Darwin’s Finches, 20th Century Business, and APIs

Evolve Your Business Model

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DARWIN’S FINCHES
These birds
live in this paradise right here
so what’s the problem?
The problem is
they’re on a small island chain
a long way from anywhere else
that’s a lot of environmental pressure
so these finches
are actually terrific competitors
and their differences
were defined by this man
as successful adaptations.
The ones you don’t see today
had unsuccessful adaptations
and died out.
A century after
a team of scientists identified the mechanism of adaptation and evolution
Twenty years later
called out the **gene**
as the atomic unit of **competition**.
From the perspective of the gene
the gene is successful if the organism that carries it is successful.
Switching gears
20th CENTURY BUSINESS
In 1910 business was mostly direct
By the 1930s there was a lot of competition
But after World War II, there were new environmental pressures
Many businesses died out.
Business went from direct to indirect.
Those businesses who \textit{thrived} in this transition
Shared a set of **successful adaptations**
Broad consumer marketing and branding

Distribution exclusives in territory and product allocation

Special makes for select retailers

Retailer incentives – slotting fees, joint marketing, tiered volume discounts

Consumer incentives – coupons, in-store events, limited time discounts
Unified by one idea
It was not just about selling in
It was not just about **selling in**
It was about **selling through**.
From the perspective of the **business**
The business is successful
If the retailer that it sells through is successful.
The real world went from **direct** to **indirect**
It went **beyond the corner store.**
The web world is going from direct to indirect.
It is going **beyond the browser.**
That takes us to
APIs
Web 1994 was the “get me a domain and a page” era. 
Web 2000 was the “make my page(s) interactive and put people on it” era. 
Web 2010 is the “get rid of pages and glue APIs and people together” era.

Robert Scoble
Author of tech blog Scobleizer
Why?
Because in a web beyond the browser
APIs are how people get to your business.
You need to see things from the perspective of the \textit{gene}. 
The **gene** is successful if the **organism** that carries it is successful.
You need to see your business from the perspective of the **API**.
The API is successful if the application that carries it is successful.
Successful applications will use many different APIs.
and they will carry those **APIs** everywhere
taking your business with them.
For the successful companies, **80% of traffic** will be coming from *beyond the browser*. 
Everyone else will have to play in the world that the winners make.
One last thought on evolution
Adaptive Radiation in Twitter Applications

Visualization by Sonoa
Classifications by Oneforty.com
CURRENT
ENVIRONMENTAL PRESSURES
They can be independent or they can support each other.

It is up to you to decide if there’s harmony.
Your company may be very well adapted to the web, but is it adapted to mobile?

Mobile devices have limited storage and processing and need to be tied in to real-world and social dimensions.

They use APIs to get at location, maps, social graphs, and events.
Social sites are data services with a critical mass of users, where each new user makes the service better.

You can’t build a new Facebook or Twitter.

But you need to access them, so you use their APIs.
Cloud computing is not about Amazon.
Cloud computing is not about Rackspace.
Cloud computing is not about Microsoft.
Cloud computing is not about Google.
Cloud computing is about how you reach your customers
We’ve gone from libraries to APIs.

In a cloud computing world people access library-like functionality via an API.

These services are the unit of programming.

Make your API useful and it will be carried to customers you’ve never met.
CHANGE AGENCY
I know you get all this already

But how do you get your colleagues to join you in the journey to APIs?
What’s so damn wrong with the current model?

I like it and it’s working for me.

Plus, I understand it.
Actually, it’s not working.
Populations, societies, and markets are becoming more specialized and differentiated.
Consumer interest groups are fragmented.
Consumer interest groups are increasingly fragmented.
Social Media Demographics: Who's Using Which Sites?

By Gender

By Education Level

By Income Level

By Age

Source: Google Ad Planner Data
Markets are changing so fast that you can’t spend the time to

“market size,
focus group,
plan,
develop,
launch,
measure and sustain”

because the market niche may be gone or fundamentally changed
A rapidly expanding range of computing platforms are needed to reach consumers.
New Computing Cycles Supported by 10x More Devices
Opportunities for Semiconductor / Hardware / Software / Services

Computing Growth Drivers Over Time, 1960 – 2020

- Car Electronics
- GPS, ABS, A/V
- Mobile Video
- Home Entertainment
- Games
- Wireless Home Appliances
- Smartphone
- Kindle
- Tablet
- MP3
- Cell phone / PDA

Increasing Integration

- Minicomputer
- PC
- 1B+ Units / Users
- 100MM+ Users
- 10MM+ Units
- 1MM+ Units

Note: PC installed base reached 100MM in 1993, cellphone / internet users reached 1B in 2002 / 2005 respectively.
Source: ITU, Mark Lipakis, Morgan Stanley Research.
This is not a solvable problem nor a winnable game.
The only way to win is to change the game.
Thousands of people, who are not on your payroll, who are intimately part of each of these changing interest groups and niches, must be convinced to carry your product there for you in a way that adapts to the dynamic environment.
Thousands of people, who are *not* on your payroll, who are intimately part of each of these changing interest groups and niches, must be convinced to carry your *brand* there for you in a way that *adapts* to the *dynamic environment*
Thousands of people, who are not on your payroll, who are intimately part of each of these changing interest groups and niches, must be convinced to carry your experience there for you in a way that adapts to the dynamic environment.
It’s a competition for ideas
Enable your business to **adapt** into niches
Adaptive radiation in Galapagos finches

- Medium tree finch (Camarhynchus pauper)
- Large tree finch (Camarhynchus psittacula)
- Small tree finch (Camarhynchus pavoivulus)
- Vegetarian finch (Camarhynchus crassirostris)
- Mangrove finch (Camarhynchus heliobates)
- Woodpecker finch (Camarhynchus pallidus)
- Warbler finch (Certhidea olivacea)
- Cocos Island finch (Pinaroloxias innoma)
- Large cactus finch (Geospiza conirostris)
- Mainly seeds (Geospiza scandens)
- Sharp-beaked ground finch (Geospiza difficilis)
- Large ground finch (Geospiza magnirostris)
- Medium ground finch (Geospiza fortis)
- Small ground finch (Geospiza fuliginosa)

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Only 1 of 100 will be successful – not a failure rate that you can withstand and remain in business.

You need to encourage that to happen “out there” where the cost structures and speed of business are synchronized.

Be ready to reward or acquire the winners.
SUCCESSFUL
API ADAPTATIONS
Realizing that **developers** are your channel

Being **recombinant** and easily mixed

Unlocking your **legacy data** into open APIs

Driving **new data** into your system via open APIs

Supporting your **application ecosystem**
Why do you need to attract developers?
Because applications are the fastest growing and fastest changing organisms in this environment and they’re built by developers.
Unsuccessful adaptations to this world are based on the following conventional wisdom.
Companies providing APIs to access their business are the supply

Developers who build against those APIs are the demand
This is *exactly wrong*.
Companies providing APIs are the demand.
Companies providing APIs are the demand.

They demand developers’ attention and adoption.
Developers building with APIs are the **supply**
Developers building with APIs are the supply

They supply innovation and adaptation
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- vegetarian finch (Camarhynchus crassirostris)
- mangrove finch (Camarhynchus heliobates)
- woodpecker finch (Camarhynchus pallidus)
- large cactus finch (Geospiza conirostris)
- cactus finch (Geospiza scandens)
- sharp-beaked ground finch (Geospiza difficilis)
- small ground finch (Geospiza fuliginosa)
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- medium ground finch (Geospiza fortis)

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Developers now sit between you and your customers.

They are like the retail store in the value chain.
SUCCESSFUL API ADAPTATIONS
Two rules for marketing your API to developers

1. Don’t assume that developers are clamoring for your API.

2. Don’t assume that developers will want to use your API alone.
Be robust so that your API is recombinant
“This is all about the customers.

We allow developers to integrate the Netflix service into apps with full control over the user experience.

So we are able to outsource innovation ... and that’s a great thing.

Michael Hart
Director of Engineering, Netflix
recombinant

Rules for robustness
recombinant

REST first, everything else second
Nothing weird: straight XML, straight JSON
Keep responses small
Keep calls granular
No custom security schemes: use OAuth
Don’t make the developer deal with PCI-compliance
Sample code wins every time
You’ll get it wrong the first time – so listen well
Be remixable so that your API is recombinant
(a) **Plasmid pUC19.** The pUC19 plasmid is an E. coli plasmid of 2686 base pairs that contains a replication origin, an ampicillin resistance gene (ampR), and a lacZ gene coding for β-galactosidase. Eleven restriction sites are clustered within the lacZ gene.

(b) **Procedure for inserting a foreign gene into pUC19.**
recombinant

Rules for miscibility
Observe your adjacencies
Don’t break social sign-on
Don’t require session management
Provide sample code for expected remixes
Reward creativity through promotion
SUCCESSFUL API ADAPTATIONS
Unlocking your legacy data into open APIs
Open APIs for your legacy data means innovation can happen **out there**
legacy data

*Product Catalogs* that integrate with your backend
*Customer Preferences* based on your interactions
*Historical Purchases* through your existing sites
*Logistics Information* about your supply chain
*Seasonality* on purchases of goods and services
*Location* of historical purchases
*User Recommendations* of good and services
*Service Providers* that you have transacted with
Leveraging the API Economy is core to Sears’ strategic vision.

As the top retailer in multichannel reach, Open APIs are a critical element for expanding our brand and creating new opportunities for engaging with customers wherever they are.

Abhay Jain
Director Online Technology, Sears
Driving **new data** into your system via open APIs
new data

**Data** is the new business model

Each new user makes the service **better**

Use the **tail** to feed the **head**
new data

GameSpy Open

One single API for the head and the tail
Tail policy: limited access for free
Head policy: unlimited access for fee
Open APIs from 2005-2010

Data from Programmable Web
App Store Growth 2008-2010

Data from Wikipedia
SUCCESSFUL
API ADAPTATIONS
Helping your finches succeed
Help your application ecosystem succeed
An **app** is only as strong as its weakest API call.

Your API is a **product** like any other product.

Design for **scale** of business processes.

There is a huge gap between a **feature** and a **business**.
Bake your business model into your API.

John Musser
Founder, Programmable Web
# API business models

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It is not just about selling in
It is about selling through.

application ecosystem
I was reminded of that yesterday when Paul Forster, the CEO of Indeed, said this at our portfolio summit yesterday:

*We tried charging for our API without much success. Then we paid developers to use it and it took off.*

In the case of Indeed, they initially offered online publishers the ability to pay for a real time search API of online jobs. Not many took them up on that offer. But when they injected their sponsored jobs into the API and offered to share the revenue with publishers, the demand was huge.

Not every company that has an API can do this jujitsu move on the market, but many can and should. It makes life much easier.

Fred Wilson
Union Square Ventures
In CLOSING
Why do we need a Web site? 1995
Of course we have a Web site 2000
Why do we need an API? 2005
Of course we have an API 2010

John Musser
Founder, Programmable Web
New Web “distribution models” driving reach and network effect

Dion Hinchcliffe
Dachis Group
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- cactus seeds and fruit
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- cactus finch (Geospiza scandens)
- sharp-beaked ground finch (Geospiza difficilis)

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THANK YOU

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