

# API

- when, how and where  
should you use open data



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PRESENTED BY ANDREAS KROHN



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## Onlinepizza har Sveriges bästa API 2012

28 MAR 2012

AV ANDREAS KROHN



Efter en nästan 2 veckor lång omröstning och 550 röster så har Onlinepizzas API utsetts till Sveriges bästa API. Onlinepizza vann med 72 röster över 229 andra svenska APIer i svenska API-katalogen. På andra plats kom Saplo textanalys-API och på tredje plats Vemringdes API.

Onlinepizzas API vinner guld Det bästa APIet som finns i Sverige [...]

LÄS MER

26 MAR 2012

## API Måndag – Skolverket, SJ, databasjournalistik & Skimlinks



Det börjar verkligen hända saker i API-Sverige. Skolverket har släppt öppen data, SJs inofficiella API har utökats och det är snart dags för ett hackathon om databasjournalistik. Som extra krydda så har Skimlinks släppt en hel radda APIer och omröstningen om Sveriges bästa API är på upploppet. Detta och mycket mer API-relaterat kan ni få [...]

LÄS MER

23 MAR 2012

## Lokala APIer från Stockholm, Göteborg, Malmö, Örebro och Umeå



Flera svenska städer har själv publicerat APIer, eller så har lokala universitet eller företag gjort det. Det finns 5 städer representerade i API-katalogen och de bästa städerna utifrån en API-synpunkt är Stockholm och Göteborg. Stockholm Det finns hela 13 APIer med data om Stockholm. Mest är det APIer från Open Stockholm där man kan komma [...]

LÄS MER

### GILLAR DU MASHUP.SE?

43

36

6

21

Tweeta

Like

Share

+1

### MINA SENASTE #APISE TWEETS

andreaskrohn: The all-new API for the all-new Basecamp <http://t.co/sGHCgYSK> #api #apise

29/3 05:14

andreaskrohn: Kvittar i Topp 10 över Sveriges bästa API <http://t.co/bp5ouwse> #apise via @kvittar

28/3 16:51

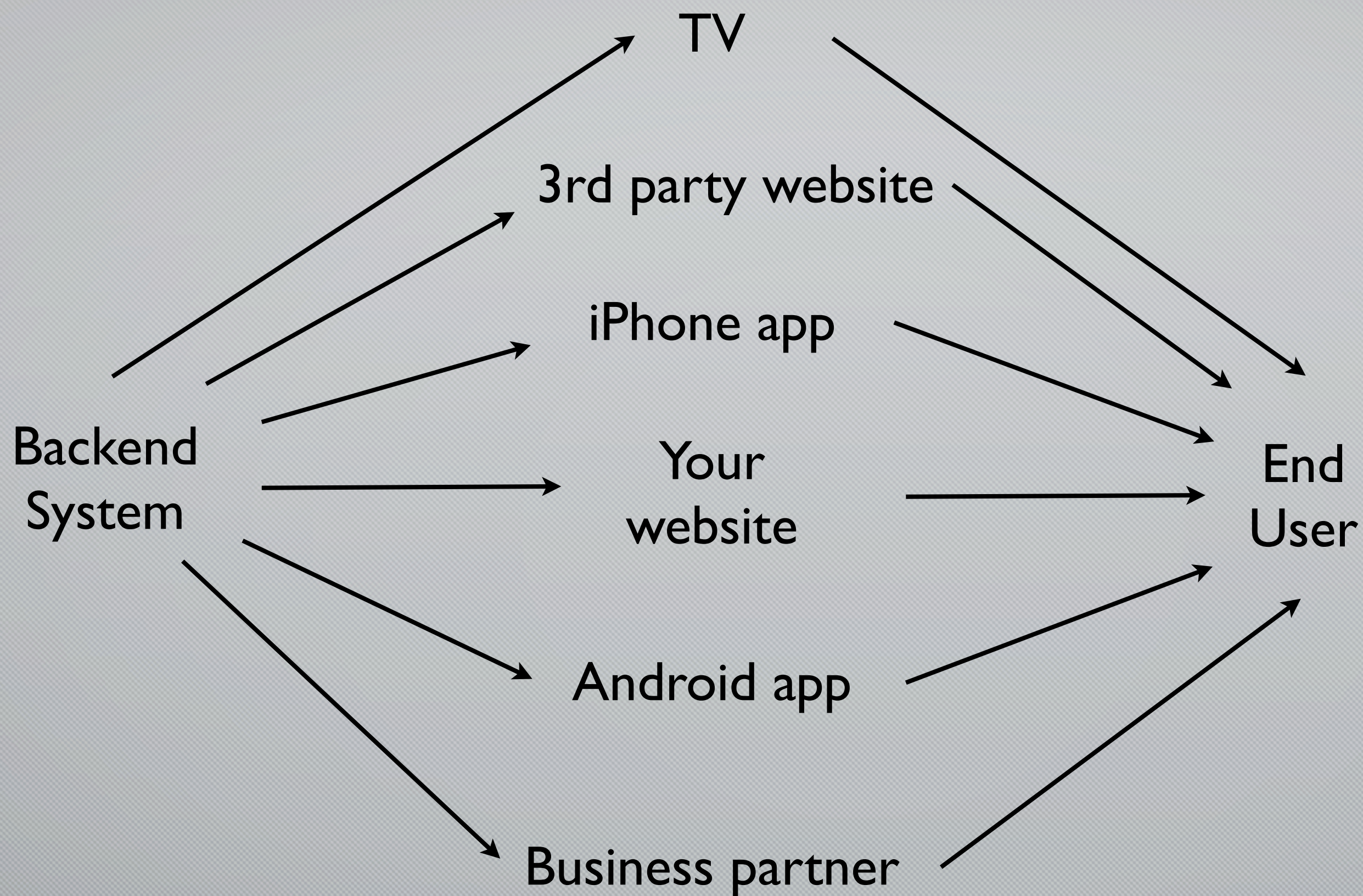
Follow @andreaskrohn 1,527 followers

### SENASTE KOMMENTARERNA

Andreas Krohn Håller med om att det är dåligt av Nordea. De skyller säkert på säkerhetsproblem, bankinspektionen och lagboken... men om de vill släppa ett API så är jag övertygad om att de kan göra det.

API PRESENTATIONER FRÅN WEBCOAST · 1 DAY AGO





Monday, 9 April, 2012

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Most companies and public agencies have a lot of complex backend systems that are presented to the end user via a website. It might be a company selling its products through their website, google giving access to their search engine or a city informing citizens about opening hours in the local library. Having a website has been a must for the last 10 years or so.

Today the world is a bit more complex and a lot of end users demand and expect that the information and functionality that is available in the website also is available in their mobile via an iPhone app or and Android app. This can partly be solved with responsive design where the website simply adapts to the size of the screen of the mobile, but in some cases a native app has it's advantages.

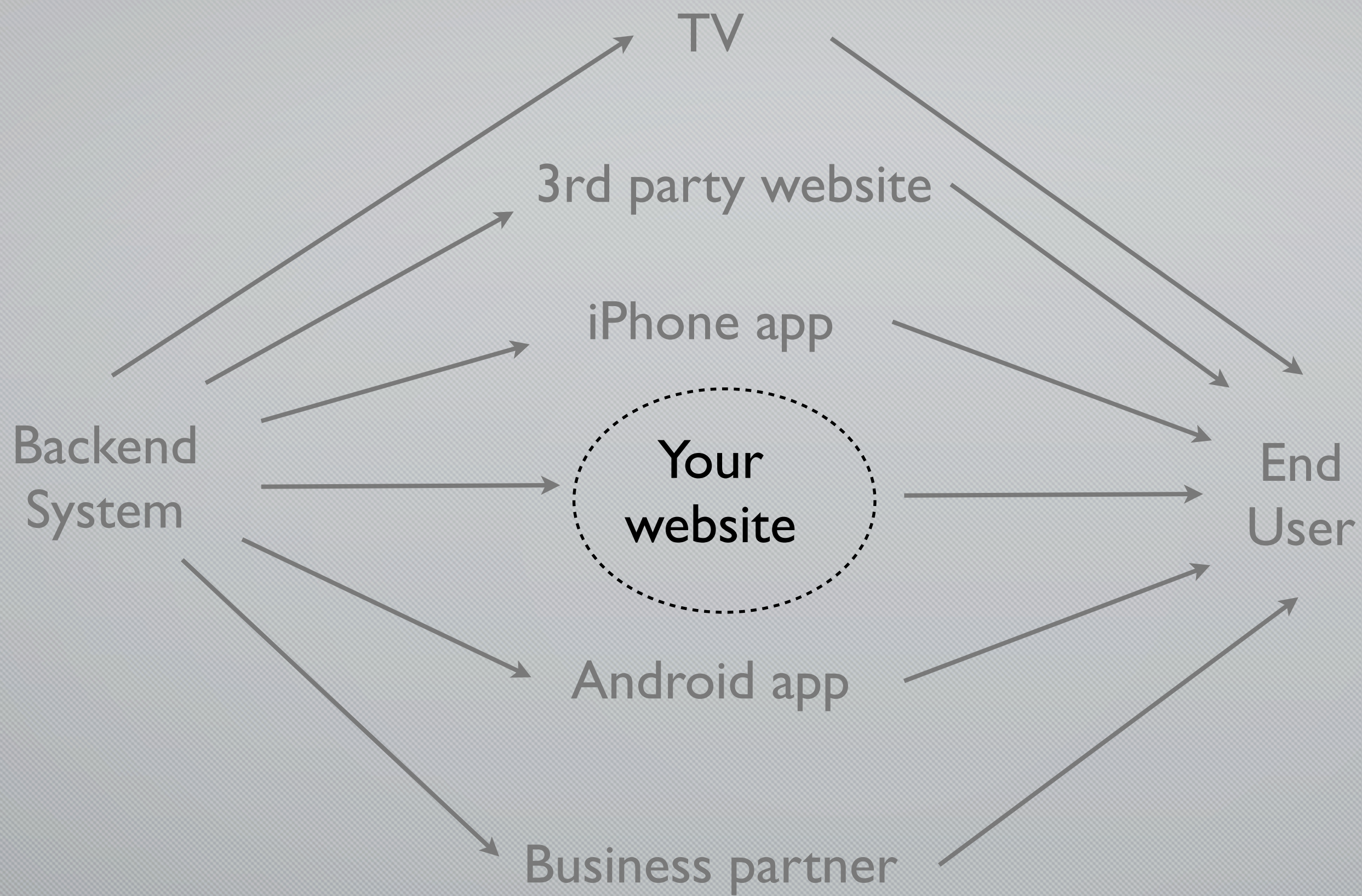
Maybe there is also a 3rd party website that wants to show some of the compaines data or use some of the companies functionality. Maybe the local newspaper automatically wants to show the local bus schedule or a affiliate site wants to sell some of your products on their site to earn a percentage of each sale.

Add to the mix that you have a business partner that need to integrate with your backend systems to know details about your stock or your common customers. In this case the end user might be an employee of this business partner that access this integrated data via their internal systems.

We are seeing a lot of rapid development in the TV-set market and soon all TVs will be connected to the internet and many of them will run apps just as cell phones do today. When that is the case you want to present your services in the TVs as well.

These are just a few of the possible ways that your data and your functionality might be accessed by a user. Of course there might also be special needs that only applies to a fraction of your user base. Should you make a special iPhone app for people with reading disabilities? Should you make a new website selling products to people that speak a minority language? Are a few percentage of your user base early adopters of new technologies and use the latest and greatest new mobile device that requires a new form of application?





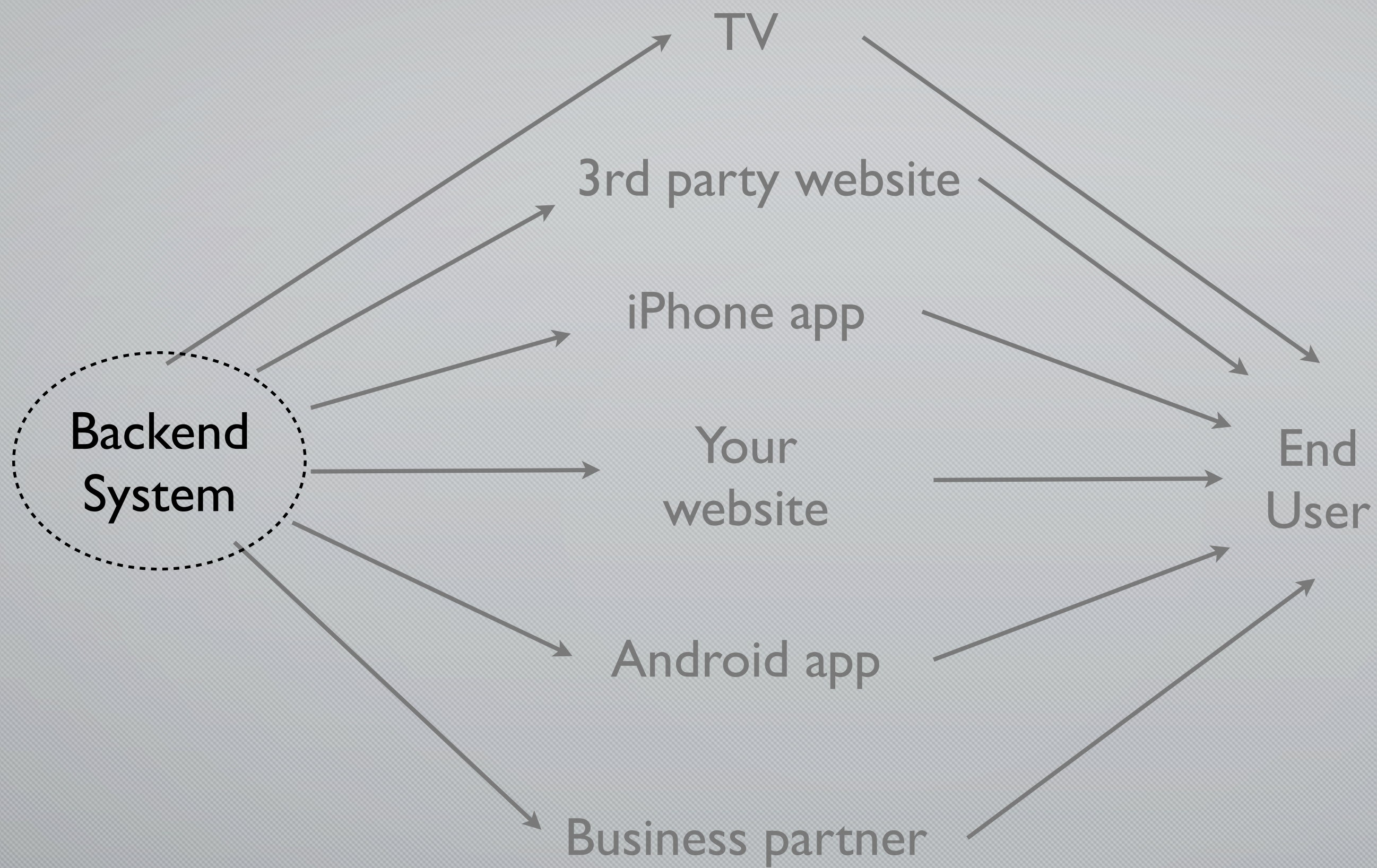
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In this environment your website is no longer your product, it is just one of many ways to present your service to your end users.

Not even your website + your iPhone app is your product, however nice looking and functional that iPhone app is.





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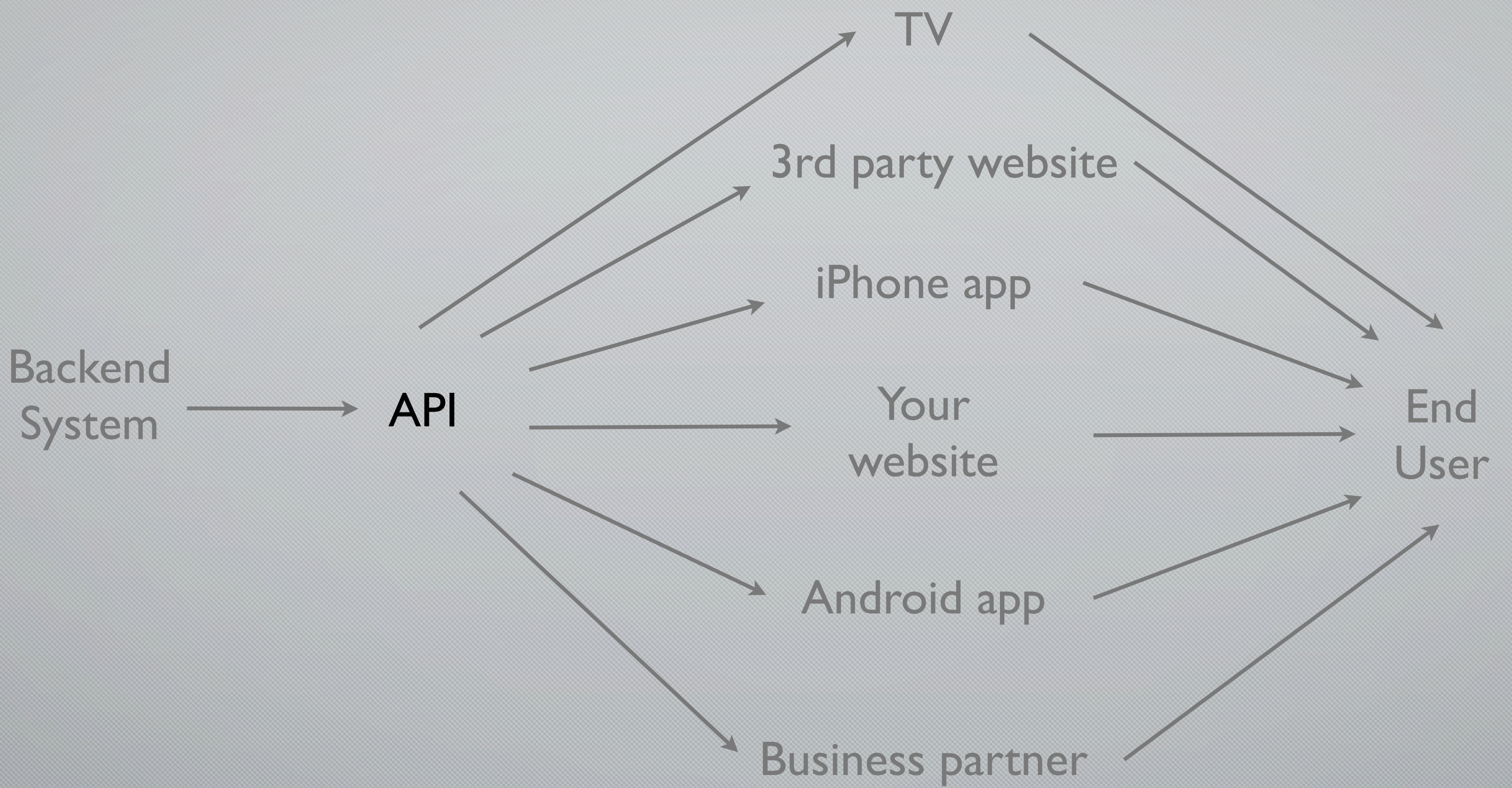
6

Instead your core product is the backend system, or in other words the DATA in your backend systems.

In many cases your core product will of course not be data but a physical service in the real analog world, such as the car you are selling, the garbage that you are collecting or the electricity you are delivering. But on the web and in the digital world all this is represented by data so online your core product is, and will always be, DATA.

So how do you deliver this data to all these devices and services without having to do a lot of work in each and every case?







# API

## Application Programming Interface

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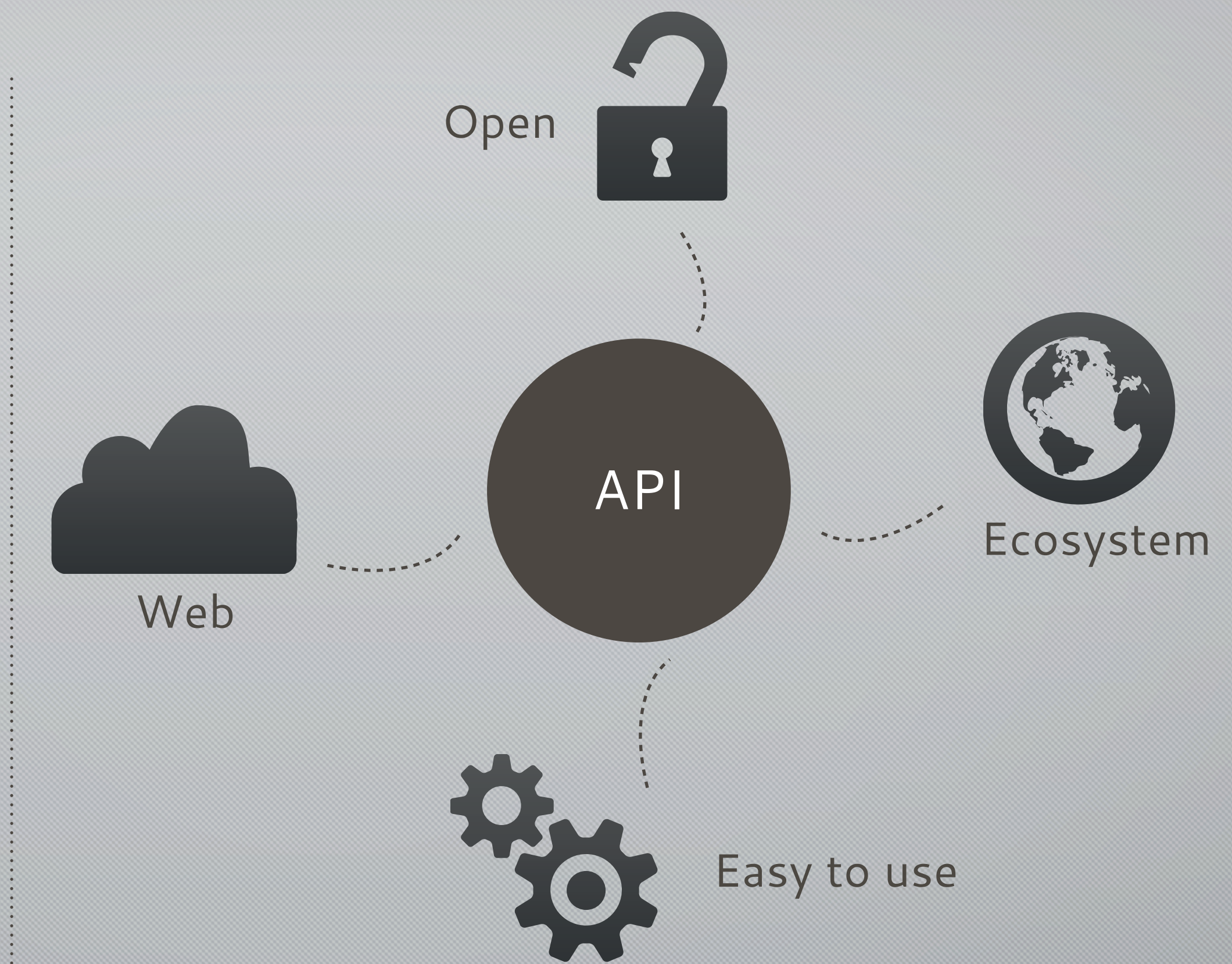
So let's talk about what an API actually is...

API stands for Application Programming Interface. The term API has been around for a long time and can mean many things, the most basic is that it is a defined interface to a system. Every programmer in the world use APIs since every programming language is an API, without it we would be writing zeros and ones. There are also APIs into operative systems, such as Windows or iOS. If you are writing a iPhone app and want to use the camera you need to use an API that Apple is providing.

However, it is not exactly this type of API I am talking about here today, but something slightly different...



# API?



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The way I define an API in this presentation is...

- That it communicates over the web. These are APIs that can be called in the same way as if you would load a web page into your web browser.
- That the API is open for anyone to use. This is not a must, there are great advantages to having APIs that are used just internally or between a handful of partners, but to really reap the benefits of APIs they should be open for anyone. This does not mean that they automatically need to be free of charge, it is perfectly OK to charge for the access to the API. After all it is your valuable data you are giving access to.

When talking about charging for APIs I would like to mention the term "open data" that are often used together with the term "API". Open data is data that is freely available to everyone to use and republish without restrictions or cost. Some open data can be published in the form of an API, but that is not a must. A lot of government data is published as open data and with the European PSI-directive we will see a lot more of this in the near future. This presentation do not focus on open data, but on APIs, which is a way to make data available.

- Easy to use, at least easy to use for programmers. An API should not be tied to a specific programming language or platform. It should be possible to use and API from PHP, C# or Javascript.
- APIs that are web based, open and easy to use together create an ecosystem, an ecosystem that all of us are using every day. Every time you go to a web page and see the Facebook Like button or the possibility to login with your Facebook or LinkedIn credentials you are seeing examples of this API ecosystem.

In technical terms this means that I am talking mainly about REST APIs returning XML or JSON, but also somewhat about SOAP Web Services. Don't worry if you don't know what any of those things mean, we will not dig deeper into technical details in this presentation. If you have technical questions please do not hesitate to grab me after the presentation and I will be happy to talk about it.

So let's look at the benefits of using APIs...



# API Benefits

- ▶ Simpler interface
- ▶ Loosely coupled systems
- ▶ Others building solutions on your data
- ▶ More innovation

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There are many benefits of using APIs, I will highlight a few of them for you...

- Simpler interface. You have already decided what the interface to your data will be, and this interface, or API, can then be used by anyone you give access to. It might be an internal project or some outside developer building an accessible version of your own inaccessible website

- Loosely couples systems had been a key ingredient in system architecture for decades. A few years ago this was achieved with SOA (Service Oriented Architecture), now it can be done quicker and cheaper with APIs. The basic idea is that different systems are connected in such a loose way that one system can be replaced easily and things can still continue to work.

- The key benefit though is that Others can build solutions on your data. You know your data best, but you do not know how to combine it in an optimal way with other data that you might not even have heard about. Your data might be fantastic and useful in itself, but in combination with data from other sources something completely new can be created that you never would have thought about yourself.

- All this leads to More innovation. However large your company is there is always more innovation outside it compared to inside it. You can never have all the ideas yourself, and if you have, you can never have the resources to implement them all yourself. Let others do that instead.



# Kundo

kundo.se

The screenshot shows the Bokus customer support forum. At the top, there's a navigation bar with the Kundo logo and a 'Logga in som redaktör' link. Below that, the Bokus logo and URL 'http://www.bokus.com/' are displayed. A search bar with a 'Sök' button is on the right. The main content area features a welcome message: 'Välkommen till Bokus kund- och supportforum! Ge beröm, ställ frågor, rapportera problem och hjälp oss med förslag och idéer! För frågor om en order, kontakta kundservice@bokus.com.' Below this is a row of four buttons: 'Ställ en fråga', 'Lämna ett förslag', 'Rapportera problem', and 'Ge beröm'. A text input field below these buttons is labeled 'Börja med en beskrivande rubrik...'. The forum is divided into two columns: 'Populära frågor' and 'Populära förslag'. The 'Populära frågor' column lists questions like 'När kommer den andra boken i De Utvalda?' and 'vill köpa:'. The 'Populära förslag' column lists suggestions like 'Hej! Jag tycker den ser för trist ut att ni borde ha lite mer färger...'. On the right side, there's a sidebar with the Bokus logo, a 'Vi svarar på dina frågor' section featuring Alexandra Nedstam, and a 'Fler hjälpresurser' section with links to contact methods and social media. At the bottom of the sidebar, there's an 'Ändringshistorik för detta forum' section.

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Kundo is a Swedish service for online customer service. A company uses Kundo to allow their customers to ask questions, report problems, come with suggestions or give praise. Kundo is used by several Swedish companies such as SVT, DN, Hemnet and also have customers in other Scandinavian countries. Other similar services internationally are getSatisfaction and UserVoice.

Of course Kundo has a website, kundo.se, where users can interact with companies. In this example it is a Swedish book vendor called Bokus that are using Kundo.

What Kundo has understood is that it is not kundo.se that is their product. Their real product is a system to facilitate the interaction between customer and company, and this system can be accessed in multiple different ways...



# Kundo

bokus.se

The screenshot shows the homepage of bokus.com. At the top left is the logo "bokus.com" with the tagline "där alla böcker bor". To the right is a search bar with a "Sök" button and options for "Alla språk" and "Svenska". Further right are links for "Logga in", "Mina sidor", "Frågor & svar", and "Kontakta oss". A shopping cart icon indicates "Din varukorg är tom". Below the search bar is a navigation menu with categories: "Ämnen", "Nyheter", "Topplistor", "Erbjudanden", "Barn & tonår", "Student", "Pocket", "Ljudböcker", and "E-böcker". On the left side, there is a "Välj ämne" section with a list of subjects including "Barn & tonår", "Biografier", "Data & IT", "Deckare", "Djur & natur", "Ekonomi & ledarskap", "Familj & hälsa", "Film, radio & TV", "Filosofi & religion", "Hem & trädgård", "Historia & arkeologi", "Juridik", "Kultur", "Mat & dryck", "Medicin", "Naturvetenskap & teknik", "Psykologi & pedagogik", "Resor", and "Samhälle & politik". The main content area features a "PÅSKEKRIM" banner with a red circle saying "Ladda för spänning i påsk!". Below this is a section for "Aktuella böcker" with a list of book covers including "UTAN EN TRÄD", "ETT KORT UPPEHÅLL", "Perenner", and "NORSTEDTS VÄRLDSATLAS". On the right side, there are two promotional boxes: "Veckans erbjudande" for "NORSTEDTS VÄRLDSATLAS" at 69:- (125:-) and "Bokstoppen - mest sålda igår" with a list of top-selling books.



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The most basic way that Kundo makes their service accessible to the end users are via a javascript widget. Bokus installes this widget on their website and get a little button on the side or the site that says "Tyck till", roughly translated to "Let us know what you think". When a user clicks this button...



# Kundo

bokus.se

Logga in | Mina sidor | Frågor & svar | Stäng

### Tyck till om vår webbplats!

[Ställ en fråga](#) [Lämna ett förslag](#) [Rapportera problem](#) [Ge beröm](#)

Börja med en beskrivande rubrik...

Skriv ditt inlägg. Var konstruktiv och ge gärna exempel.

Ditt namn  Din e-postadress

Genom att posta ditt inlägg accepterar du vår policy

kundo

#### Populära inlägg

- Hej! Jag tycker den ser för trist ut att ni borde ha lite mer färger inte bara har två eller tre färger att ni borde ha olika så att man nästan blir glad när man gå in på er hemsida. 0 9
- När kommer den andra boken i De Utvalda? 2 7
- Min inköpta bok blev endast 45 sidor. 0 7
- Bra boksortiment 1 4
- På blodröda tuvor 0 4
- vill köpa: 0 3
- Nobels Kulturella Bokpris... GRATULERAR! 2 2
- De utvalda Del 2! 0 6

> LÄS FLER INLÄGG



# Kundo API

kundo.se/api/bokus/b.json

```
{
  "comments_uri": "/api/comment/bokus/62054.json",
  "title": "Lättillgänglig och prisvärd",
  "text": "Det är så enkelt att handla på Bokus dessutom ger de låga priserna en möjlighet för fler människor",
  "num_votes": 0,
  "topic": "B",
  "absolute_url": "http://kundo.se/org/bokus/d/lattillganglig-och-prisvard/",
  "num_comments": 0,
  "pub_date": "2012-01-18 11:43:34",
  "id": 62054,
  "user": {
    "first_name": "Eva Dickson",
    "gravatar_image": "http://www.gravatar.com/avatar/373b9ba0f4802680ac69ce3af35b6664/?s=47&d=http%3A%2F%2Fwww.gravatar.com%2Favatar%2F373b9ba0f4802680ac69ce3af35b6664%3F%3F",
    "id": 61179
  }
},
{
  "comments_uri": "/api/comment/bokus/59166.json",
  "title": "bästa bokaffär",
  "text": "jag älsar den man hittar ALLA böcker här!!!!!!",
  "num_votes": 0,
  "topic": "B",
  "absolute_url": "http://kundo.se/org/bokus/d/basta-bokaffar/",
  "num_comments": 0,
  "pub_date": "2012-01-01 18:15:18",
  "id": 59166,
  "user": {
    "first_name": "albina",
    "gravatar_image": "http://www.gravatar.com/avatar/c82b46cb0b31a9f159f1f7abf5550bb1/?s=47&d=http%3A%2F%2Fwww.gravatar.com%2Favatar%2Fc82b46cb0b31a9f159f1f7abf5550bb1%3F%3F",
    "id": 58078
  }
}
```

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This is an example from the Kundo API.

With this URL I can retrieve data about all the praise customers have written about Bokus at Kundo. You can see that the URL looks just like a URL you would use in a web browser to load a web site.

When I call that URL I get back data about the praise in JSON format, which is a format that can be used in any programming language and on any platform.

With this API it is possible for anyone to build their own client to Kundos service. Almost everything that can be done on kundo.se or in the javascript widget can be done via their API.

If you want to build a windows phone Kundo app there is nothing stopping you.

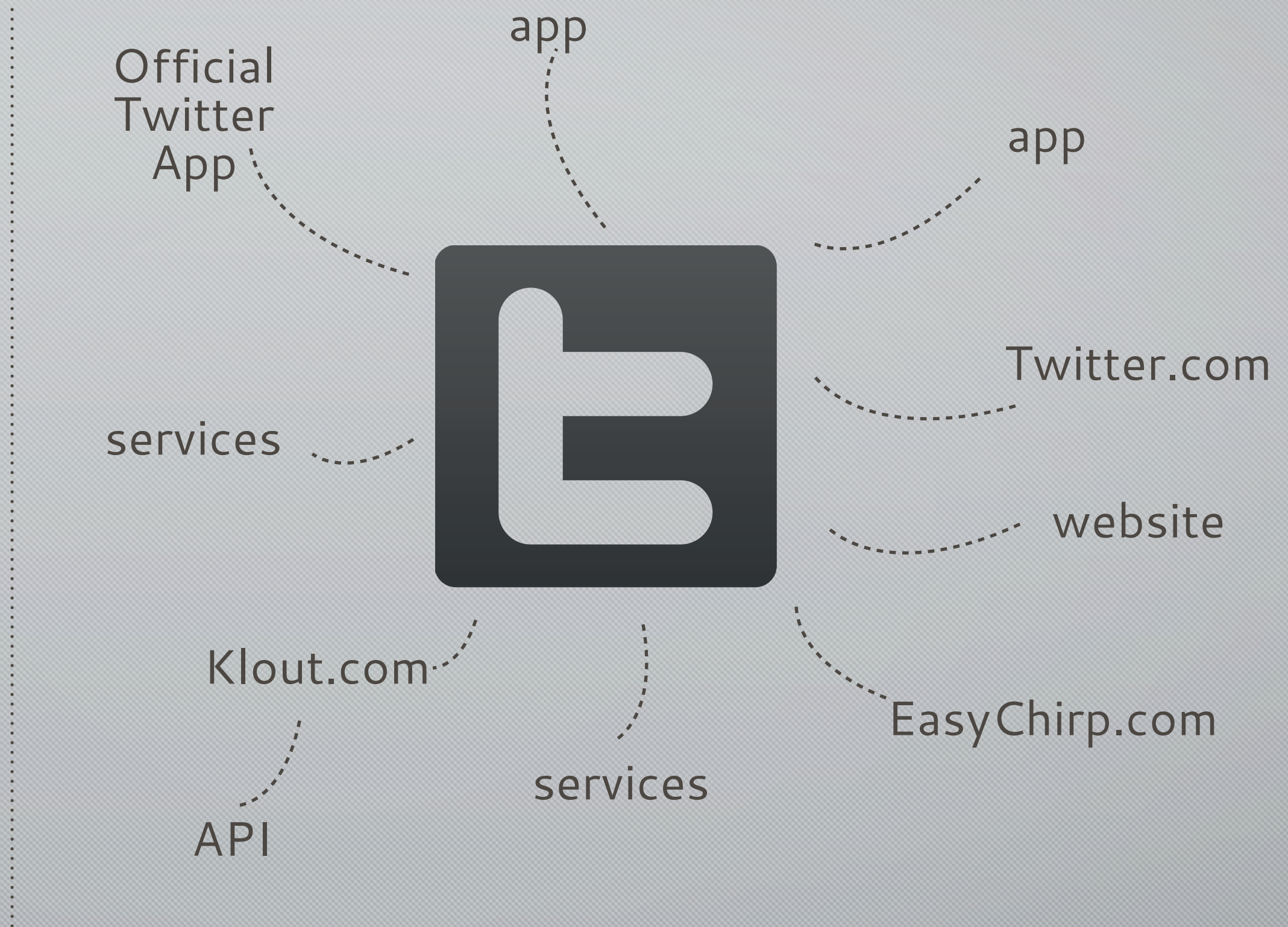
If you want to present the Kundo interface in Farsi there is nothing stopping you.

If you want to integrate Kundos customer service into your callcenter software so that the telephone operators can answer questions on Kundo when there are no calls to answer, there is nothing stopping you.

Kundo has even taken this one step further and built a Facebook app on their own API so that the customer service now is available on Facebook. They have also built an iOS library so you can integrate Kundo customer service directly into your iPhone app. Of course they could have skipped this last step and let somebody else build the Facebook app and the iOS library, but they deem those important enough to develop themselves.



# The Twitter Ecosystem



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Twitter has used their API to build a very successful ecosystem of apps, sites and services. Without their API Twitter would not have been as big as it is today and disappeared into oblivion just as similar services such as Jaiku, Plurk and Identi.ca. It is a brilliant example of how an API enables a company to be much more than their website and instead be a platform and the center of an ecosystem.

In addition to the official Twitter mobile apps there are 100s of mobile apps that communicate with Twitter via their API. Whatever fetures you want and whatever platform you want there is probably an app for you. Twitter themselves have not developpe these apps, instead they have published and API that enables others to integrate easily into Twitter. There are also websites and many services that in different ways integrate with Twitter via the API. One example is EasyChirp.com that have made a accessible version of the Twitter.com site, complete with keyboard shortcuts etc.

Twitter has over 13 billion API calls/day and 75% of their traffic is via the API and not to the website Twitter.com (this last number is almost 2 years old, so it might have changed a bit). There are over 900.000 registered applications using the Twitter API and over 600.000 developers using the API. This shows that APIs are not just a sidenote, it is the basis on which a whole business can be built.

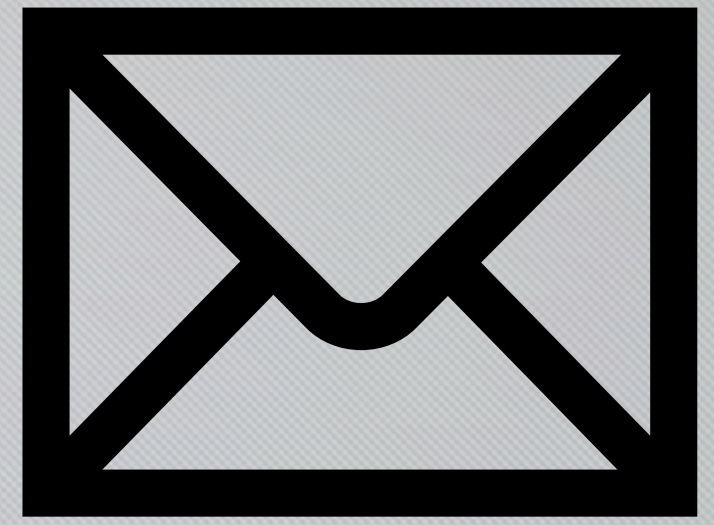
It is also interesting to note that several of the services that uses the Twitter API also publish an API. One example is Klout.com that uses data from Twitter, Facebook, Google and others to calculate a users influence in social media. They then make the influence ranking available via their API. That means that they are analyzing loads of Twitter data and then publishing the result themselves. The Klout API has over 10 billion calls/month and has been the basis for a lot of venture capital investment in the company.



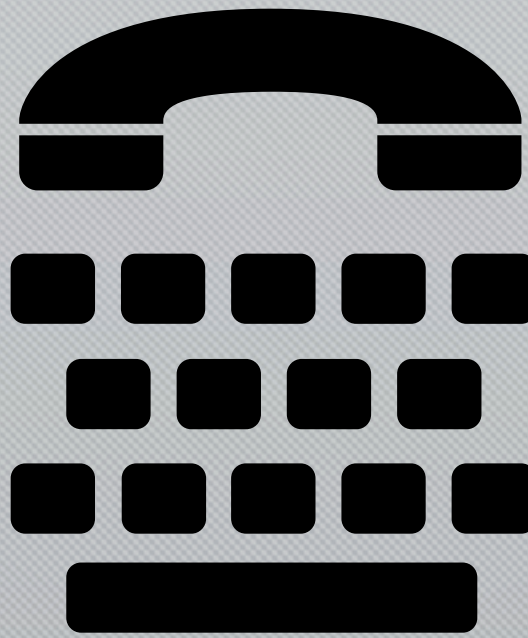
# API Examples



face.com



context.io



46elks.com

trafiklab.se

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The API from Face.com would be Science Fiction just a few years ago. Send in a photo of a person and get back details like name, age, gender, mood, if they wear glasses etc. Really complicated stuff that you can use in a few minutes. What could facial recognition do for your system?

Think about how much data you have hidden away in emails. Every one of us have 1000s and 1000s of emails in our email archives, a virtual treasure trove of data. With context.io you get an API to all the information you have in email. List all emails sent to and from a contact or get access to all attachments your boss has sent you. This is a perfect API to use if you have a CRM and want to track the correspondence with certain customers for example.

With the API from 46elks you can send and receive SMS and MMS. If you have an application that would benefit from SMS-integration you can no implement that without caring about the complexities of telecom systems. With 46elks you can also route voice calls, in effect you can build your own virtual switchboard.

Trafiklab.se is one of my customers and they provide APIs for public transport. The Stockholm Transit Authority (SL) is part of the project so via Trafiklab.se you can use APIs to plan trips in the Stockholm subway, get information about delays and access timetables. If you planned your trip here today in a iPhone app or mobile app you probably used these APIs.

These are just a few APIs to give you examples of the power of using APIs. Do not develop things yourself without first checking if there is an API for that, it can save you significant time as well as give you access to fantastic new functionality.

So where do you find all these APIs...



# Where to find APIs

- ▶ [ProgrammableWeb.com](http://ProgrammableWeb.com)
- ▶ [Mashup.se](http://Mashup.se)
- ▶ [Opengov.se](http://Opengov.se)





**INTERNAL**  
within our own walls

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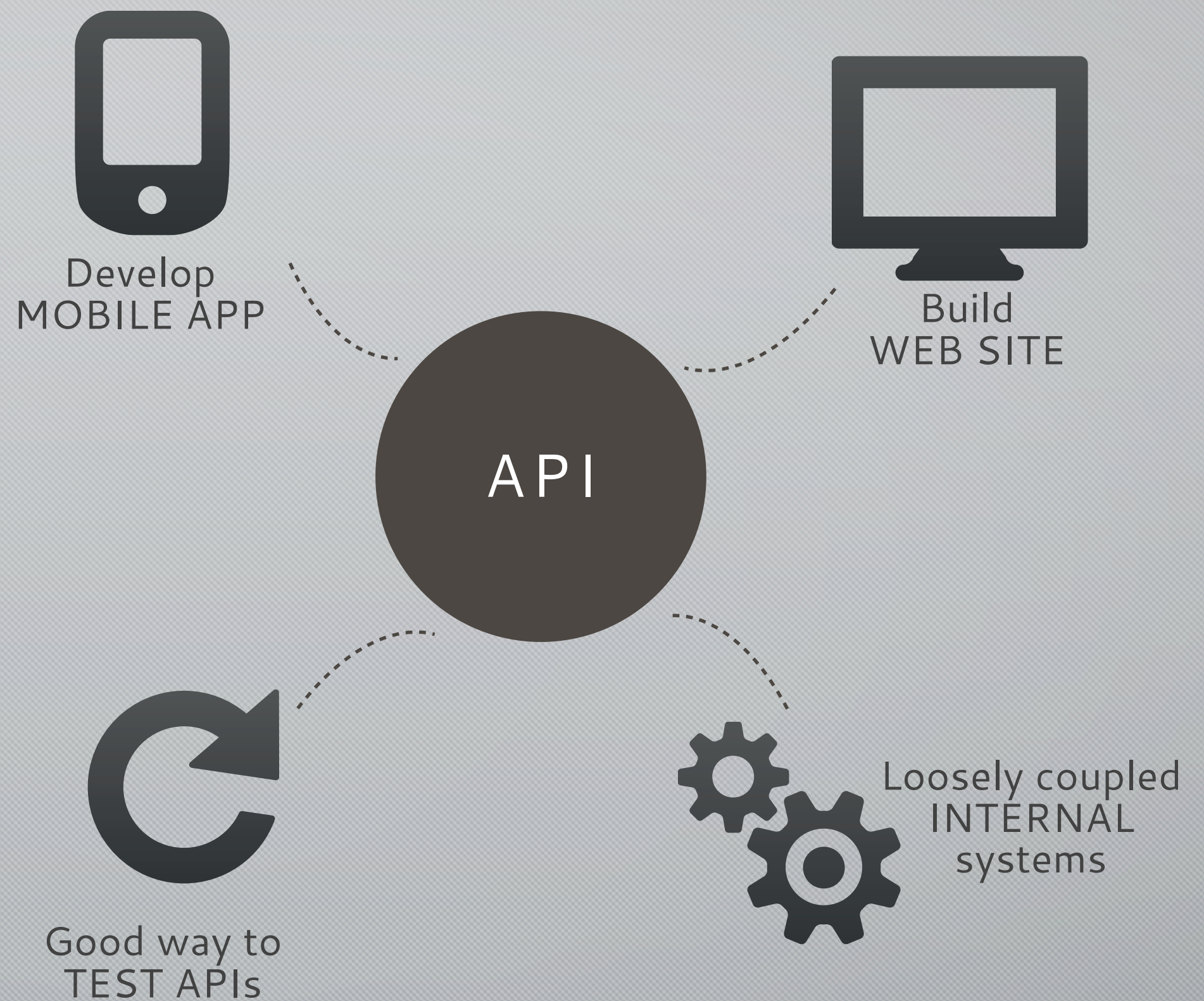
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We have now covered some of the possibilities and advantages of using APIs, but what benefits could you reap if you published an API to your own data? The benefits depends on how you make your API available, so let us look at the 3 possible ways you can publish an API.

First you can publish the API only internally so that it can be used within your own company or organization.



# Internal API



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There are several benefits of having internal APIs, let us look at some of them

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550k+ iOS apps, 400k+ android apps

Internal can easily become public, major swedish banks, swedish railways, Ministry of Transport





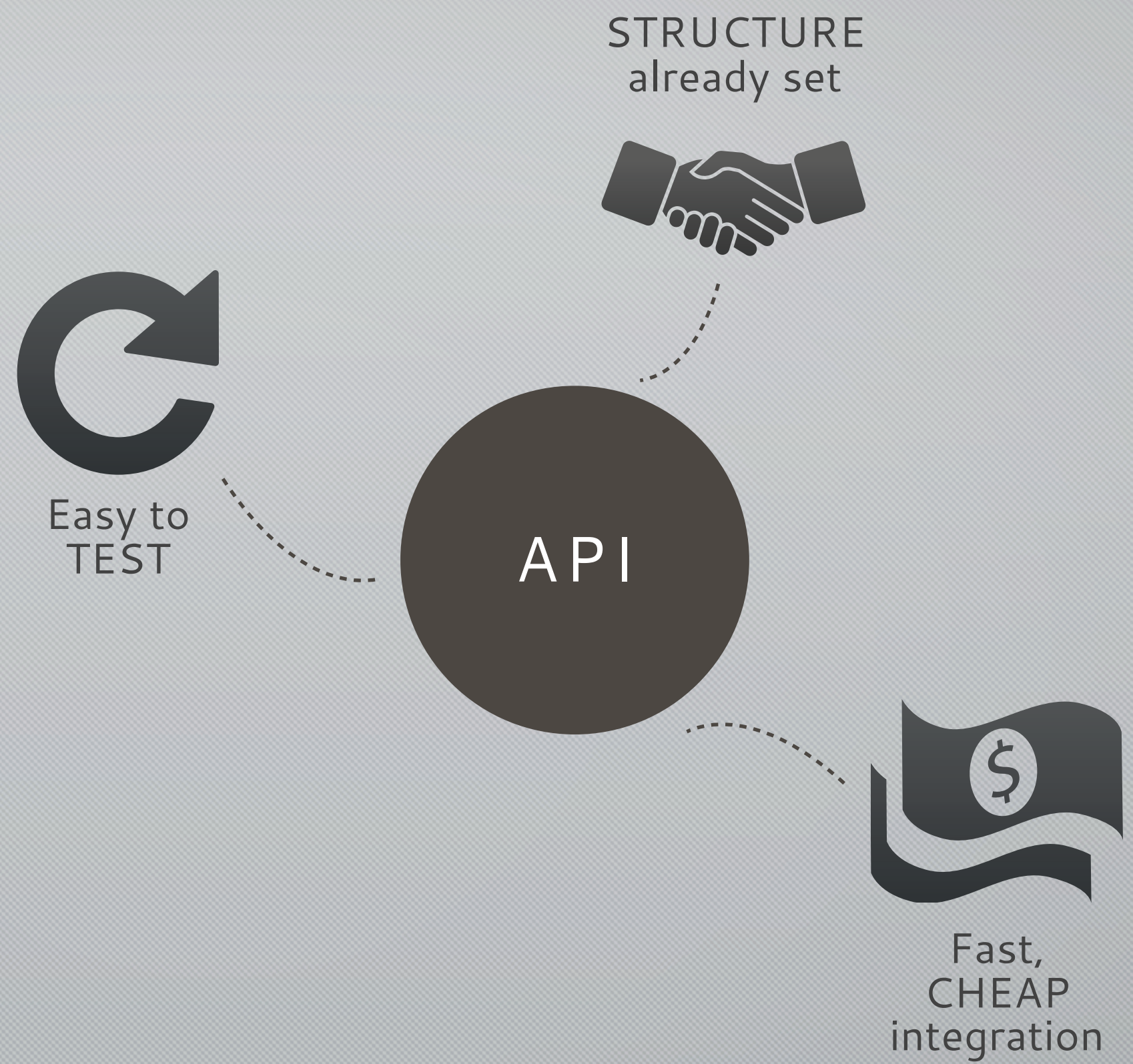
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**PARTNER**  
with the chosen few



# Partner API



Without an API is is very likely that potential partners use a competitor that it is easier to get started with





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**PARTNER**  
with the chosen few

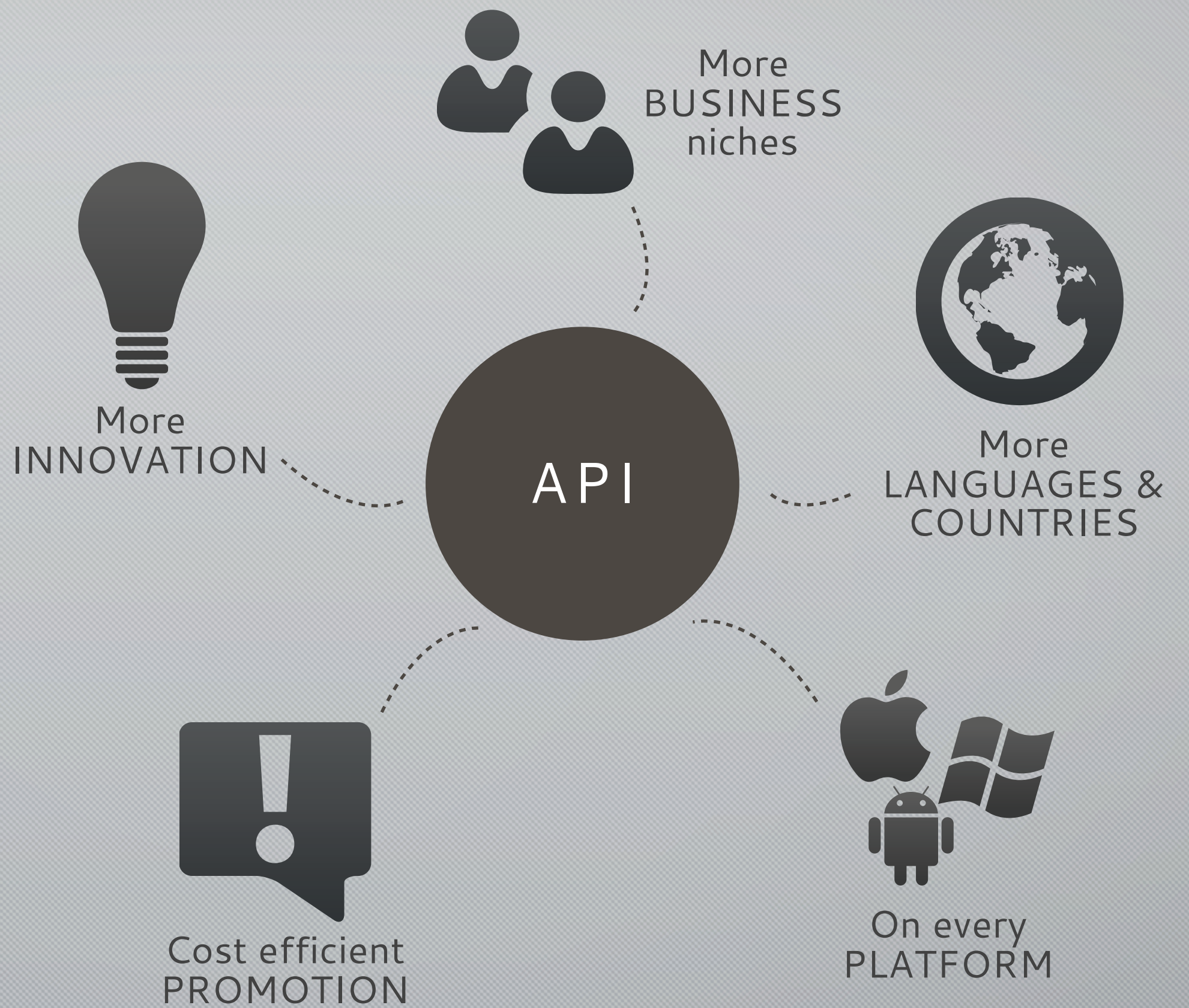


**PUBLIC**  
with everybody

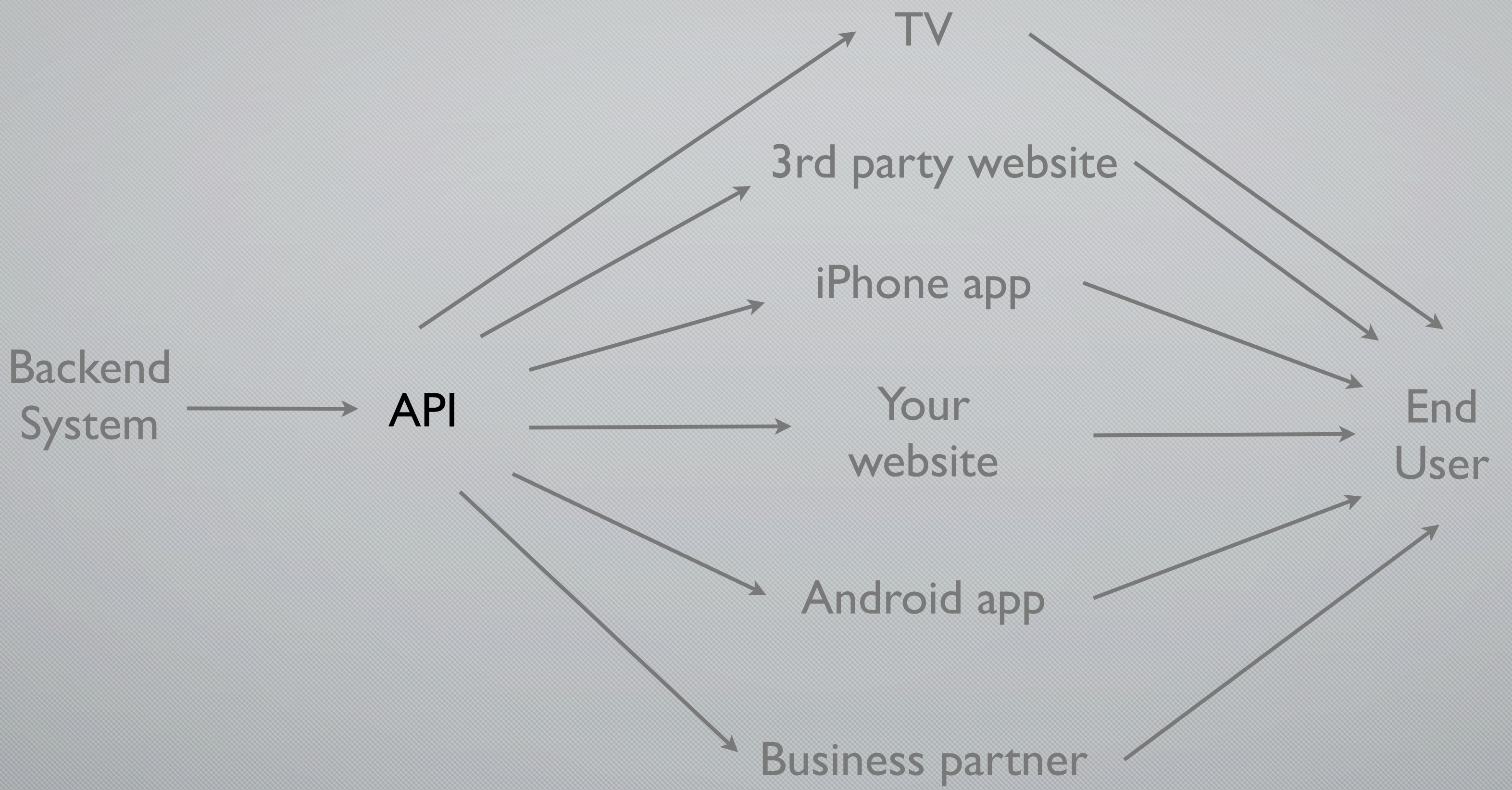


# Public API

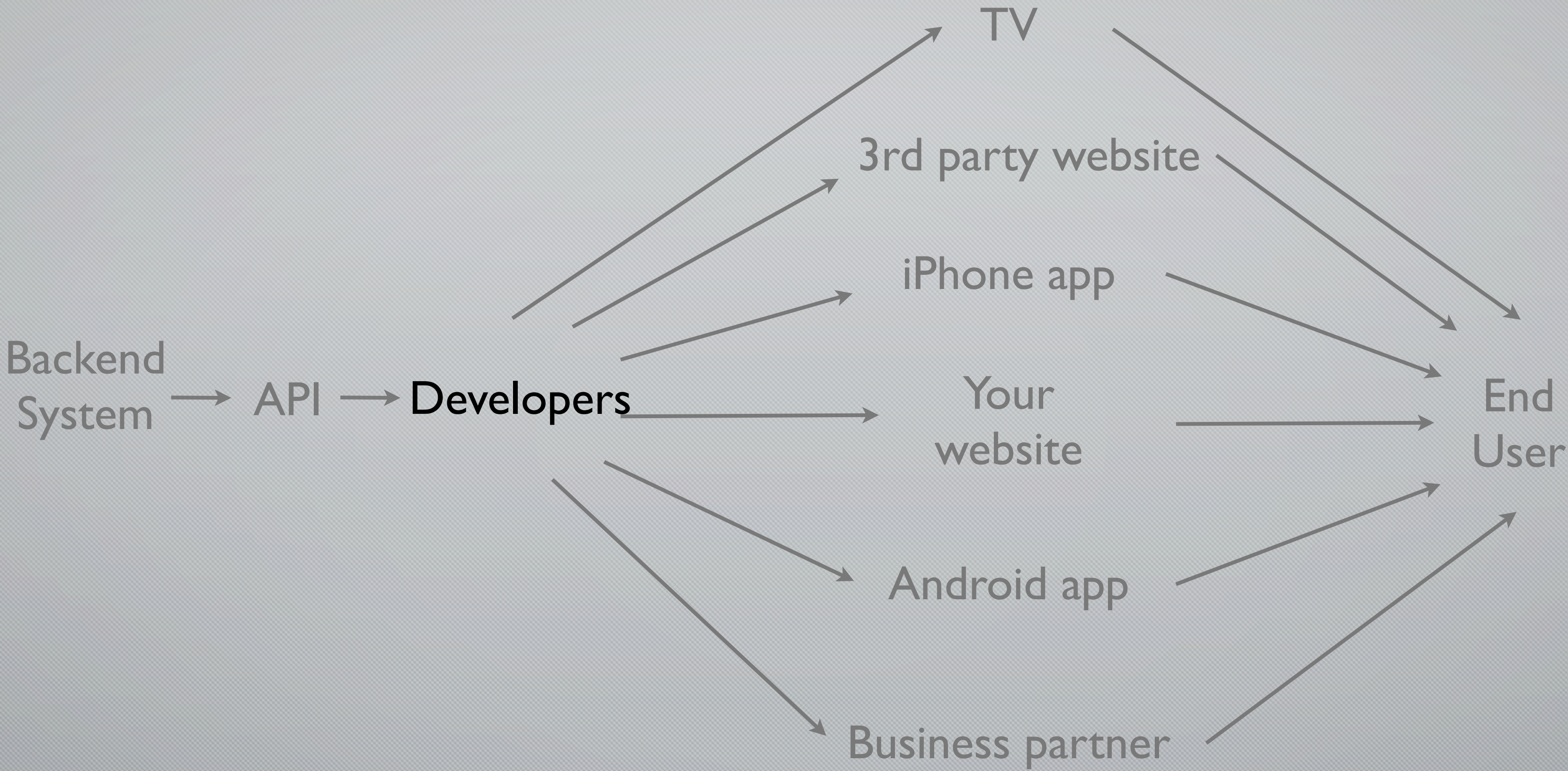
Open API





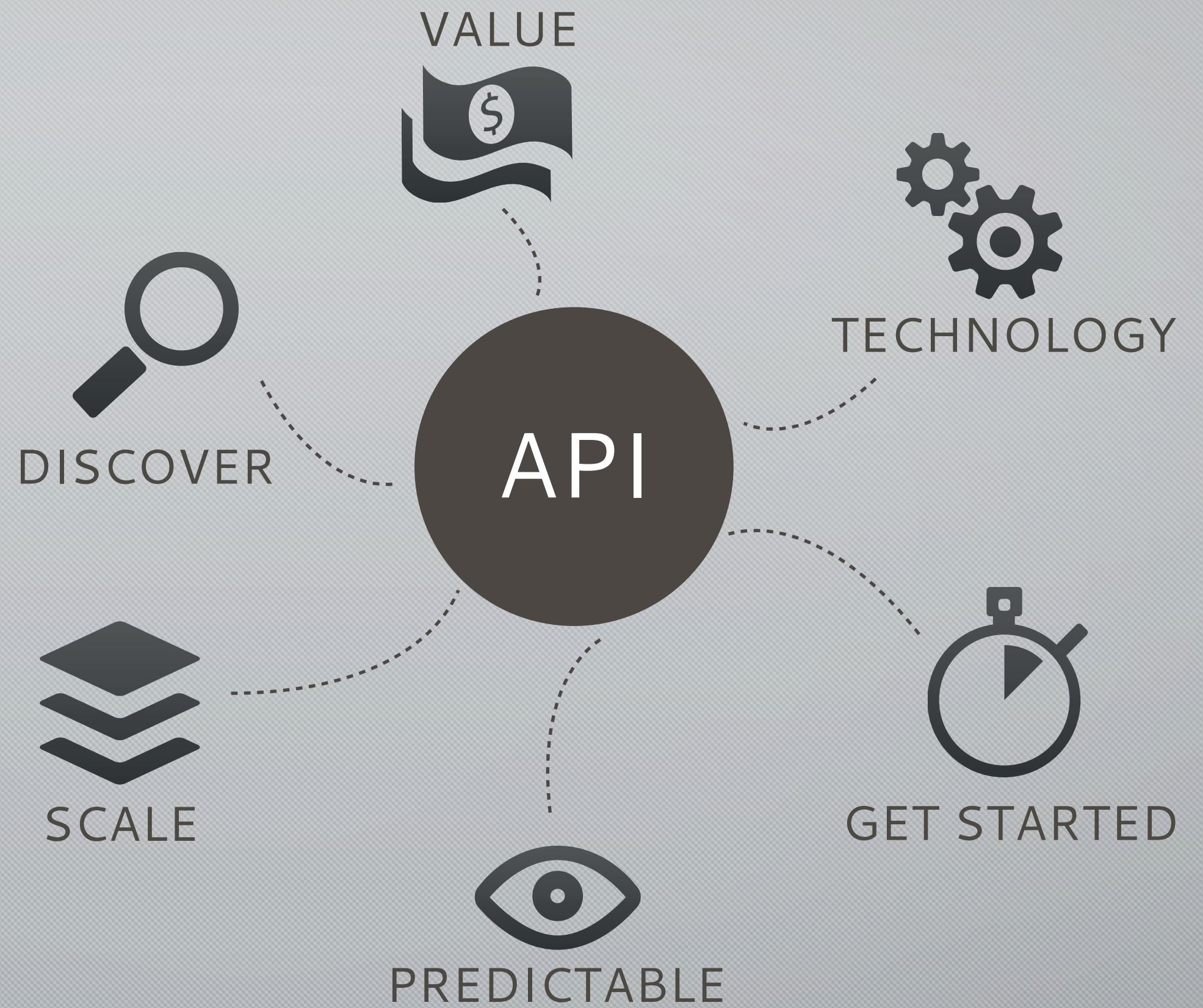








# Needed for Success



The developers are the new middlemen, the ones that produce the products that the consumer/end user sees

You need to make the developers (independent hacker or IT Director of a Fortune 500 enterprise) happy

6 things needed for a successful API



# Use APIs

other peoples data,  
your presentation



# Publish APIs

Your data,  
other peoples presentation



# Icons

- ▶ [thenounproject.com](http://thenounproject.com)
- ▶ [gentleface.com](http://gentleface.com)
- ▶ [twitter.com/kemie](https://twitter.com/kemie)



# Q & A

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THANK YOU!