





## Acknowledgements

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We would like to thank our partners for their help in making this study

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webshell

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Our job is to help big organizations think and act like startups. And we believe that this cannot be achieved without causing people to **want** to innovate and explore new business models. Our ambition is to inspire you by giving you the keys to understand new markets like [Russia](#) or successful companies like [Apple](#), [Amazon](#), [Facebook](#)... or the business value of APIs.



# Deep-Dive in the API World



# What is an API ?

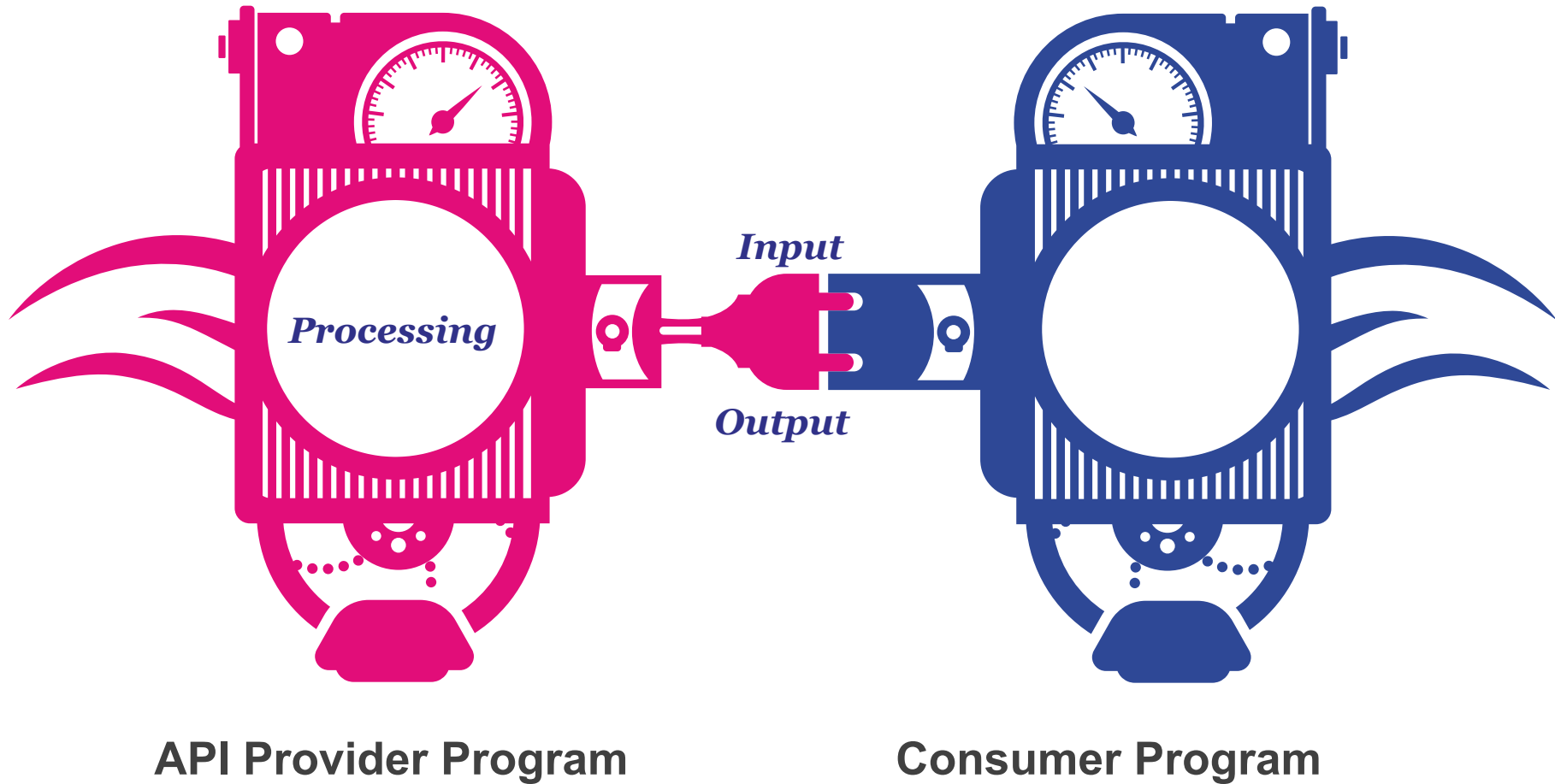
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“

*An **Application Programming Interface** (API) is a specification intended to be used as an **interface** by **software components** to **communicate** with each other. An API may include specifications for routines, data structures, object classes, and variables.*

”

**In other words, APIs are like male and female plugs allowing software to share data and functionalities.**



●●●

# An analogy: The evolution of the car industry follows the logic of APIs

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## Yesterday



Carmaker = craftsman

- Tailor made
- Custom design for each element of the car (wheels, seats, brakes, lights, roof, etc.)
- Restricted modularity
- No standardized processes

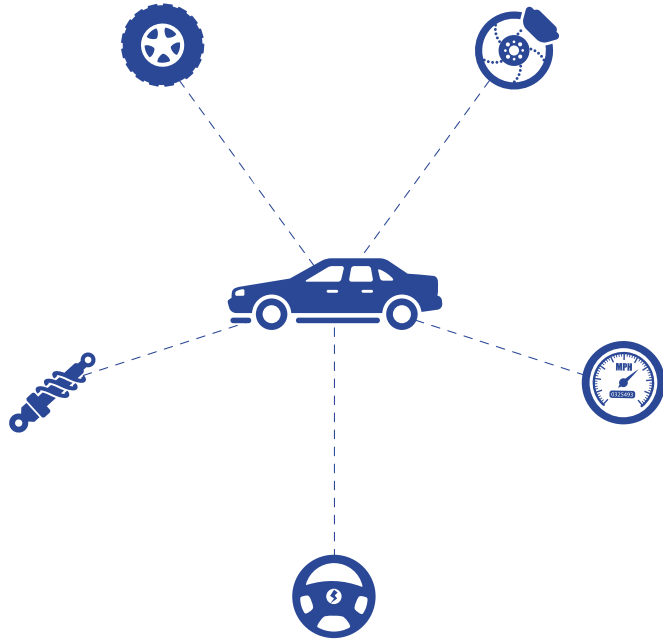
## Today



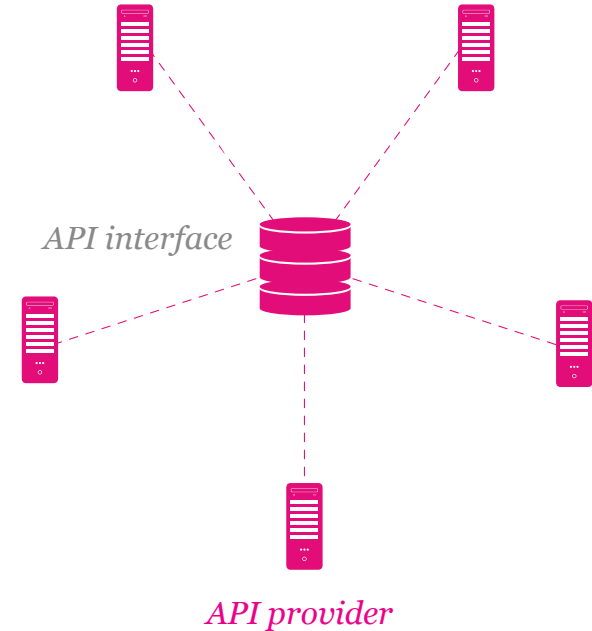
Carmaker = system integrator

- Car divided into **subsystems** (powertrain, brakes, steering, suspension, etc.)
- Main elements **designed separately** and **reused** in different cars
- Standardized** processes
- Communication interfaces** between different engineering teams

# So, what is an API ?



Just like a car which consists of several **subsystems** designed by different specialized teams (internal or partners) who communicate with each other all throughout the design process...



...an API is a **software brick** that allows someone to share data, content and functionalities with others, for them to **build new services** based on this data, content and functionalities (i.e. using one or several bricks). The services built can use **one or several APIs** from the **same or different API providers**.



# The Facebook Like button uses an API to dominate social recommendation

*Before 2010: no Like API*



The **Like** button was at first intended to be used only on Facebook to like photos, status, comments and fan pages.

*After 2010: a Like API*



```
1 <iframe src="Some Facebook URL" allowTransparency="true" style="border:none; overflow:hidden; width:450px; height:px">
```



By embedding a line of code in their website, now anyone can benefit from the **Like** button functionality and enable their visitors to Like any content while browsing.

# There are three main types of API



## Private

Private APIs are used **internally** to facilitate the **integration** of different applications and systems used by a company.

### Advantages:

- Rationalized infrastructure
- Reduced costs
- Increased flexibility
- Improved internal operations



## Partner

Partner APIs are used to **facilitate** communication and integration of software **between a company and its business partners**

### Advantages:

- Value-added service
- Up sell
- Must have for business partners



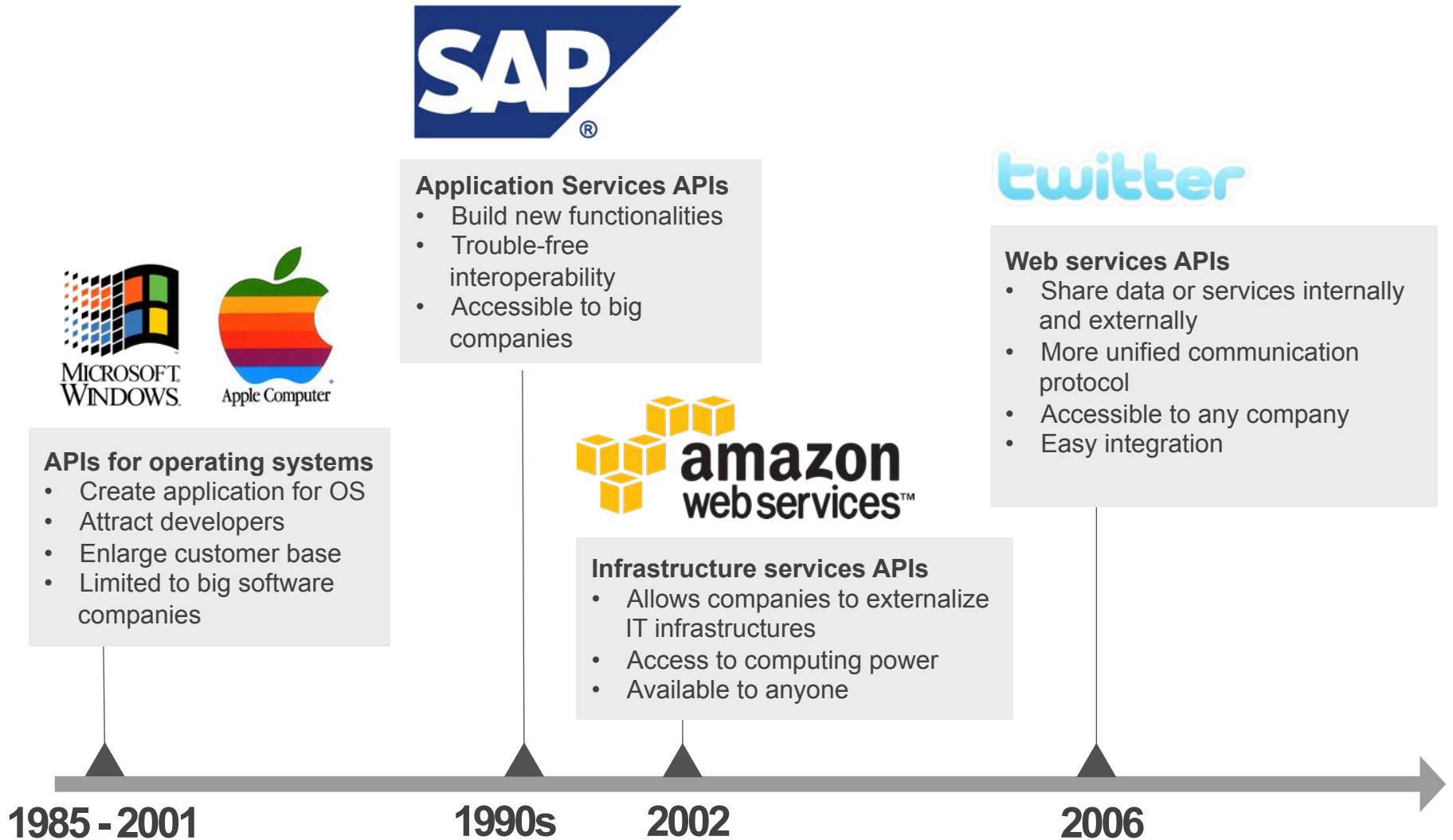
## Public

Public APIs allow companies to **publicly expose information and functionalities** of one or various systems and applications to **third parties** that do not necessarily have a business relationship with them.

### Advantages:

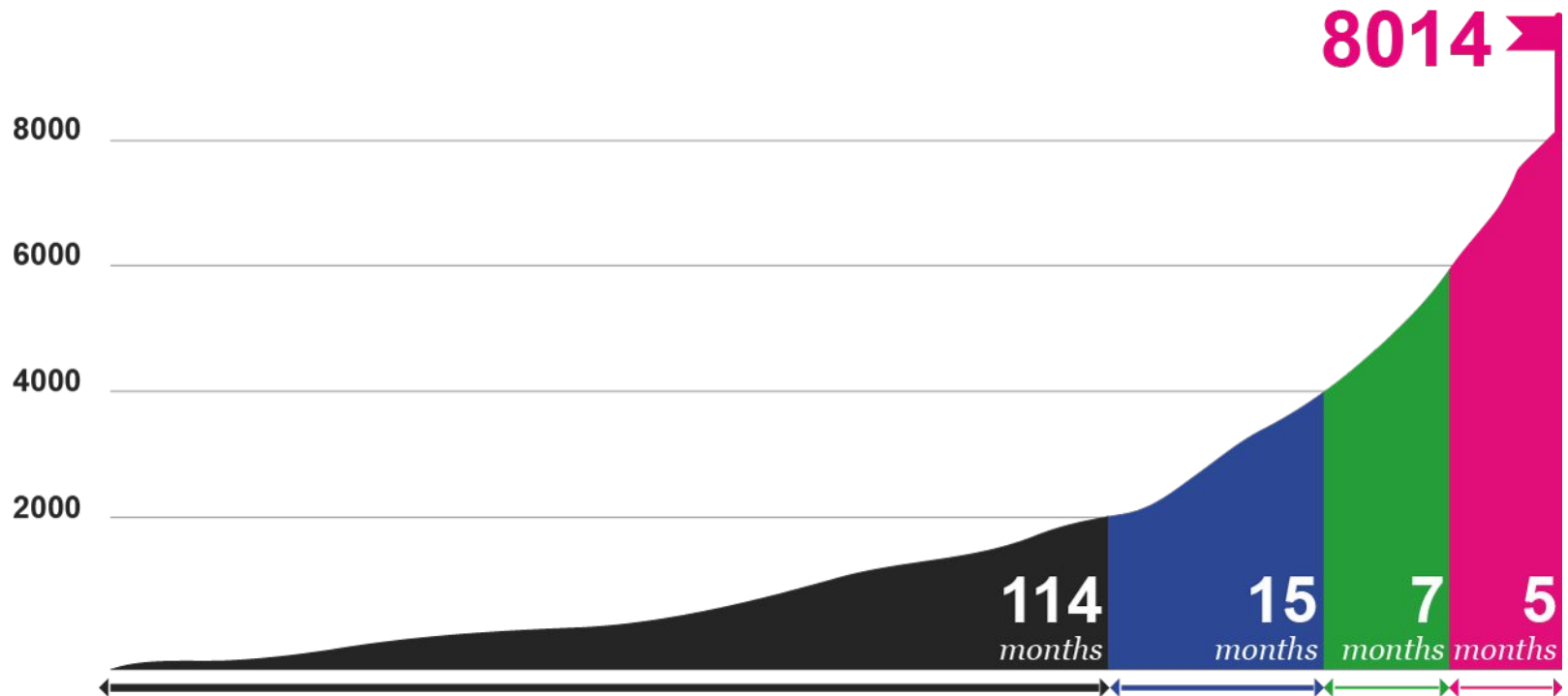
- Delegated R&D
- Increased reach, traffic
- New revenue stream

# Historically, APIs were used by big software companies but their usage is becoming more democratic today



Source: 3Scale, What is an API?

# Today, API growth is skyrocketing...



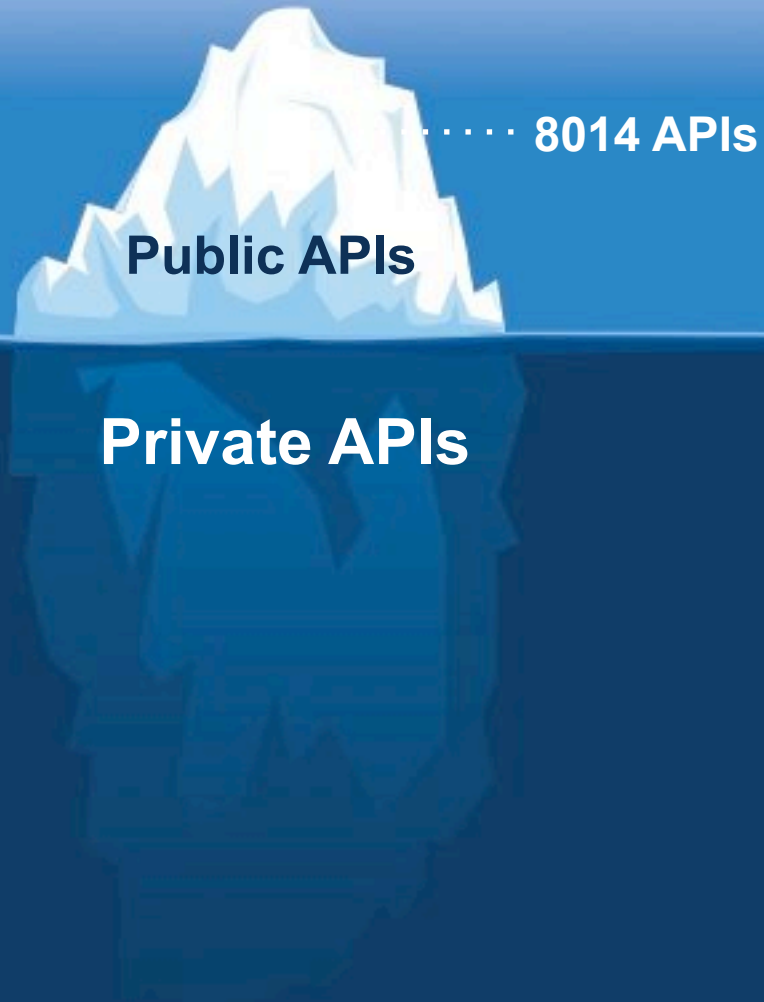
Number of public APIs listed on ProgrammableWeb

Source: ProgrammableWeb



...however, most APIs are private and thus invisible to the public

---



APIs mean a lot of exposure for web giants...

twitter

13

billion API calls / day

Google

5

billion API calls / day

facebook

5

billion API calls / day

NETFLIX

1,4

billion API calls / day

ACCU WEATHER

1,1

billion API calls / day

ebay


1

billion API calls / day

Source: Open APIs, What's Hot What's Not, John Musser



...and also significant revenue

 Expedia  
Affiliate Network = \$2  
billion/year

“90% of what we do is business through APIs”

*John Watton, Expedia Affiliate Network, Travolution.co.uk, April 2012*

# API revolutionized a century old industry: the Canadian Yellow Pages...



*Yellow Pages* **book**

Before, **The Yellow Pages** were delivered as a paper directory. Users had to flip pages to find relevant information. The content was not mobile, you had to have a Yellow Pages book at hand to find what you were looking for.



*Yellow Pages* **database**



Today, **The Yellow Pages** data can be accessed via an API, allowing it to be present on any device (PC, smartphone, tablets, etc.) and associated with search, location-based services and other functionalities.



...and is expanding its reach to many industries



*Internet*



*Social*



*Tools*



*Mapping*



*Shopping*



*Telephony*



*Finance*



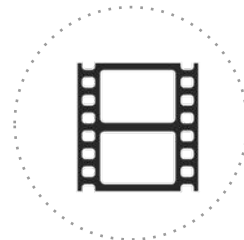
*Enterprise*



*Music*



*Photos*



*Videos*



*Messaging*

# Did you know? APIs can also be used to do unexpected things



Generates full report of available information about a specific vehicle based on its vehicle identification number.



Users pass CAPTCHAs through the API where they are solved by an OCR or manually. Average solved response time of 15 seconds, and average accuracy rate of 90%.



The FullerData Fortune Cookie API randomly generates a message (a fortune). There are a total of 882 fortunes available.



The KBS API provides users with programmatic access to the KBS's Korean translation of the Bible.



Who's Hurt is an injury reporting service for professional sports leagues, including football, baseball, basketball, hockey, and soccer leagues.



The MyFitnessPal API allows developers to access and integrate the functionality of MyFitnessPal (tracking food and exercise) to create new applications.

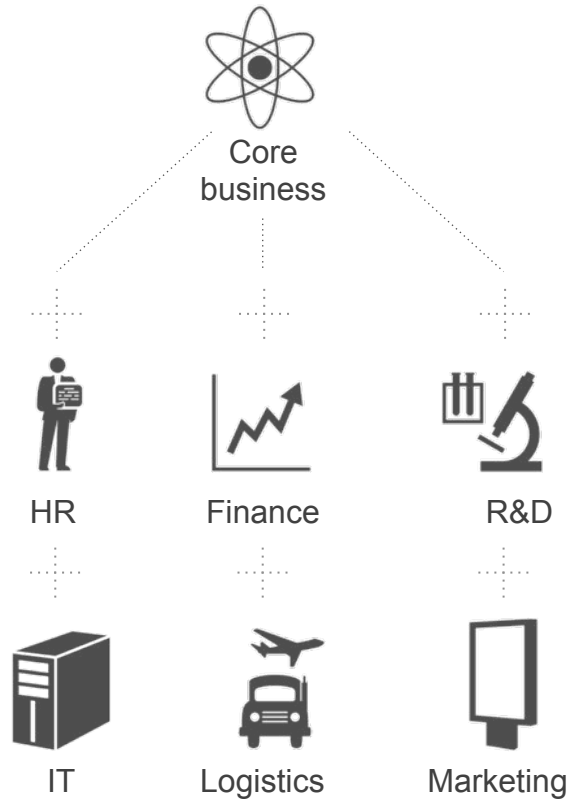


# API Case Studies



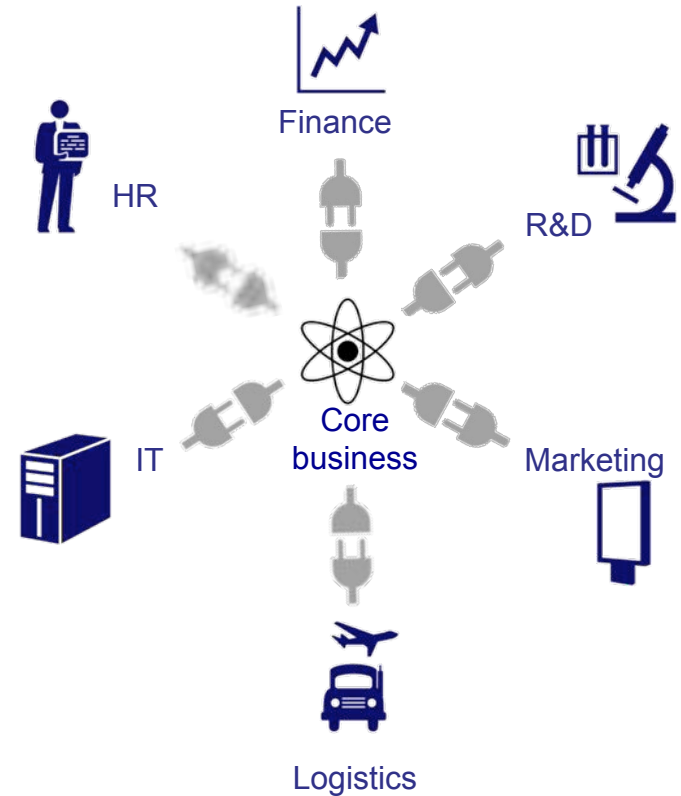
# APIs, an innovative and efficient model allowing companies to manage their core business activities only

## TRADITIONAL COMPANY



us.

## API-DRIVEN COMPANY



In a traditional company, all functions are **internalized** to support the **core business**

In an API-driven company, support functions are **externalized** via an **API**, **focus** is on the **core business**

## Case Study #1



# Case Study 1. Salesforce, CRM in Platform-as-a-Service mode

1

2

3

Salesforce provides a range of **CRM services** in the cloud via an **API**, on a **subscription basis**...



*Sales force automation*



*Customer service, support, helpdesk*



*Social media monitoring*

...and also some products related to companies workflow.



*Performance management*



*Enterprise social network*

The screenshot displays the Salesforce CRM interface for a contact record. The top navigation bar includes 'Home', 'Cases', 'Contacts', 'Accounts', 'Solutions', 'Reports', and 'Dashboards'. The main content area is titled 'Contact Mr. Tim Barr' and shows a 'Contact Detail' section with the following information:

Contact Owner	Christian Verwiebe [Change]
Name	Mr. Tim Barr
Account	Grand Hotels & Resorts Ltd
Title	SVP, Administration and Finance
Department	Finance
Birthdate	4/4/1942
Reports To	[View Org Chart]
Lead Source	Partner Referral
Mailing Address	2335 N. Michigan Avenue, Suite 1500 Chicago, IL 60601, USA
Languages	English
Created By	Christian Verwiebe, 8/14/2006 11:09 AM
Description	

Below the contact details, there are sections for 'Opportunities' (No records to display) and 'Cases' (New). The 'Cases' section shows a table with the following data:

Case	Subject
00001000	Structural breakdown of rotor assembly
00001001	Customer service for portable generators needs beefing up

The interface also includes a 'Recent Items' list on the left side, showing contacts like Tim Barr, John Bond, and Jack Rogers, and a 'Recycle Bin' section at the bottom.

**Using Salesforce requires no software installation at customer companies sites.**

## Case Study 1. What would it cost if there were no APIs?

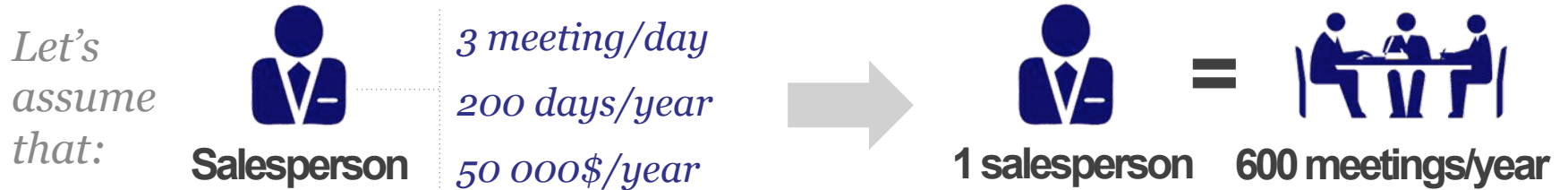
1

2

3

If Salesforce did not have an API, it would have to install its software at each client's site, which means **sending out staff** to install the software.

### What would it cost?



### Salesforce has 104 000 clients

To reach that client target in 3 years Salesforce would need around:

**60** salespersons = **\$9** million

Salesforce is able to handle a large basis of clients while maintaining low costs. Delivering services through an API is far more cost effective than running software locally on clients IT infrastructures



Thanks to its API, Salesforce can easily integrate with:

Applications



ORACLE®

Microsoft®

Web services



Google  
App Engine





Case Study #2



**Expedia**<sup>®</sup>

## Case Study 2. Expedia, marketing through APIs

1

2

3

Expedia is a travel booking company (train, plane, hotels, etc.). Before, their web marketing would be done thanks to an **HTML framed window** that **affiliates** would embed in their website.

Today, Expedia opened up an **API** for their **affiliates** to **enable them to pick up**:



Bookings



Photos



Search results



User reviews

It allowed developers who needed a **piecemeal access** to Expedia content to integrate it **seamlessly** in their **interfaces** and **experiences**.

Today, Expedia Affiliate Network includes 10,000 partners and makes \$2 billion revenue per year, 90% of which comes from its API.

# Case Study 2. Room 77, a hotel search website using the Expedia API

1

2

3

Room 77 is a hotel reservations aggregator

Users perform a hotel reservation search. Several options are suggested; they all redirect to the matching hotel booking partner websites.

Links redirecting to Expedia website

Room 77 hotel search

Your Search Paris, France Dates: 11/15/2012 12/11/2012 2 Guests 1 Room Search

700 hotels found near Paris, France.

Sort by: Popular Price (low to high) Price (high to low) Star Rating User Rating Distance

Most Recent Searches Paris, France 11/22/2012 - 12/03/2012

Download our mobile app for fast, easy mobile booking. Get Our App

Why Use Room 77?

- Lowest Prices We search hundreds of sources to bring you the lowest prices available online.
- Earn Loyalty Points Most rates are eligible for hotel loyalty points.
- Pay at Hotel No prepayment required on most rates.
- Special Rates Save more with AAA and senior discounts.

Ads by Google

1500 Hotels in Paris Half-Price Hotels Book your Hotel in Paris online www.booking.com/Paris-Hotels Most Popular Hotels

Paris Holiday Rentals Have A Whole Place For The Price Of A Room. Book A Rental From 47€/m! www.houstrip.com/Paris-Apartments List Your Property Free

Paris Hotels - save 70% 44 Paris Hotels from 610

Hotwire Save up to 60% on Paris hotels Get Deal

K&K Hotel Cayre Save \$227 Room 77 Expedia \$372 Hotels.com \$372 Agoda \$352 Orbitz \$395 See All Rates Get Deal

W Paris - Opera Save \$227 Orbitz \$517 CheapTickets \$517 Room 77 \$519 Expedia \$519 Hotels.com \$519 ReserveTravel \$650 Booking.com \$840 EasyToBook \$840 See All Rates Get Deal

La Belle Juliette Save \$227 Agoda Sold Out Expedia Sold Out Hotels.com Sold Out Booking.com Sold Out Get Deal

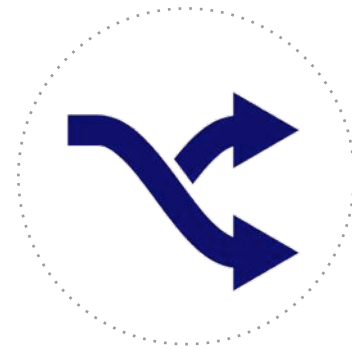
Le Pradey Save \$227 Booking.com \$294 Expedia Sold Out Hotels.com Sold Out Pay at Hotel Get Deal



Drives more traffic  
to Expedia



Generates new  
revenues sources



New distribution  
channels

Thanks to its API, Expedia affiliates do the partnership and marketing work for Expedia at a low marginal cost for Expedia.

Case Study #3

The Netflix logo is centered within a white folder icon. It consists of a red square with the word "NETFLIX" in white, bold, sans-serif capital letters. The letters have a slight 3D effect with a dark shadow.

NETFLIX

# Case Study 3. Netflix, distribution on a large scale thanks to APIs

1

2

3

# NETFLIX

## New Arrivals

My Instant Queue

My Recommendations

New Arrivals

Browse Genre

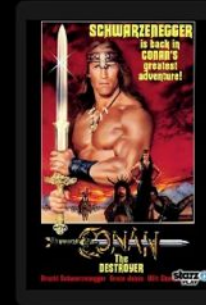
Search



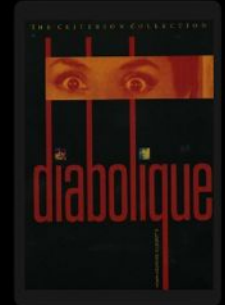
All About Eve



Chances Are



Conan the Destroyer



Diabolique



Netflix offers subscription to unlimited **streaming movie and TV shows**

In October 2008, Netflix **opened an API** to allow developers to use its resources:

- Movie database
- Queue management
- Rental history
- ...

The API is **free** and allows for **commercial use**

# Case Study 3. Many use case scenarios are built on the Netflix API

1

2

3



instantwatcher.com

**800+** devices can stream Netflix content

**20 000** developers use the Netflix API

Source: Redesigning the Netflix API, Daniel Jacobson

## Case Study 3. What would it cost if there were no APIs?

1

2

3

If Netflix did not have an API, it could not have developed **thousands of applications for hundreds of devices** on its own.

**What would it cost if Netflix developed these apps themselves?**

*Let's  
assume  
that:*



**= 50 000\$/year**

**20 000 developers use Netflix API**

Having these developers **in-house** would cost Netflix:

**\$1 billion/year**

**Netflix allows third party developers to build applications for all sorts of devices, thus catering to many needs without involving high development costs**



Case Study #4

**facebook**

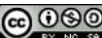
# Case Study 4. Facebook Connect API, partnership on a worldwide scale



**Facebook Connect** allows users to **log-in** on any websites or application using their Facebook information.

Third party developers can add a “Connect with Facebook” button by using **Facebook Connect APIs**.

**Facebook Connect API has standardized credentials on the web, creating a universal ID**



## Case Study 4. What would it cost if there were no APIs?

1

2

3

If Facebook did not have APIs, it **could not let third party developers** onboard themselves to use **Facebook Connect API**, and would thus have to do **partnership work**.

### What would it cost if Facebook did partnership work?

Let's  
assume  
that:



10 phone meetings/day  
200 days/year  
50 000\$/year



=



### 7 million websites and apps use Facebook Connect

To reach that partners target in **3 years** Facebook would need around:

**1100** salespersons = **\$55** million

Facebook let partners onboard themselves in its ecosystem through its API, and thus built partnerships on a worldwide scale while maintaining low costs

# Case Study 4. Facebook Connect enriches its Social Graph

1

2

3

*Facebook Connect is embedded in iOS 6...*



**Connect with Facebook** to apps like Safari, Photos, Camera, Maps, Game Center, etc.

**Synchronize contact info**, events and birthdays your friends have shared with you on Facebook

**Like songs, albums and apps** directly from iTunes and the App Store

*...and in Instagram*



**Post** pictures directly to Facebook

**Chat** in a native Facebook interface

Case Study #5



# Case Study 5. Fitbit API, externalizing R&D

Fitbit is a fitness tracker that records health and fitness data.

Originally, there was **only one application** using the data developed by Fitbit.



In 2011, Fitbit created an **API** to allow **third party developers to create fitness apps** using Fitbit health data such as daily steps, calories burned, food eaten and weight.



# Case Study 5. Thriving innovation based on the Fitbit API

1

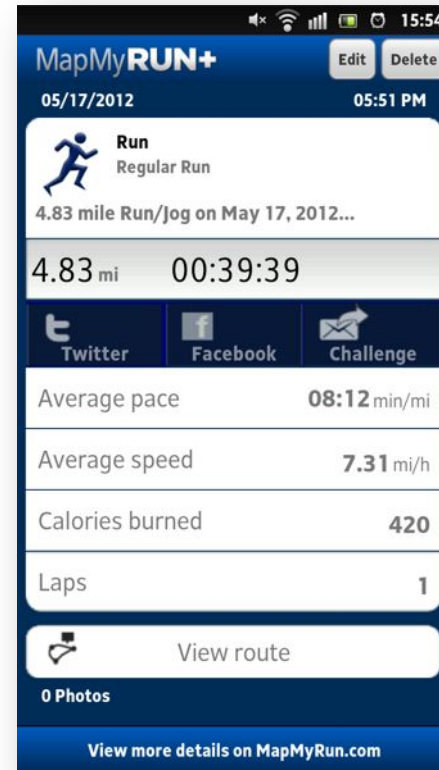
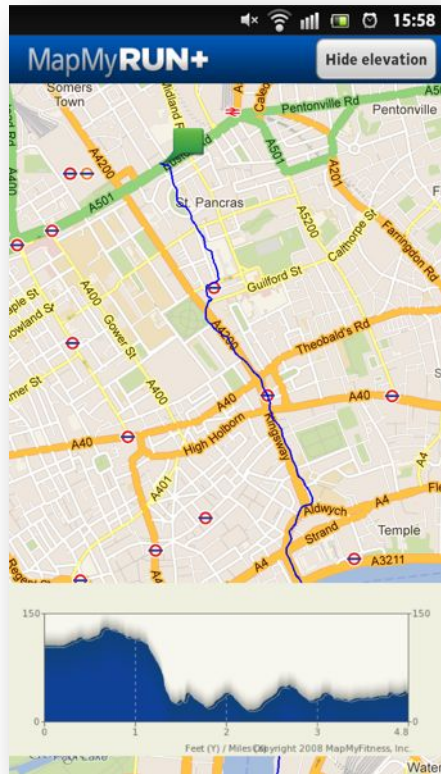
2

3



20 apps were built on the Fitbit API creating innovative uses of fitness and health data

# Example: MapMyRun



**MapMyRun** uses **FitBit** health data to provide joggers with statistics such as calories burned, heartbeat, speed, altitude



## Case Study 5. What would it cost if there were no APIs?

1

2

3

If Fitbit had not had an API, they would have had to **develop applications internally** to create innovative use cases. Without an API, it would **not be able to leverage third party developers creativity**.

What would it cost if Fitbit had developed these apps themselves?

*Let's  
assume  
that:*



= \$50 000

**20 applications are using fitness data from Fitbit API**

**Developing** these apps would have cost FitBit:

**\$1** million

Fitbit lets developers create new apps with its data, which results in higher usage of Fitbit device. It only cost Fitbit the maintenance the API.

Business value is  
moving towards **data**  
and **its associated**  
**uses**



  
Takeaway

# APIs allow companies to effectively pursue the classical triptych of business goals

#1

## Business Development



The New York Times

#2

## Product Development



#3

## Supply Chain Management



# ...by giving access to what they do best and accessing what others do best

*Thanks to APIs, companies can benefit from other companies' **core business** to support their **own business**.*



WOOZOR, online meteo

=



High quality maps

+



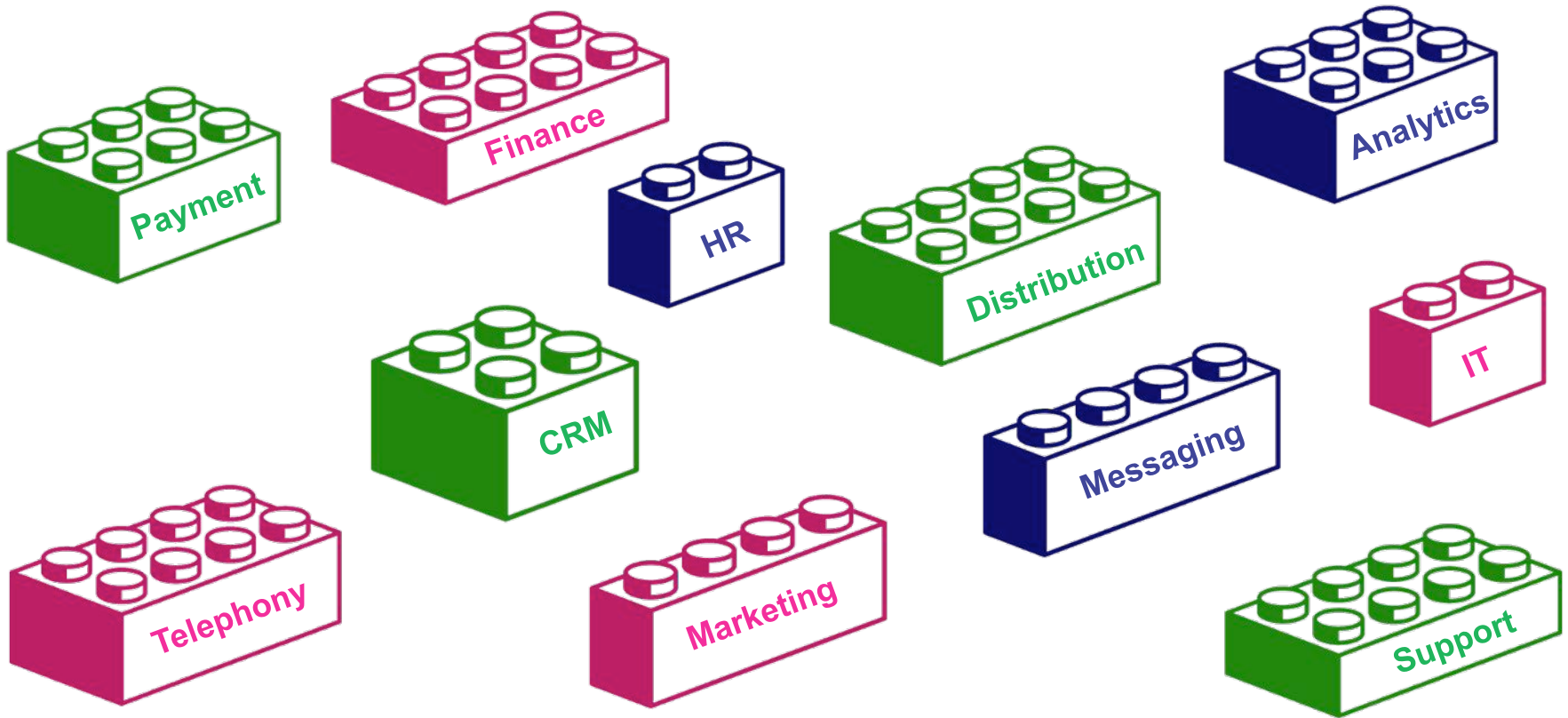
High quality weather data

When opening up data through an API (whether it is private, partner or public), the API provider does the **partnership work once**, partners then need only onboard themselves and use **their own resources** as often as they like for **marginal additional cost** to the provider.

An API provider creates the **infrastructure** and then each partner does the **technical, business and legal work** on their end.

Source: Dion Hinchcliffe, Open APIs Mature Into a Next-Generation Business Model

# APIs are becoming more flexible allowing companies to add functionalities like LEGO blocks and grow core business activities



APIs give business the ability to **completely customize their strategy** by choosing which function they want to **outsource via an API** and which functions they want to keep internally. It is like picking different **LEGO blocks** to build a tailored toy house.

# An API is more than the sum of its parts, it combines many advantages



New business model  
and revenue streams



New distribution channels  
and extended reach



Externalized R&D  
and fostered innovation



Partnership development



Rationalization and control over  
who accesses your resources



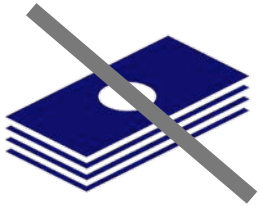
Organization flexibility  
with internal APIs



**NEW BUSINESS MODELS  
& REVENUE STREAMS**

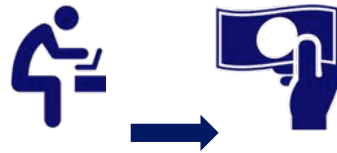


# An API represents a shift in traditional business models



## Free

Any developer who signs up can access the API and use its functionalities. This is the model used by the **Facebook Like API**.

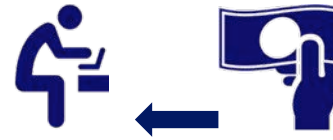


## User pays

API providers **get paid for the use** of their APIs. Different revenue models exist.

### Variant:

- Pay as you go
- Tiered
- Freemium
- Unit-based
- Transaction fee



## User gets paid

API providers **share revenue** with users for leads they bring to their website.

### Variant:

- Revenue share
- Affiliation



## Indirect

API providers receive **indirect revenue** from the use of their APIs. Salesforce for instance sell its API as a SaaS.

### Variant:

- Content acquisition
- SaaS
- Content syndication
- Internal use

# Business model 1. Free



## Case Study



The Facebook Like API is **free to use**. Anyone can embed a Like button on their page.

This allowed Facebook to spread the Like button very rapidly everywhere on the web, to enrich the **Facebook Social Graph**, to be present **everywhere on the web**, and to position themselves as **dominant in social recommendation**.



## Key figures

#1

**2,7** billion of Likes/day

#2

**2,5** million websites use the Like button

#3

**+1,000** websites adding the Like button/day

## Business model 2. User pays



### Case Study



Amazon Web Services (AWS) offer a wide variety of services (storage, database, computing power, servers, application services, deployment & management) accessible through a set of APIs.

Each of these services is charged following use pricing.



### Key figures

#1

**905** billion objects  
stored in AWS

#2

**\$750** million  
revenue in 2011

#3

**\$1** million savings for  
NASA after moving IT into AWS

# Business model 3. User gets paid



## Case Study



The **Google AdSense API** allows publishers to automatically serve text, image, video, and rich media on Google's network websites, targeted following content and audience. These adverts are administered, sorted, and maintained by Google, and they can generate revenue on either a per-click or per-impression basis.

Google splits revenue with publishers who display their ads.

Source: Google AdSense Facts



## Key figures

#1

**\$9,71** billion of revenue in 2011 for Google

#2

**28%** of Google's revenue

## Business model 4. Indirect



### Case Study



**Comcast**, America's largest TV, media, entertainment and cable provider created an internal API for teams to easily share data and solutions.

The API is free for use by internal teams. Today, teams can build new products and user experience faster than ever, generating thus **new revenue sources** for Comcast.

Source: How an API Can Transform Your Enterprise, RWW. Comcast annual report.



### Key figures

#1

**30** minutes to share resources through internal API compared to months in the past

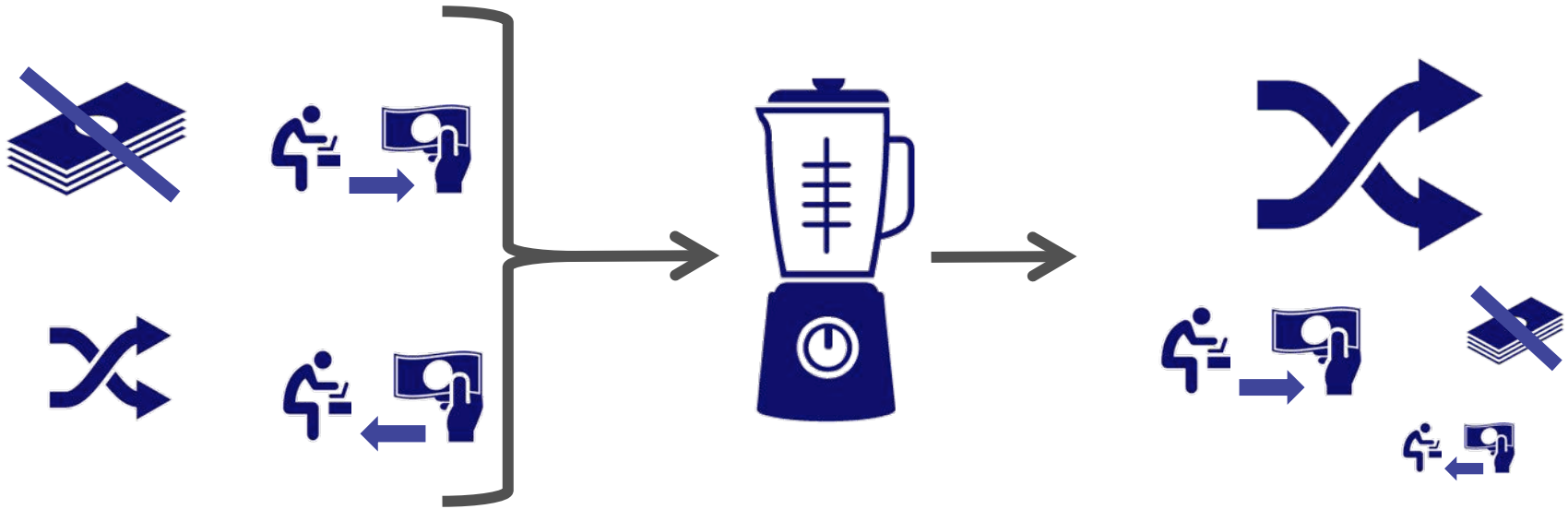
#2

**x100** increase in the API traffic last year

#3

**\$8,5** billion revenue for Xfinity, a Comcast offer using the API

## APIs usually mix several business models



API business models are often a **mix of the various models** previously explained. This allows API providers to cater to the needs of different API users by adapting pricing policies.

*For instance, the **freemium business model** gives free access to an API's basic functions and data; to access more advanced functions and data, developers must pay the API provider.*



2

**NEW DISTRIBUTION CHANNELS  
& EXTENDED REACH**



## APIs open up distribution channels

---



“

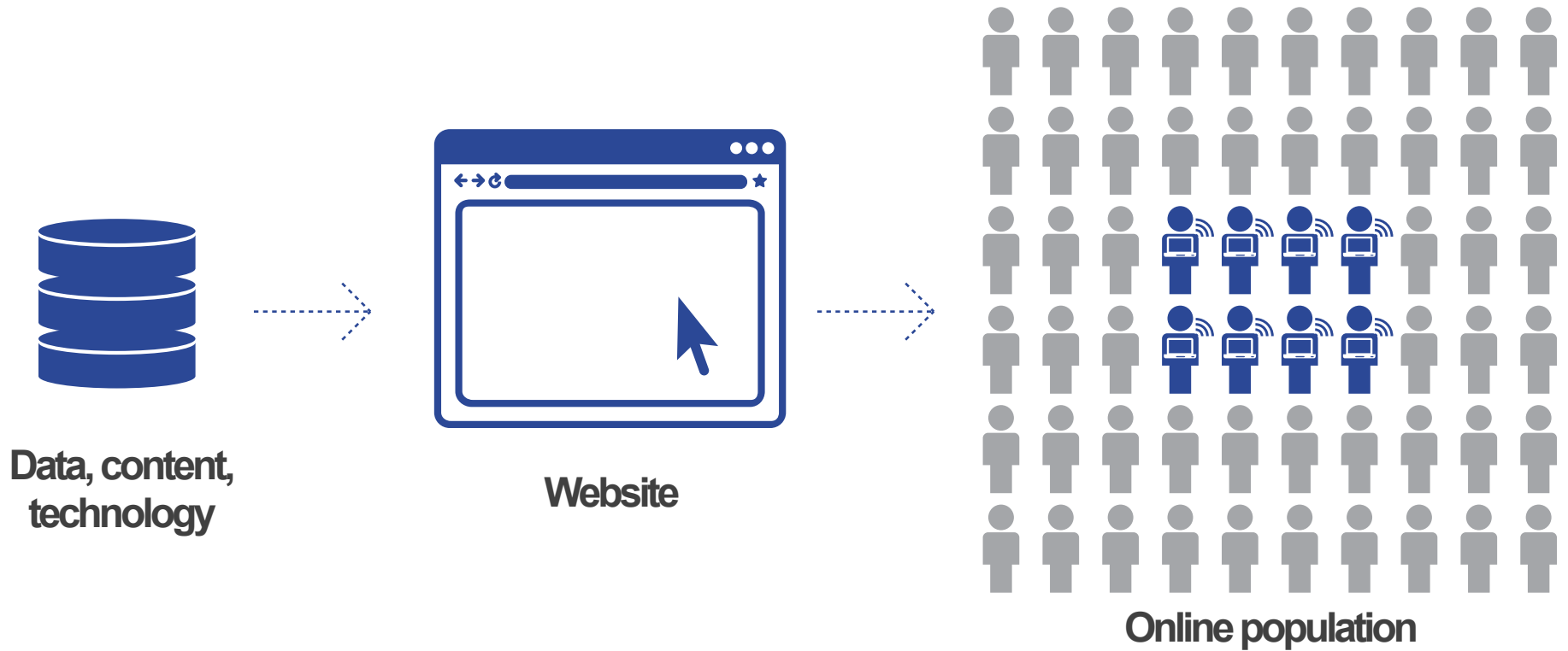
*At Netflix now, we have several hundred devices running off our API. Many publishers of various kinds would love to have that kind of distribution.*

”

**Daniel Jacobson, Director of API Engineering at Netflix**

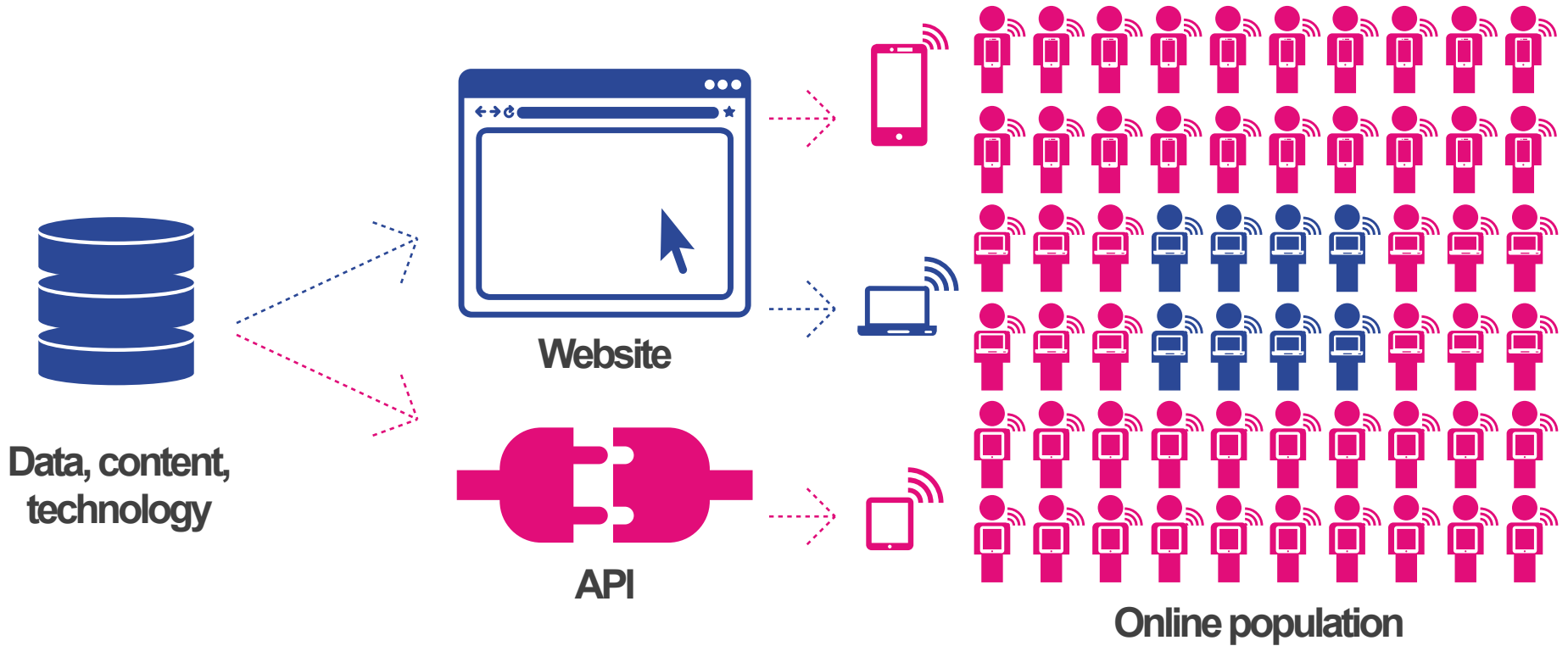


# Yesterday, websites were key to reach the online population that used only computers to browse the Web...



In the dot-com era, websites were crucial for companies to reach new customers and grow their businesses. However, today the online population has skyrocketed in size and **variety of devices** (computer, smartphone, tablet), making it **hard** for a single website to reach the whole online population.

...today APIs allow for content, data and technology to be accessed and used everywhere, seamlessly



APIs unlock distribution channels by allowing data, content and services to be accessible and usable on any device, anywhere. Thus, theoretically, all the online use case scenarios can be covered with an API where developers (external or internal) build applications for each of these scenarios.

## Case Study. The Netflix API, distributing digital media on every possible device

Netflix opened up an API in October 2008 to allow for its content to be accessed everywhere through every device.



Today, more than 800 devices use the Netflix API to stream content



3

EXTERNALIZED R&D  
**FOSTERED INNOVATION**



## Companies can foster innovation by exposing some of their resources to others



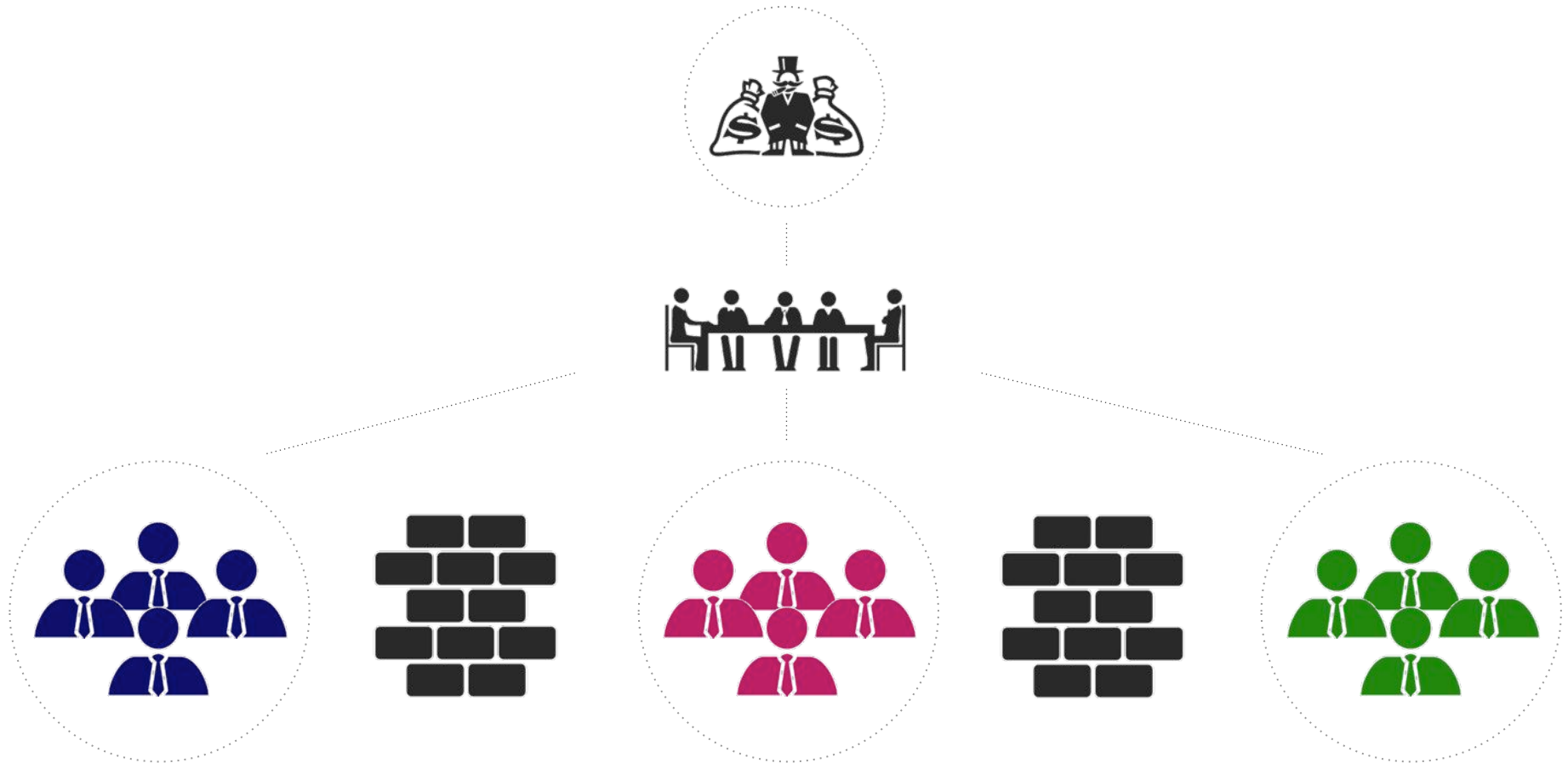
“

*We are accelerating the pace of innovation at AT&T. The transformation that is underway here is about unlocking the value of our platform and delivering new capabilities to our customers faster than ever before. [...] It (API) accelerates time-to-market with finished products, and it also increases leverage and reuse of assets.*

”

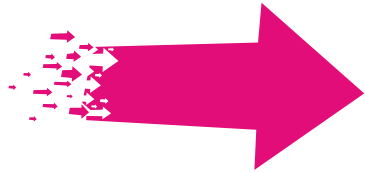
**Jon Summers, AT&T's Senior Vice President of Applications and Services Infrastructure**

# Before, corporate processes were designed to support long product or service development cycles...



In a traditional company, the organization is **pyramidal**, communication protocols between teams are **slow**, validation processes are **long** and the product development cycle is **lengthy** due to **time consuming processes**. Data is often **used and stored differently** from one team to another, slowing things down even more when these teams have to work together.

...but in today's fast evolving economy, innovation has to speed up drastically, which is what APIs allow



**Fast and efficient**  
communication protocols



**Unified** data uses and  
storage formats



**Facilitated resources access**  
through APIs



**Eased** team  
collaboration



**Thriving** community of  
developers around  
company's APIs



***Faster** product or service development cycles*

## Case study. Twitter and AT&T internal APIs



**3X** **faster** is the product development cycle at AT&T thanks to its **APIs**



**746** **applications** were developed based on the **Twitter API**

**5** **billion** API calls each month, mostly coming from third party developers. A **1400%** increase since the launch of the **API** in 2010







4

**PARTNERSHIP  
DEVELOPMENT**

## APIs open up possibilities for new partnerships at a low marginal cost

“



*There are plenty of people all over the world that would like to have access to our content, but we don't have enough people to go and talk to all of them, [...] this [API] helps us scale and has opened us up to a set of large partners we wouldn't otherwise have had the time and energy to go after.*

”

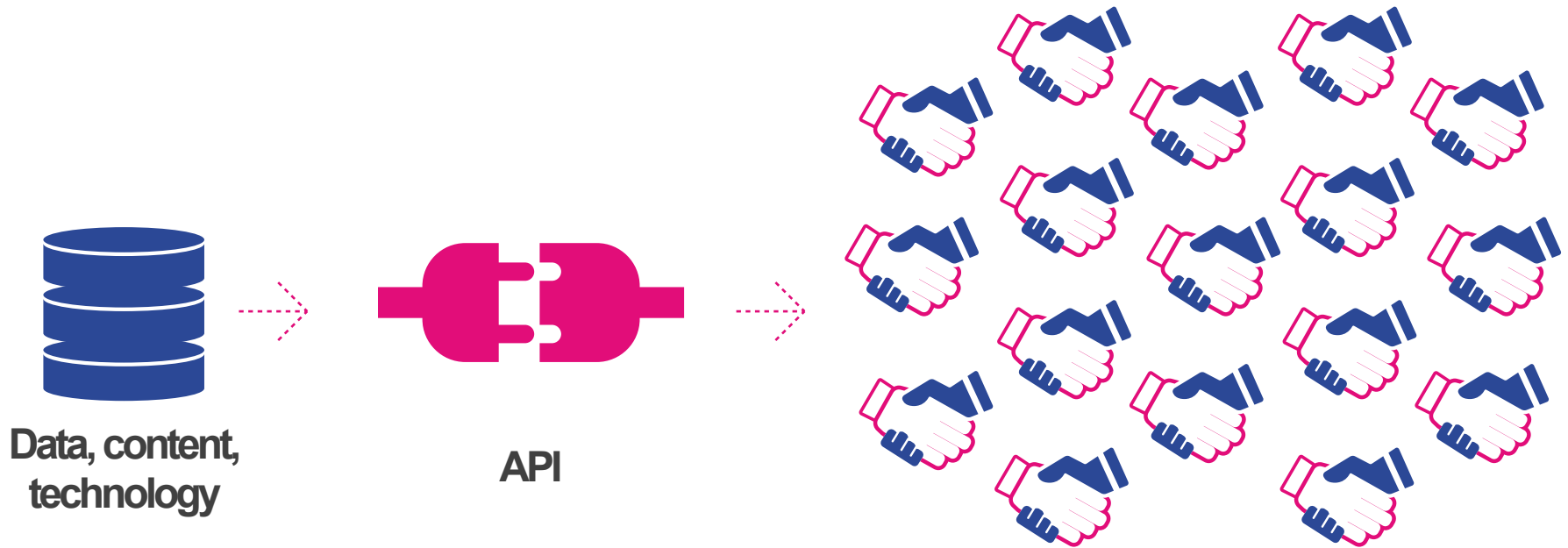
**Sharath Bulusu, Product Manager about The Guardian API**

# Before, developing new partnerships was time consuming and required consequent commercial workforce,...



Usually, to develop new partnerships, a commercial team goes **prospecting for new partners and clients**. The number of partnerships achieved is **limited** by the size of commercial teams, and the ability of the company to process these partnerships, and effectively set them up. This partnering process is **energy and time consuming**.

# ...but today APIs take partnerships on a large scale while maintaining low costs



By opening up **business assets** to other parties, APIs ease considerably partnership process. Potential partners are able to make use of the API to design **new products and services**. Commercial workforce no longer needs to have a “**door-to-door**” approach to finding new partners. Instead, new partners **plug-in to the company’s APIs** on their own.

# Case Study. Xignite API, distributing financial data on a large scale



**xignite**  
On-Demand Financial Market Data

50 financial cloud APIs

Reference and historical data covering :

- Global equities
- Commodities
- Currencies
- Fixed income
- Mutual funds
- Derivatives
- OTC instruments



API

**NASDAQ**



**ING** 



**DOWJONES**

imagination at work

**EXXON**



**Mobil**

**Forbes**



Today, 900 clients in 47 countries  
use Xignite financial services



5

RATIONALIZATION & CONTROL  
OVER WHO  
**ACCESSES YOUR RESOURCES**

# APIs allow for monitoring and control over how a company's resources can be used

“



*We want to make sure that the Twitter experience is straightforward and easy to understand. [...] Related to that, we've already begun to more thoroughly enforce our Developer Rules of the Road with partners, for example with branding, and in the coming weeks, we will be introducing stricter guidelines around how the Twitter API is used.*

”

**Michael Sippey, VP Consumer Products at Twitter**

# APIs allow companies to open their resources in a secure and controlled way while bringing them closer to their customers

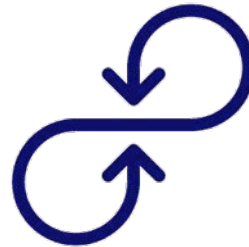


## Control your ecosystem

API providers have **complete control** over their **API ecosystem** :

- **Degree of openness** of their APIs.
- **Usage rules** for developers.

**Example** : Twitter recently decided to strengthen its API policy to be sure the best experience is delivered to users.



## Get feedback fast

API providers can know precisely **how their resources are being used** :

- Identity, number of API calls, functionalities used, etc.
- **Instant insights** on which resources are most used and thus potentially **most valued by customers**.



## Secure your resources

Identification protocol allows developers to **access securely to APIs** :

- **Encrypted** communications.

Security depends on what resources a company decides to expose to third parties through an API.





6

ORGANIZATION FLEXIBILITY WITH  
**INTERNAL API**

# Traditionally, IT management controls the whole value chain of a company's data...

In traditional companies,  
IT's role can be summed up as:



Controlling corporate data



Building enterprise  
applications

IT systems are thus **centralized, locked down, and controlled** by IT teams.

All requests for new applications or changes **have to be submitted to IT**, thus **creating a funnel** effect that slows down processes. This results in a **rigid, costly, and time-consuming** IT organization.

...whereas internal APIs give more flexibility and speed up internal processes

## With internal APIs, IT's role is reinvented



Define policies for data use



Build and maintain APIs

## Internal APIs grease the wheels in companies and organizations

### Updatability

If changes or repairs are needed in the database, IT can handle it **without disrupting** the functioning of IT systems as long as API rules do not change

### Flexibility

Each department can **build its own applications** with in-house or third party developers using **data** and **functionalities** provided by the **internal APIs**.

### Scalability

In case **opening data** and **functionalities** to **partners** is needed, having internal APIs speeds up partnership and scaling processes.

### Cross-department

Departments can **share data** easily, and **re-use** other departments' data to **rapidly build** their own **applications** without to resort to IT management.



## Yesterday

Accessing cross-division resources to create new products would **take months** because:

#1

**No standardized data** format between departments

#2

**Different** data exchange protocols

#3

Code created for each project was **rarely reusable**

## Today

Now, thanks to internal APIs, accessing cross-division resources takes around **30 minutes**:

#1

Each department is **free to use other departments' resources**

#2

**A dozen of internal APIs** have been created

“

*The goal is that APIs become so fundamental to how we operate that people don't notice them anymore, like the air.*

”

Agustin Schapira, Principal Architect at Comcast

# REST architecture for APIs eases resources manipulation

*RESTful is a style of software architecture that allows data exchange through human readable URIs*

*REST language uses **nouns and verbs**, and has an emphasis on **readability**. It ultimately uses **less bandwidth** than other language such as SOAP for instance*

Users can manipulate  
data through a REST  
API using

4

action verbs  
and an URI



## Example: an internal REST API

Let's consider an enterprise named **HelloWorld**

**Example:** if HelloWorld had an internal REST API, typing the following command line...

```
get api.company.com/1/revenue/?subsidiary=paris&year=2012
```

*HelloWorld API version 1    Revenue of...    ...subsidiary in Paris...    ...in 2012*

...would return HelloWorld **revenue in 2012 of the Paris subsidiary.**

```
{
  "year":2012,
  "total":32800000,
  "by_month": {
    "01":350000,
    "02":100000,
    "03":120000,
    "04":200000,
    "05":220000,
    "06":310000,
    "07":400000,
    "08":260000,
    "09":290000,
    "10":360000,
    "11":450000,
    "12":220000
  }
}
```

*Machine & human readable results: HelloWorld revenue in 2012, each month*



**APIs**

**revolutionize the  
way products and  
services are  
delivered**

# Re-imagination of movie rental

THEN



Brick-and-mortar stores / Localized / Not compatible with every device / Limited distribution / High fixed costs



NOW



Online / Accessible on demand / Virtually unlimited catalog / Wide reach / Accessible on any device





# Re-imagination of the newspaper industry

THEN



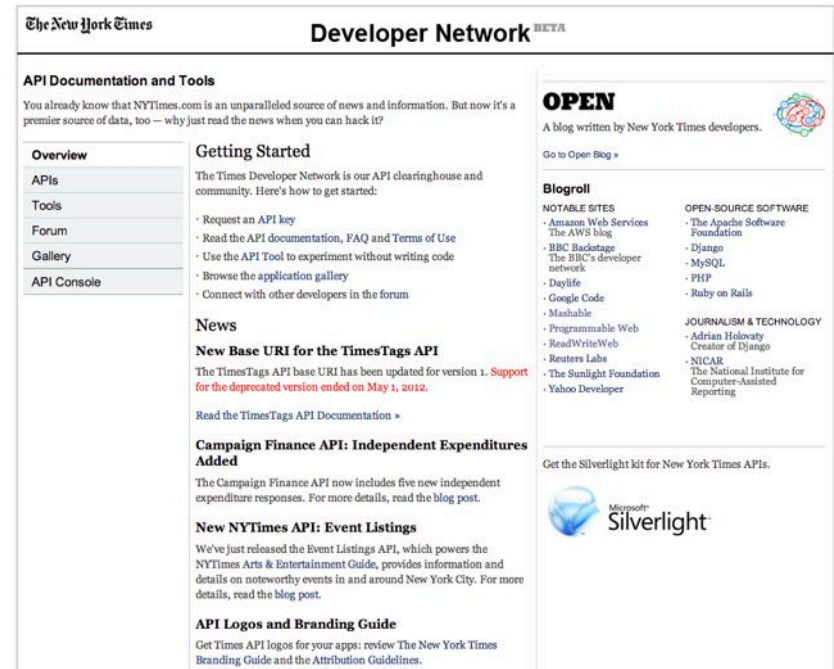
Printed on paper / Limited and localized distribution / Print costs / High distribution costs / Not scalable / Limited innovation



NOW



Online / Accessible on demand / Eased partnerships / Wide reach / New distribution channels / Scalable / Low distribution costs



The New York Times Developer Network BETA

**API Documentation and Tools**

You already know that NYTimes.com is an unparalleled source of news and information. But now it's a premier source of data, too — why just read the news when you can hack it?

**Overview**

- APIs
- Tools
- Forum
- Gallery
- API Console

**Getting Started**

The Times Developer Network is our API clearinghouse and community. Here's how to get started:

- Request an API key
- Read the API documentation, FAQ and Terms of Use
- Use the API Tool to experiment without writing code
- Browse the application gallery
- Connect with other developers in the forum

**News**

**New Base URI for the TimesTags API**

The TimesTags API base URI has been updated for version 1. **Support for the deprecated version ended on May 1, 2012.**

[Read the TimesTags API Documentation >](#)

**Campaign Finance API: Independent Expenditures Added**

The Campaign Finance API now includes five new independent expenditure responses. For more details, read the blog post.

**New NYTimes API: Event Listings**

We've just released the Event Listings API, which powers the NYTimes Arts & Entertainment Guide, provides information and details on noteworthy events in and around New York City. For more details, read the blog post.

**API Logos and Branding Guide**

Get Times API logos for your apps: review The New York Times Branding Guide and the Attribution Guidelines.

**OPEN**


A blog written by New York Times developers.

[Go to Open Blog >](#)

**Blogroll**

<b>NOTABLE SITES</b>	<b>OPEN-SOURCE SOFTWARE</b>
<ul style="list-style-type: none"><li>Amazon Web Services</li><li>The AWS blog</li><li>BBC Backstage</li><li>The BBC's developer network</li><li>Daylife</li><li>Google Code</li><li>Mashable</li><li>Programmable Web</li><li>ReadWriteWeb</li><li>Reuters Labs</li><li>The Sunlight Foundation</li><li>Yahoo Developer</li></ul>	<ul style="list-style-type: none"><li>The Apache Software Foundation</li><li>Django</li><li>MySQL</li><li>PHP</li><li>Ruby on Rails</li></ul>
<b>JOURNALISM &amp; TECHNOLOGY</b>	
<ul style="list-style-type: none"><li>Adrian Holovaty</li><li>Creator of Django</li><li>NIJAR</li><li>The National Institute for Computer-Assisted Reporting</li></ul>	

Get the Silverlight kit for New York Times APIs.





# Re-imagination of business IT

THEN



Internal servers / High acquisition and maintenance costs / Obsolescence issues / Limited computing power / Not scalable



NOW



Online / Pay-as-you go / No obsolescence issues / Virtually unlimited computing power / No maintenance costs / Scalable



# Re-imagination of the business of telephony

THEN



Fixed phones / Single communication device / Limited functionalities / Closed communication ecosystem / High scalability costs



NOW



**Twilio** / Cloud-based communications / Endless integration possibilities with devices / Low scalability costs / Open communication ecosystem / Expandable functionalities

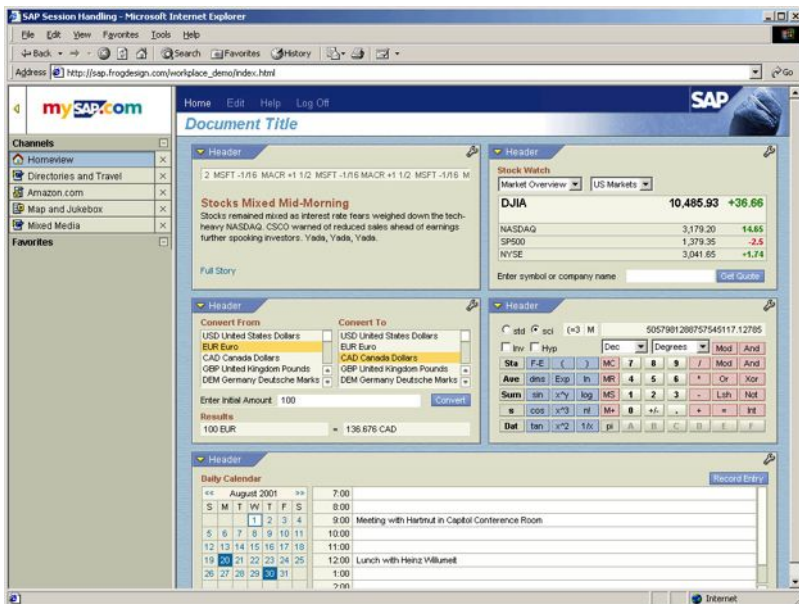


# Re-imagination of enterprise ERPs

THEN



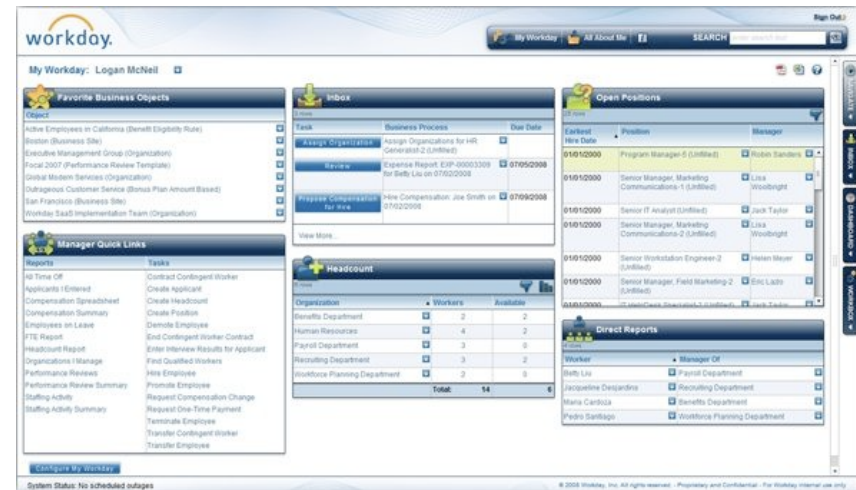
SAP, Oracle / Expensive systems / Limited flexibility / On-premise / Low scalability / Complicated to use



NOW



Workday / SaaS / Always up-to-date / User-centric / Flexible and scalable



# Re-imagination of educational content

THEN



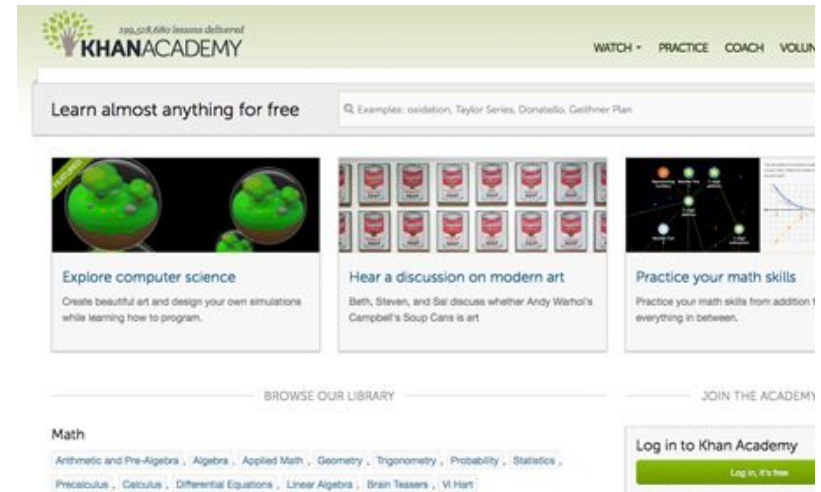
Printed on paper / Obsolescence / One size fits all approach / Unique distribution mode / Static content



NOW



Khan Academy / Analytics for teachers and students / Interactive content / Diverse distribution modes / Embeddable with other contents and functionalities



# Re-imagination of fitness coaching

THEN



Single device / Limited functionalities / Not evolutionary / Few analytics /



NOW



Myfitnesspal / Many applications possibilities / Analytics / Fun / User-centric / Evolutionary

**myfitnesspal** THURSDAY / Jul 15, 2010

**Your Daily Summary**

**1307** CALORIES REMAINING

Goal	Food	Exercise	Net
1930	+ 899	- 276	623

**Nutrient Summary**

	Total	Goal	Left
Total Fat (g)	24	73	49
Saturated (g)	5	21	16
Polyunsaturated (g)	3	100	97
Monounsaturated (g)	6	100	94

**Diary** MONDAY / Jul 26, 2010

Goal	Food	Exercise	Net	Remaining
1930	990	397	593	1337

**Breakfast 430 cal**

- Fresh Squeezed Orange Juice 110
- Fruit & Yogurt Parfait 320

**Lunch 560 cal**

- Smoked Turkey Breast Sandwi... 560

**Cardio Exercise**

Family Dental  
www.familydentalfostercity.com

vitaminwater zero®  
Facebook.com/vitaminwaterzero  
Ads by Google

# Re-imagination of retail product search

THEN



Paper catalog / Not interactive / One-to-many marketing / No analytics

**Mobilier extérieur**

Modulez-les suivant vos envies !

**EXTRA RESISTANT** **PRIX EXCEPTIONNEL** **TOP QUALITE** **NEW**

**152.50** **115.00** **198.90** **99.00** **99.00** **69.00** **69.00** **89.00** **89.00**

**Mikonos**  
000010 Module d'angle équipé de deux coussins - 80x80x66 cm **198.90** €  
000011 Module droit équipé de deux coussins - 80x60x66 cm **152.50** €  
000012 Table ou pouf équipé d'un coussin - 60x60x38 cm **115.00** €  
Structure métal aluminium anodisé recouverte de wicker polyéthylène. Tube extra résistant - 24x2x1,5 mm. Protection en aluminium aux pieds. Coussins couleur beige épaisseur 10 cm.

**Dakar**  
000010 Fauteuil empilable **99.00** €  
Structure aluminium anodisé. Assise et dossier tressage wicker polyéthylène haute densité. Dimensions 66x67x84 cm. Tube ø25 mm épaisseur 1,2 mm. Protection aluminium aux pieds. Coussin couleur beige épaisseur 5 cm.

**Gorée**  
000012 Fauteuil empilable **99.00** €  
Structure aluminium anodisé. Assise et dossier tressage wicker polyéthylène haute densité. Dimensions 66x67x84 cm. Tube ø25 mm épaisseur 1,2 mm. Protection aluminium aux pieds. Coussin couleur noir épaisseur 5 cm.

**Lifou**  
000000 Chaise empilable **69.00** €  
Structure aluminium anodisé. Assise et dossier tressage wicker polyéthylène haute densité. Dim. 53x56x76,5 cm. Tube ø25 mm ep. 1,5 mm.

**Kuto**  
000001 Chaise empilable **69.00** €  
Structure aluminium anodisé. Assise et dossier tressage wicker polyéthylène haute densité. Dim. 53x56x76,5 cm. Tube ø25 mm ep. 1,5 mm. Teinte naturelle.

**Mahadit**  
000000 Fauteuil empilable **89.00** €  
Structure aluminium anodisé. Assise et dossier tressage wicker polyéthylène haute densité. Dimensions 66x67x79 cm. Tube ø25 mm épaisseur 1,2 mm. Protection aluminium aux pieds. Coussin couleur noir épaisseur 5 cm.

**Palta**  
000002 Fauteuil empilable **89.00** €  
Structure aluminium anodisé. Assise et dossier tressage wicker polyéthylène haute densité. Dimensions 66x67x76 cm. Tube ø25 mm épaisseur 1,5 mm. Teinte naturelle. Coussin couleur terracota épaisseur 5 cm.

NOW



Mobile product search / Geolocalized / Analytics / One-to-one marketing / Many functionalities (reviews, couponing, etc.)

10:18

Xenocide (Ender, Book 3)

Web (24) \$0.18

Local (13) \$6.79

Reviews

Save to Wish List

Alert when price is

Local Stores

Map

Best Buy \$29.99  
4414 DFW Turnpike Dallas, TX

Deals History scan Lists More





**In the 90's you couldn't do  
without a website...**





...and today you can't do without  
an API



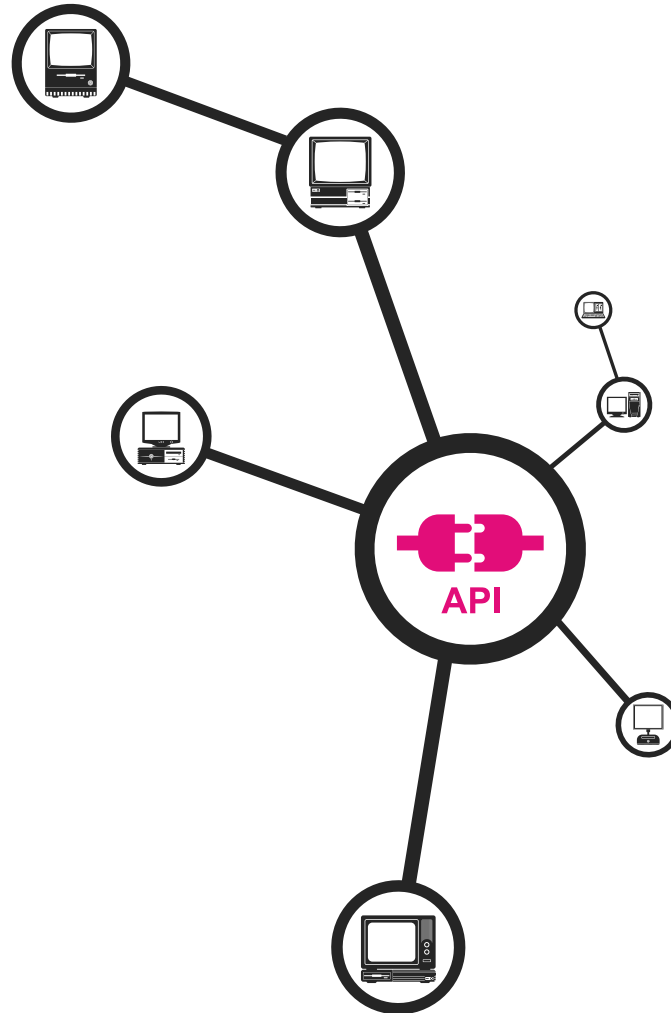


  
**What's next for the API world**



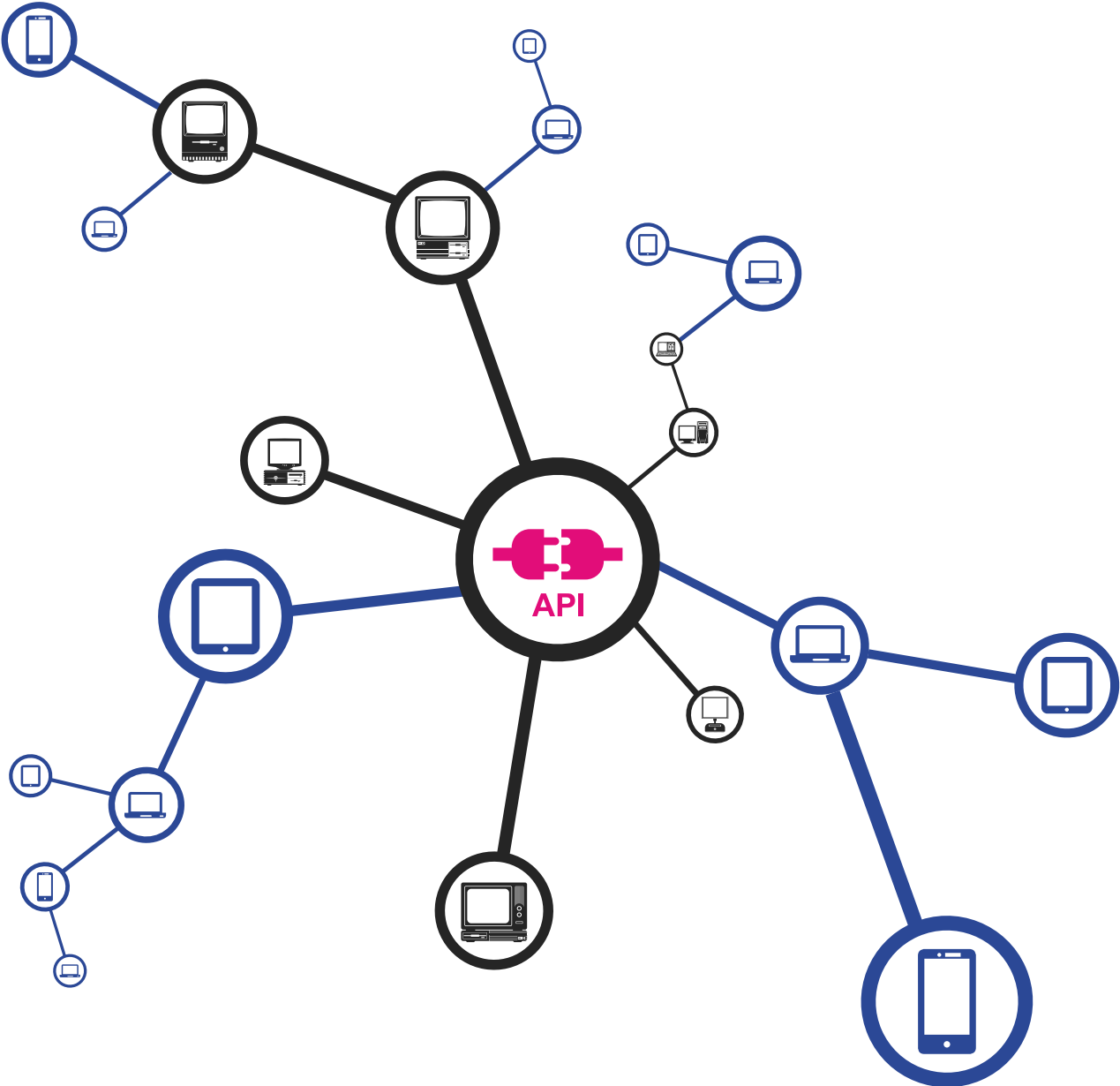
# In the 90's APIs allowed programmers to develop applications for OS

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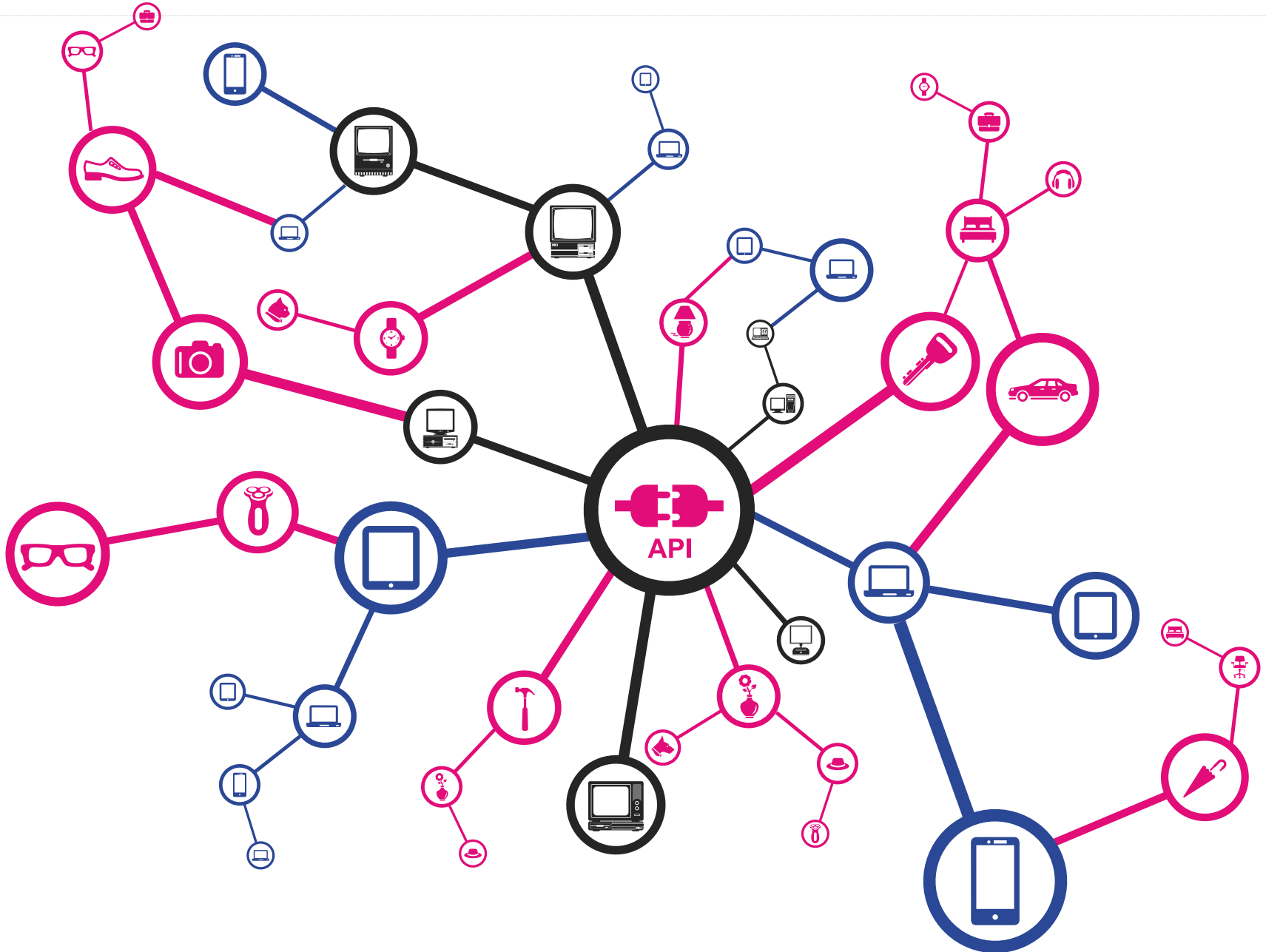




Today, APIs connect smartphones, computers, tablets, etc.



# Tomorrow, all objects will be able to exchange resources through APIs





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*We help large organizations think and act like startups!*

**We help our clients make the most of digital opportunities and emerging practices. We build on tomorrow's challenges to deliver significant impact.**

**We are designers, business analysts, and engineers.**



**We work ideas into successful projects.**

**We make innovation happen.**



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*Senior Software Engineer*

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*Junior Project Manager*

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