



We are in a technology revolution of the “empowered consumer”.■

...in the Digital Age it is all about:

1. Staying in the Relevant Set of Consumers
2. Digital Business Models
3. Trust.■

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- 1 Attacking in the Digital Era:
Strategic Challenges
- 2 **Impact on Insurance—Big Data Use Cases**
- 3 Challenges

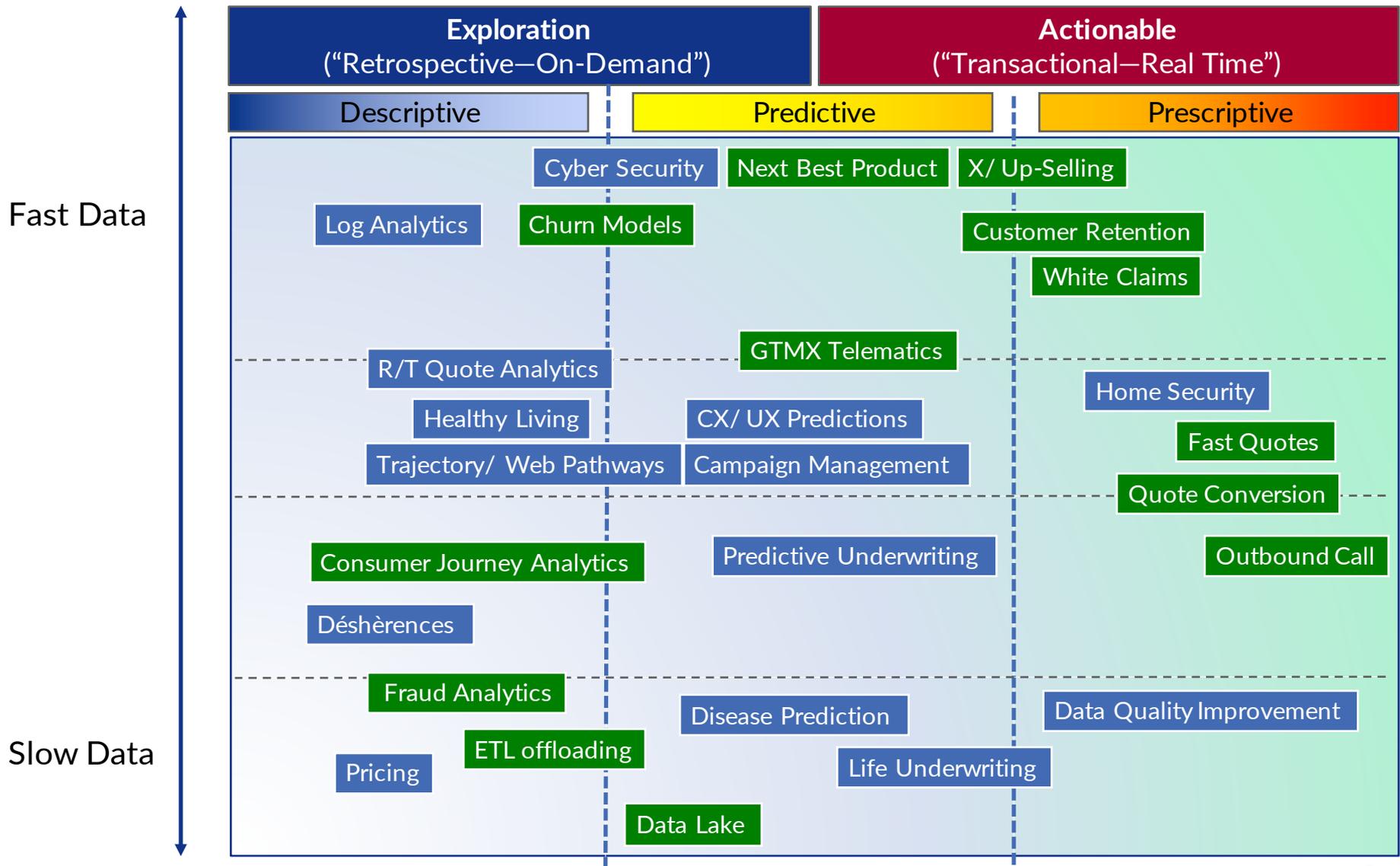
The Big Data Era for Allianz

Key figures

Global Data & Analytics (May 2014)

- Focusing on **Big Data Analytics**
- So far, the focus on **selected key markets**
- **“Digital touchpoints”** comprised of, e.g.: system log, cookie, telematics, and IoT data
- **Growth in 2015 (GD&A only):**
≈ 5 PB production data in total, growing ever faster
- **Current clusters:**
 - Hybrid private cloud
 - Allianz Big Data Ecosystem (v2)
 - On German soil
 - Satellites clusters to meet local data protection legislation, but same architecture
 - Data locality, nothing shared

A Variety of Use Cases—Triggers a Zoo of DBs

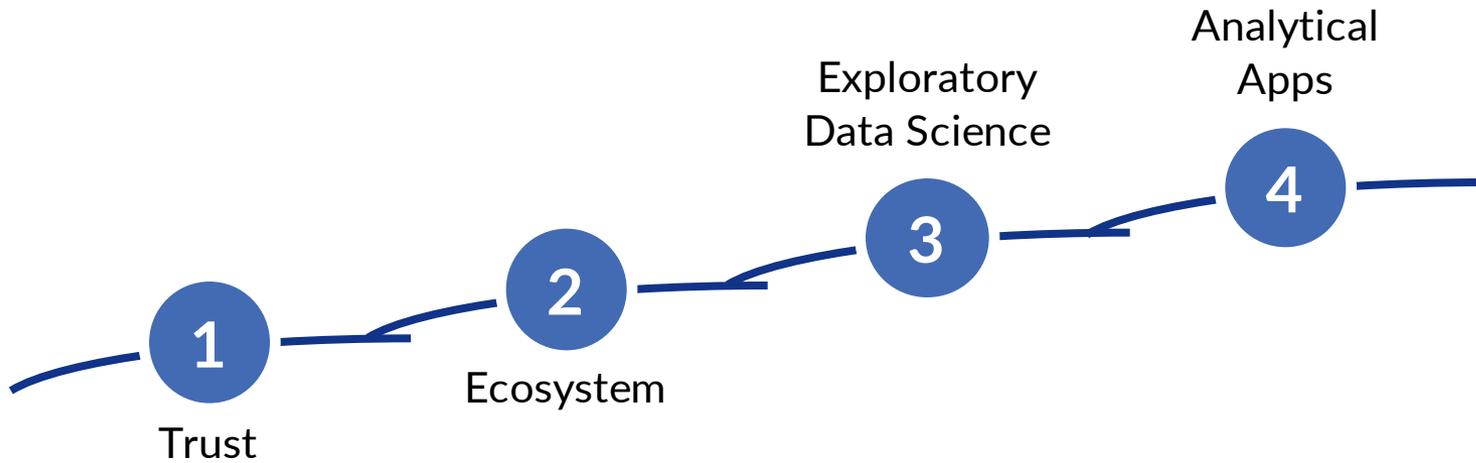


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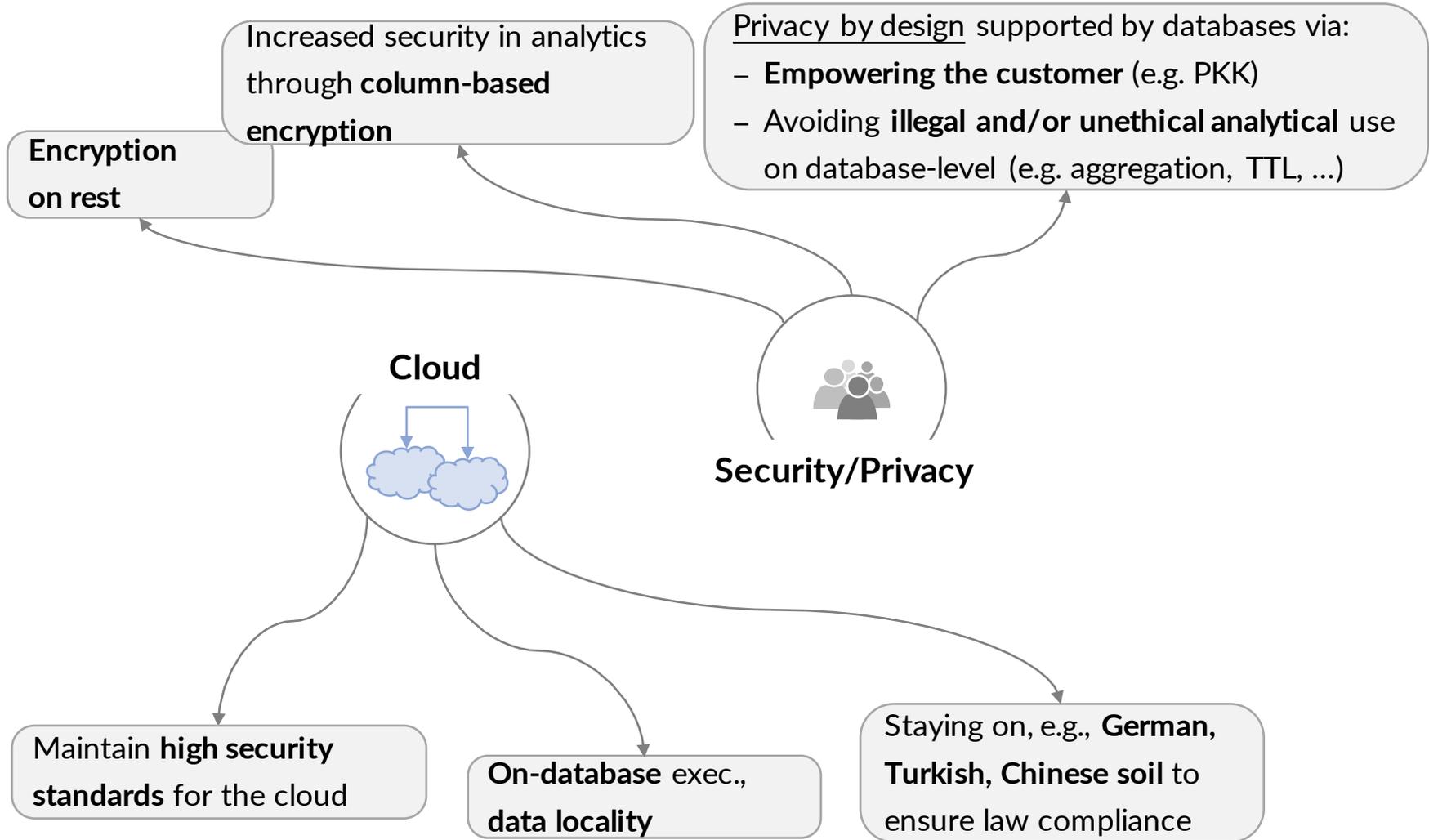
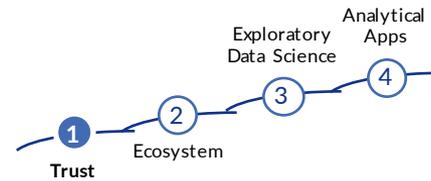
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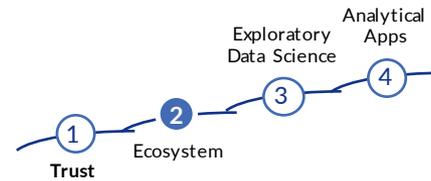
Strategic goals implicate four main challenges



C1: Trust



C2: Ecosystem



Technical Aspects

Infrastructure and Hosting

- Data locality
- Cloud, "commoditizing the data center"

Architectural

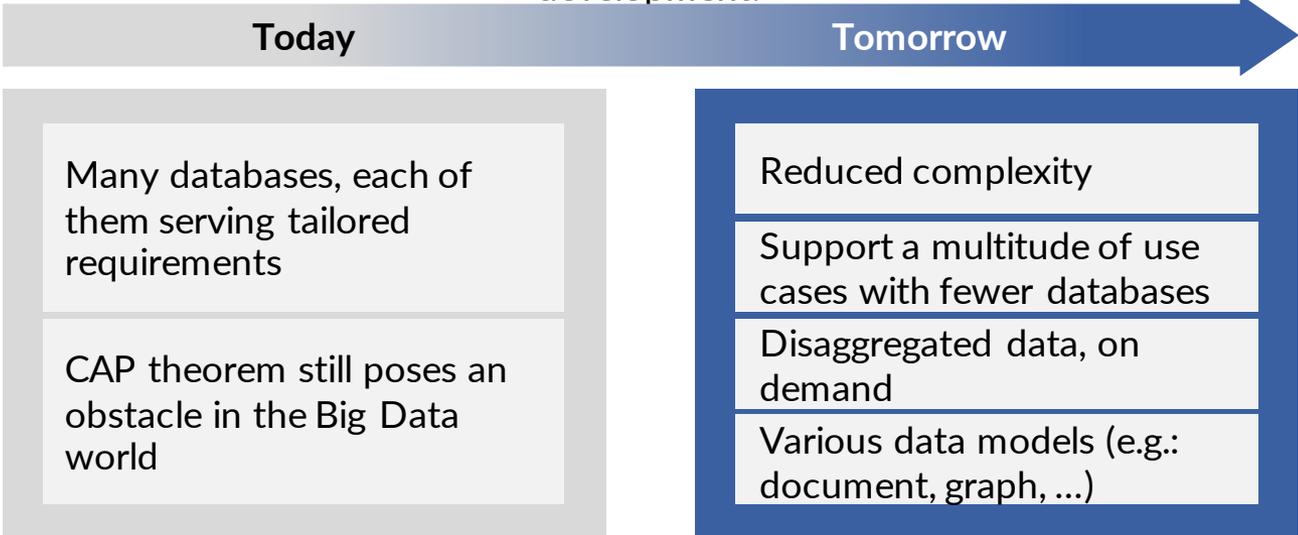
- Decoupling data and DBs
- Avoid vendor lock-ins, open source

tical apps, process-on-the-go/ pay-as-you-use

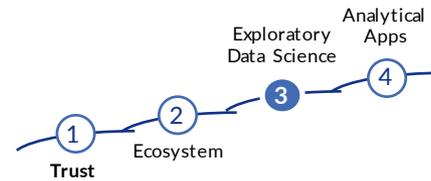


Analytical Aspects

Findings from exploratory and analytical app development:



C3: Exploratory Data Science



Agile data exploration requires us to rethink traditional approaches

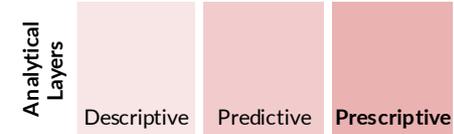
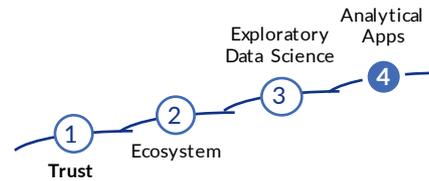
Requirements

- Multi-version concurrency control (à la CouchDB = git for data)
- Violating the CAP-theorem:
 - Combine high degree of consistency and availability: two speed layers
 - Stable copies / Multi-staged process
 - Achieve “transparency”

Challenges

- ETL still doesn't work
- Bridging the traditional—i.e. legacy—and new, big data world
- Filling the gap between the data lake concept and the analytical requirements (schema, semantics)
- Enabling in-memory analytics / On-demand results on fine-grained data

C4: Analytical Apps



Provisioning prescriptive, i.e. “actionable” insights and enable efficient app use

Architecture

- Reduce architectural complexity
- Lambda architecture (stream/batch/provisioning layers)

Apps

- On-demand speed for thousands of concurrent analytics users
- Transaction processing (fraud analytics, white claims)
- Enable geo-spatial analytics at scale
- Online ML

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