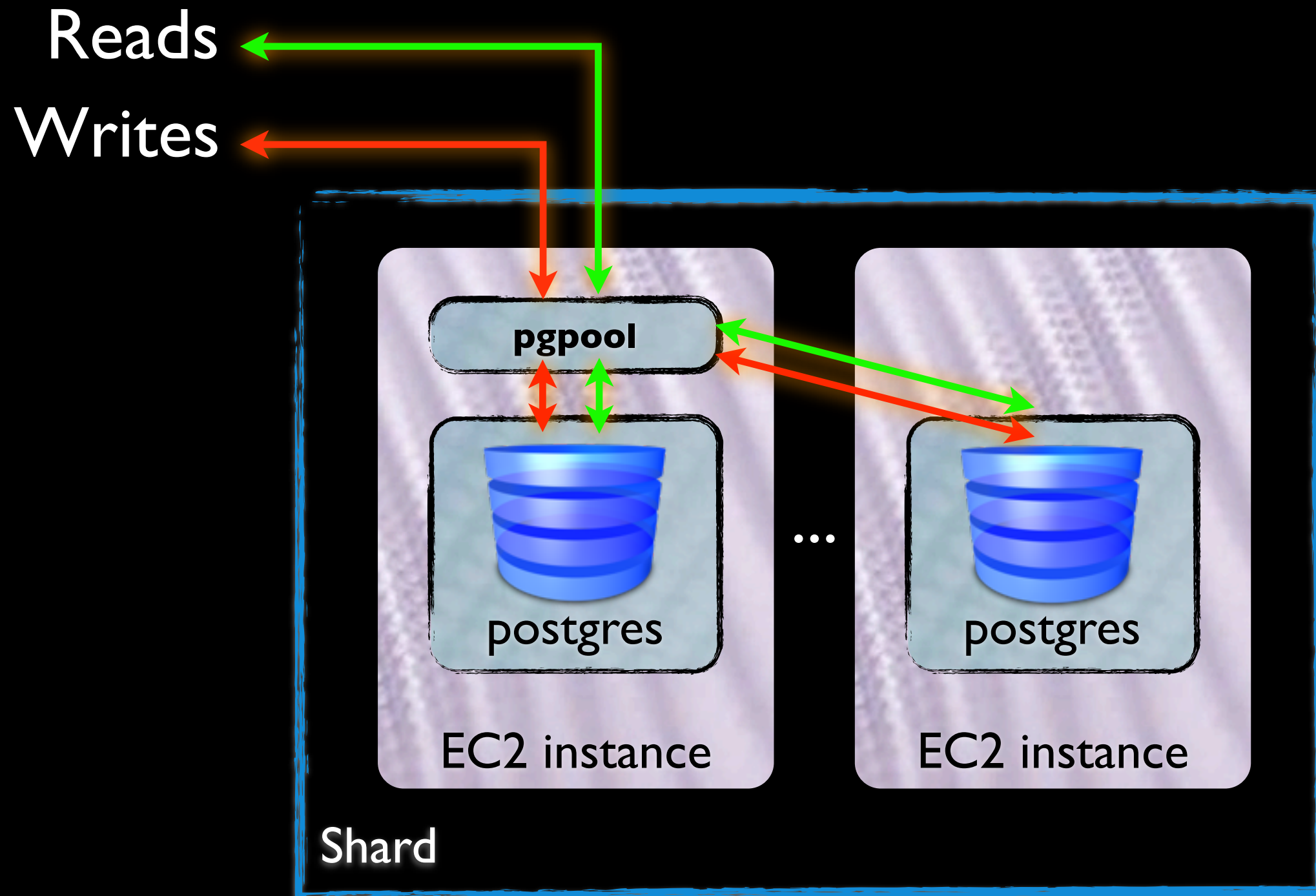
What happens to the data?

Is it gone or what?

Elastic Block Storage



Database



Database

Users id < 100.000

Users id > 100.000

pgpool



Shard 1

...

pgpool



Shard n

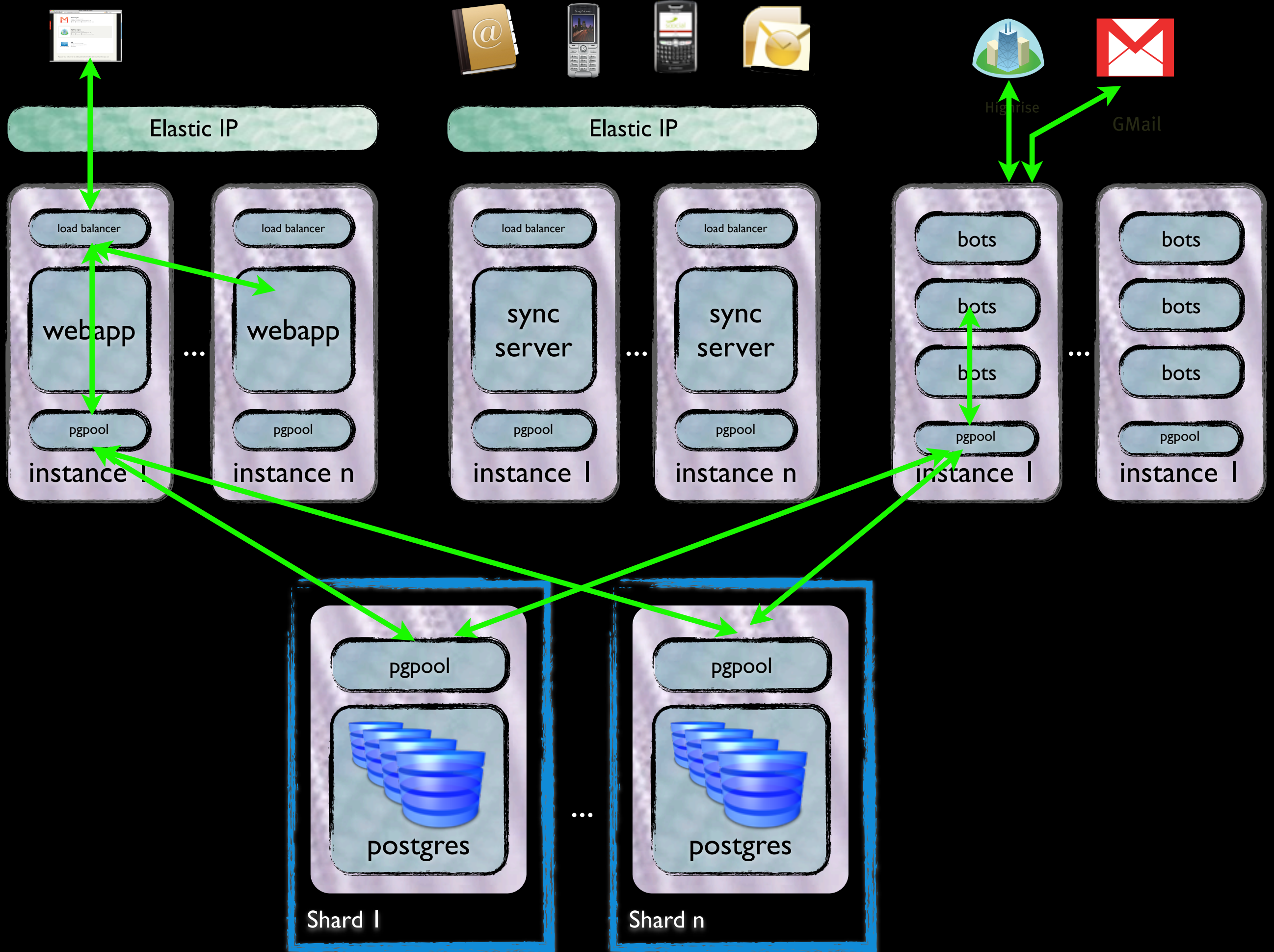
The move

webapp

sync server

bots

database



Changes needed

changes to code:

nearly none

Deploy scripts

```
@ec2 = EC2::Base.new(  
  :access_key_id => "XYZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ",  
  :secret_access_key => "XXXXXXXXXXXXXXXXXXXXXXXXXXXXYZ")  
  
# Get id's of running images  
currently_used_images = @ec2.describe_instances ...  
  
# Get the current running bot  
AMI = @ec2.describe_images['imagesSet']['item'].select{...}  
  
# Get the actual IP addresses.  
instances = @ec2.describe_instances['reservationSet']['item'].select{...}
```

Lessons learned

Everything has to be stateless

Understand your own infrastructure

Have a project owner

Use monitoring tools



Things
were good!
right?

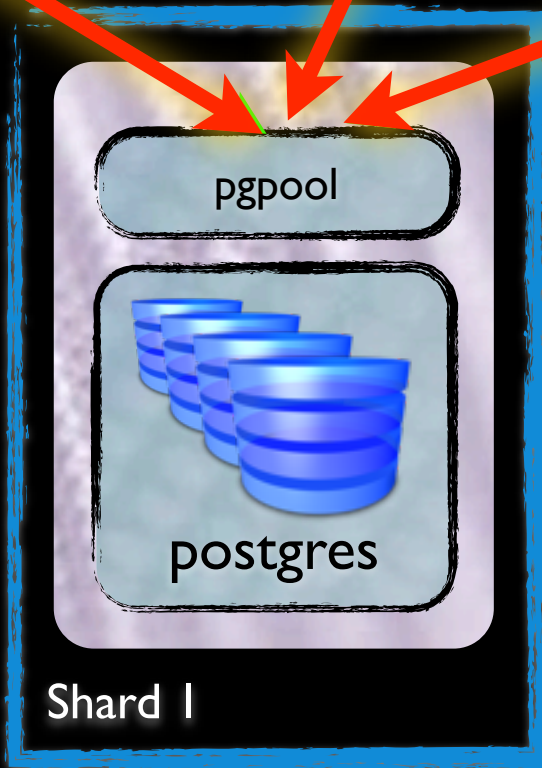
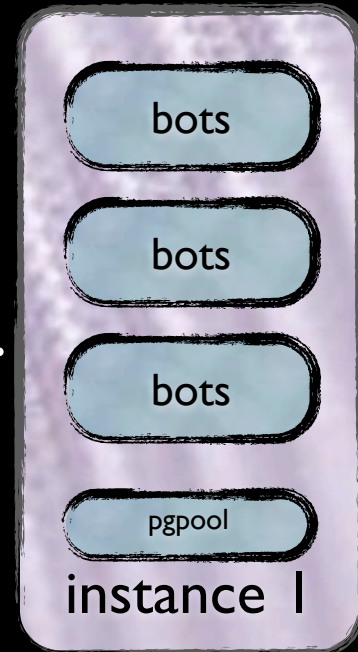
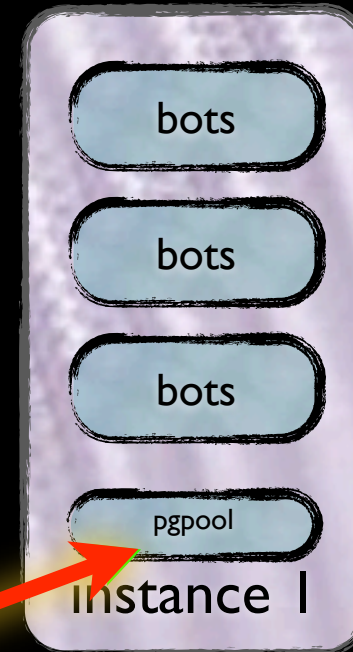
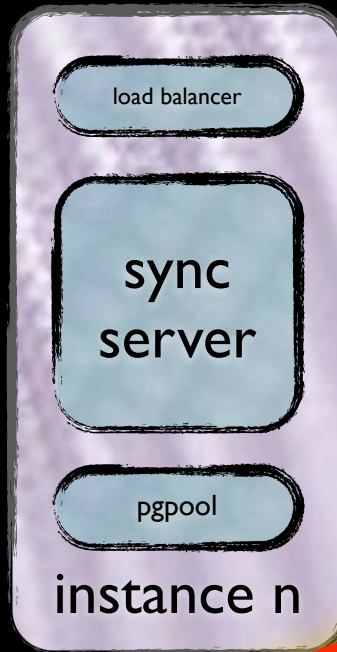
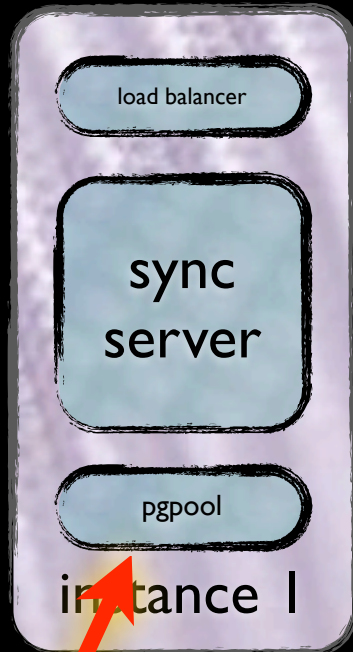
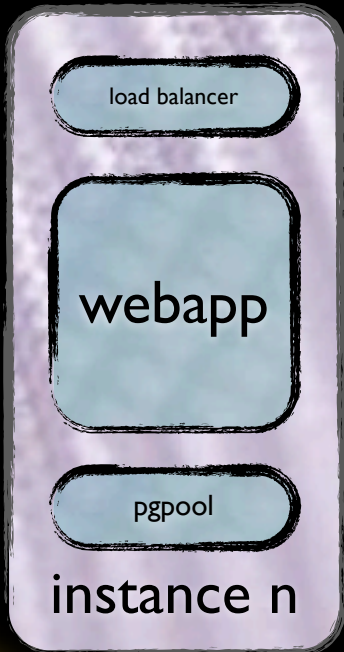
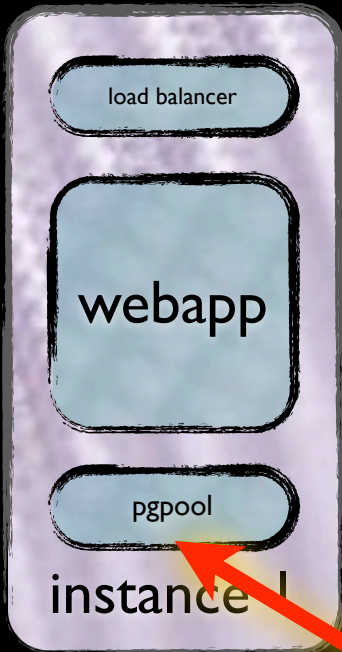


Highrise

GMail

Elastic IP

Elastic IP



...

...

...

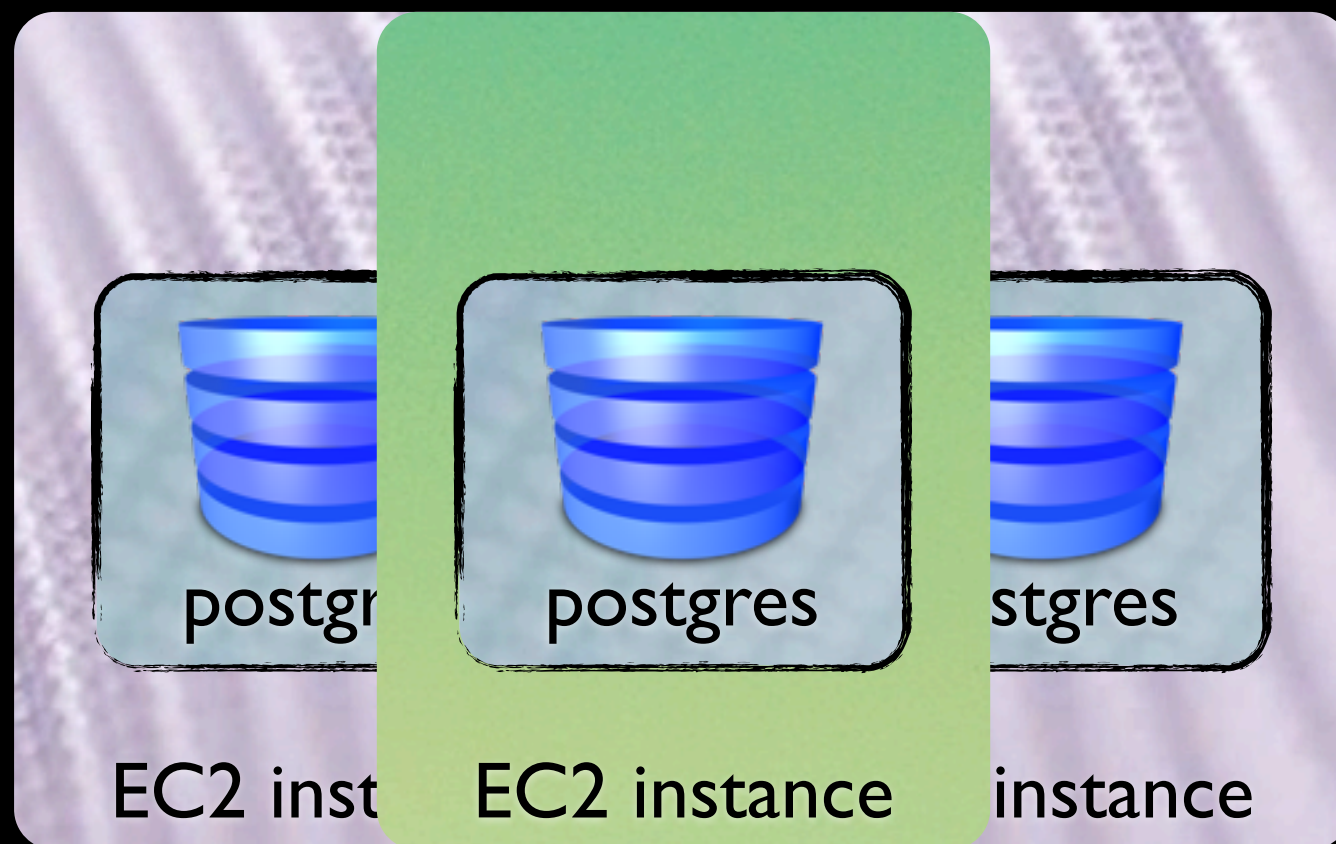


Grab the easy option

Upgrade the database server instance



Medium instance



PROBLEM: 64 BIT

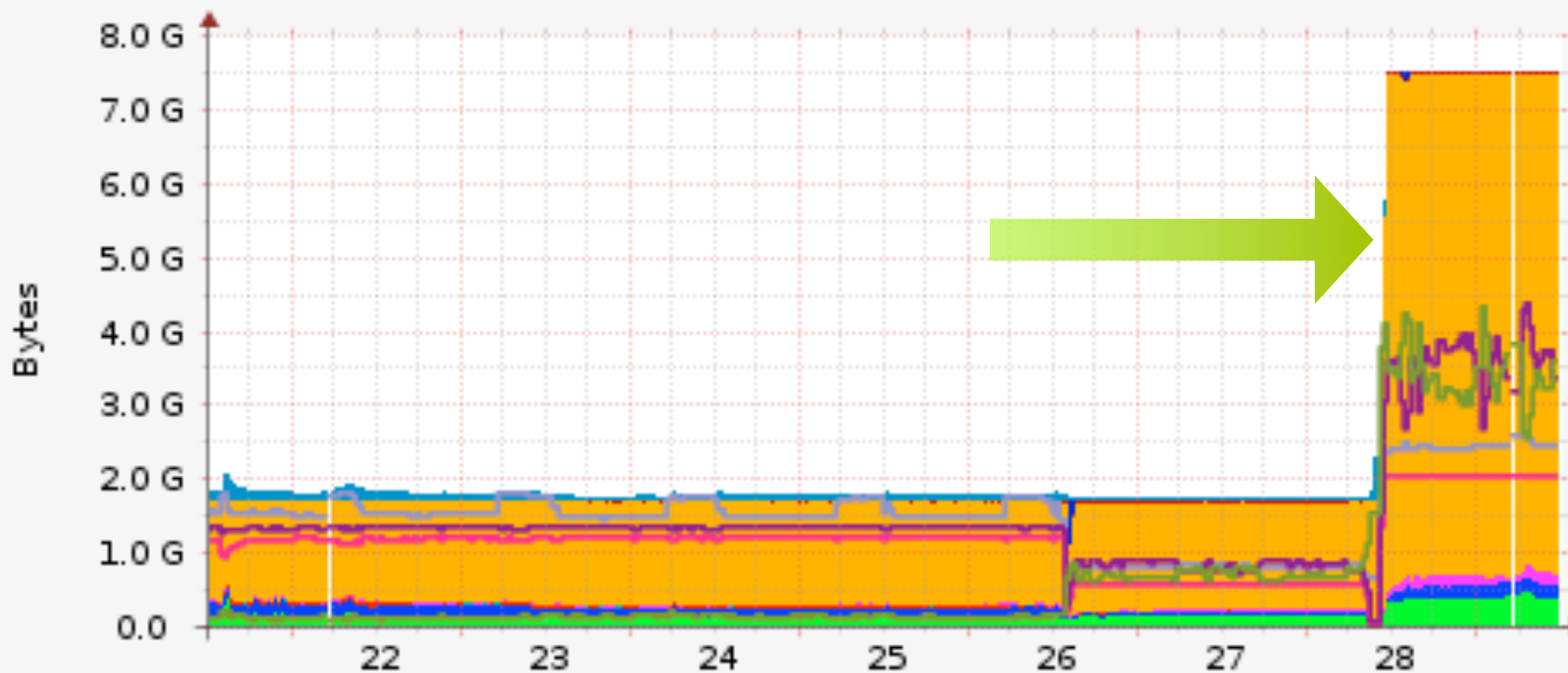
Scaling? Easy?

Change Database server to a 64-bit image

Dump/rebuild/reload our db

Memory usage - by week

RRDTOOL / TOBI OETIKER



	Cur:	Min:	Avg:	Max:
apps	392.10M	37.80M	170.90M	497.49M
page_tables	187.67M	2.19M	114.21M	229.64M
swap_cache	0.00	0.00	20.26M	159.54M
vmalloc_used	120.00k	119.76k	1.27M	1.45M
slab_cache	121.41M	15.39M	40.44M	286.81M
cache	6.79G	274.88M	2.09G	7.15G
buffers	19.14M	878.58k	16.33M	117.07M
unused	15.76M	7.63M	14.81M	1.32G
swap	0.00	0.00	58.50M	567.77M
committed	2.46G	679.55M	1.53G	2.72G
mapped	2.06G	36.99M	1.17G	2.06G
active	3.06G	74.43M	1.52G	4.97G
inactive	3.95G	48.27M	741.28M	5.12G

Last update: Thu Jan 29 12:00:09 2009

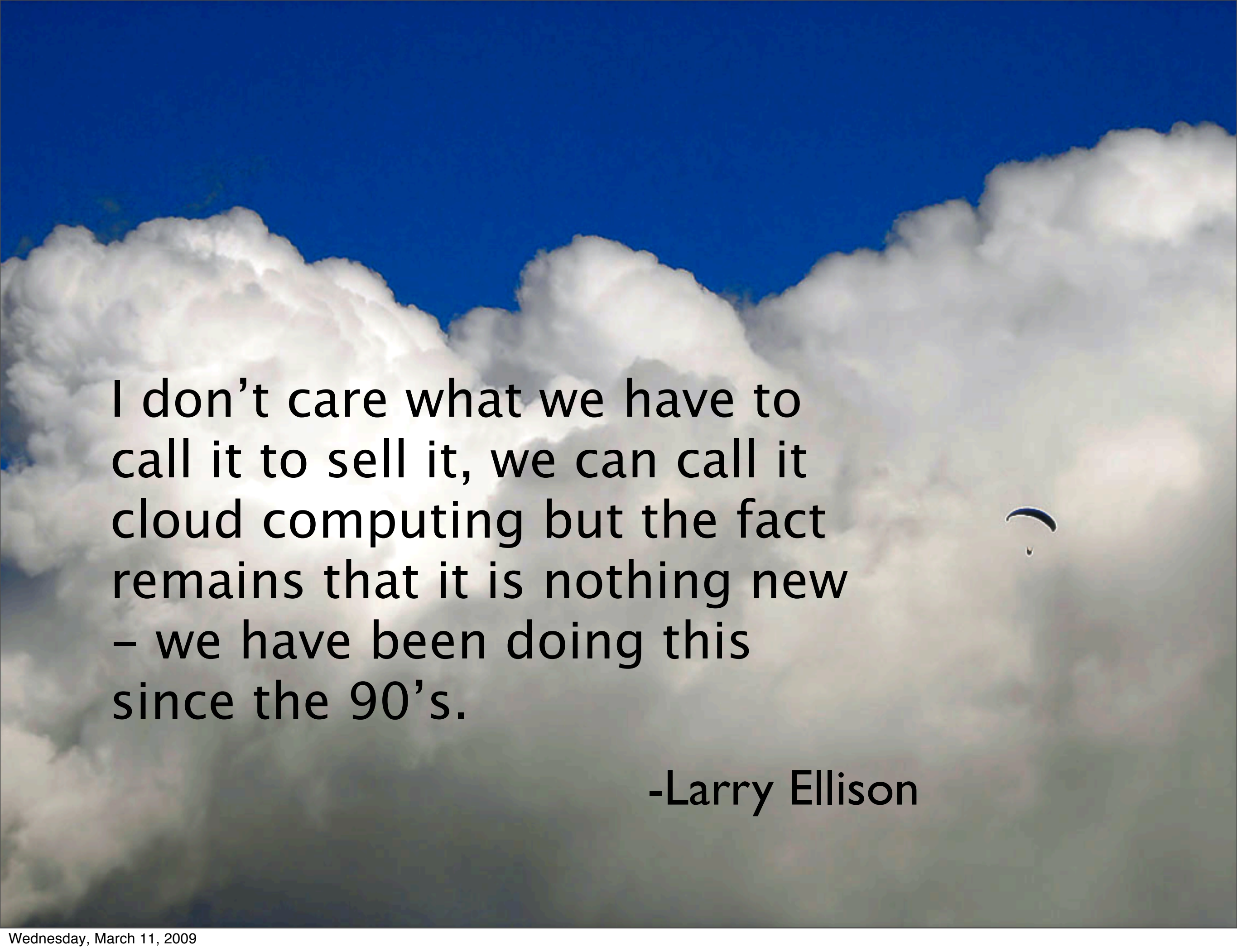
A large, dramatic cloud formation at sunset or sunrise, with a dark silhouette of trees and a lit lamp in the foreground.

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2 The cloud?

A blue sky with white clouds and a small blue object in the distance.

I don't care what we have to call it to sell it, we can call it cloud computing but the fact remains that it is nothing new – we have been doing this since the 90's.

-Larry Ellison

@jamesurquhart IT is a barrier to getting things done for most businesses; the Cloud reduces or eliminates that barrier.

5:27 PM Nov 29th, 2008 from TweetDeck in reply to jamesurquhart



GeorgeReese

George Reese



@GeorgeReese Of course, if your IT is that bad, then by all means...However, I don't buy that most IT is that bad.

10:08 AM Nov 30th, 2008 from web in reply to GeorgeReese



jamesurquhart

James Urquhart



...but there **is** something
different about it.

Commoditisation

“Change from monopolistic to
perfect competition”



Wednesday, March 11, 2009



Yesterday's
hot stuff



Today's
boredom

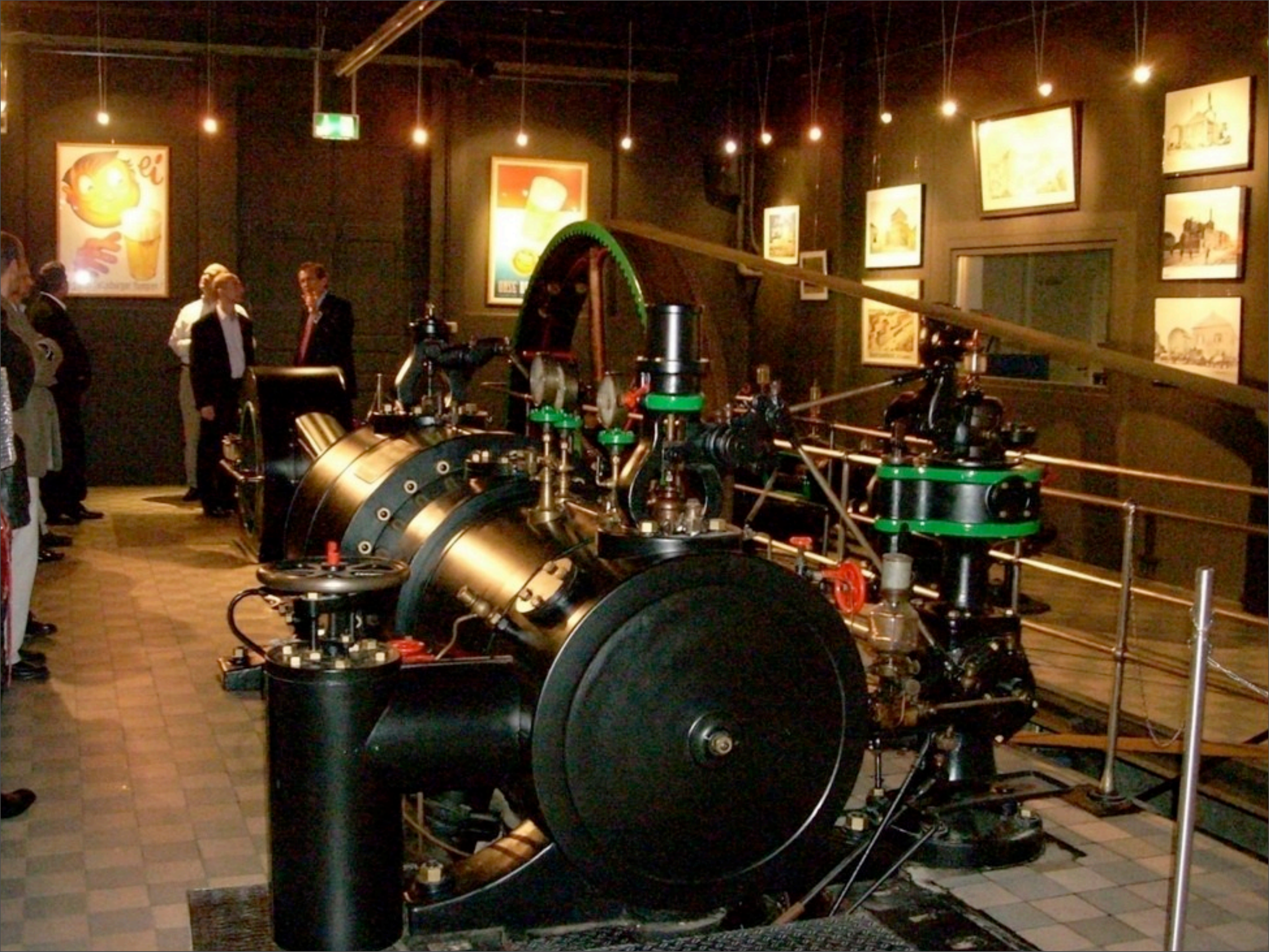
Rare thing

Generators
in Factories

Third party
providers

National
Grid

1800's
Electricity



Rare thing

Copy
cats

Standard
Products

Ubiquitously
Distributed

Rare thing

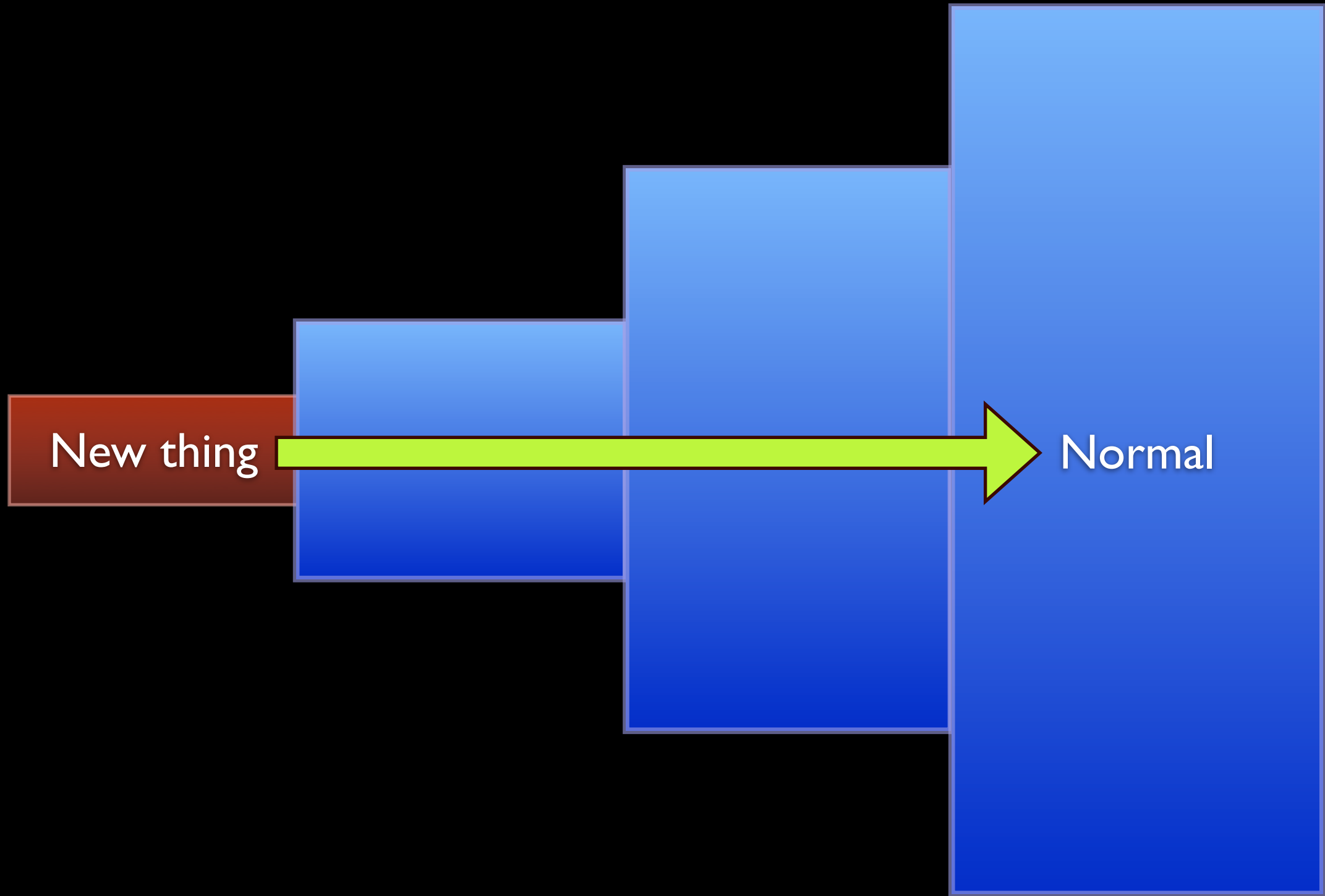
Ubiquitous
Distributed

Competitive
advantage

Rare thing

Ubiquitous
Distributed

Cost of doing
business



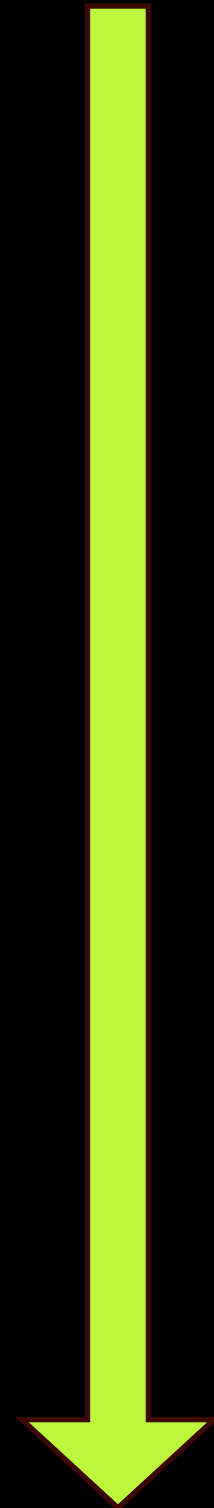
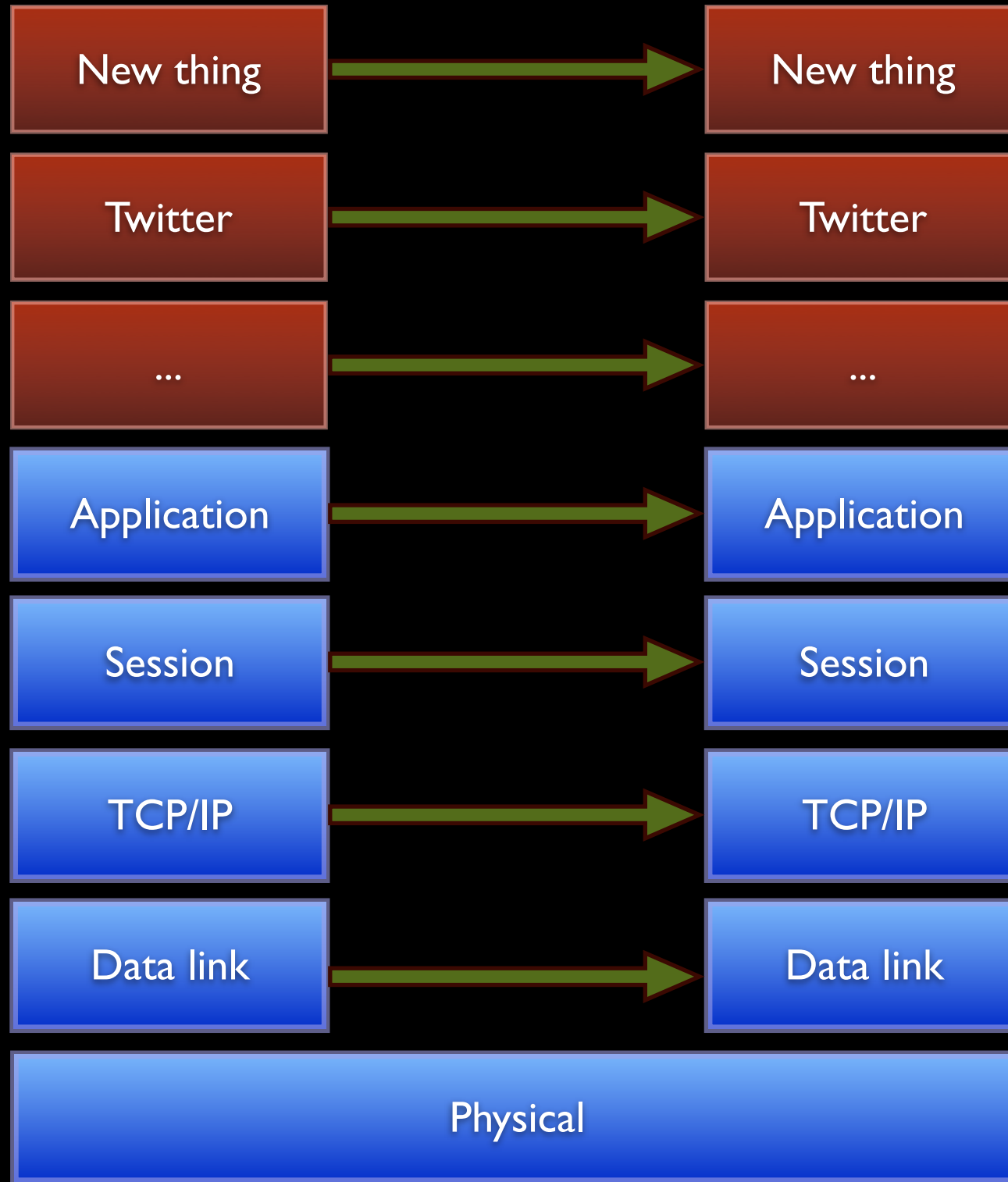
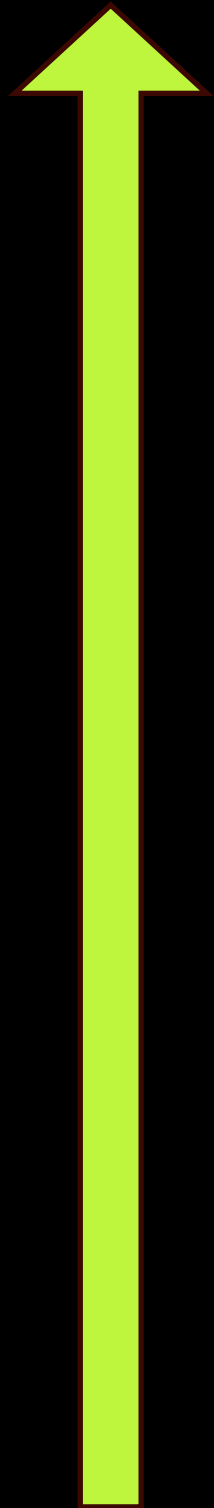
New thing

Normal

“The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”

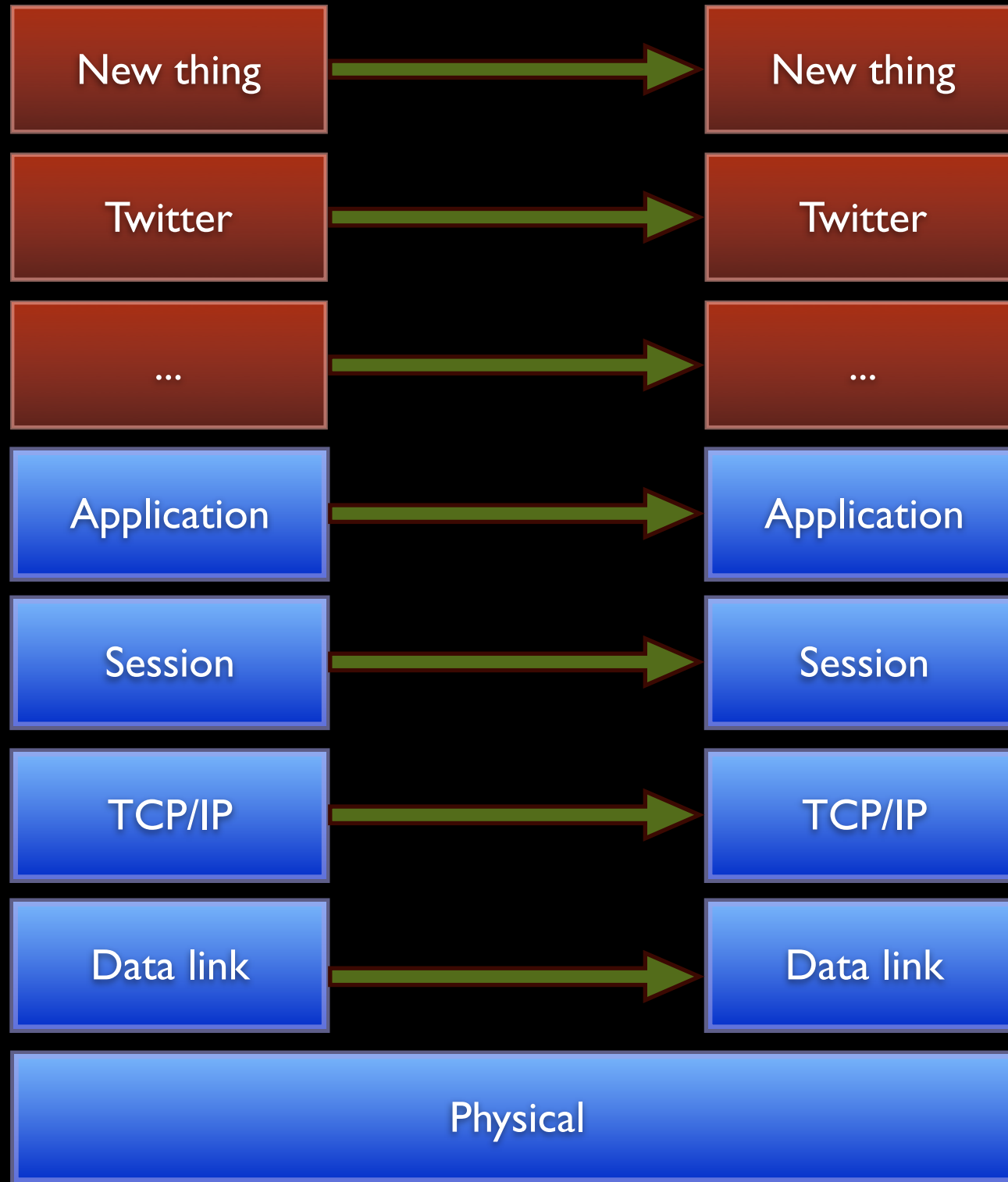
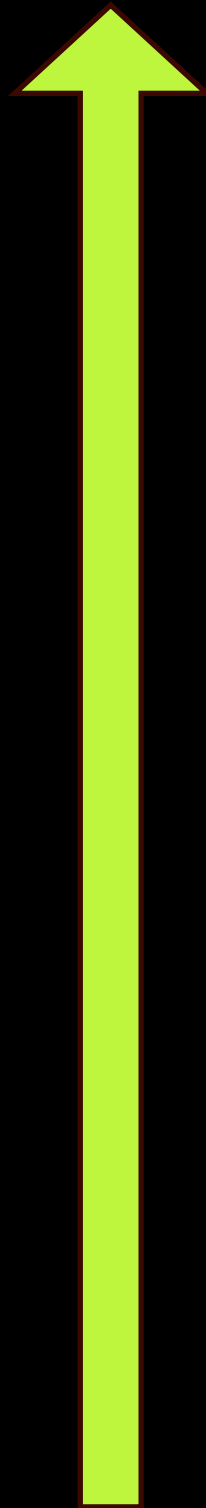
- Mark Weiser

New stuff

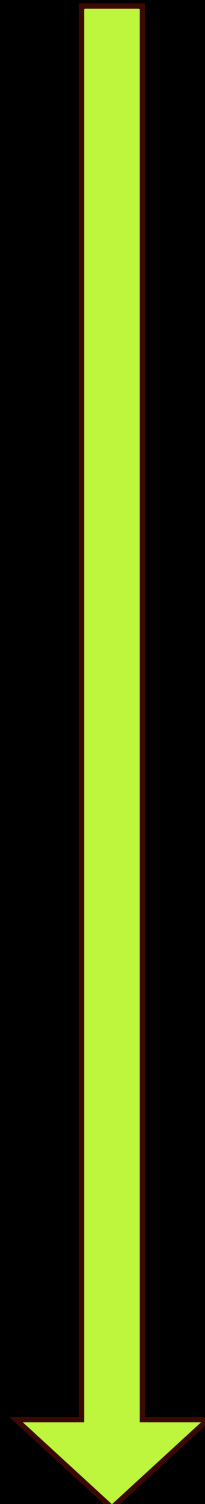


Old stuff

Visible



Disappears



AIR

OIL

P1

P2



AUTO
CRUISE

NORMAL
CRUISE

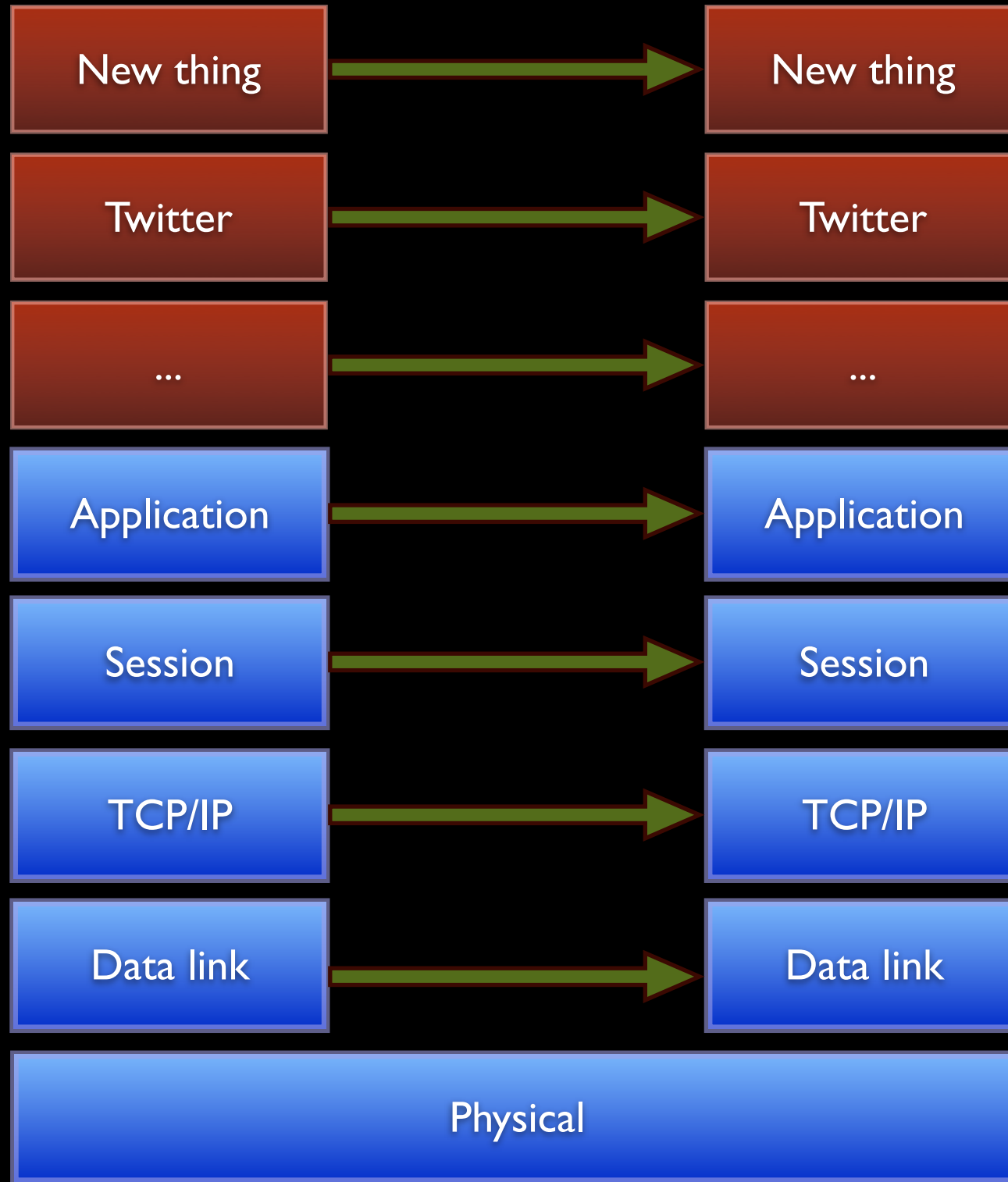
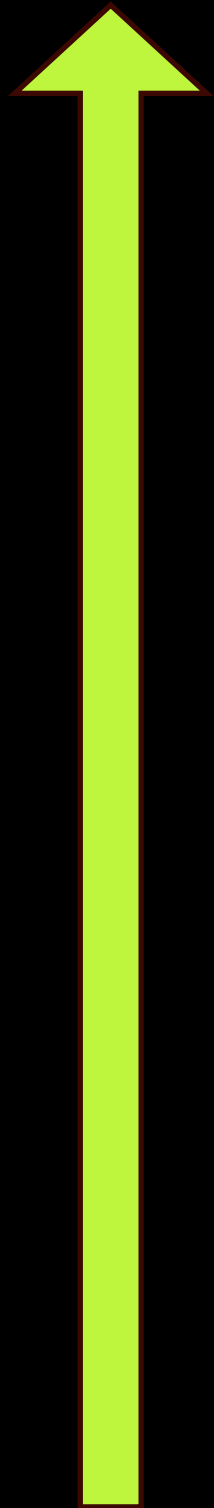
S1

S2

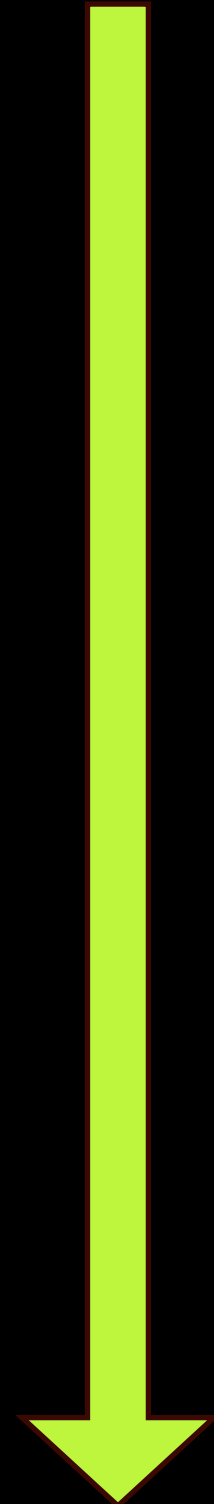
P3

P4

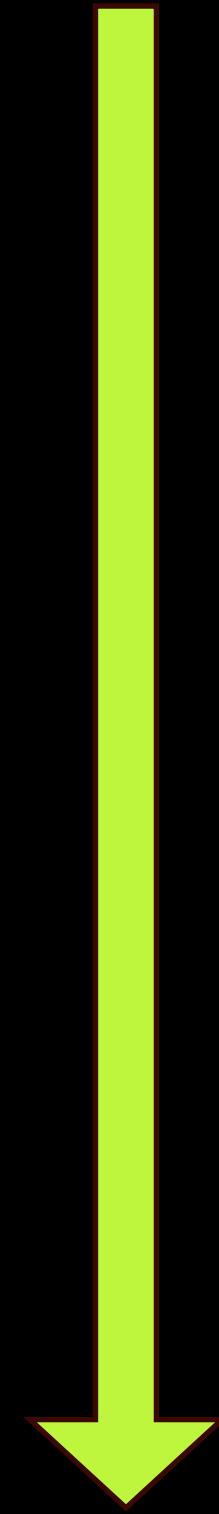
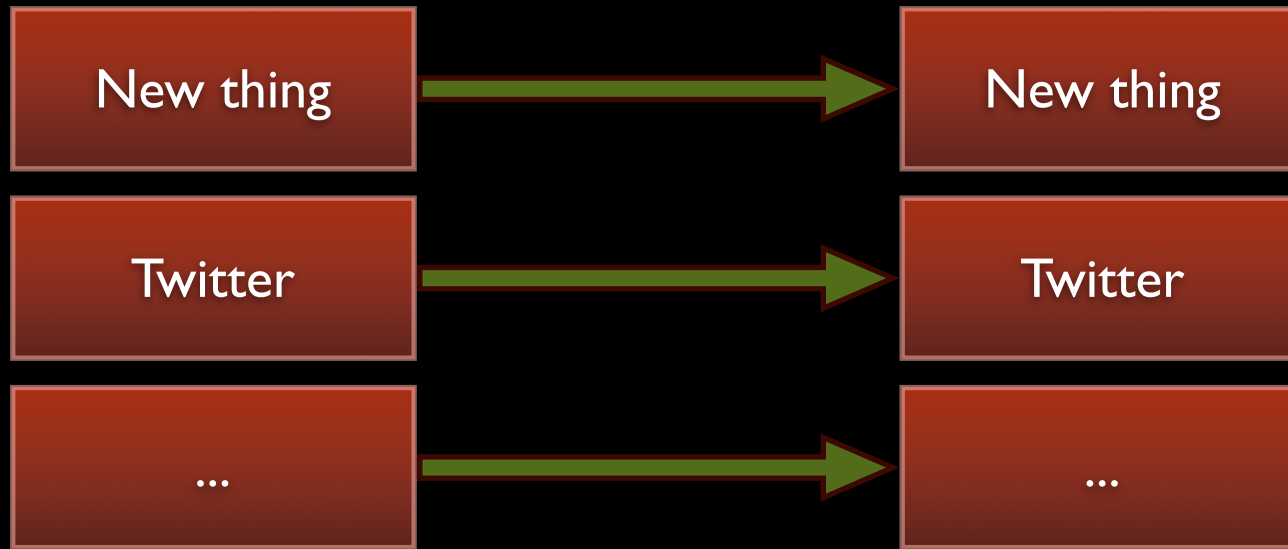
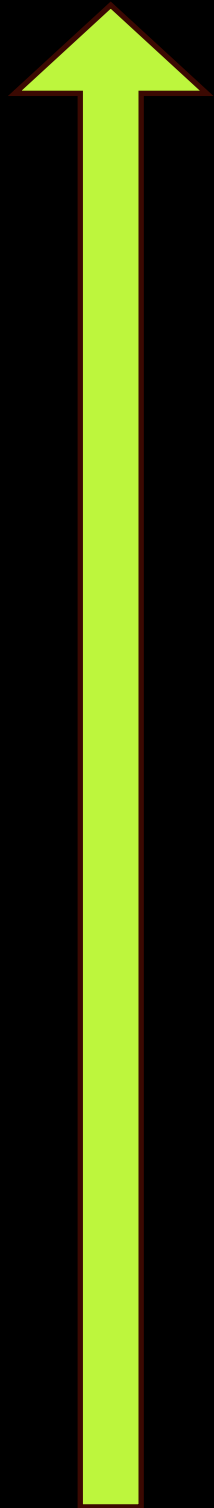
Visible



Disappears



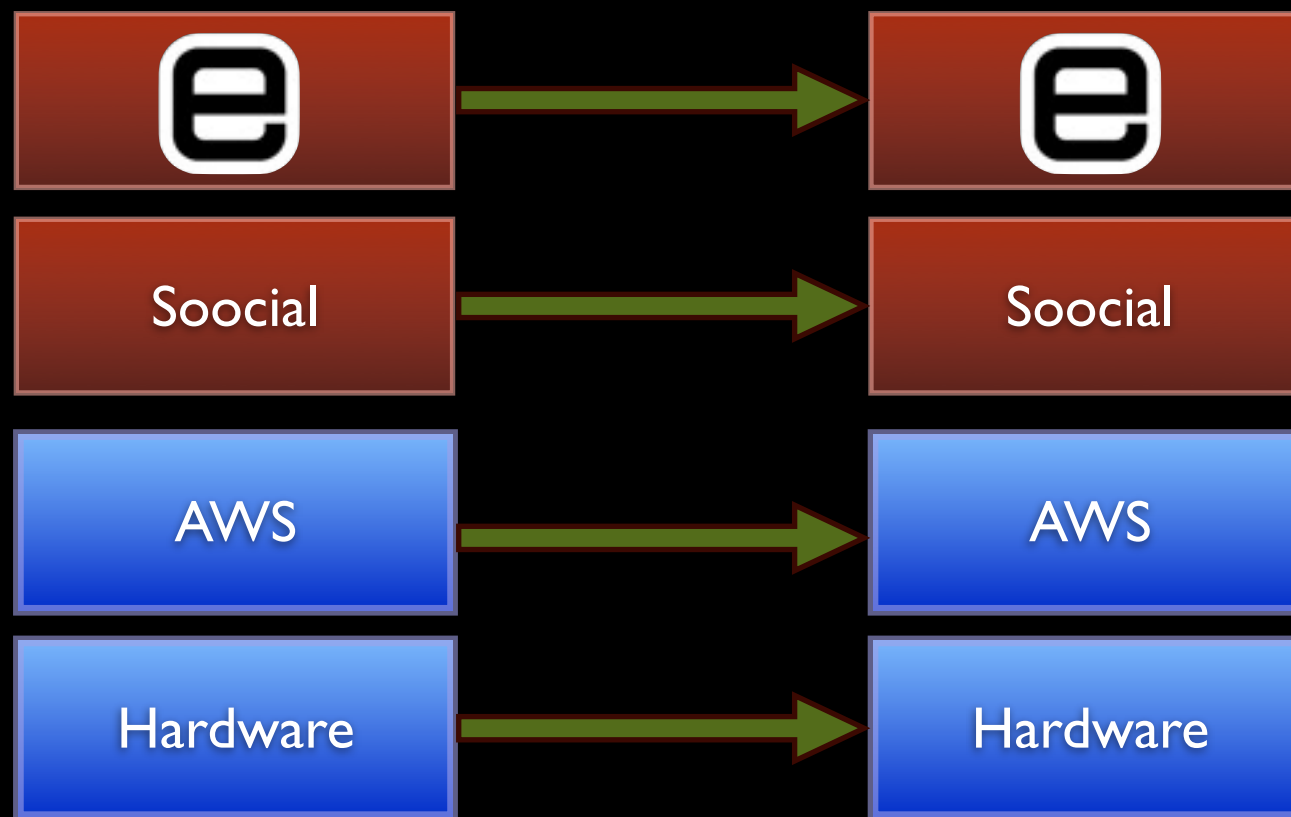
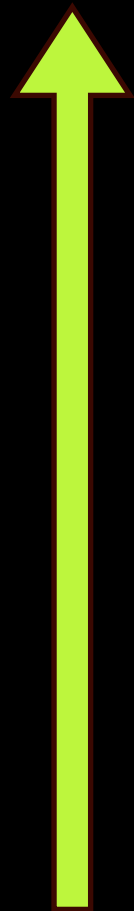
Visible



Disappears

Value stack

Visible

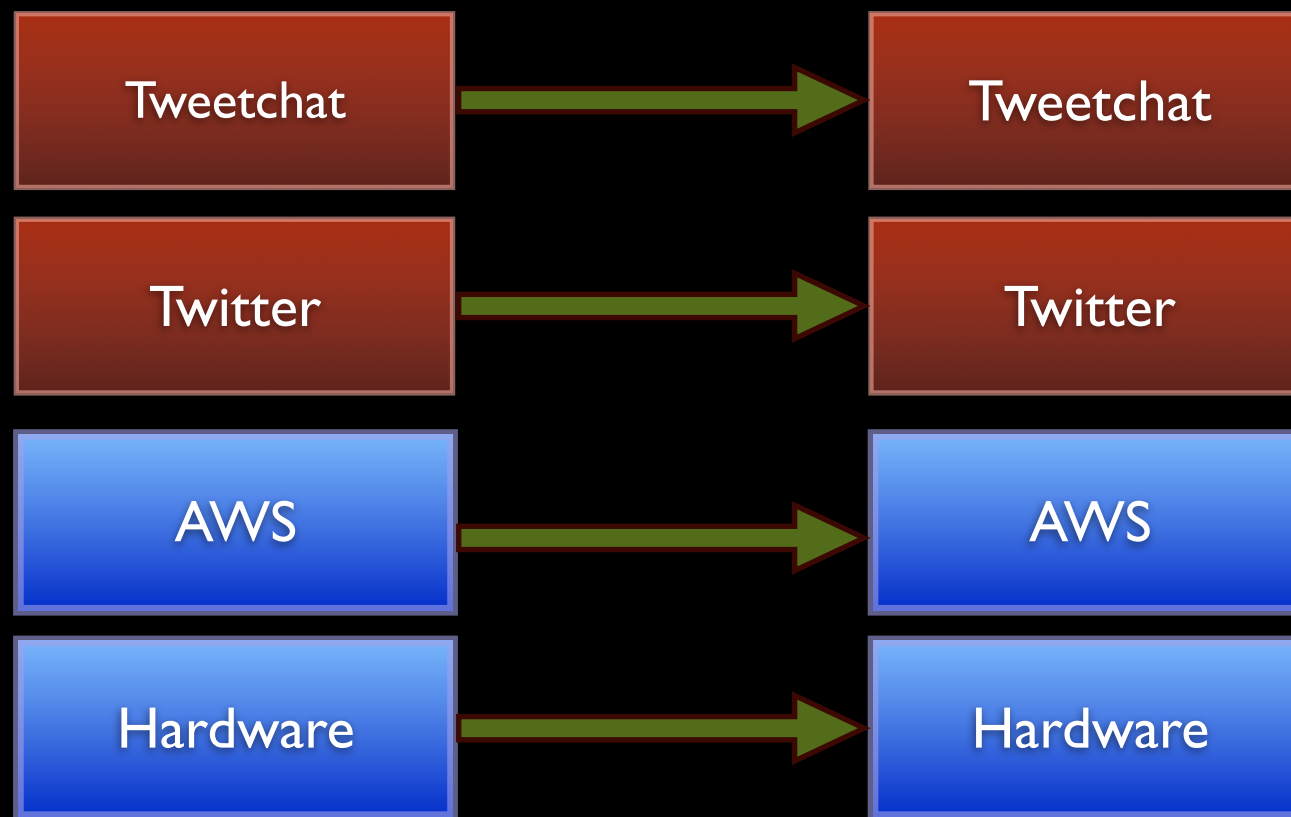
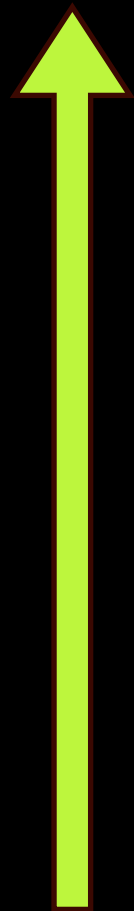


Disappears



Value stack

Visible



Disappears



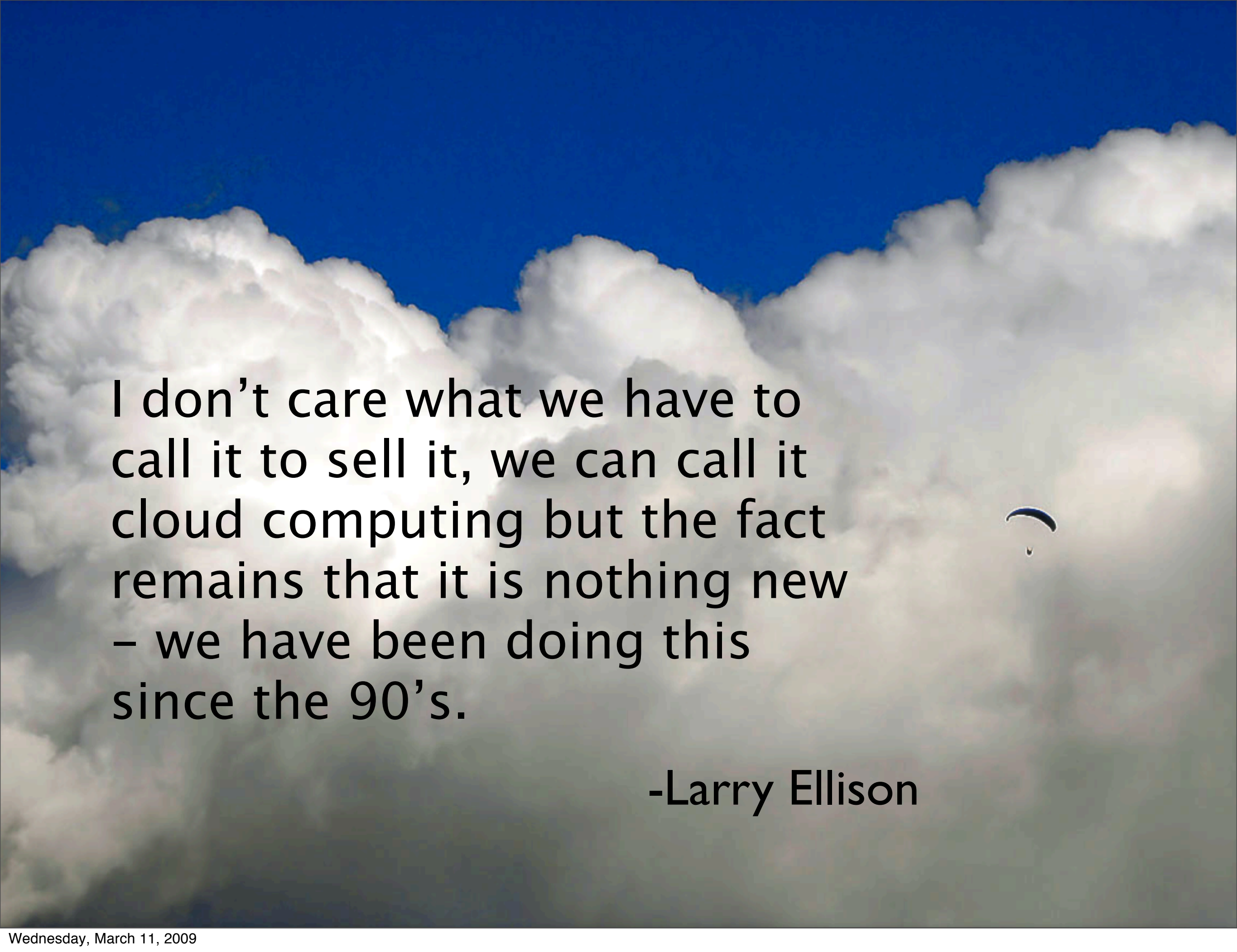
Today's
hot stuff



Hassle-free contacts



Tomorrow's
boredom

A blue sky with white clouds and a small blue object in the distance.

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-Larry Ellison

Benefits

Costs

Reliability

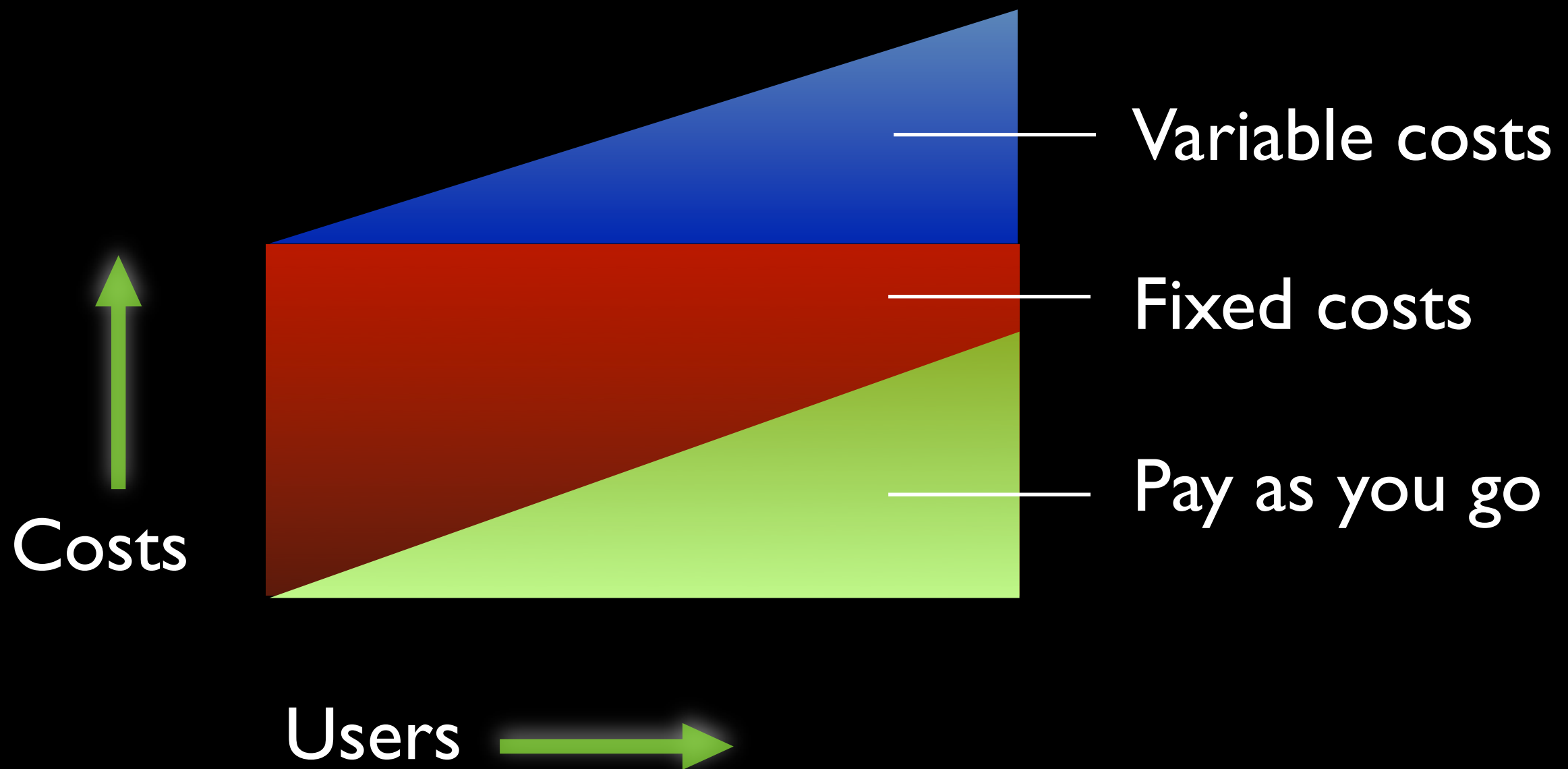
Scalability


Security

Sustainability

Multi-tenancy

Economics





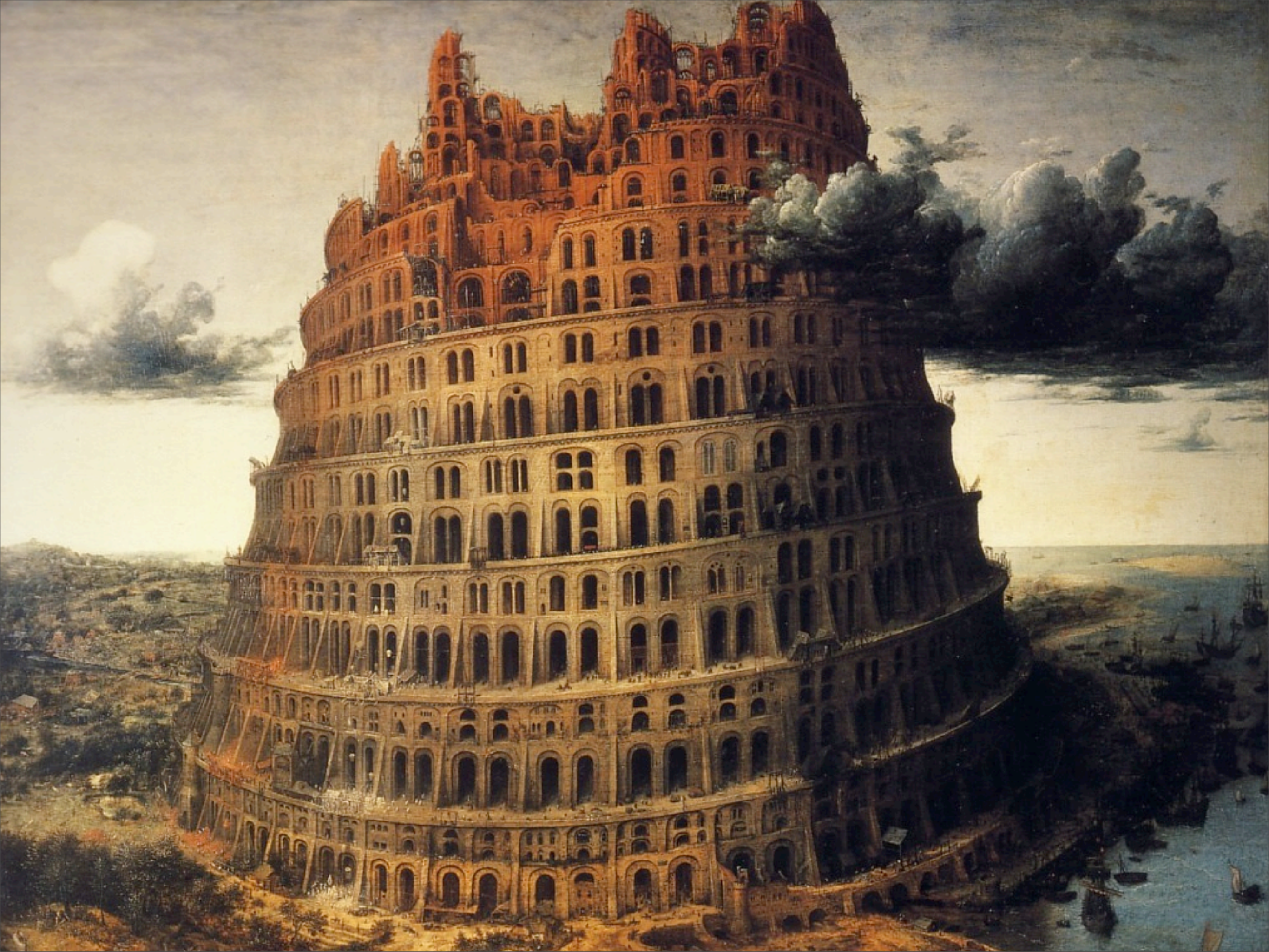
Making it easier.
Better abstractions.
More powerful management tools.

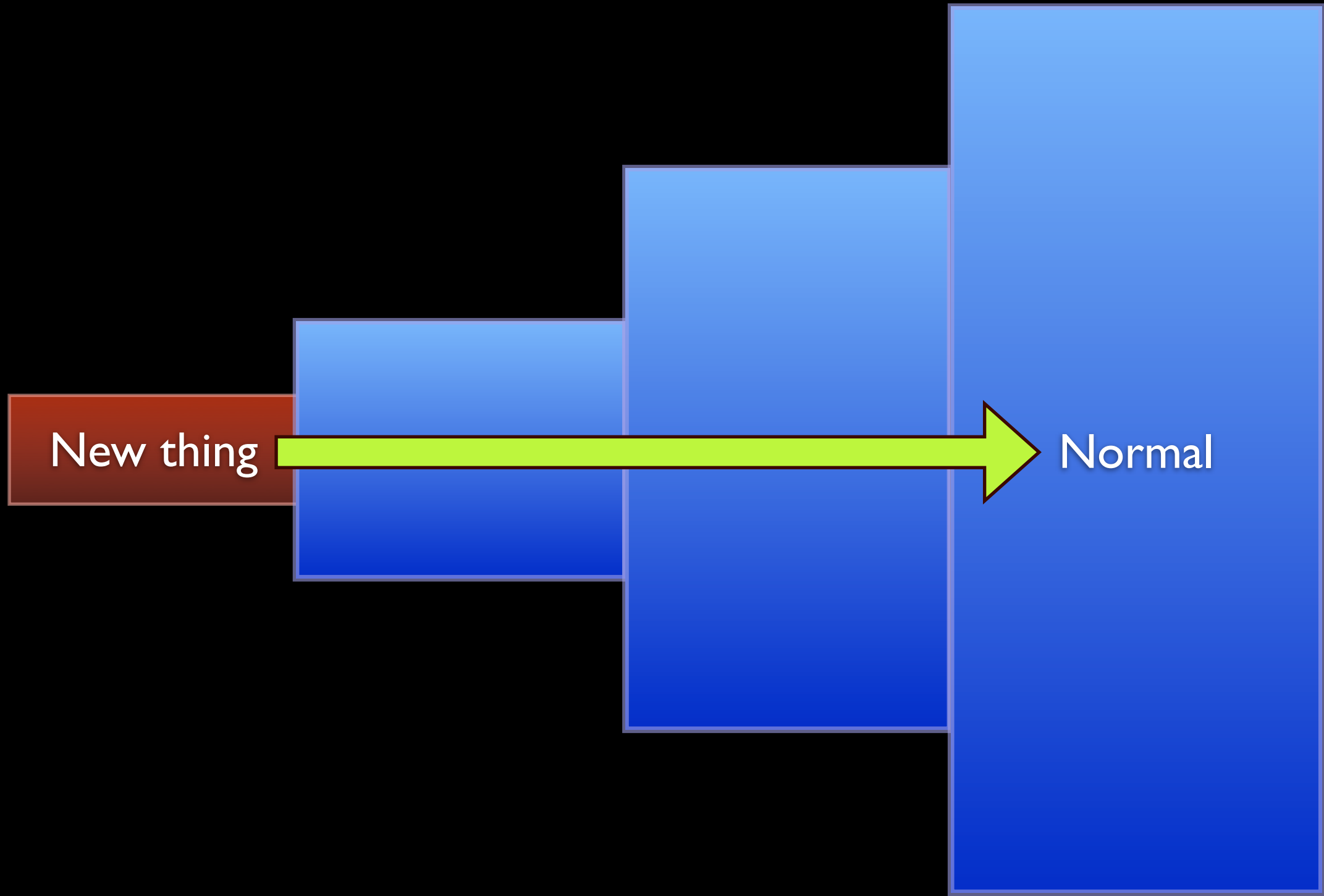


Bearriers





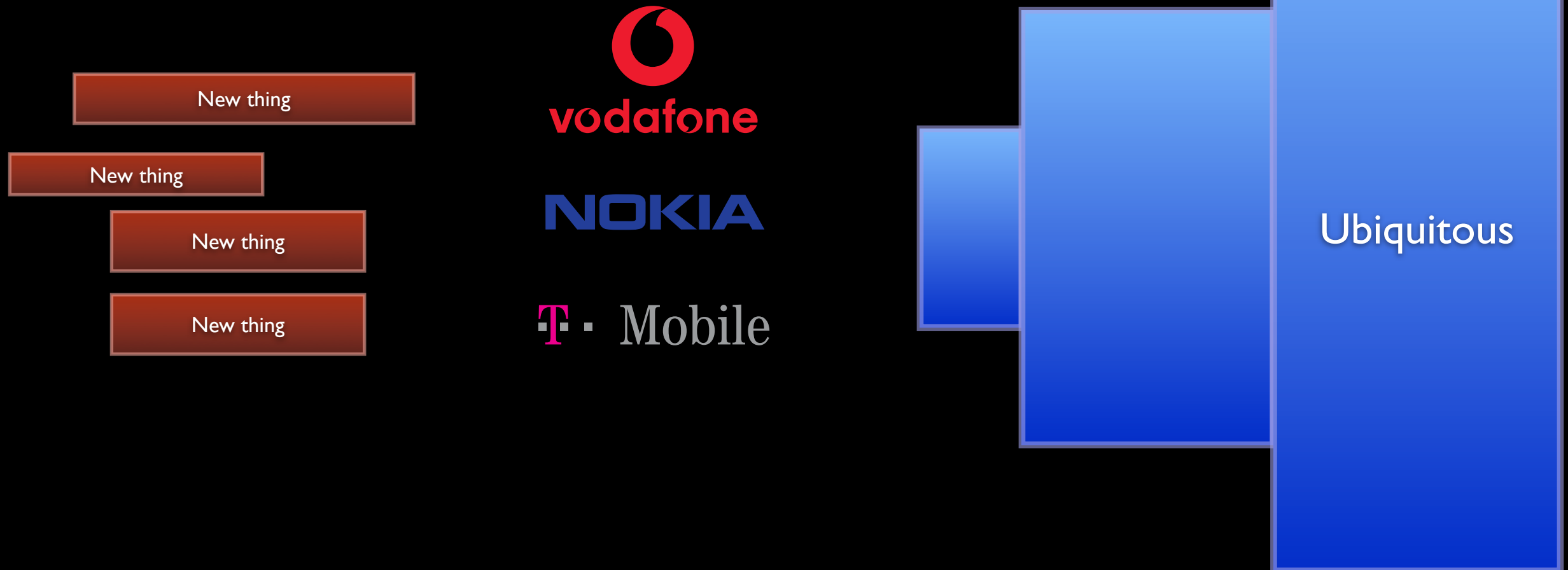




New thing

Normal

Vendor lockins

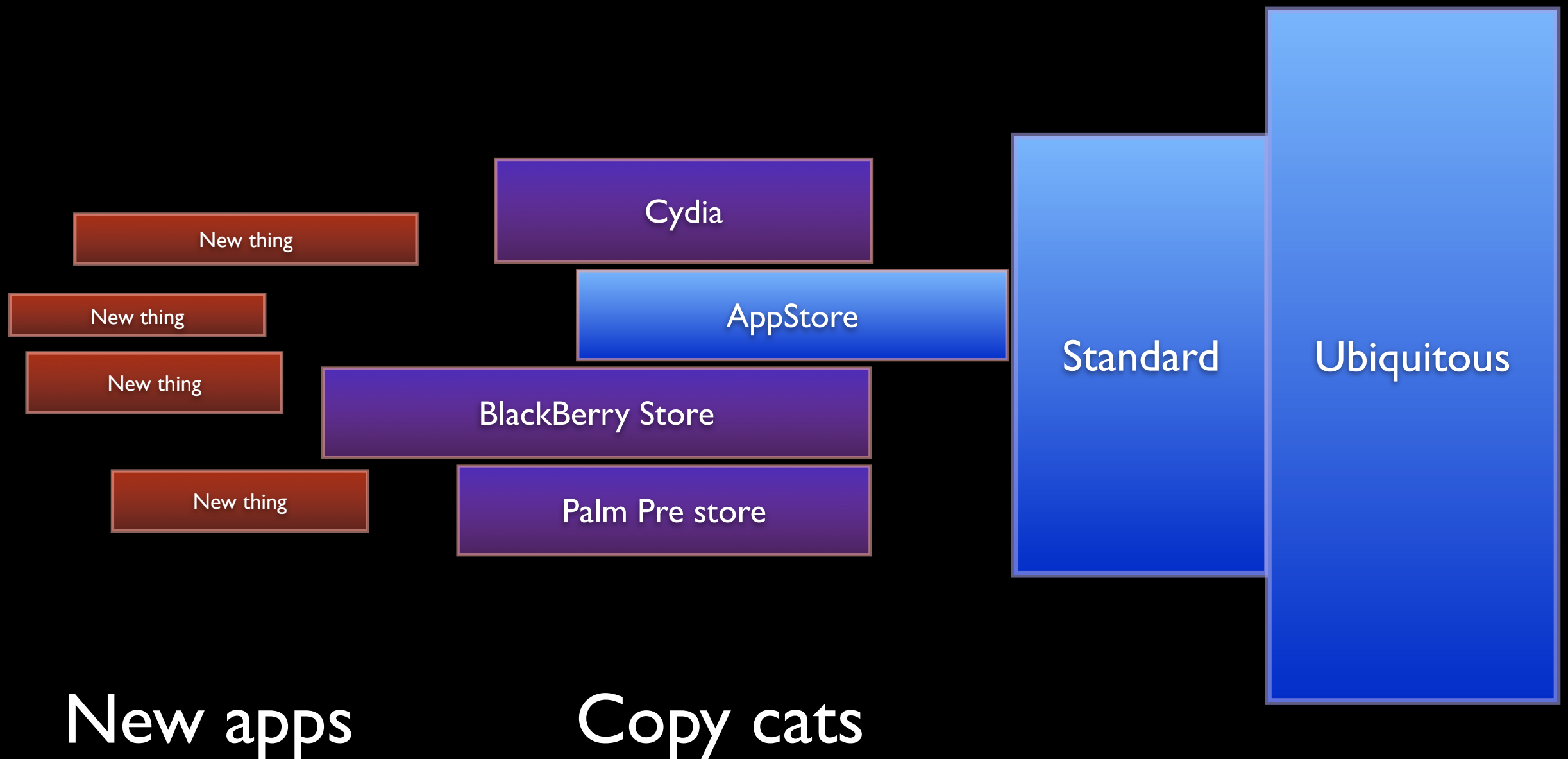


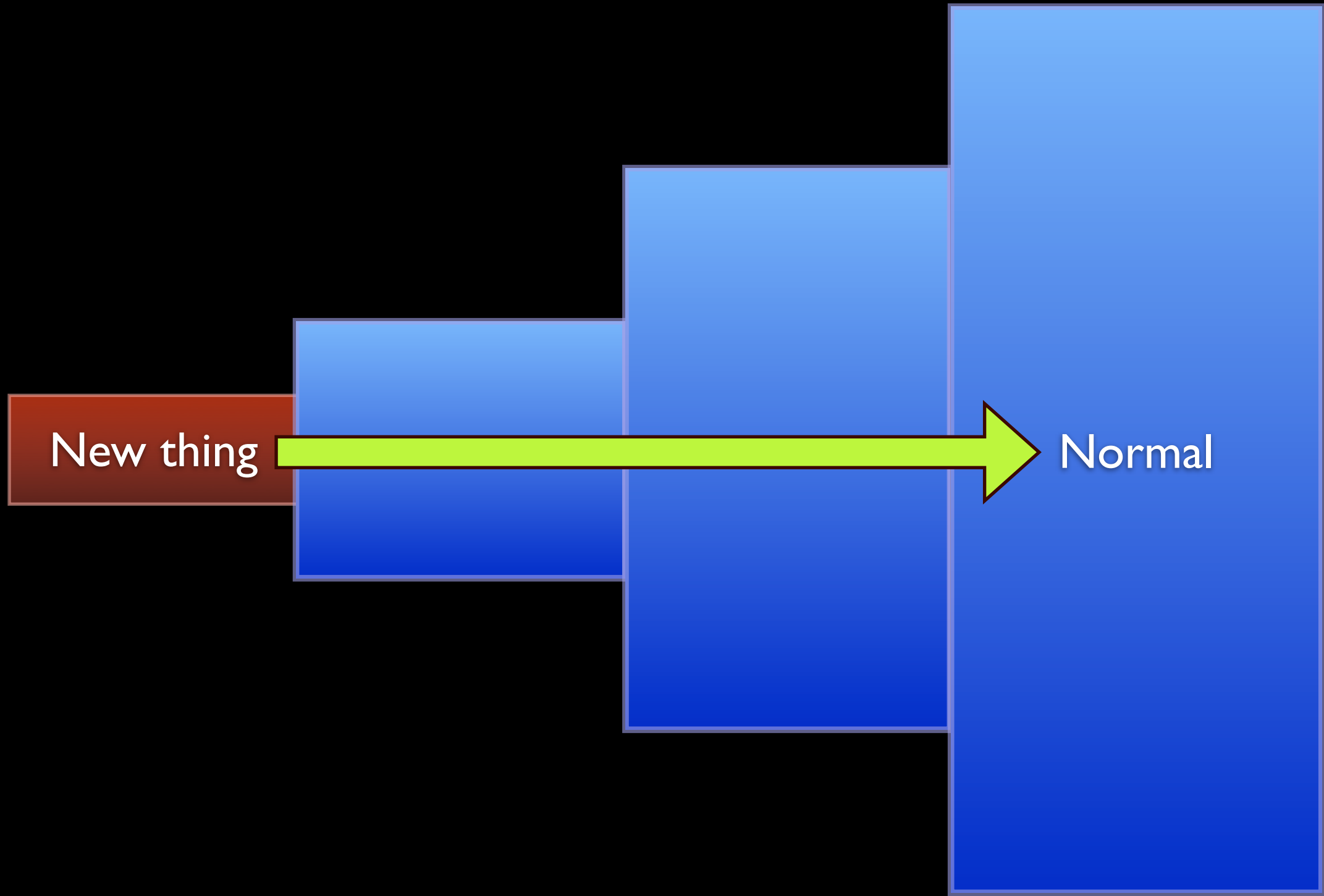
T-mobile

€9 per Mb



Vendor bypassing





New thing

Normal

It's a force of nature
It's inevitable
It's like gravity

Like a rubic's cube

Needed for ubiquitous cloud computing

Pricing transparency

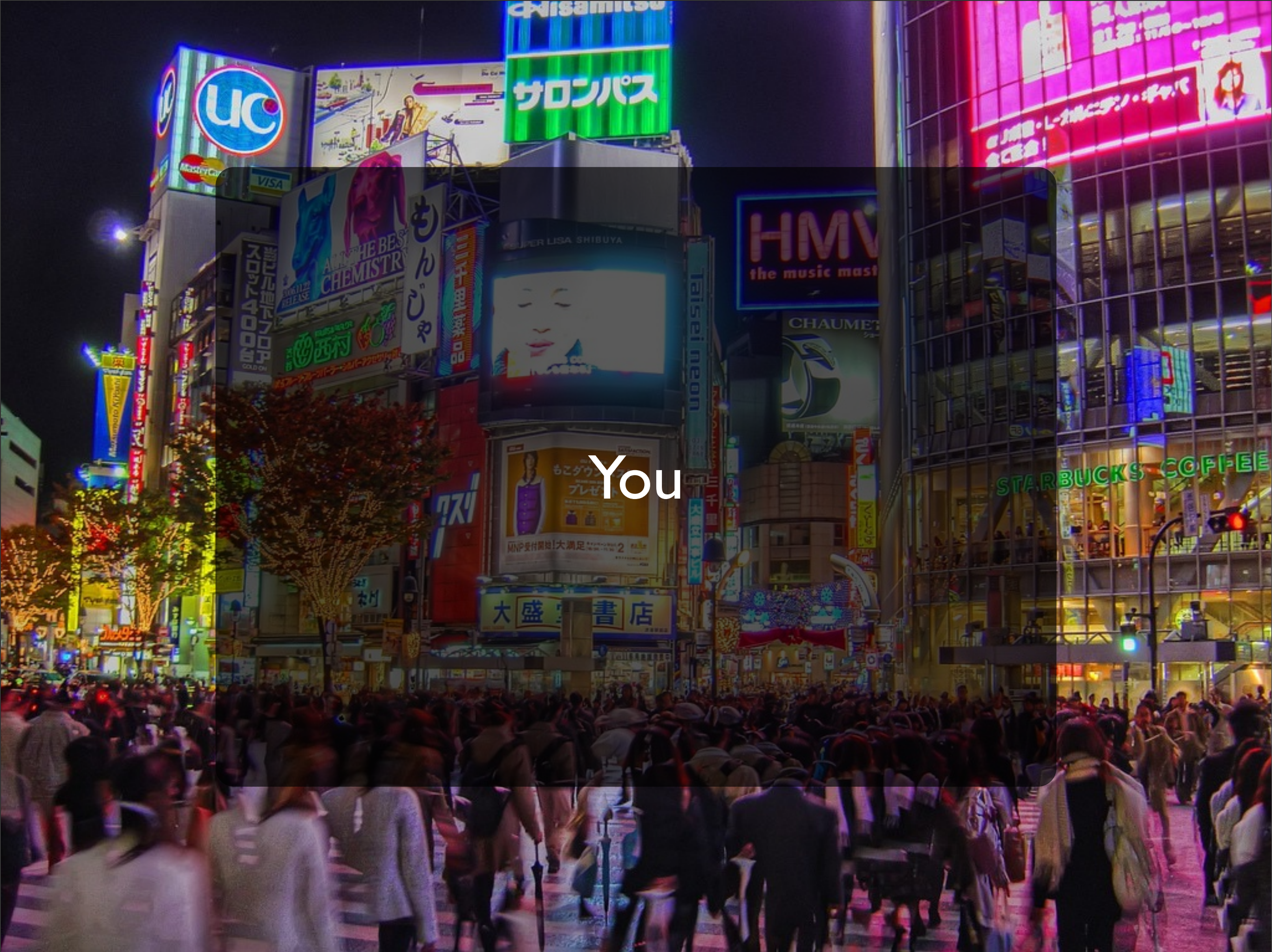
Modular API's

Interchangeability

X as a Service

Security & control

Third party operators



You



wakooopa

marvia

CREATIVESYNDICATE

TWONIES



Like it? Tiplt! >

freshli

social

IRL CONNECT



tvnotify

shoot 'n share
mobypicture



VIVEK KUNDRRA
Chief Technology Officer
District of Columbia

Future



DECEMBER 1953 35c

THE SYNDIC BY C.M. KORNBLUTH

MOB RULE IN USA

160 PAGES!



MAC



"The best way to predict the
future is to invent it"

Alan Kay

SPECIAL EDITION



The global gamble

- ▶ World unites with interest rate cuts to stave off depression
- ▶ British government in £500 billion bailout for wounded banks
- ▶ Fear still stalks the markets – and FTSE falls by another 5.2%

NEWS 2 • HAMISH MCRAE • STEVE RICHARDS 7 • EDITORIAL 7 • NICK CLAGG 7 • BUSINESS 37 • JEREMY WARNER 37



Keep moving
towards invisibility

Thank you!



Hassle-free contacts