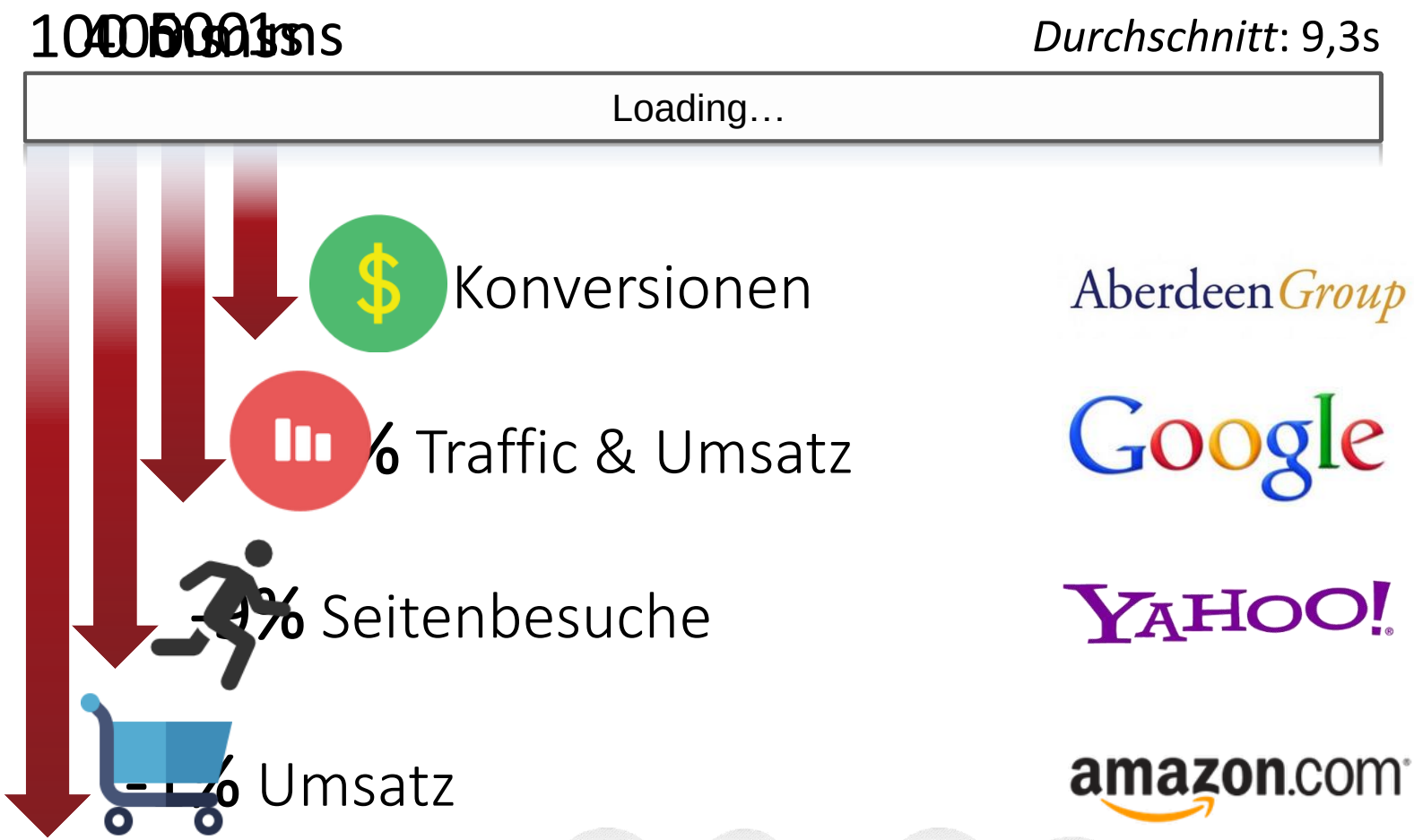
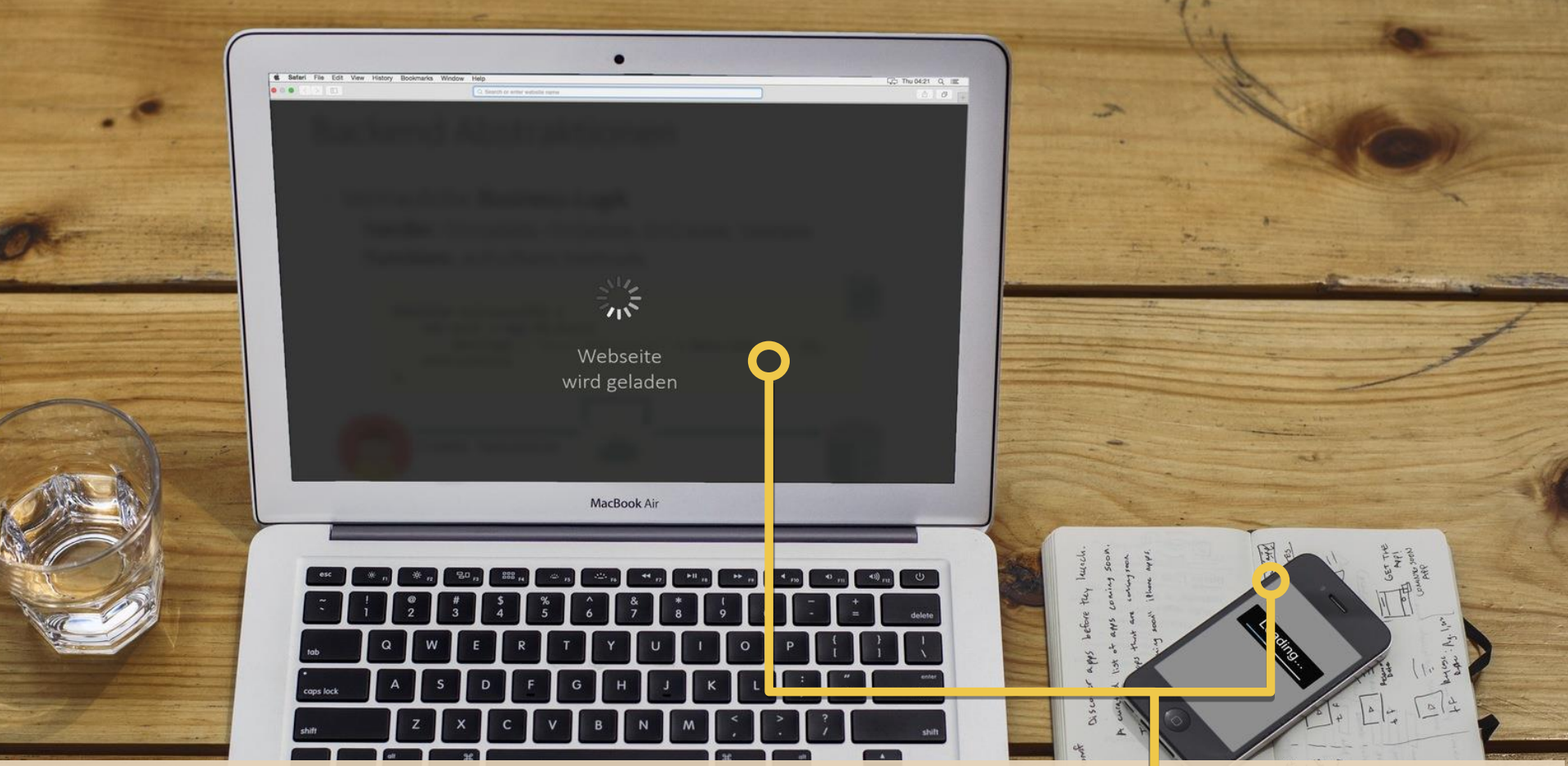
BaQend
Build faster Apps faster.

Präsentation
wird geladen

Das Ladezeitproblem



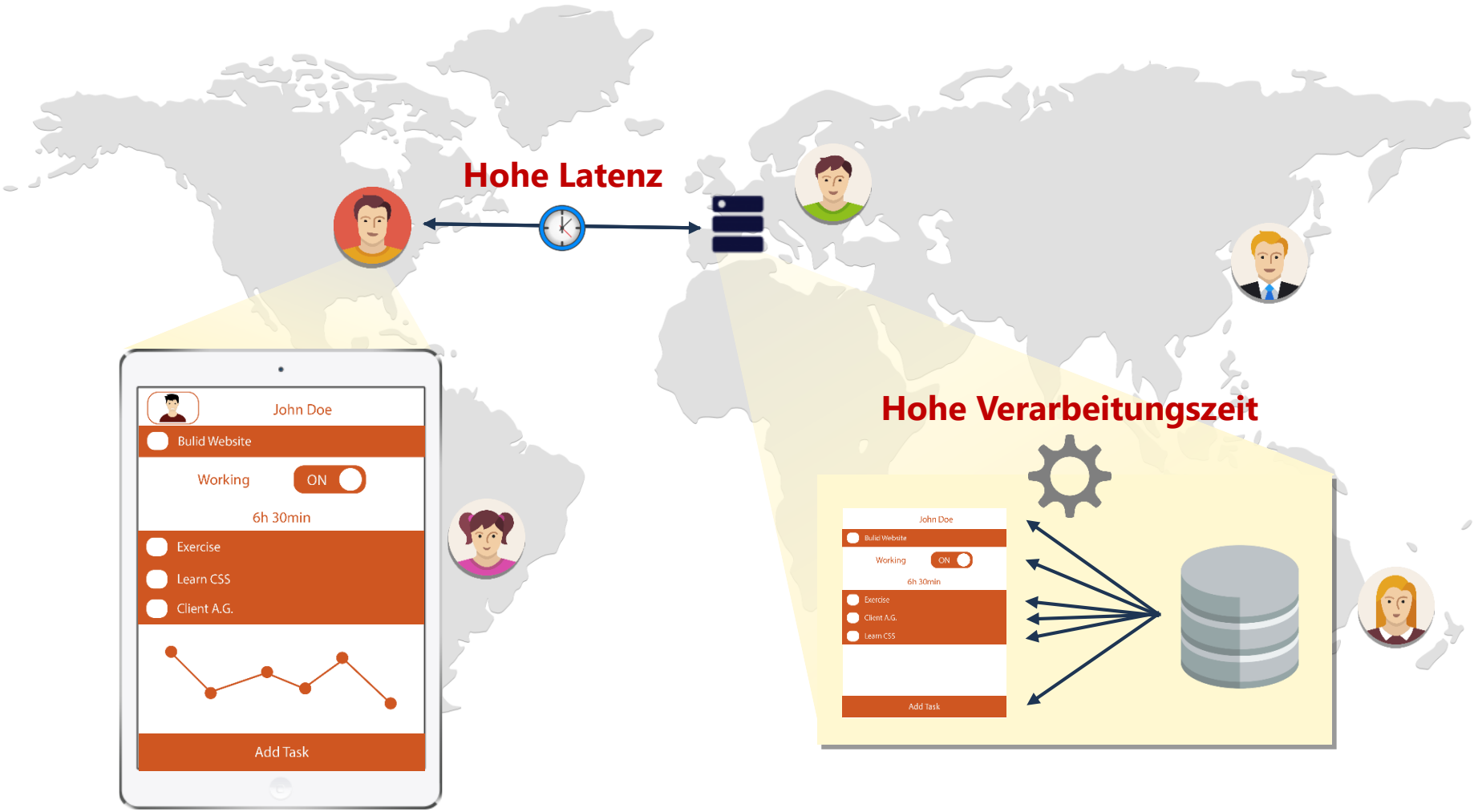


Langsame Apps und Webseiten schaden allen wichtigen **Business-Metriken**

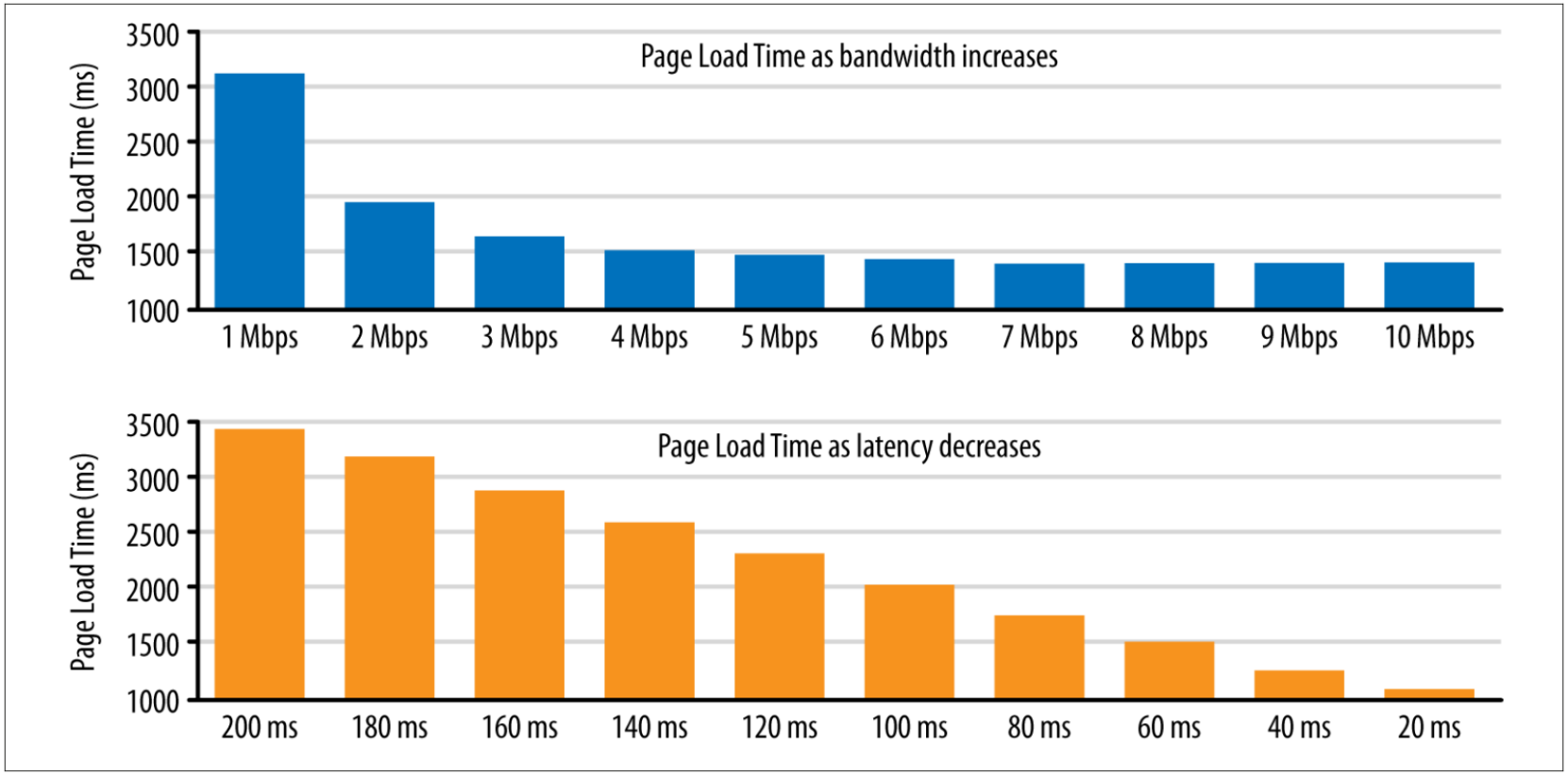
...aber wo liegt das technische Problem?

Stand der Technik

Zwei Engpässe: Latenz und Verarbeitung

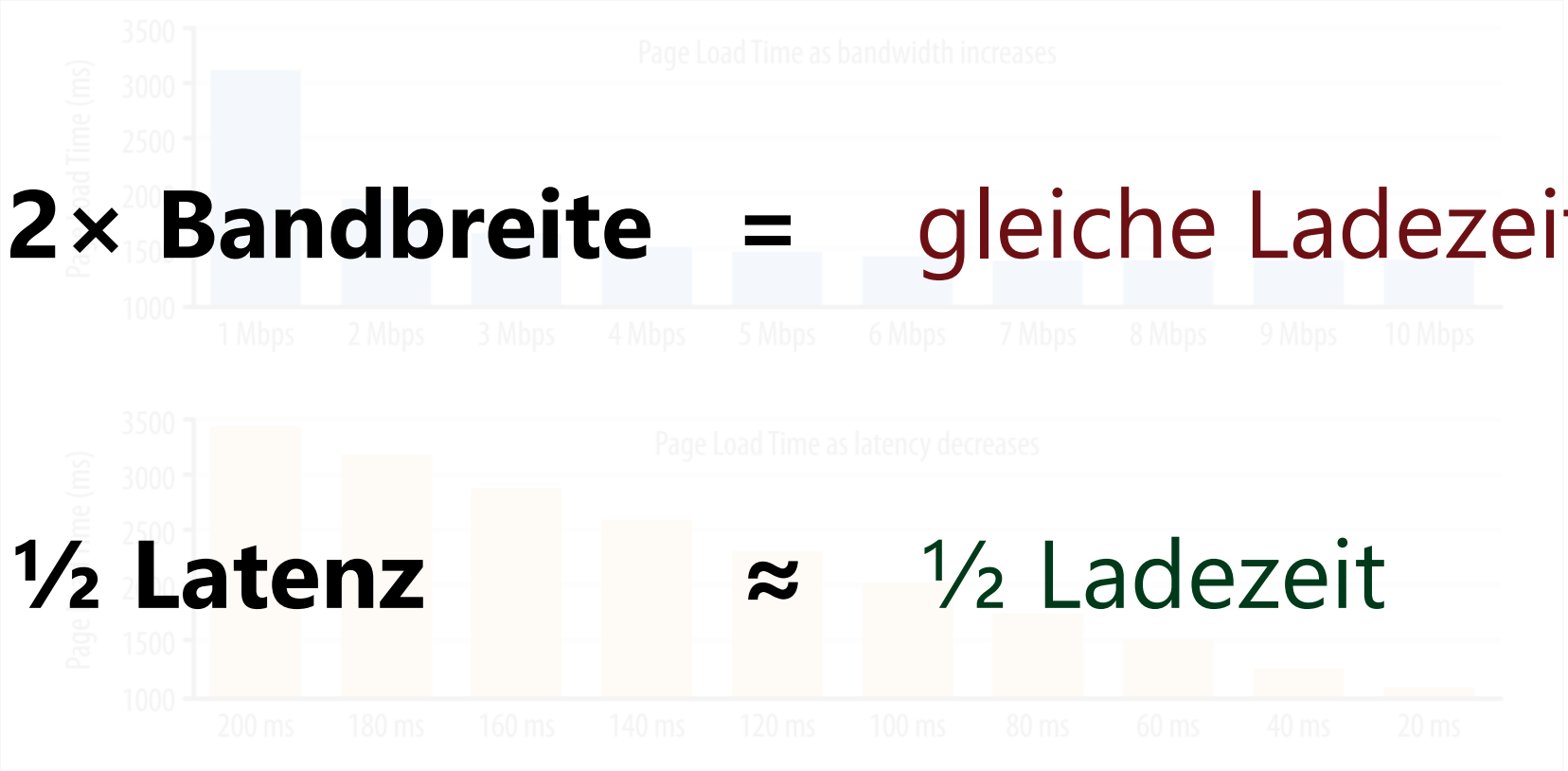


Problem: Netzwerklatenz



I. Grigorik, High performance browser networking. O'Reilly Media, 2013.

Problem: Netzwerklatenz



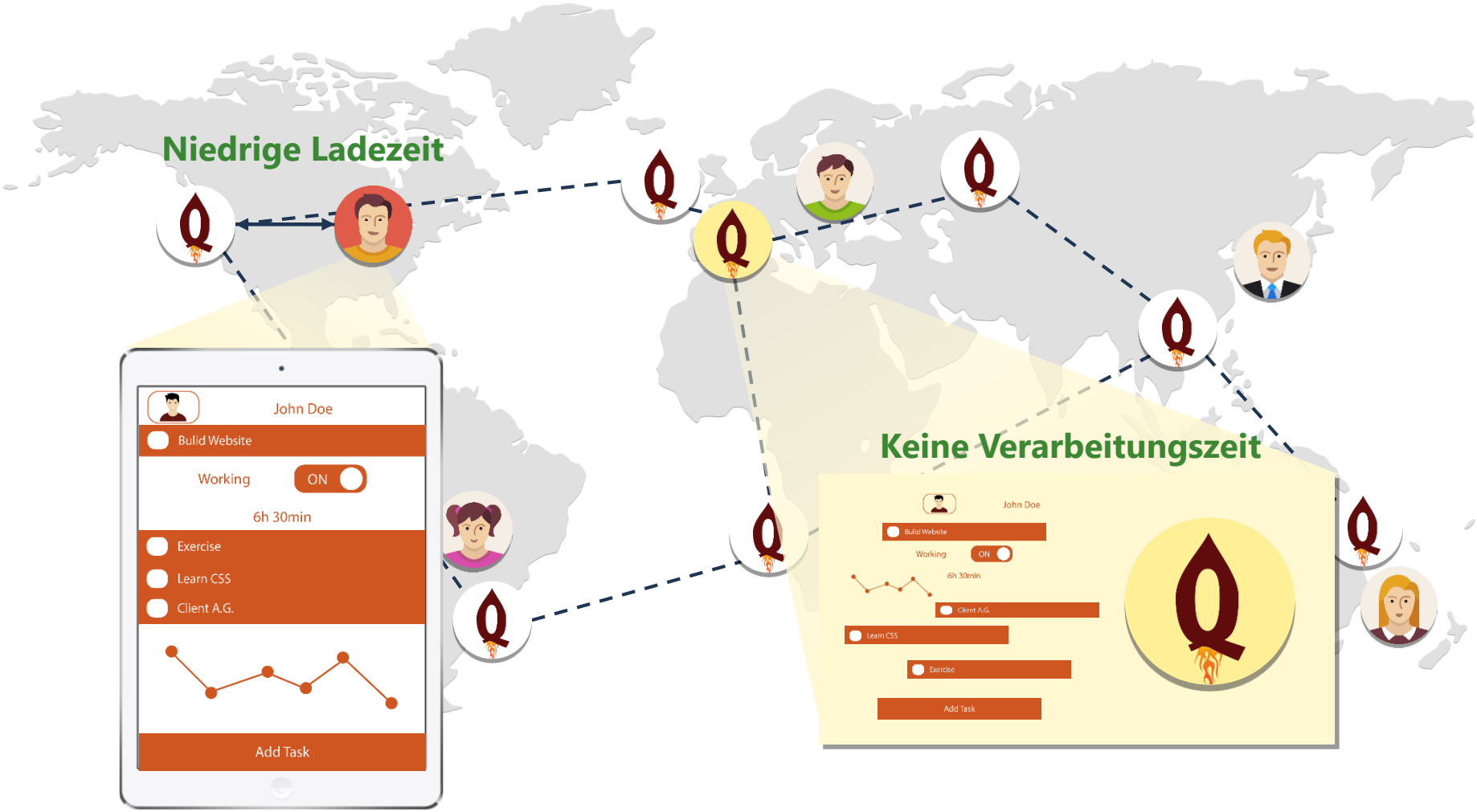
2× Bandbreite = gleiche Ladezeit

½ Latenz ≈ ½ Ladezeit

I. Grigorik, High performance browser networking. O'Reilly Media, 2013.

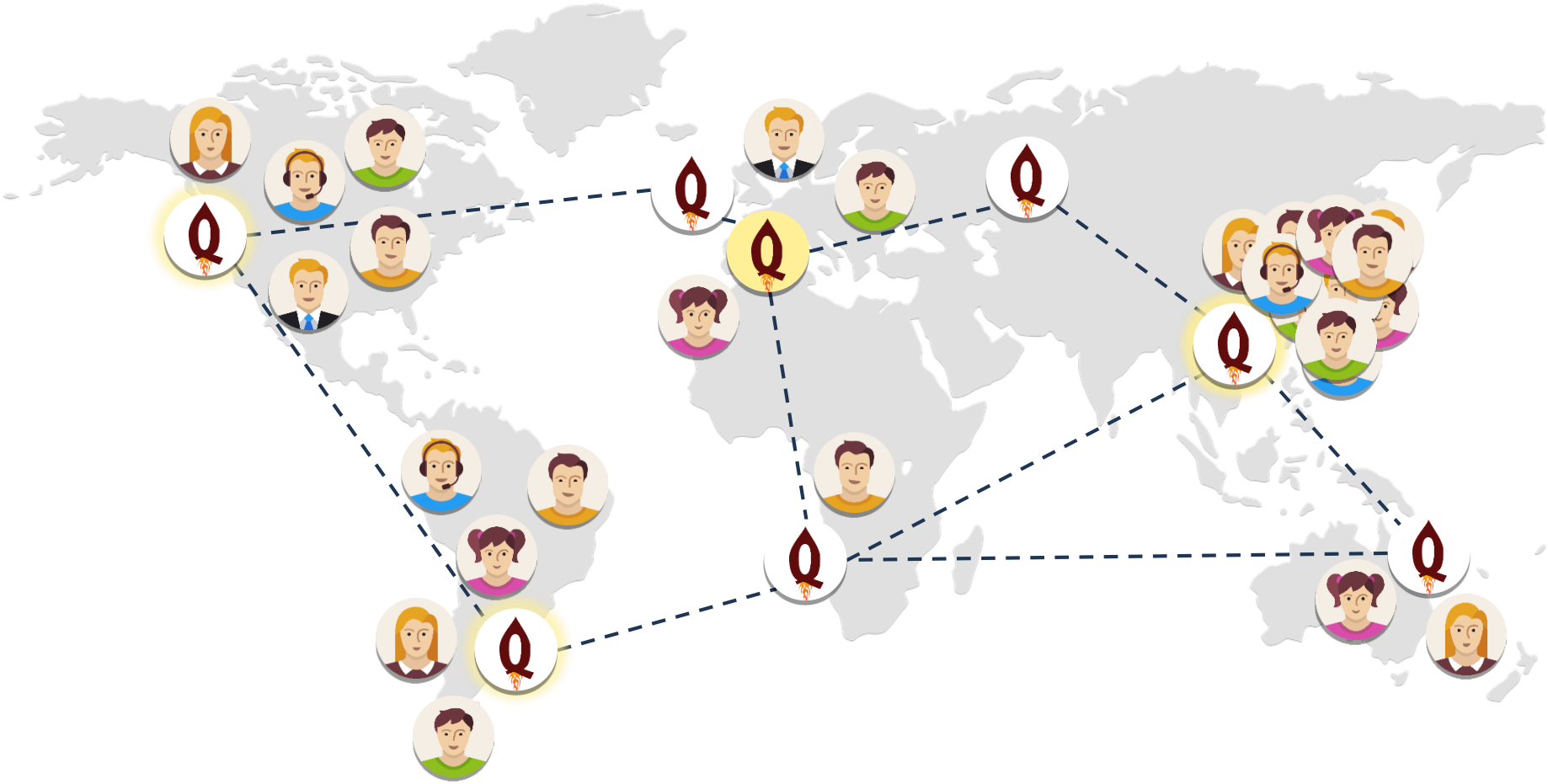
Unsere Lösung

Globales Verteilen und Zwischenspeichern von Daten



Unsere Lösung

Skalierbarkeit und Ausfallsicherheit



Innovation

CLOUD
DATABASE
DATA
WEB
Consistency
DISTRIBUTED
Caching
NOSQL
SYSTEMS
TRANSACTIONS
Performance
SURVEY
Scale
Service
MANAGEMENT
STORES
APPLICATIONS
NETWORK
RELATIONAL
Storage
Concurrency
MODELING
USING
OBJECT
FILTERS
SNOTIONS
KEY
High
Platforms
MAPREDUCE
BLOOM
PROCESSING
STRUCTURES
ORIENTED
BASED
SCALABLE
ELASTIC
Datenbanksysteme
Cassandra
Multi
Shared
Paxos
Replication
STREAMING
MIGRATION
PERSISTENCE
PERSPECTIVES
SQL
POLICY
PRACTICAL
AWARE
CAP
CLUSTERING
SERVERS
ARCHITECTURES
TREE
BALANCING
SCHEMA
CONTROL
ALGORITHMS
ANALYTICS
PARTITION
IMPLEMENTATIONS
Internet
AVAILABLE
HIGHLY
Approaches
CLASSIFICATION
LOAD
ANALYSIS
challenges
VALUE
CONTENT
INTERACTIVE
VIRTUALIZATION
SPECTRAL
Memory
BUILDING
EVALUATION
Approximate
MODERN
COMPARISON
PREDICTION
OPTIMISTIC
MEASUREMENT
ISOLATION
Causal
Replication
IMPROVING
HASHING
TOLERANT
RESOURCE
EVENTUALLY
LARGE
MECHANISMS
PROVISIONING
Taxonomy
PEER
Main
Functions
DATASETS
ENABLING
BENCHMARKING
MACHINE
Live
Azure
Column
computing
Methods
techniques
Prefetching
Simple
Multiscale
Decentralized
ASYNCHRONOUS
BROADCAST
PostgreSQL
DUPLICATES
INTELLIGENT
Alternative
Programming
RELATIONALER
DATASTORES
WORKLOADS
CAPABILITIES
OVERVIEW
LIGHTWEIGHT
FORBUILDING
DELIVERY
BUSINESS
LIMITATIONS
MULTIMEDIA
OPERATION
NECESSITY
LOCKING
STRONG
FREEING
LATENCY
Software
Replacement
Authorization
Shapshot
Comparative
Dynamics
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MULTIPOINT
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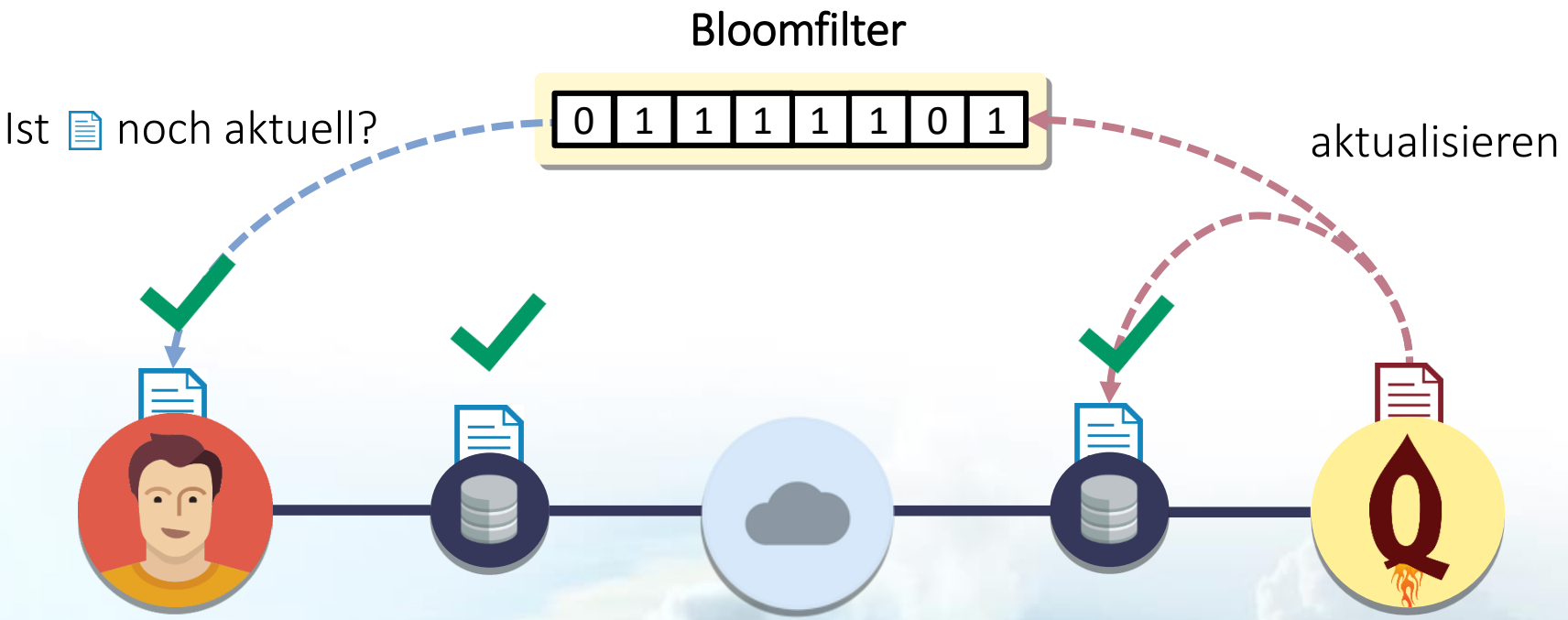
SERIALIZABLE
CASE
SEARCHING
PROBABILISTICALLY
ANWENDUNGEN
PRESENTATIN
BLOOMFILTER
Enterprise
PROXY
ANFORDERUNGEN
UNDERSTANDING
SYNCHRONIZATION
DIMENSIONAL
DIMENSIONEN
Query
Change
Engineering
ENGAGEMENTS
GENERATION
DATENBANKEN
MASTERARBEIT
CONSENSUS
RESSOURCENVERWALTUNG
CLOUDRUNNER
Changed
Mapping
TENANT
OVERCOMING
ENVIRONMENTS
PUBLICATION
Manitoulane
MAKING
SUPPORTING
GOOGLES
TRANSAKTIONSUNTERSTÜTZUNG
DELIVERING
TECHNOLOGY
HETEROGENEOUS
Theory
FRAMEWORK
FREQUENCY
Feasibility
LEARNING

Innovation

Lösung: Baqends Algorithmus aktualisiert Daten

4,5 Jahre
Forschung & Entwicklung

Neue Algorithmen
Datenaktualität erstmals gelöst



Innovation

Lösung: Baqends Algorithmus aktualisiert Daten

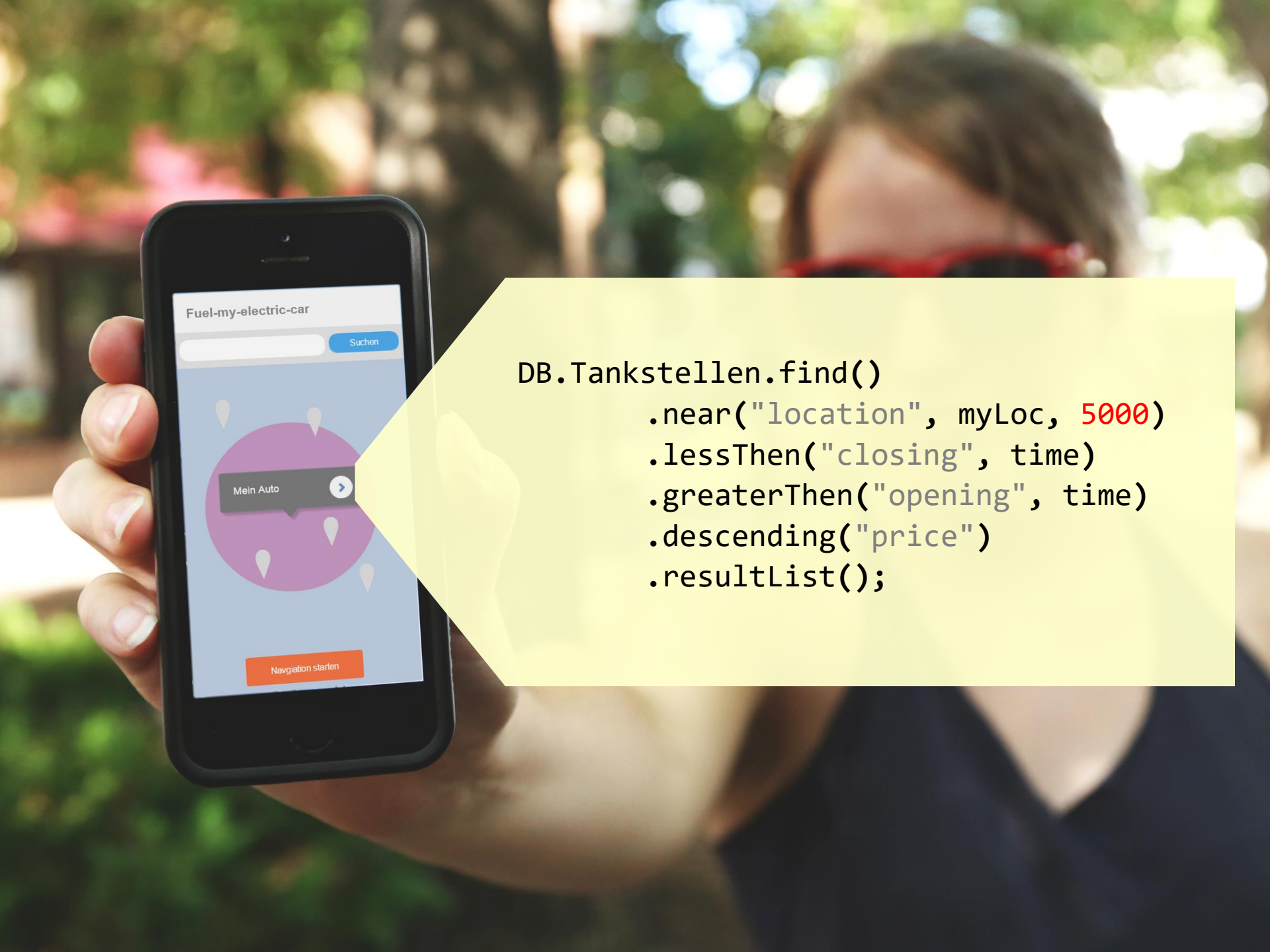
- F. Gessert, F. Bücklers, und N. Ritter, „ORESTES: a Scalable Database-as-a-Service Architecture for Low Latency“, in *CloudDB 2014*, 2014.
- F. Gessert und F. Bücklers, „ORESTES: ein System für horizontal skalierbaren Zugriff auf Cloud-Datenbanken“, in Informatiktage 2013, 2013.
- F. Gessert und F. Bücklers, *Performanz- und Reaktivitätssteigerung von OODBMS vermittels der Web-Caching-Hierarchie*. Bachelorarbeit, 2010.
- M. Schaarschmidt, F. Gessert, und N. Ritter, „Towards Automated Polyglot Persistence“, in BTW 2015.
- S. Friedrich, W. Wingerath, F. Gessert, und N. Ritter, „NoSQL OLTP Benchmarking: A Survey“, in *44. Jahrestagung der Gesellschaft für Informatik*, 2014, Bd. 232, S. 693–704.
- F. Gessert, S. Friedrich, W. Wingerath, M. Schaarschmidt, und N. Ritter, „Towards a Scalable and Unified REST API for Cloud Data Stores“, in *44. Jahrestagung der GI*, Bd. 232, S. 723–734.
- F. Gessert, M. Schaarschmidt, W. Wingerath, S. Friedrich, und N. Ritter, „The Cache Sketch: Revisiting Expiration-based Caching in the Age of Cloud Data Management“, in BTW 2015.
- F. Gessert und F. Bücklers, *Kohärentes Web-Caching von Datenbankobjekten im Cloud Computing*. Masterarbeit 2012.
- W. Wingerath, S. Friedrich, und F. Gessert, „Who Watches the Watchmen? On the Lack of Validation in NoSQL Benchmarking“, in BTW 2015.
- F. Gessert, „Skalierbare NoSQL- und Cloud-Datenbanken in Forschung und Praxis“, BTW 2015

Wie setzt man

als Entwickler

die Technologie ein?

Backend-as-a-Service




```
DB.Tankstellen.find()
        .near("location", myLoc, 5000)
        .lessThen("closing", time)
        .greaterThen("opening", time)
        .descending("price")
        .resultList();
```

Baqend

Dashboard API Docs Tutorial

localhost

Filter...

Baqend Code +

BUCKETS

- App Data
- test.type
- test
- test.bucket
- jstest
- test.Validation
- test.Classcollection

Dashboard / Home / Dashboard

Data Schema ACL Handler Query

Add Delete Import Search

Showing 1 of 13 Pages Previous Next

id	version	name String	mother Person	address Address	aunt Person
			/db/Person/		/db/Person/
eb6d7a84-e394-44b9-...	20	Peter Meier	/db/Person/59e35ba1-...	{"street":"/db/Street/bf...	/db/Person/59e35ba1
d6f523c2-2d37-4ca2-9...	19	Peter Meier	/db/Person/ad23a58d-...	{"street":"/db/Street/4c...	/db/Person/ad23a58d
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+ Create

Backend-as-a-Service

=

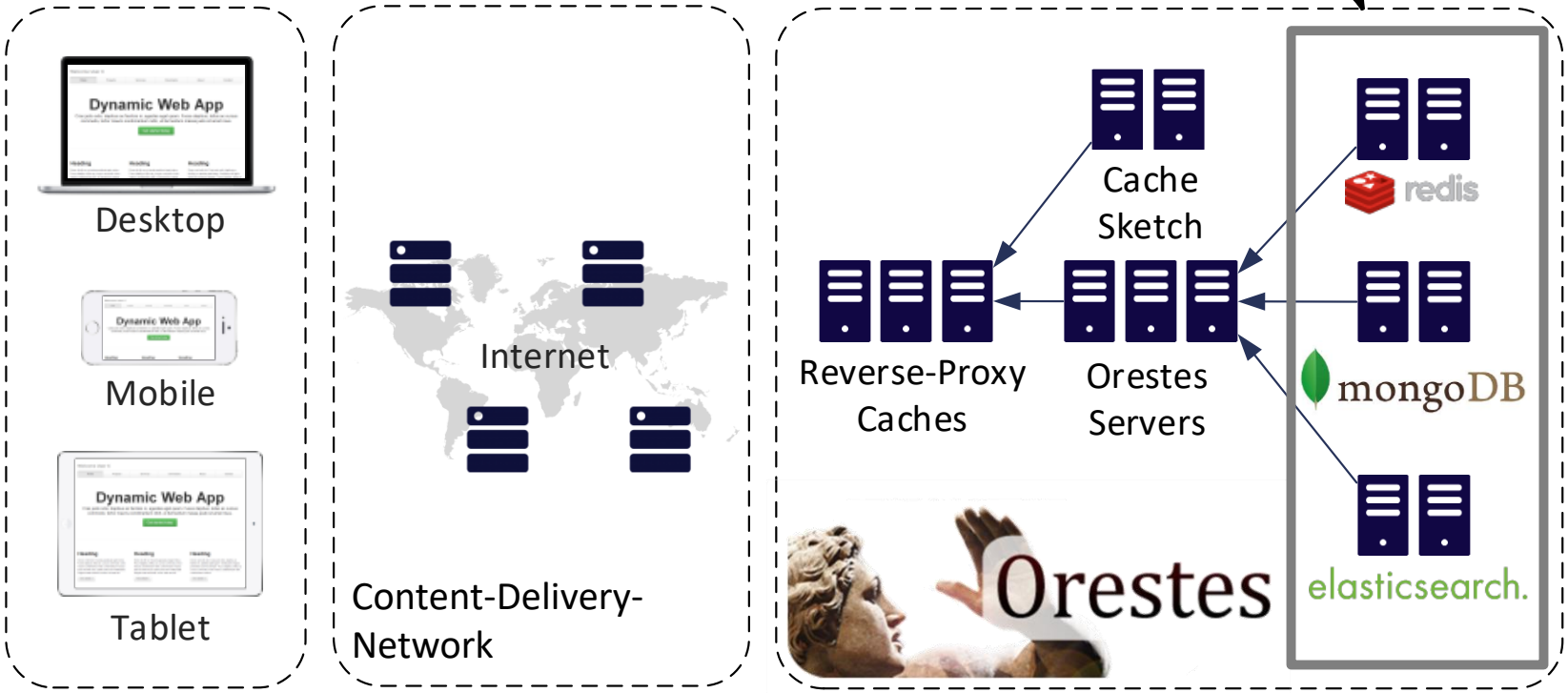
+

Datenbank **Cloud Code**

Technische Realisierung

Die ORESTES Plattform

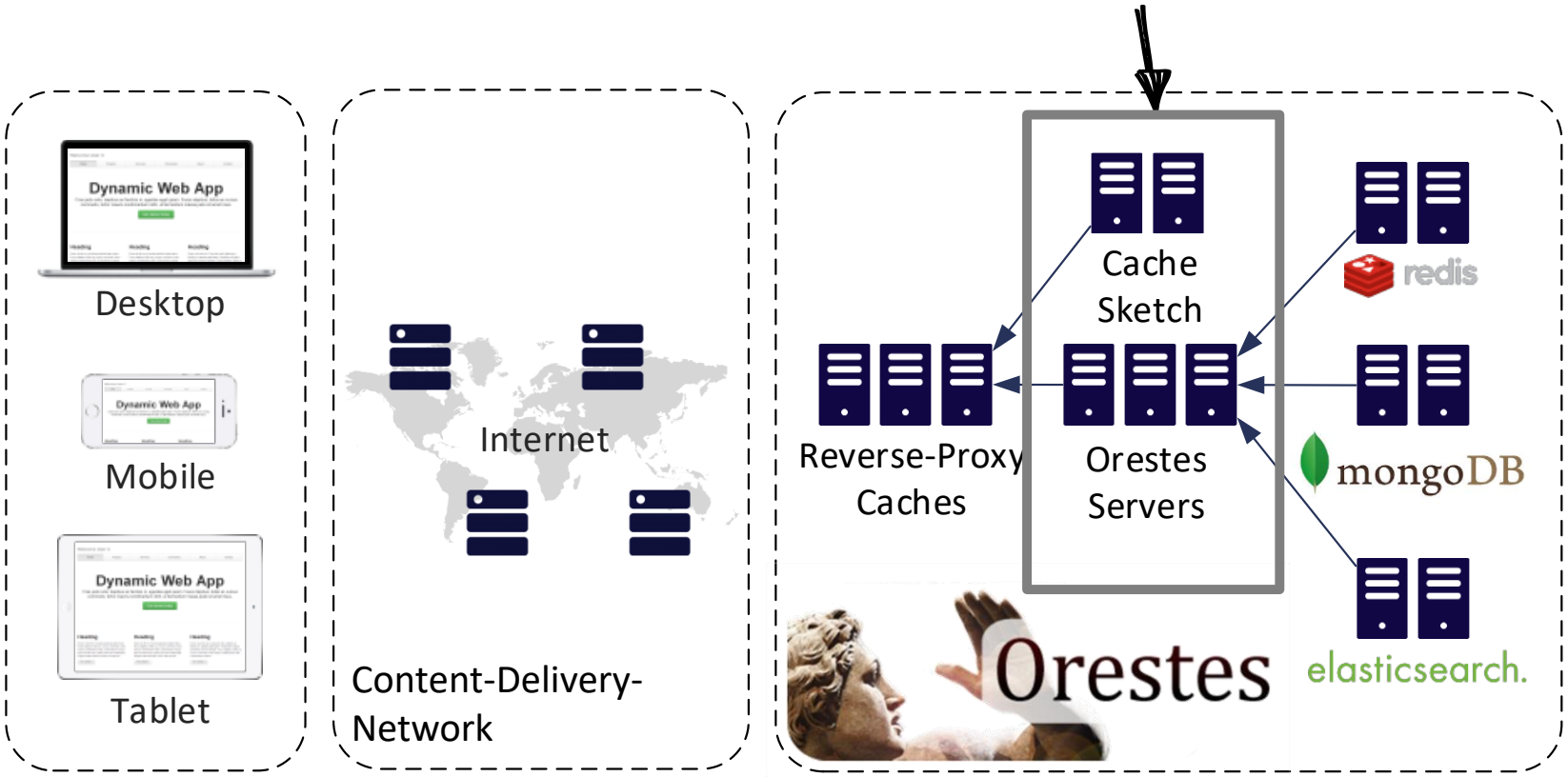
Smarte **Polyglotte Persistenz** sucht die passende Speicherung aus



Technische Realisierung

Die ORESTES Plattform

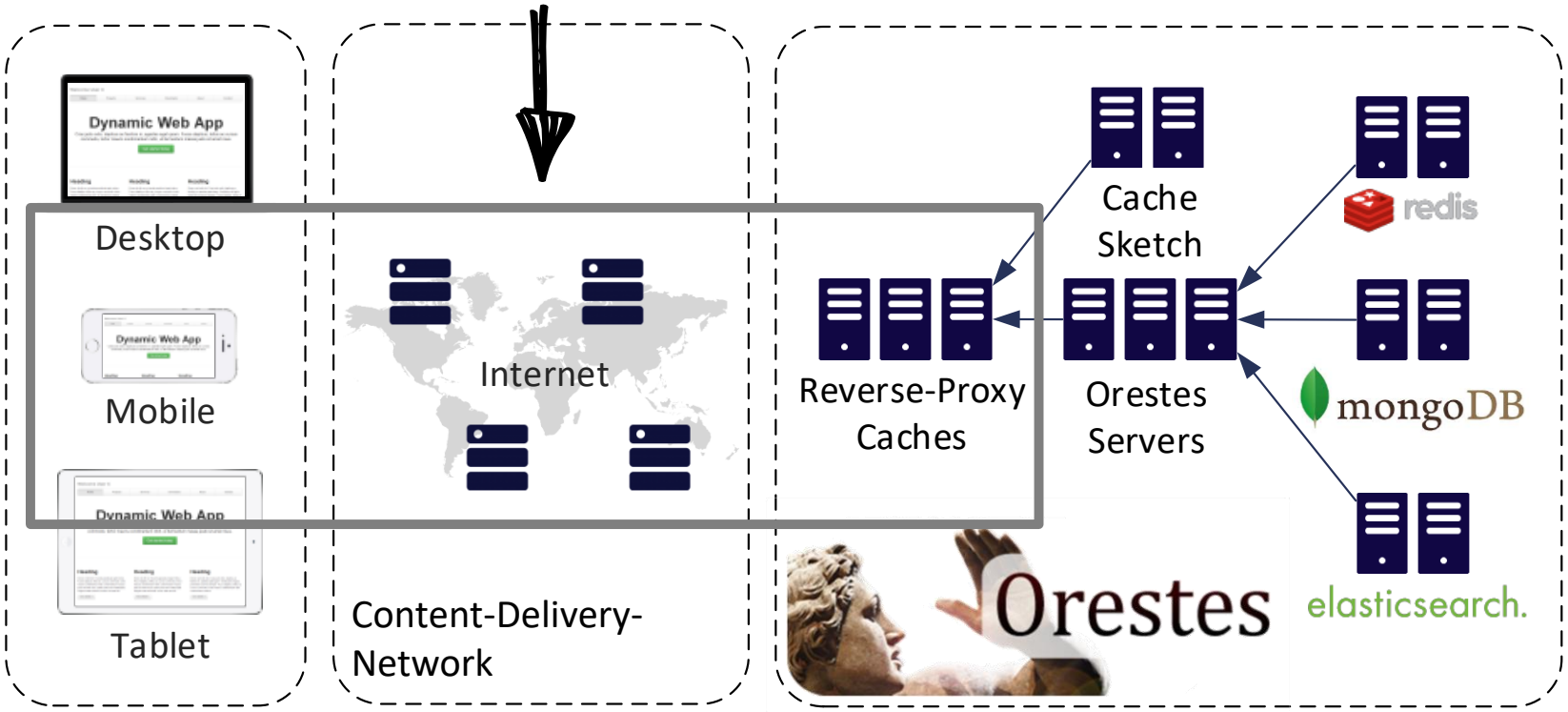
Cloud Code, automatisches **Caching** & Autoscaling



Technische Realisierung

Die ORESTES Plattform

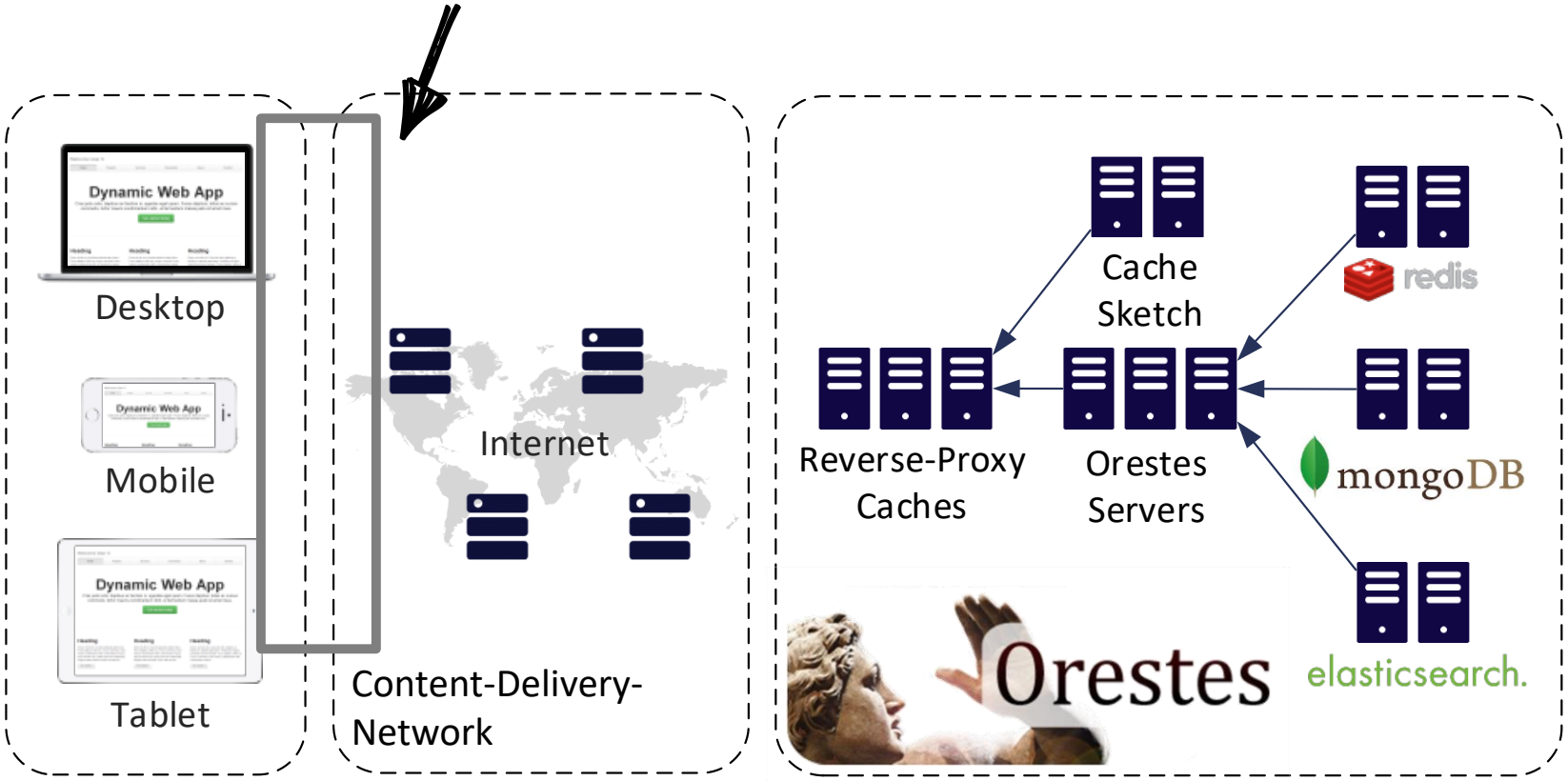
Optimierte **Performace**, **Verfügbarkeit** und **Skalierbarkeit** durch HTTP Caching



Technische Realisierung

Die ORESTES Plattform

REST API für beliebige **Endgeräte**

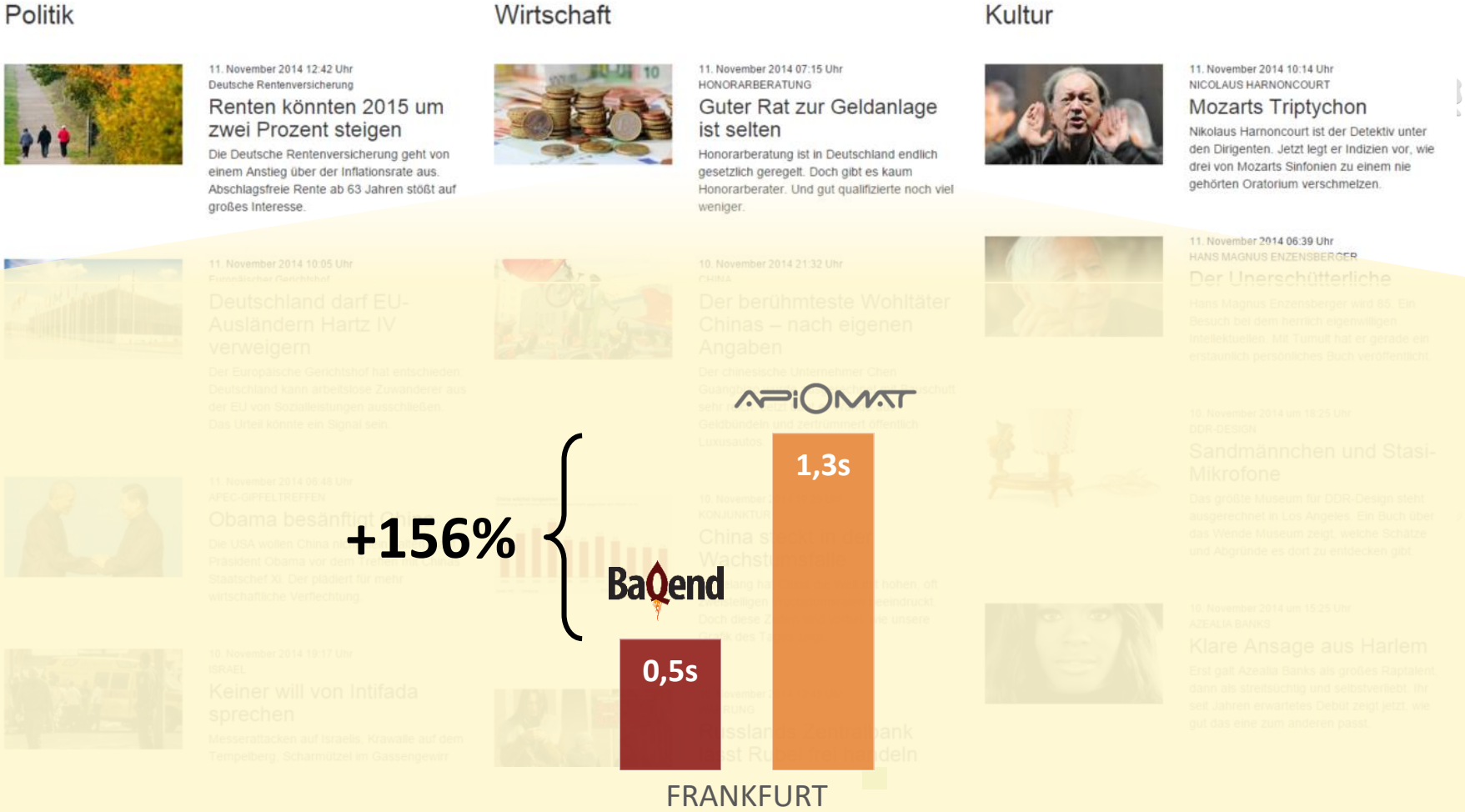


Technische Realisierung

Die ORESTES Plattform

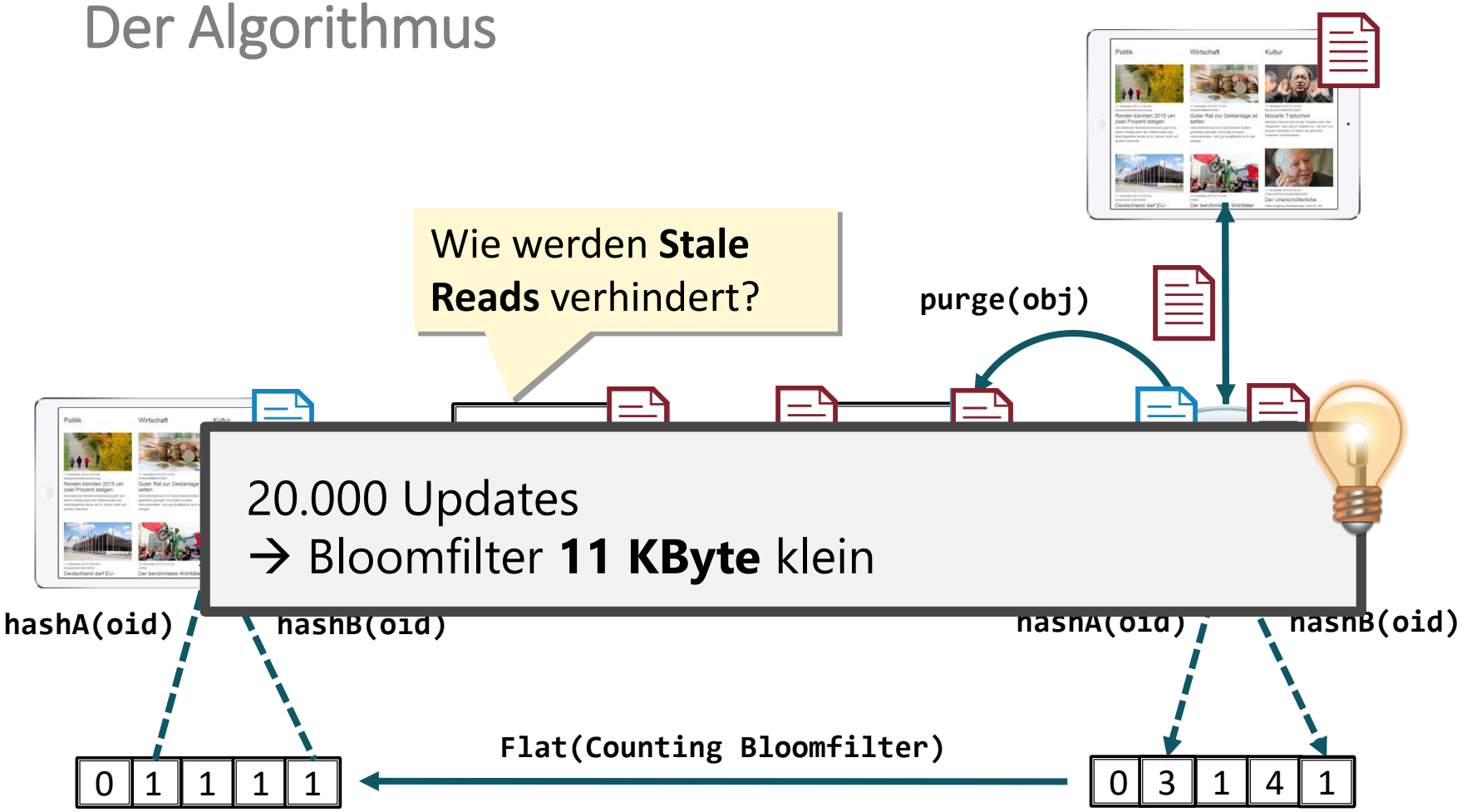
Wieviel bringt es?

Ladezeitvergleich für eine praktische Anwendung



Was passiert im Detail?

Der Algorithmus



Ladezeiten

gelöst

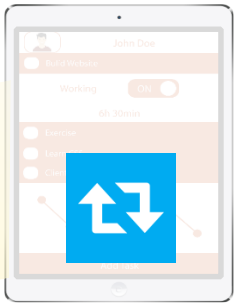
Doch was ist mit

Echtzeit-Daten?

Baqend Real-Time

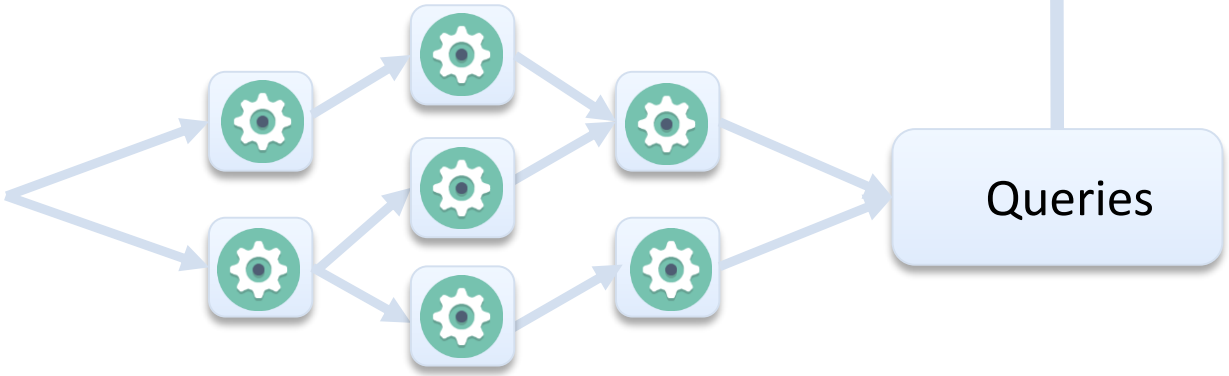
API: die Komplexität wird verborgen

Continuous Queries,
Push Notifications,
Alerts, Monitoring,…



```
stream=DB.News.find().stream();
stream.on("add", onNews);
stream.on("remove", onRemove);
```

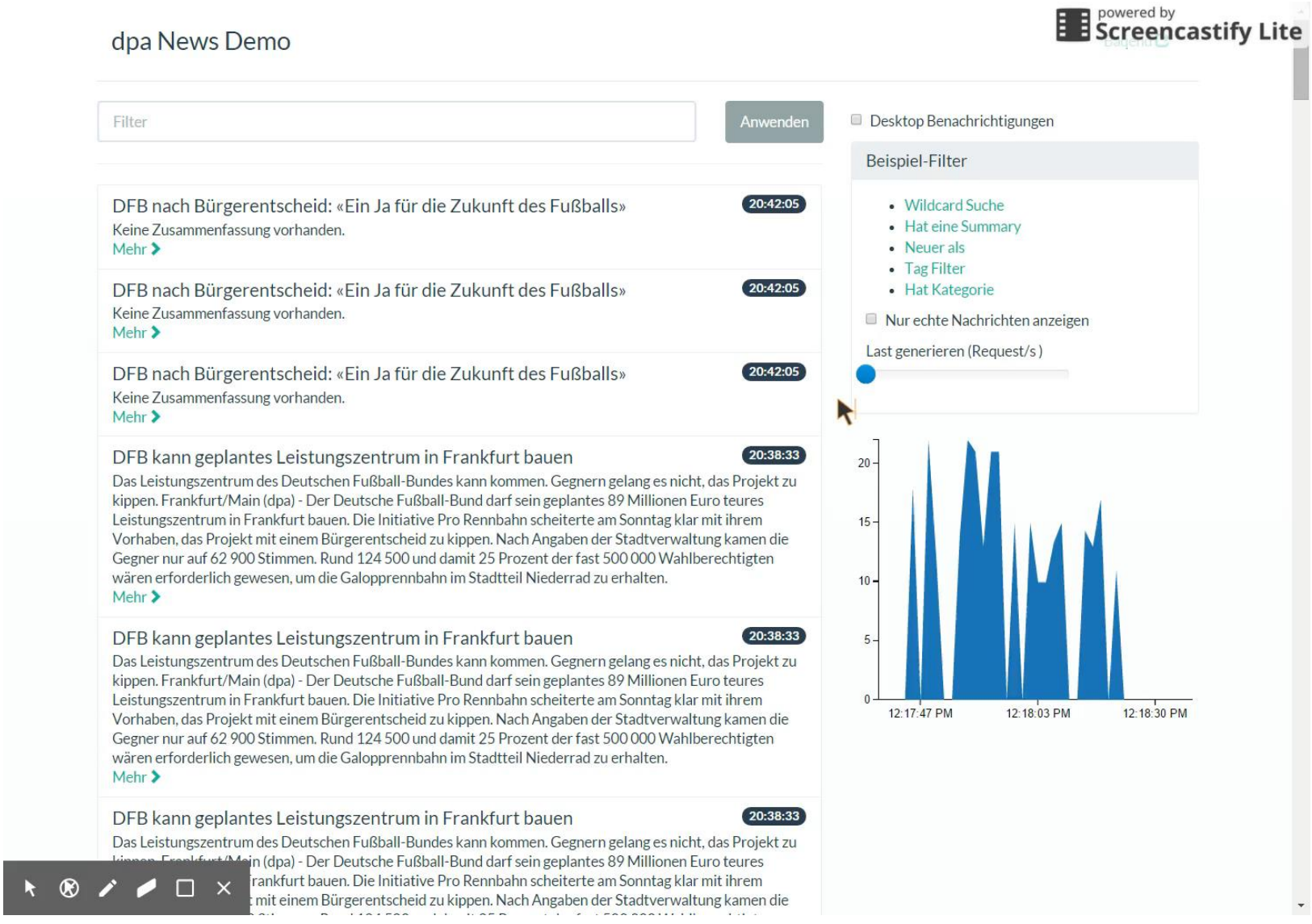
Beliebige Daten



Baqend Stream Processing System

Baqend Real-Time

Beispiel: dpa



Das Produkt:

Baqend Cloud

Gemanagter *Backend-as-a-Service* Cloud Dienst

Das Produkt:

Baqend Enterprise

Lizensierte Software für *on-premise* deployments

Das Produkt:

Baqend Community Edition

Freie Version für kleine & private Projekte

Baqend Cloud

Pay-as-you-go Preismodell

	Starter		Business		Enterprise		Individual	
	0 €	+1 € for any	20 €	+1 € for any	200 €	+1 € for any	1.000 €	+1 € for any
Lesende Anfragen (T)	**100**	20	**500**	30	**7.000**	100	**20.000**	150
Schreibende Anfragen (T)	**50**	10	**250**	15	**3.500**	50	**10.000**	75
Download Volumen (GB)	**4**	2	**20**	4	**200**	4	**800** cached **1.200**	4 8
Datenbank im Monat (GB)	**2**	2	**10**	3	**30**	4	**100**	4
File storage im Monat (GB)	**5**	20	**100**	25	**1.000**	25	**5.000**	33

Was passiert als nächstes?

Baqend Roadmap

2015
Q1-Q4

Eng betreute
Pilotprojekte

- Als Proof of Concept

2016
Q1

Baqend Enterprise
Softwarepaket

- Auch als *Community Edition* verfügbar

2016
Q1

Baqend
Cloud-Service

- Mit umfangreichem *Free Tier*

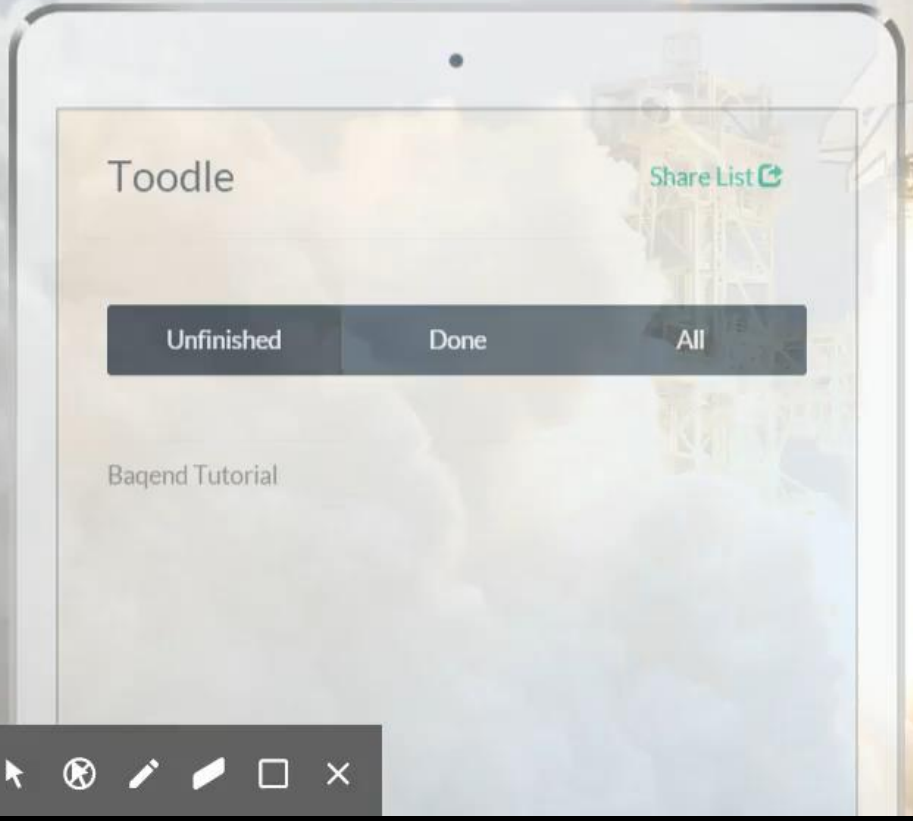
BaQend

Overview Tutorial Download Architecture

www.baqend.com

Announcing the world's fastest backend

Build applications with imperceptible load times.



THE BAQEND PLATFORM

Sky-rocket your development

Learn how to build this App with Baqend in just 5 minutes.

Online Tutorial | Download Beta

Unsere Vision:

Apps und Webseiten ohne Ladezeiten