

A dramatic photograph of a Space Shuttle Columbia launching from the launch pad. The shuttle is ascending vertically, leaving a massive, bright white and yellow plume of smoke and fire at its base. The launch pad's service structure is visible on the left. The sky is a deep blue with scattered white clouds. A semi-transparent horizontal band across the middle of the image contains the BaQend logo and tagline.

# BaQend

Build faster Apps **faster.**



Presentation  
is loading

# The Page Load Problem

1004ms  
405ms  
500ms

Average: 9,3s

Loading...



1% Traffic



9% Visitors



1% Revenue

Google

YAHOO!

amazon.com



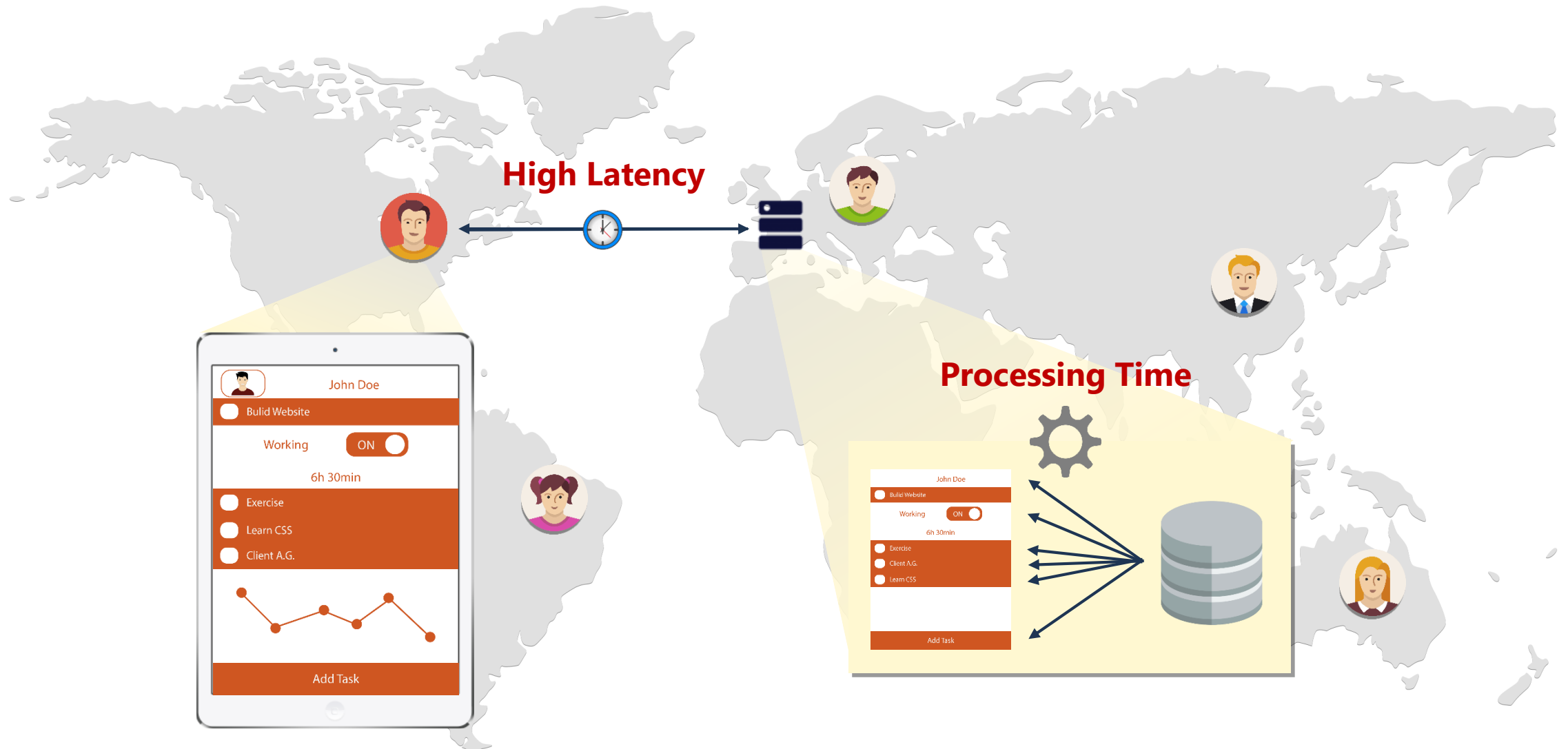


If speed can boost so many  
**Business KPIs**

...what causes slow page load times?

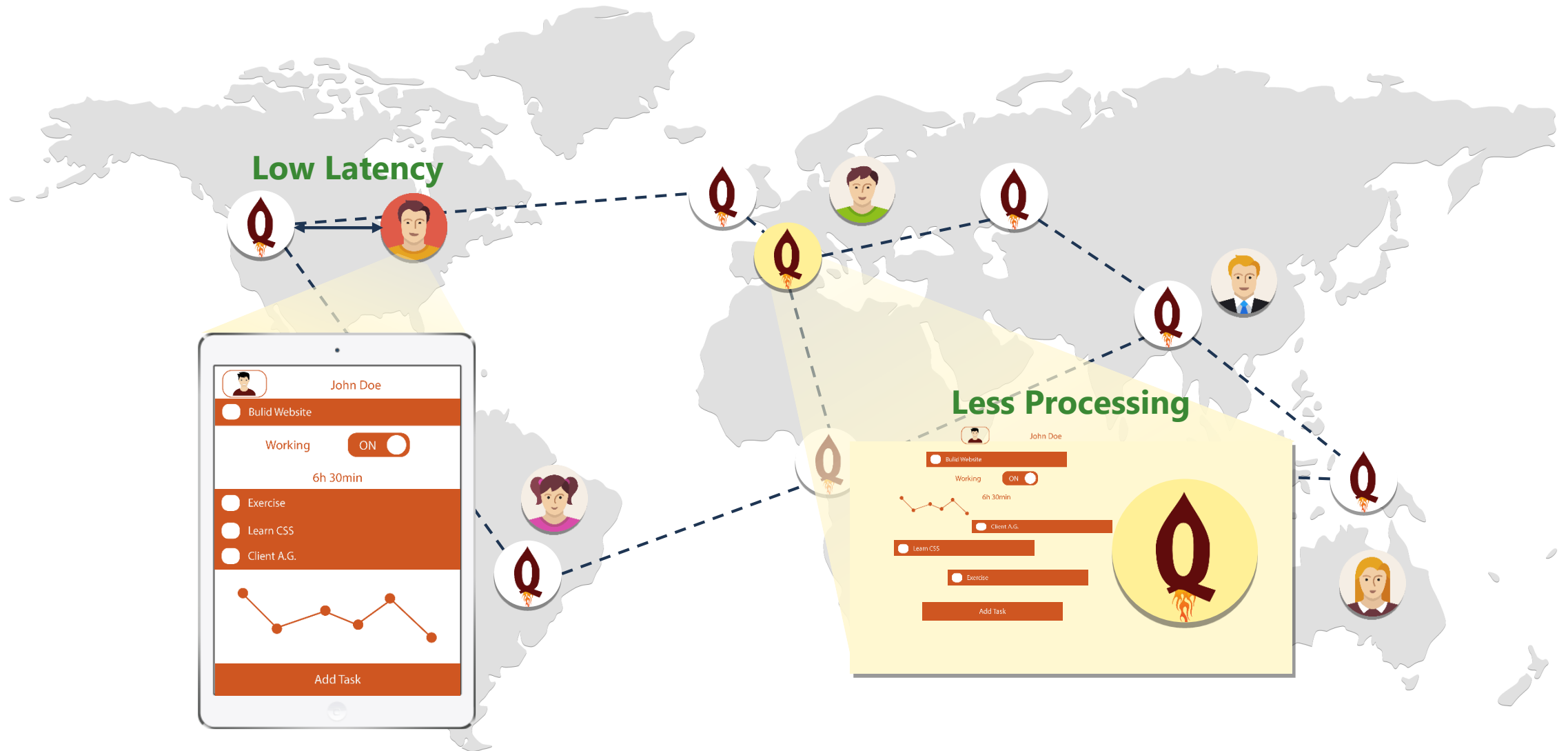
# State of the Art

Two bottlenecks: latency und processing



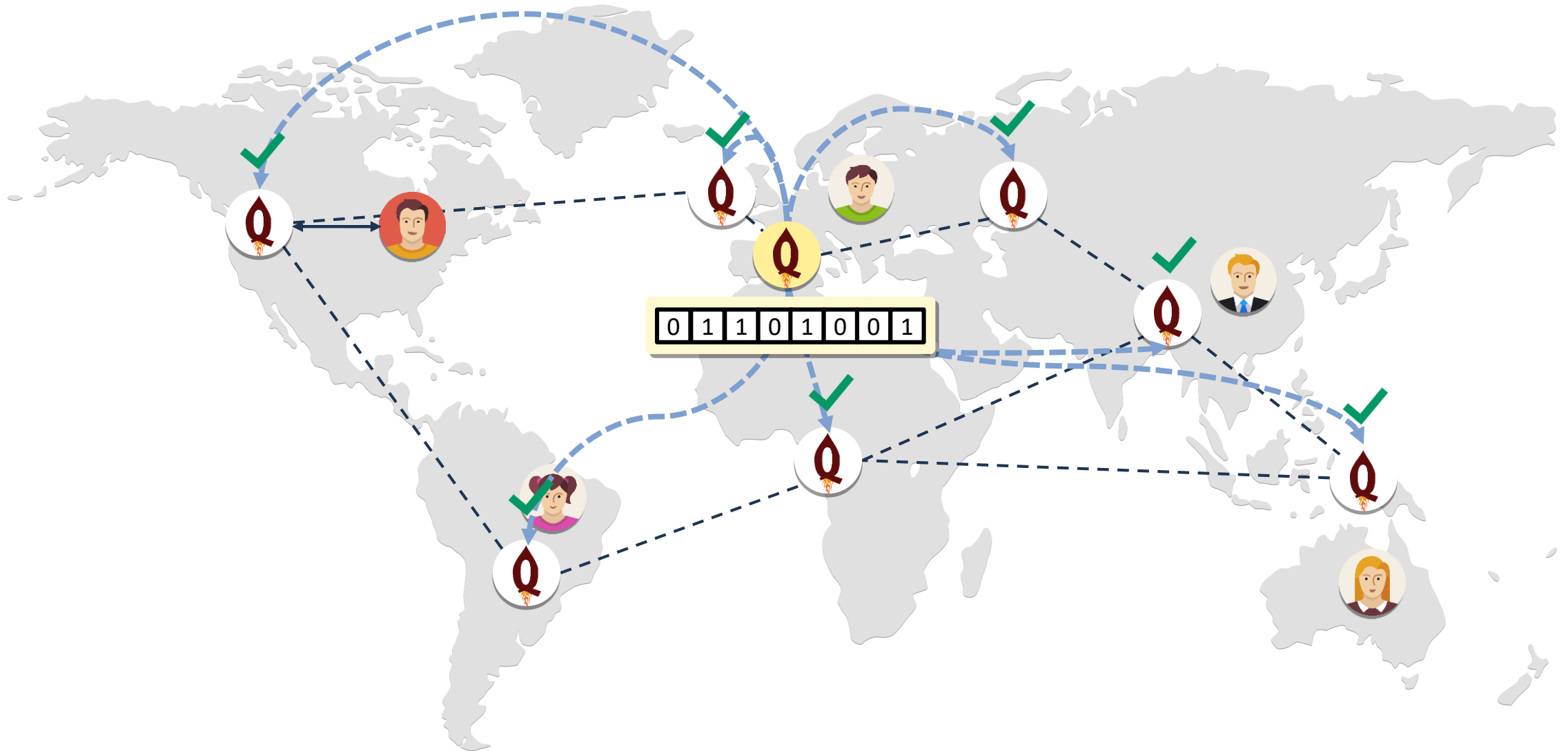
# Make the Web Great Again

## Fresh Data from Ubiquitous Web Caches



# New Caching Algorithms

Solve Consistency Problem





F. Bücklers, „ORESTES: ein  
Anker“, in Informatiktage

F. Bücklers, *Performanz- und Skalierung von Web-Caching-Hierarchien*

dt, F. Gessert, und N. R. BTW 2015.

Wingerath, F. Gessert,  
Lehrstuhl für die Darstellung der Gesellschaft

F. Gessert, S. Friedrich, N. Ritter „Real-time stream processing  
*Analytics it - Information Technology*, 2016

Vingerath, S. Friedrich, N. Ritter "NoSQL Database Systems: A Guidance", *Computer Science - Research and Development*, 2011

100

## 6 Years



Universität Hamburg

F. Gessert, N. Ritter „Polyglot Persistence“, *Datenbank Spektrum*

---



Parse

Baqend

Kinvey

benchmark.baqend.com

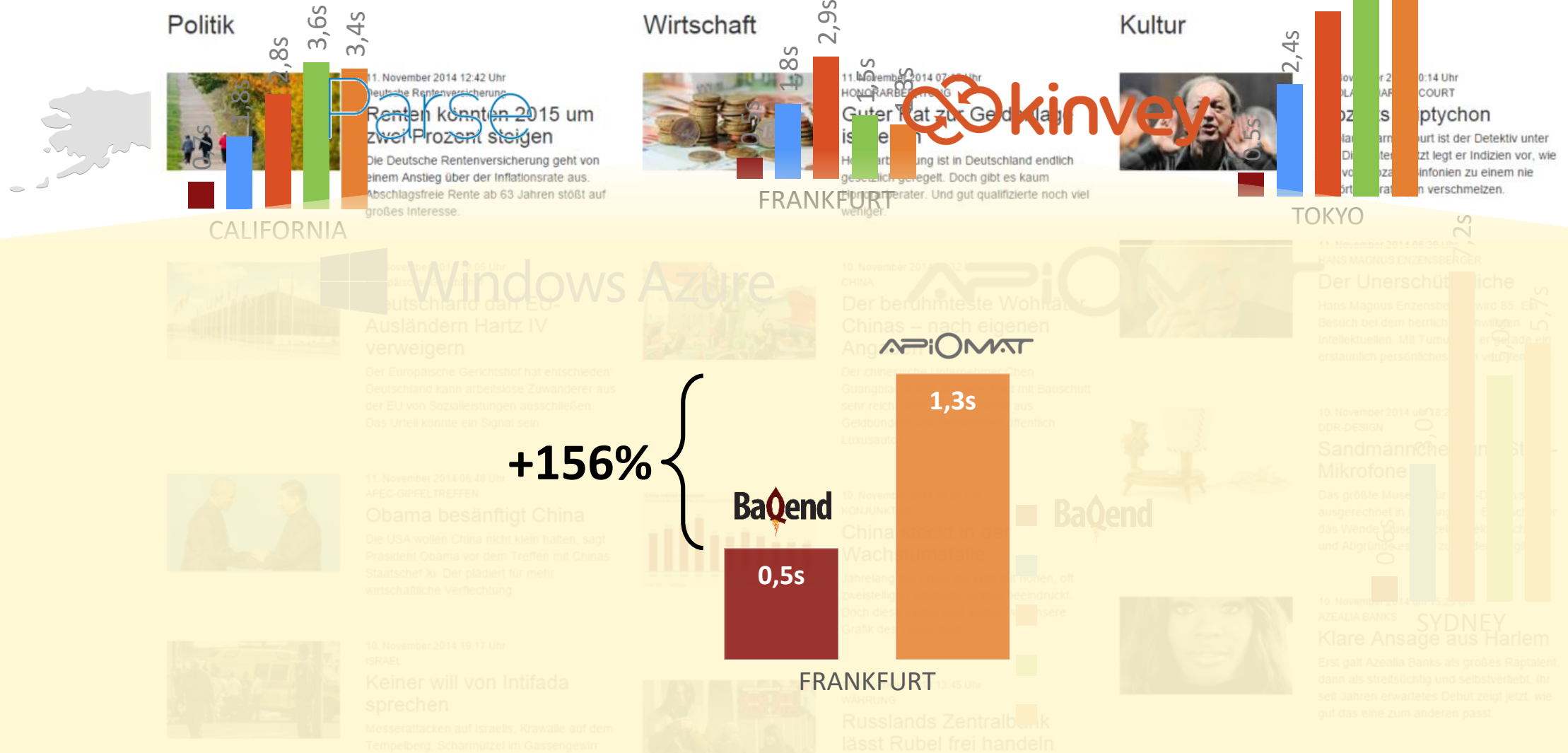
2.6 s

0.3 s

3.9 s

# Competitive Advantage

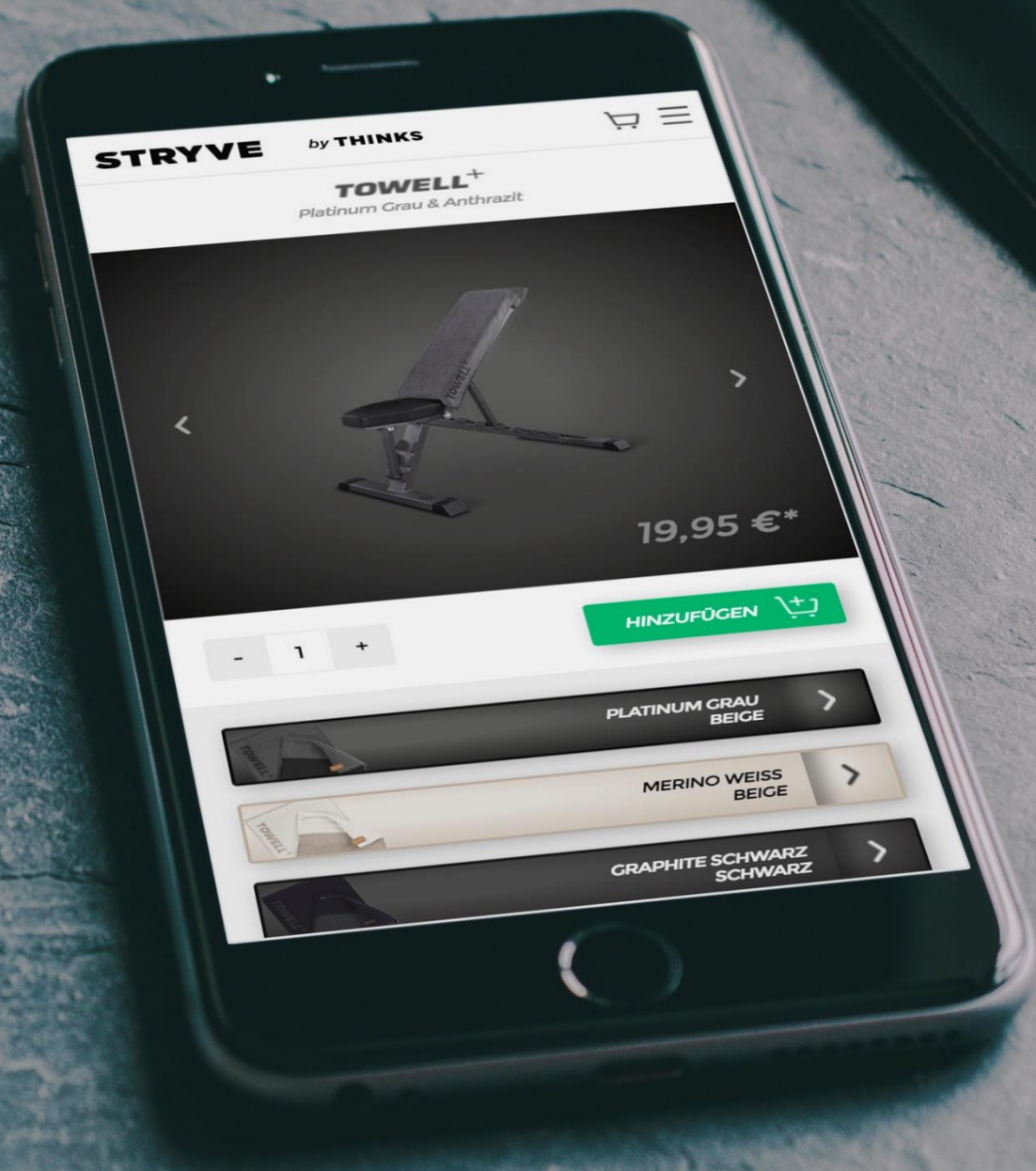
What impact does Baqend have in practice?











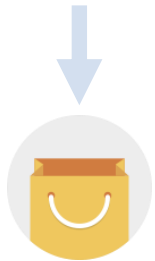


**STRYVE** by THINKS Shop



**< 1 second**

Page Load  
Time



**7.8%**

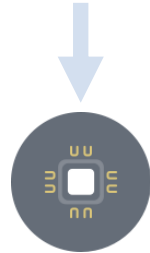
Conversion  
Rate

Aktuell  
**46557**

aktive Nutzer auf der Website



Simultaneous  
Users



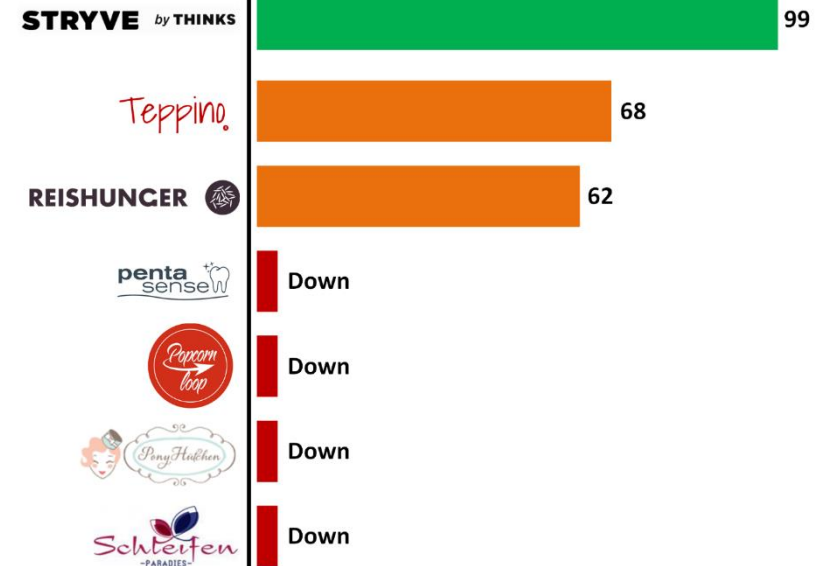
**3%**

Server  
Usage



## Shops in "Die Höhle der Löwen"

The Google Page Speed Scores  
for Season 3, 09/06/2016







# 10x Faster Than Amazon

„Our conversion rate was **7.8% at 100K users** in a couple of minutes. Experts from industry told us we wouldn't be able to reach **1%**. A significant factor for this success was the incredible **page load time.**“



A person is holding a smartphone in their right hand. The phone screen shows a mobile application interface. At the top, there is a header with the text "Fuel-my-electric-car" and a blue toggle switch. Below the header, there is a large pink circular button with a white speech bubble icon and the text "Mein Auto". The background of the app is light blue with several white location pin icons. The person holding the phone is wearing a dark blue shirt and has their left hand near their face. The background is a blurred outdoor scene with trees and foliage.

How is this technology used  
**for development?**

**Baqend Cloud is a SaaS**



Product ▾

Developer ▾

About us

Blog

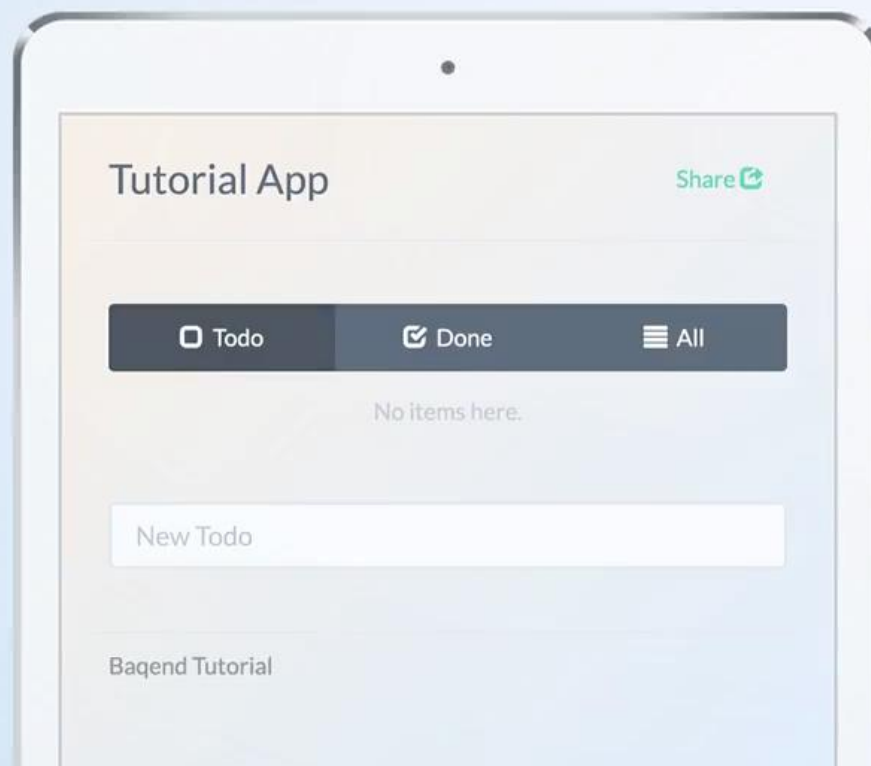
Press

Log in or

[Sign Up Free](#)

# The World's Fastest Backend

Build websites and apps that load instantly.



THE BAQEND PLATFORM

## Sky-rocket your Development

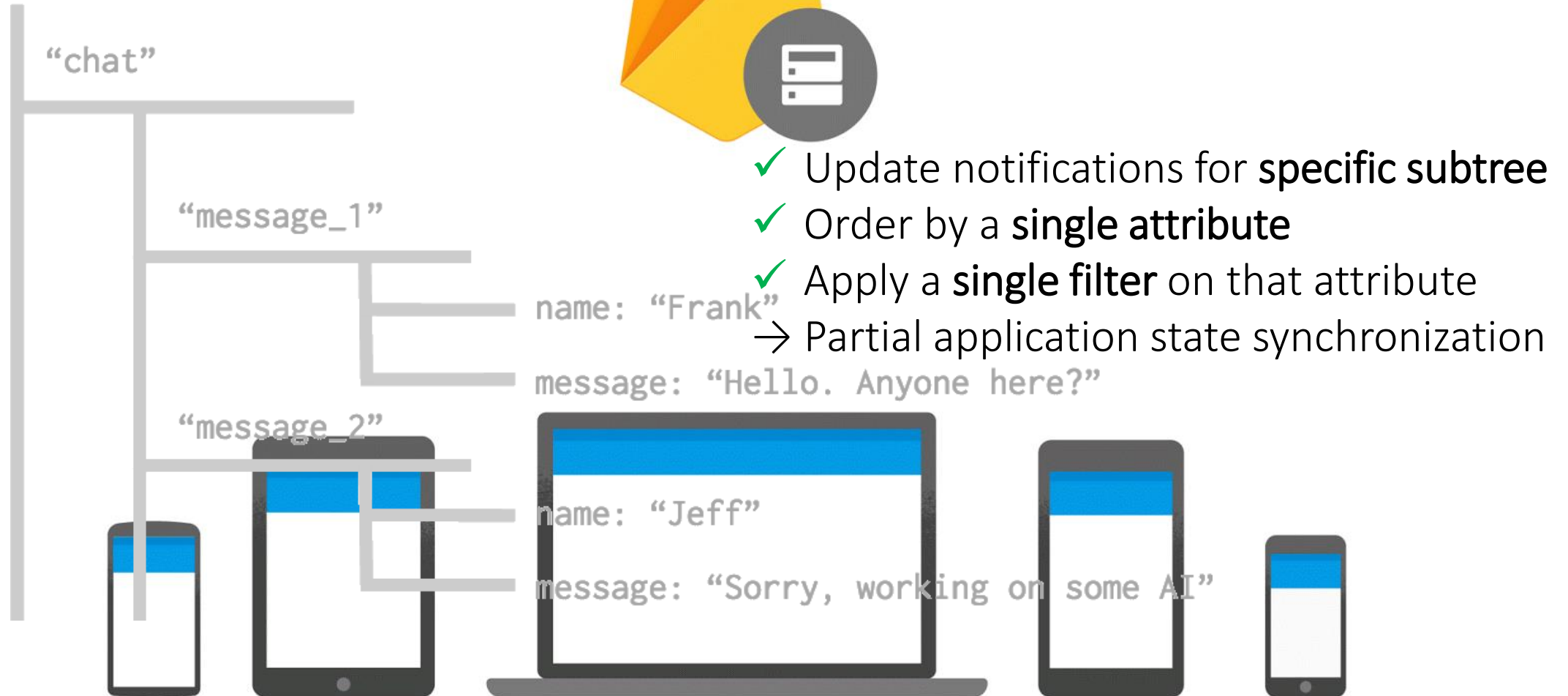
Start building now. Baqend Cloud is free and easy to get started with.

[TUTORIAL](#)

[TRY BAQEND >](#)

# Firebase

## Real-Time Synchronization



# Baqend

## The German Answer to Firebase

**ToDoList Object**

```
{
  id : "mylist",
  name : "Todo Liste",
  owner : {
    name : "Johnny",
    age : 12
  }
}
```

**Embedded Object**

Update notifications for **complex queries**  
→ Keep your query up-to-date

✓ **Compose** filters on many attributes

✓ **Order** by many attributes

**ToDoList Object**

```
{
  id : "mylist",
  name : "Todo Liste",
  owner : "2333790852"
}
```

**Owner Object**

```
{
  id : "2333790852",
  name : "Johnny",
  age : 12
}
```

**Reference Correlation**

Also:

✓ **Sort**

✓ **Correlation**



# Baqend

The German Answer to Firebase

## Why Query Complexity Matters

TodoList Object

```
{
  id : "mylist",
  name : "Todo Liste",
  owner : {
    name : "Johnny",
    age : 12
  }
}
```

TodoList Object

```
{
  id : "mylist",
  name : "Todo List",
  owner : "23337908"
}
```

Toodlie

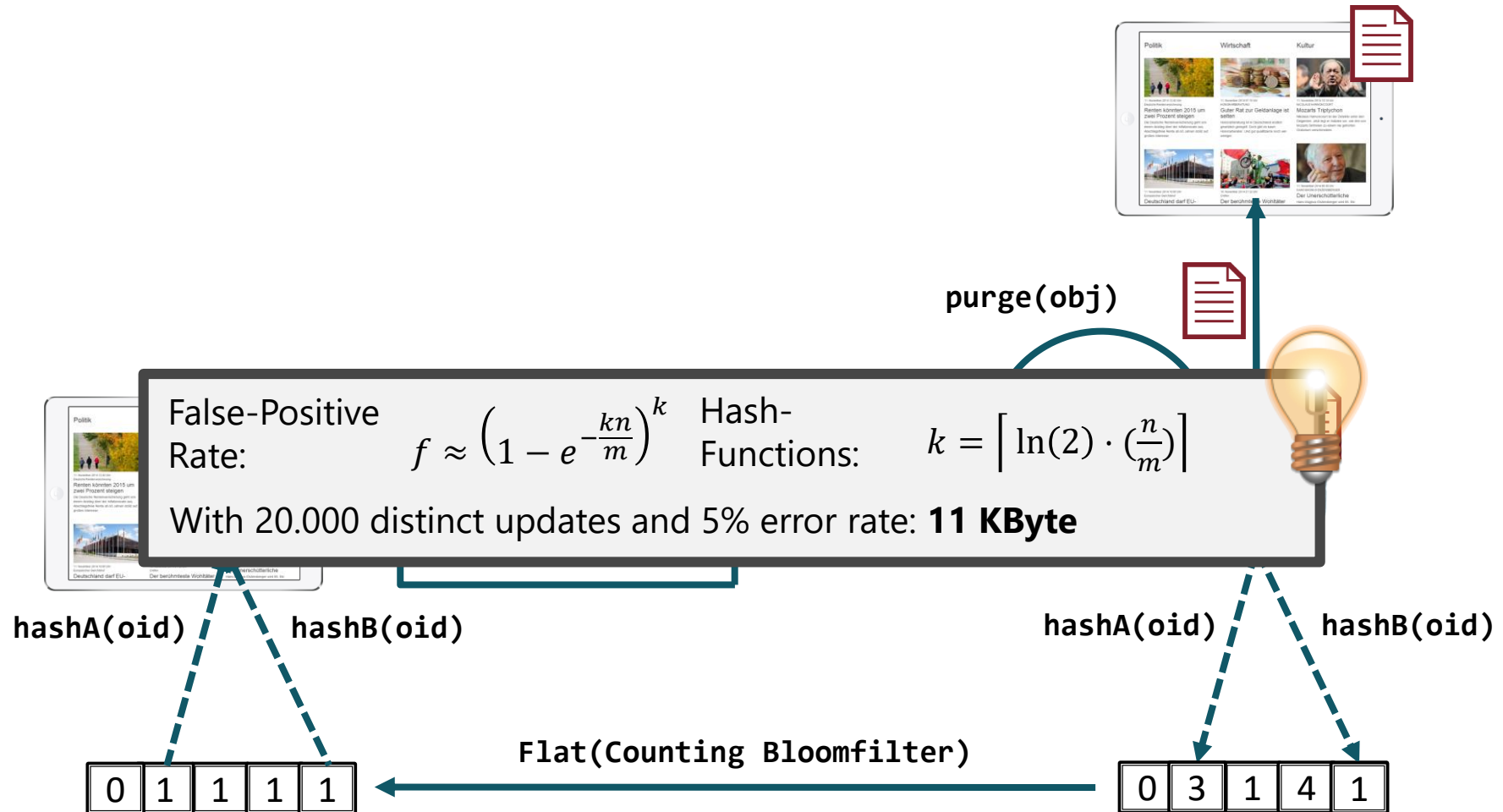
```
DB.Todo.find(
  {
    name: 'work'
  },
  {
    sort: { deadline: -1 }
  }
)
```

Table	Matching Conditions	Ordering	Firebase	Baqend
Todos	created by „Bob“	ordered by deadline	✓	✓
Todos	created by „Bob“ AND status = „active“		✗	✓
Todos	„work“ in the name		✗	✓
Todos	„work“ in the name AND status = „active“	ordered by deadline AND by creator's name	✗	✓

Complex queries  
-date  
tributes

# Automatic Object, Query and File-Caching

## End-to-end Example



# Show me some Code!

## Getting Started with Baqend



Product ▾ Developer ▾ About us Blog We're hiring

Log in or [Sign Up Free](#)

### Querying Data

1 2 3 4 5 6 7 8 9

If we do not know the ids, we use queries to specify which objects we are looking for. The following query for instance gets us all the Todos in a specific list that are not marked as done:

```
DB.Todo.find()
  .equal("listId", "myList")
  .notEqual("done", true)
  .resultList().then(myCallback); //Returns a list of matching objects
```

`resultList` returns all matching objects, whereas `singleResult` only returns the first match.

Baqend supports many query operators, which allow very sophisticated lookups, including ordering, geospatial queries, text search and boolean combinations of query predicates.

Next >

HTMLCSSJSResult

EDIT ON  
CODEPEN

```
1 * class TodoService {
2   //load unfinished Todos
3   static unfinished(listId) {
4     return DB.Todo.find()
5       .equal("listId", listId)
6       .notEqual("done", true)
7       .resultList();
8   }
9 }
10
11 //Load data
12 * function onReady() {
13   insertData()
14     .then(() => TodoService.unfinished("my-list"))
15     .then((todos) => printItems("Unfinished Todos:", todos));
16 }
17
18 //Insert some data
19 * function insertData() {
20   var todo1 = new DB.Todo();
21   todo1.id = "my-todo";
22   todo1.listId = "my-list";
23   todo1.done = false;
24   insertData().then(() => insertData());
25 }
```

LIVE

Unfinished Todos:

- My Todo [id:/db/Todo/my-todo] from list my-list
- My other Todo [id:/db/Todo/my-todo-2] from list my-list
- my third todo [id:/db/Todo/my-todo-3] from list my-list

Try this: [www.baqend.com/tutorial.html](http://www.baqend.com/tutorial.html)

# Baqend Team



**4 Computer Scientists**

+2 PhD Researchers

+3 CS Students



**1 Business  
Economist**



# Baqend Team



**4 Computer Scientists**  
+2 PhD Researchers  
+3 CS Students



**1 Business Economist**

Looking For:  
**Technical Evangelist (m/f)**

Technical Writing

Sales

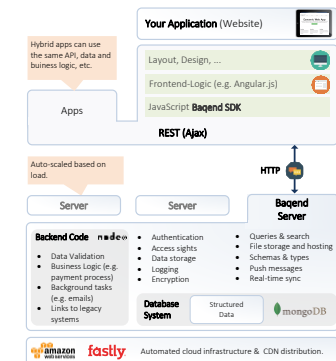
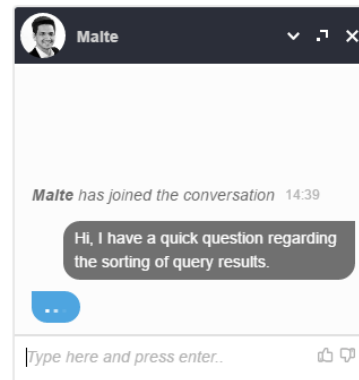
Conference Talks

Workshops & Trainings

Recommended by you, Hannes Kuhlmann,  
and 289 others

## Building a Shop with Sub-Second Page Loads: Lessons Learned

Here is the story of how we leveraged  
research on web-caching and NoSQL  
systems to prepare a webshop for hundreds  
of thousands of visitors...







GRUNDERSZENE

XING

XING Events

FORK

CARL GROUP  
WE GROW SOLUTIONS

OSXS

T-Sys



Scatterbury #hamburg  
#mypursey #reperbahn #reperb

Atchpre  
Scante S

welt  
VOUCHER FOR A MEDIA  
BUDGET WORTH  
100.000 €

STARTUPS  
KREUZBERG

STARTUPS  
WINNER  
2016  
WELT





**BILANZ**  **WirtschaftsWoche**

**GRÜNDER SZENE**

**DIE**  **WELT** **Handelsblatt**



STARTUP **TV**

**Hamburg News**

**welt**  
**VOUCHER** FOR A MEDIA BUDGET WORTH  
**100.000 €**



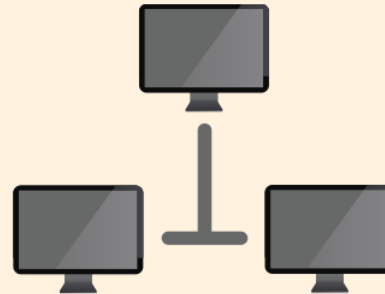
# Our Core Features



>250%

Faster  
Loads

Automatic  
Scaling



Faster  
Development

#1

Users are happy  
and buy  
everything.

#2

Never be  
afraid of PR  
again.

#3

The nerds have  
time to catch  
some fresh air.



Our Vision for Baqend:  
„A web without load times“

[www.baqend.com](http://www.baqend.com)  
@Baqendcom

