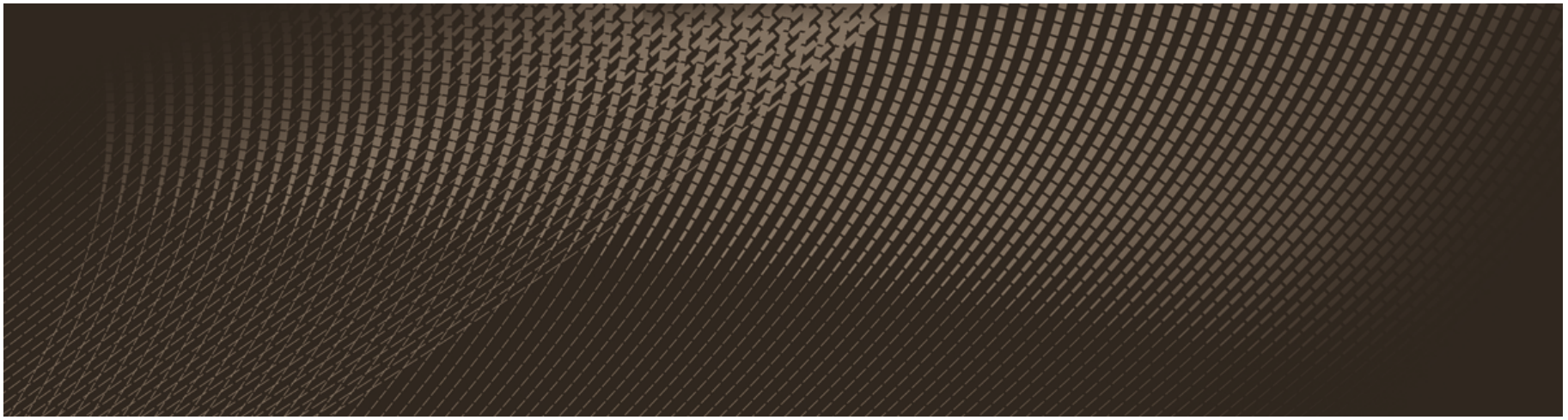


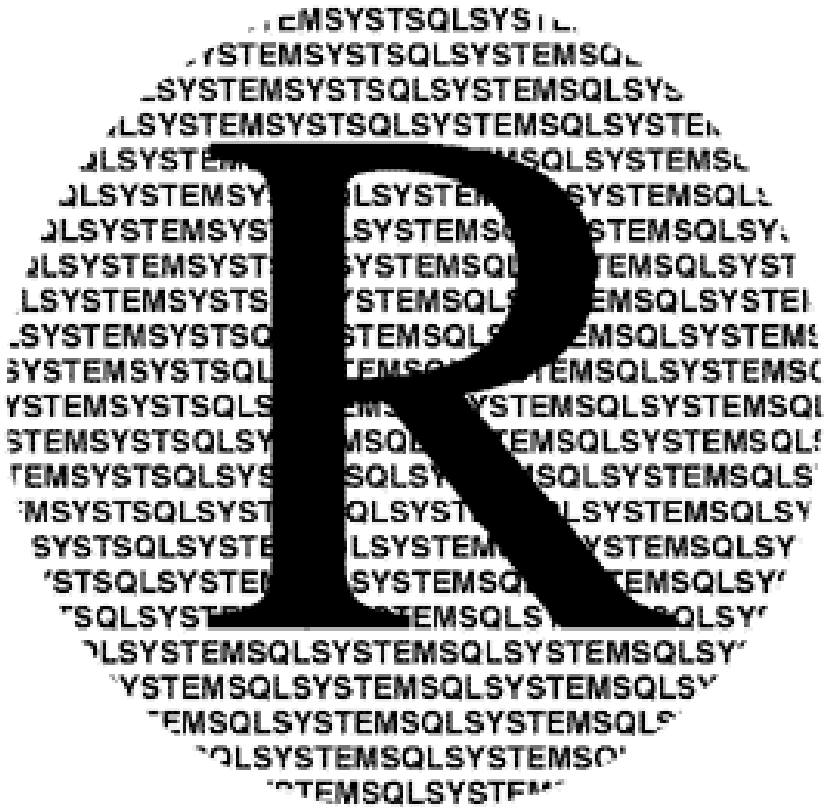
På tide å kaste ut relasjonsdatabasen?

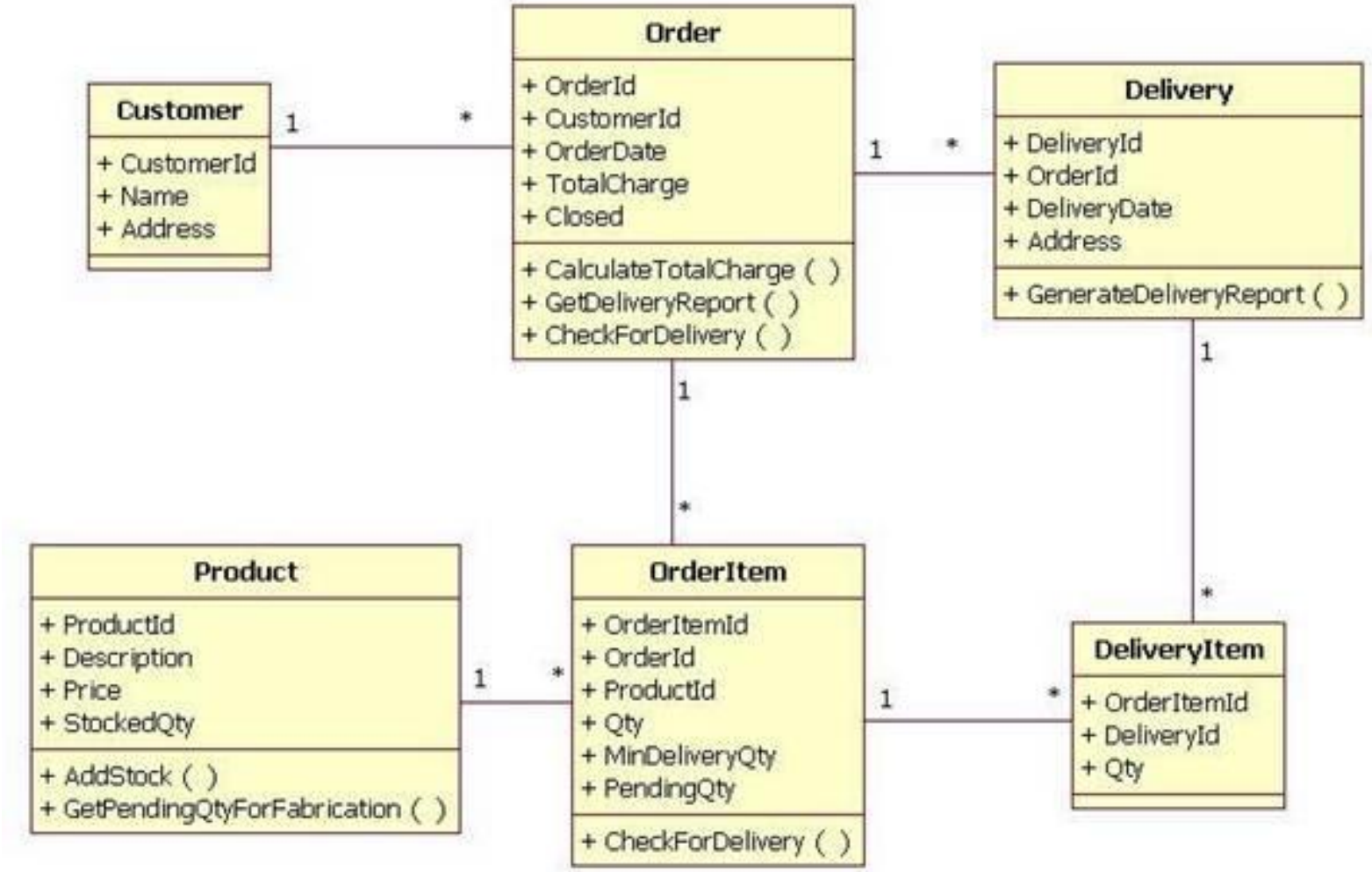
NoSQL - IASA 14.oktober 2009

Trond Arve Wasskog

BEKK

1

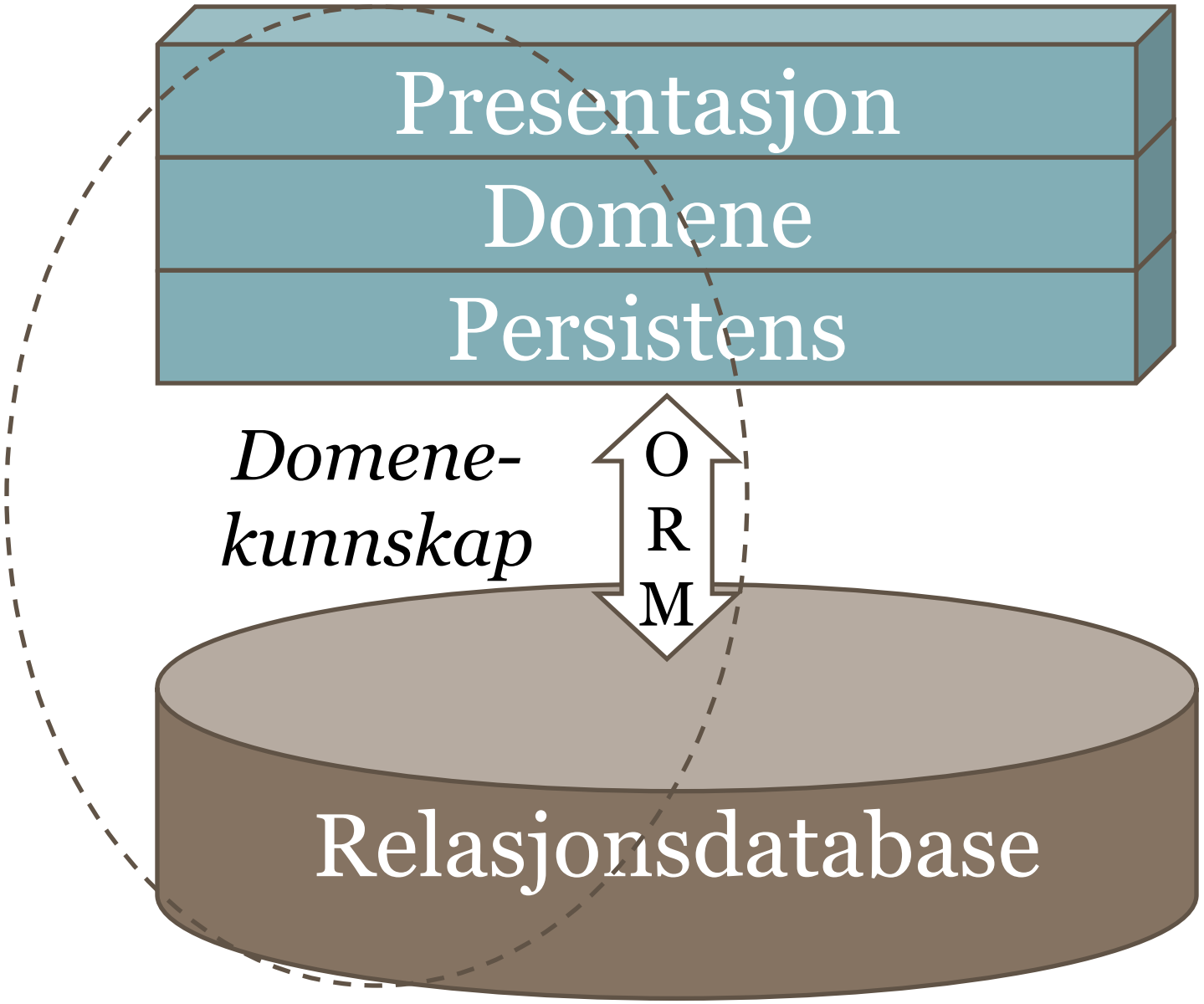

R


Customer
+ CustomerId
+ Name
+ Address
1
*
Order
+ OrderId
+ CustomerId
+ OrderDate
+ TotalCharge
+ Closed
+ CalculateTotalCharge ( )
+ GetDeliveryReport ( )
+ CheckForDelivery ( )
1
*
Delivery
+ DeliveryId
+ OrderId
+ DeliveryDate
+ Address
+ GenerateDeliveryReport ( )
1
*
1
*
Product
+ ProductId
+ Description
+ Price
+ StockedQty
+ AddStock ( )
+ GetPendingQtyForFabrication ( )
1
*
OrderItem
+ OrderItemId
+ OrderId
+ ProductId
+ Qty
+ MinDeliveryQty
+ PendingQty
+ CheckForDelivery ( )
1
*
DeliveryItem
+ OrderItemId
+ DeliveryId
+ Qty

ACID

2

Skalerbarhet


Presentasjon
Domene
Persistens
Domene-
kunnskap
O
R
M
Relasjonsdatabase

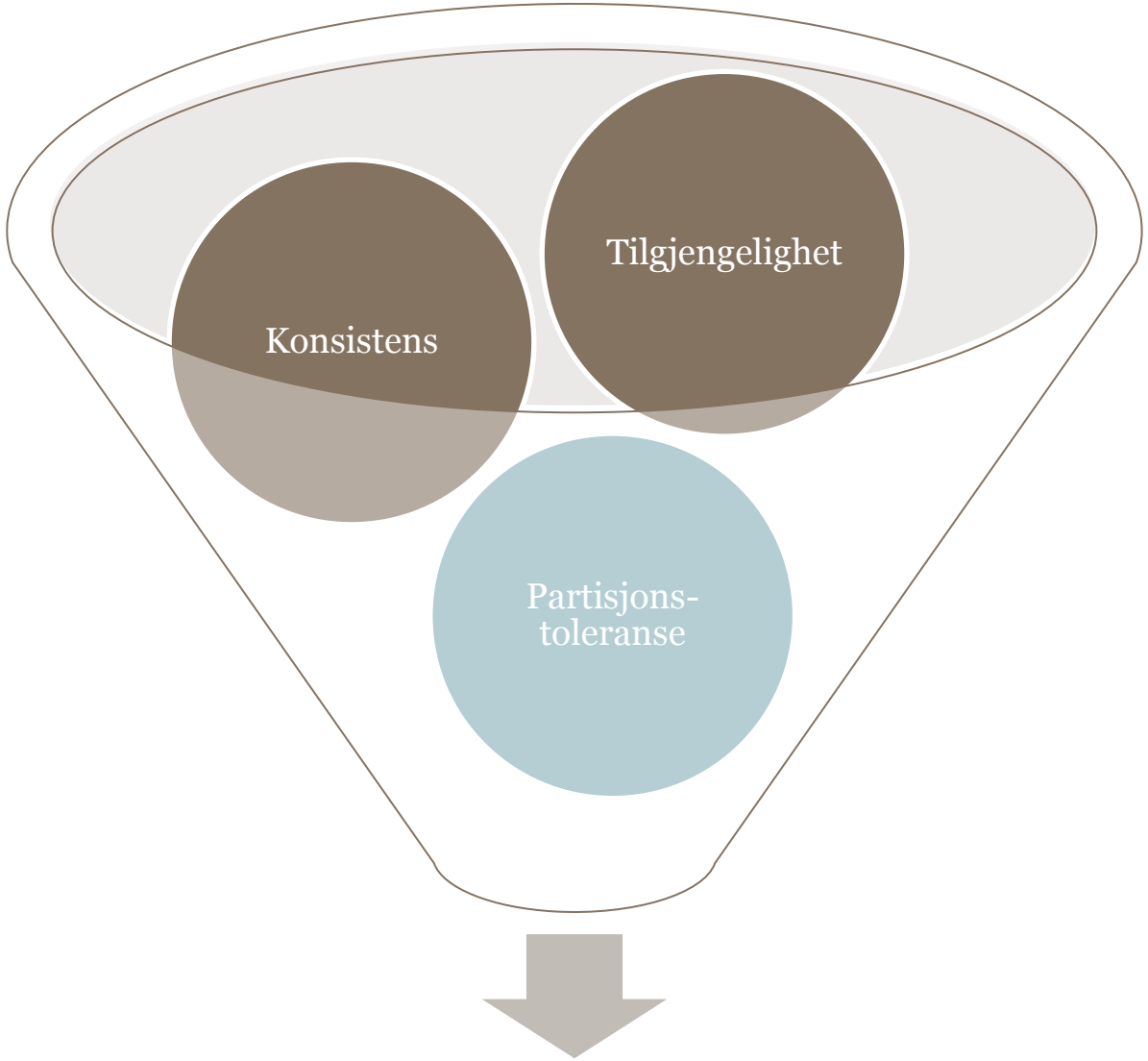
Endringsvennlighet

3

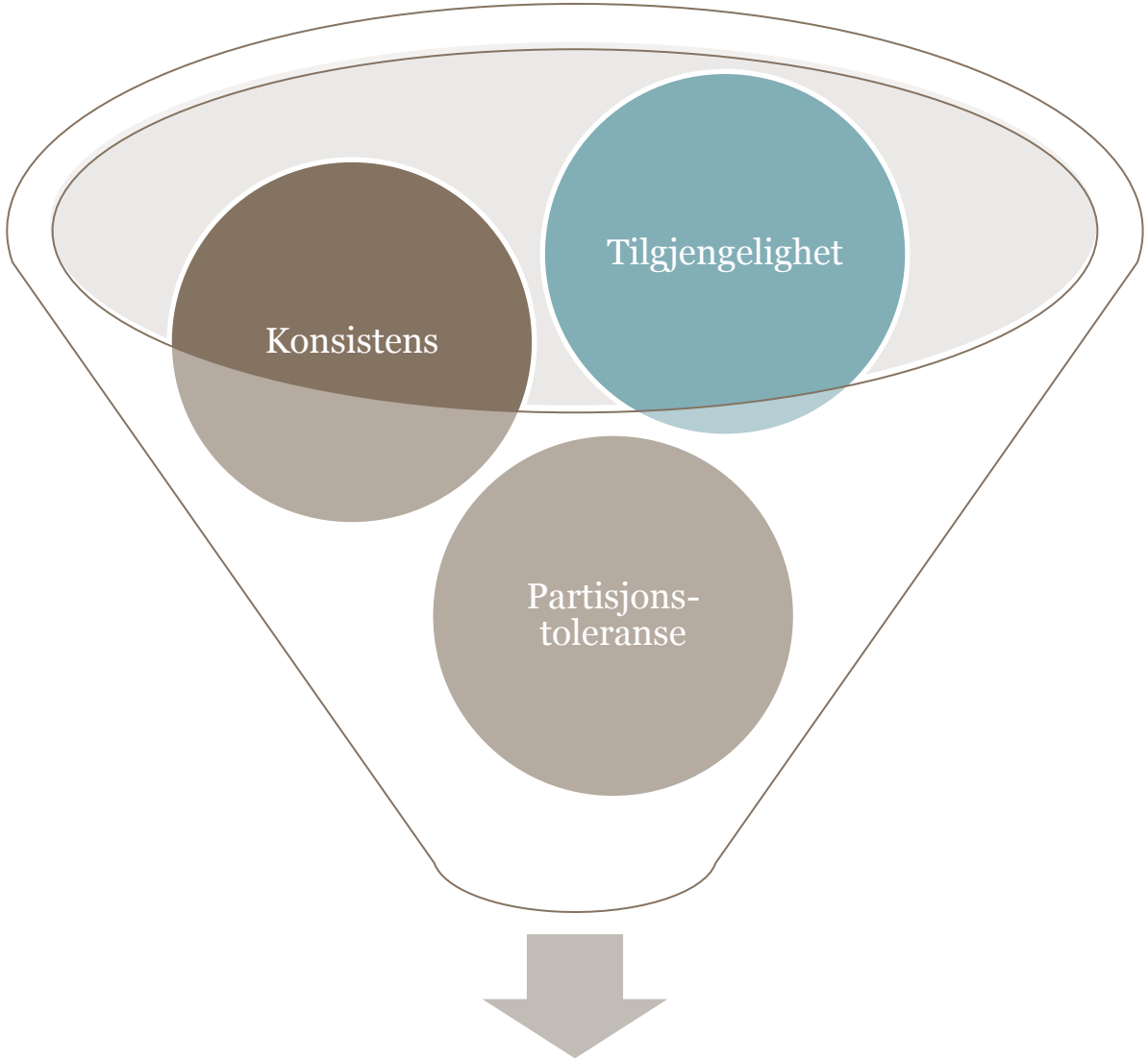
CAP conjecture

When designing distributed web services, there are three properties that are commonly desired: consistency, availability, and partition tolerance. It is impossible to achieve all three.

Eric Brewer, Inktomi/Berkeley

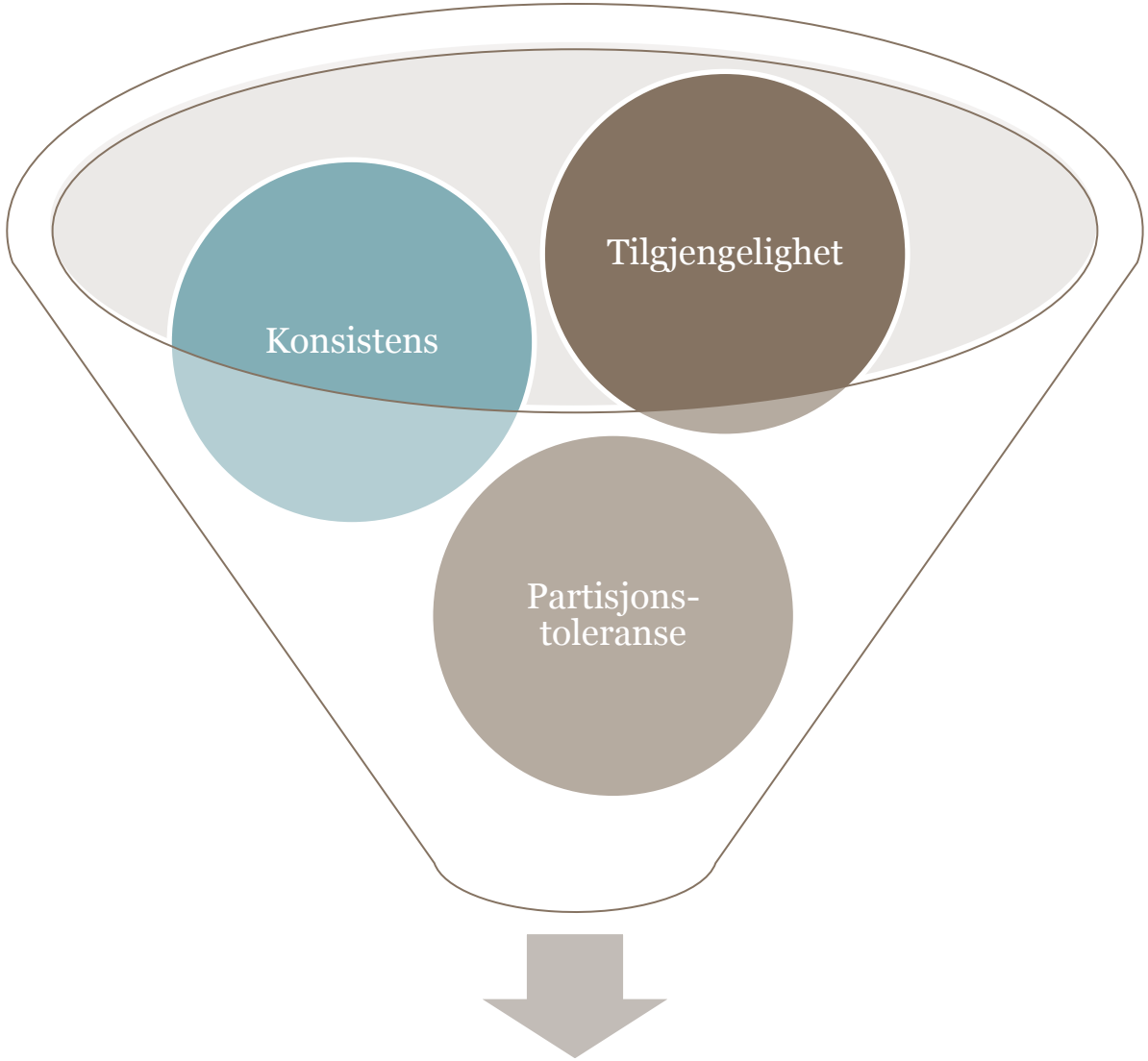


Selvstendige applikasjoner
Lokale klyngeløsninger



Distribuerte databaser

Distribuert låsing



Webcaching

DNS

4

EAV
Entity-Attribute-Value model

SimpleDB

KundeID	Fornavn	Etternavn
1	Trond Arve	Wasskog
2	Ola	Nordmann

Domain: Kunde

KundeID	Fornavn	Etternavn
1	Trond Arve	Wasskog
2	Ola	Nordmann

Item

KundeID	Fornavn	Etternavn
1	Trond Arve	Wasskog
2	Ola	Nordmann

Key-Value Attributtes

KundeID	Fornavn	Etternavn
1	Trond Arve	Wasskog
2	Ola	Nordmann

KundeID	Fornavn	Etternavn
1	Trond Arve	Wasskog
2	Ola	Nordmann

PUT (Item, 1),(Fornavn, Trond Arve), (Etternavn, Wasskog)

PUT (Item, 2),(Fornavn, Ola), (Etternavn, Nordmann)

KundeID	Fornavn	Etternavn	Alder
1	Trond Arve	Wasskog	37
2	Ola	Nordmann	

PUT (Item, 1),(Alder, 37)

KundeID	Fornavn	Etternavn	Alder
1	Trond Arve	Wasskog	37
2	Ola	Nordmann	

SELECT * FROM *Kunde* WHERE *Etternavn* = ‘Wasskog’

REST

SOAP

Java
C#
Perl
PHP
VB.NET

Kun strenger

Automatisk indeksering

Redundans

Eventual Consistency

5

Google Appengine Datastore

Rike datatyper

Entitetgrupper

Relasjoner

6

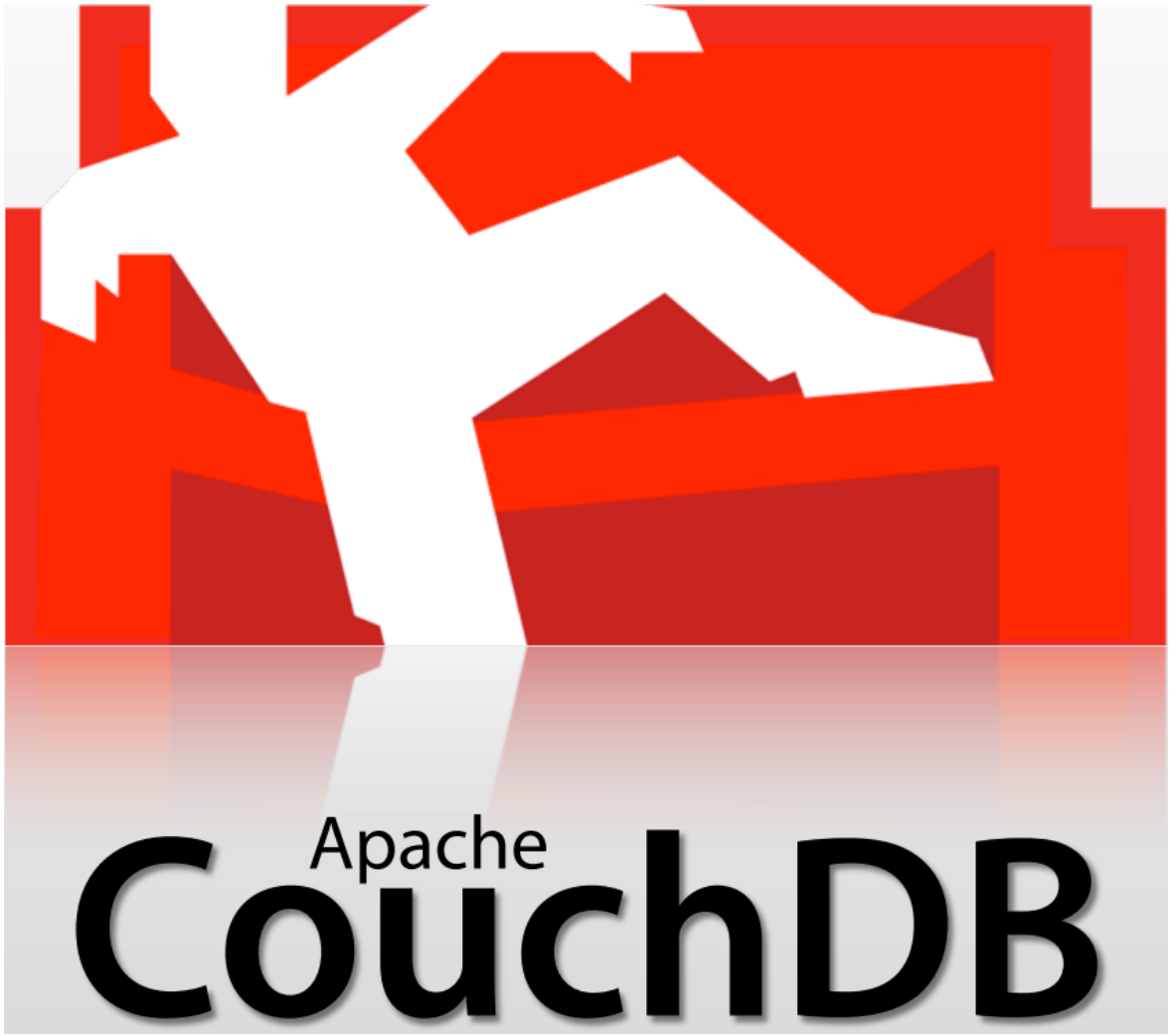
Dokumentdatabaser

Subject: I like CouchDB
Author: Trond Arve
PostedDate: 09/09/2009
Tags: [rdbms, document, key/value]
Body: I decided today that I don't like RDBMS

Views

Versjonering

Replikering
(Peer to Peer)


Apache
CouchDB

RESTful JSON API

Javascript MapReduce views

BigTable	**SimpleDB**	**CouchDB**
Hbase	**Voldemort**	**MongoDB**
Hypertable	**PNUTS**	**ThruDB**
Cassandra	**Redis**	**Jackrabbit**
Vertica	**Tokyo**	**Notes**

7

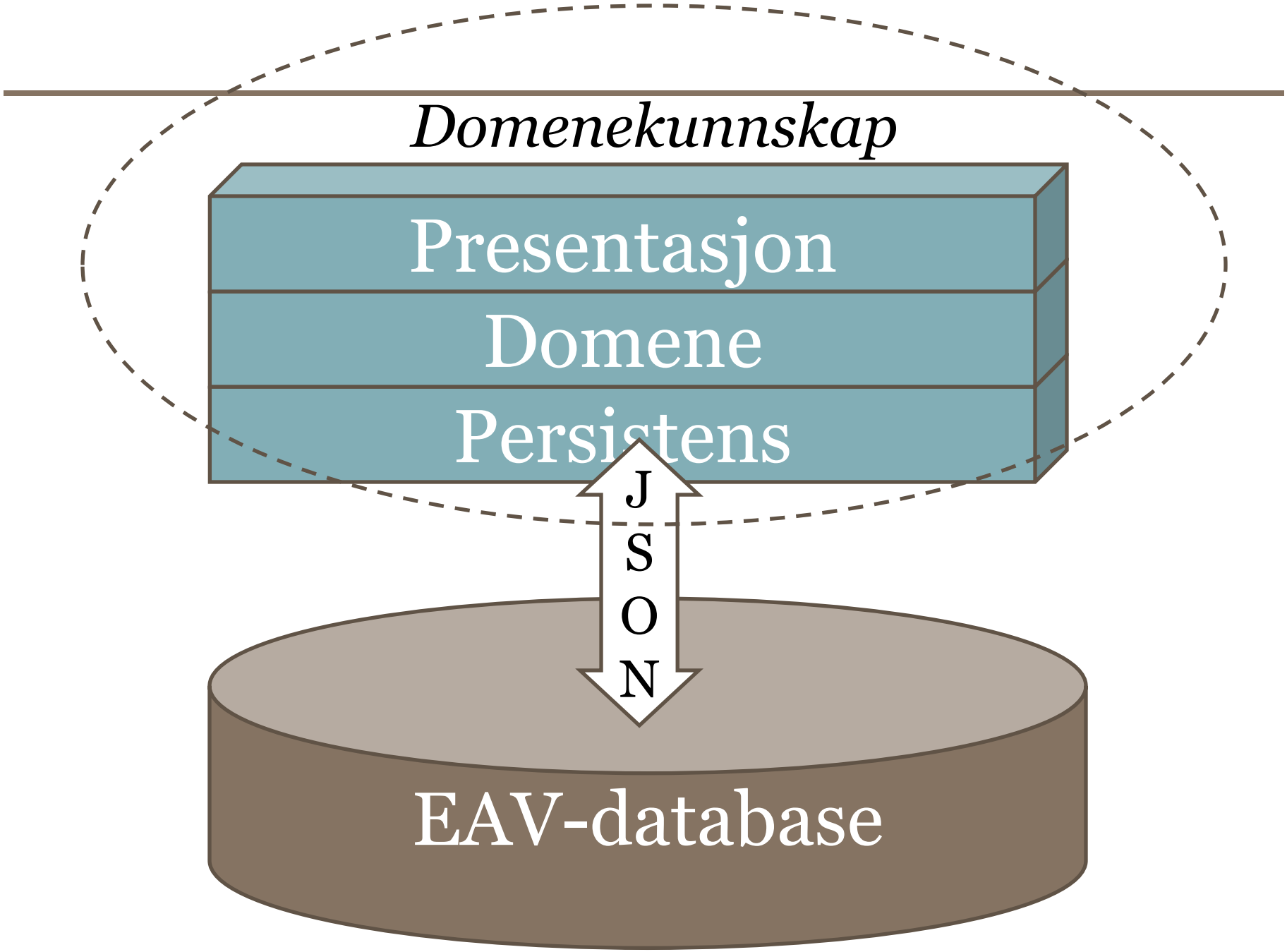
Cloud Computing

Web 2.0

Pris

Skalerbarhet

Robusthet
Redundans
Stabilitet
Tilgjengelighet


Domenekunnskap
Presentasjon
Domene
Persistens
J
S
O
N
EAV-database

8

Skjema

Joins

Spørringer

Datatyper

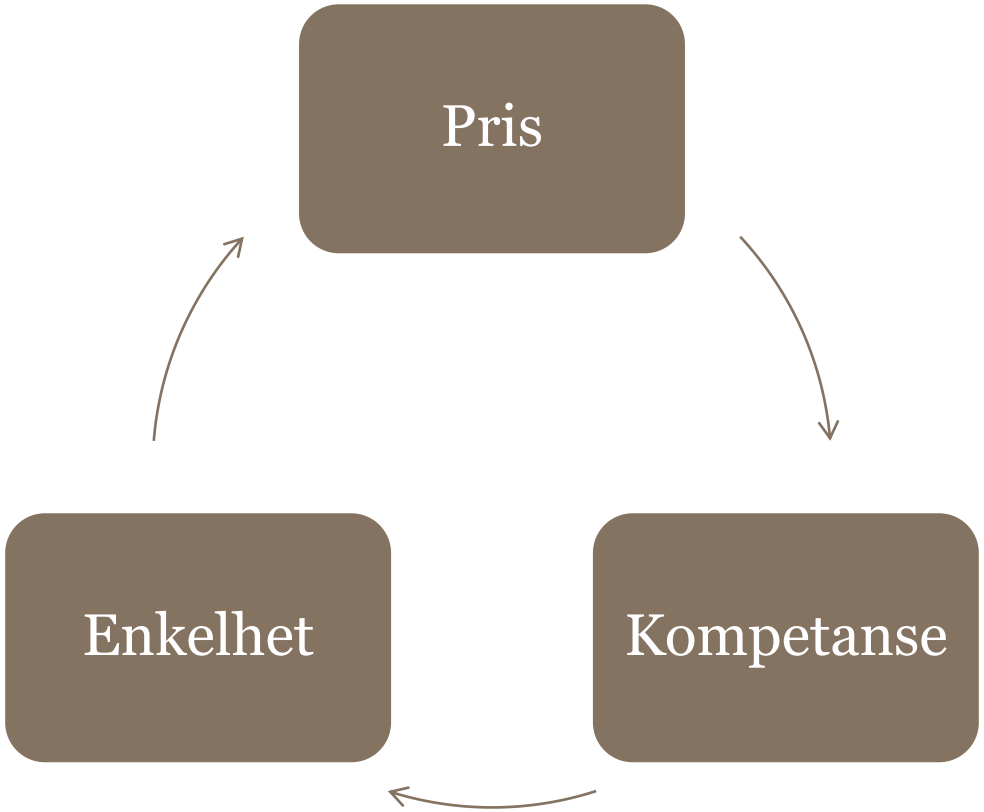
Referanseintegritet

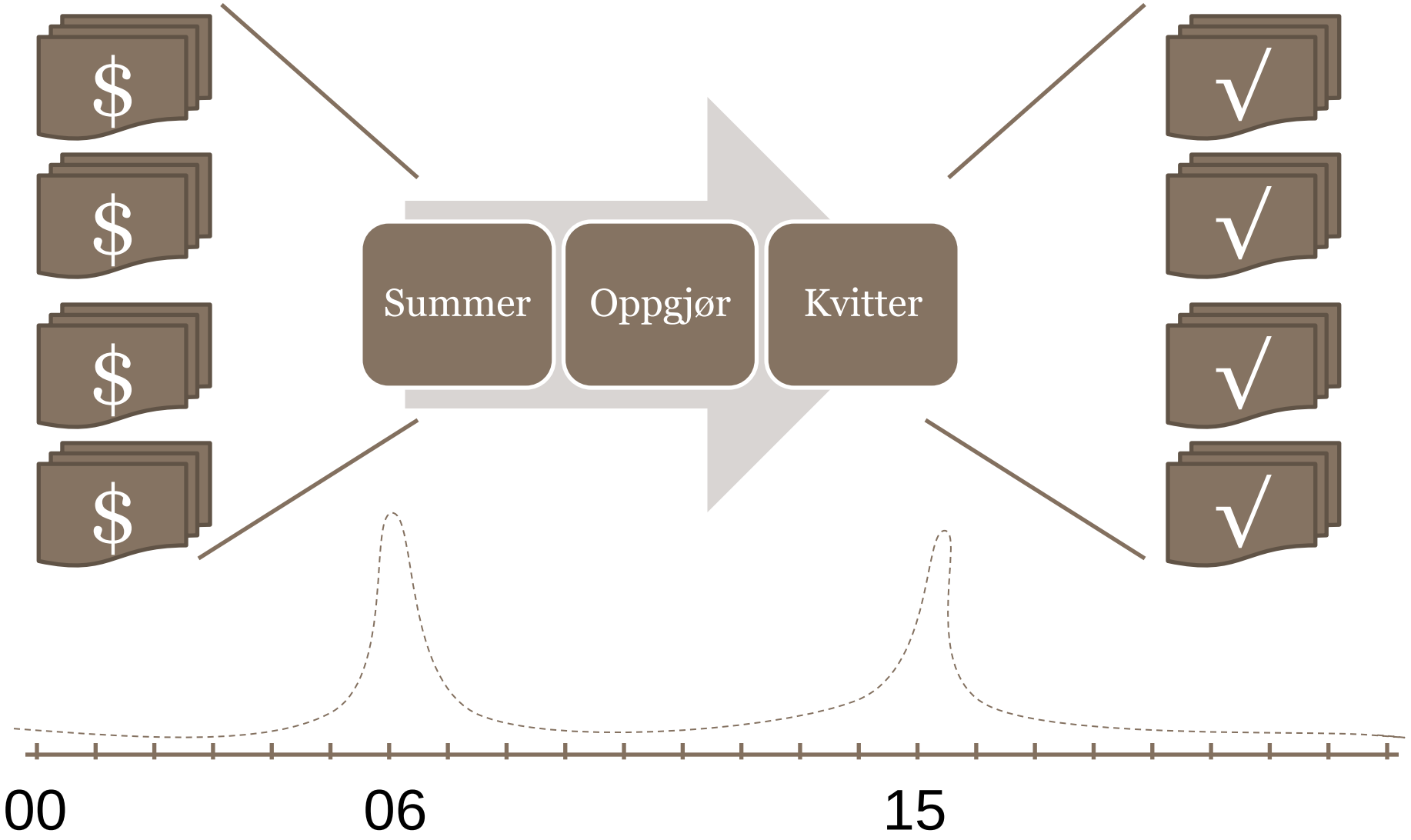
Konsistens

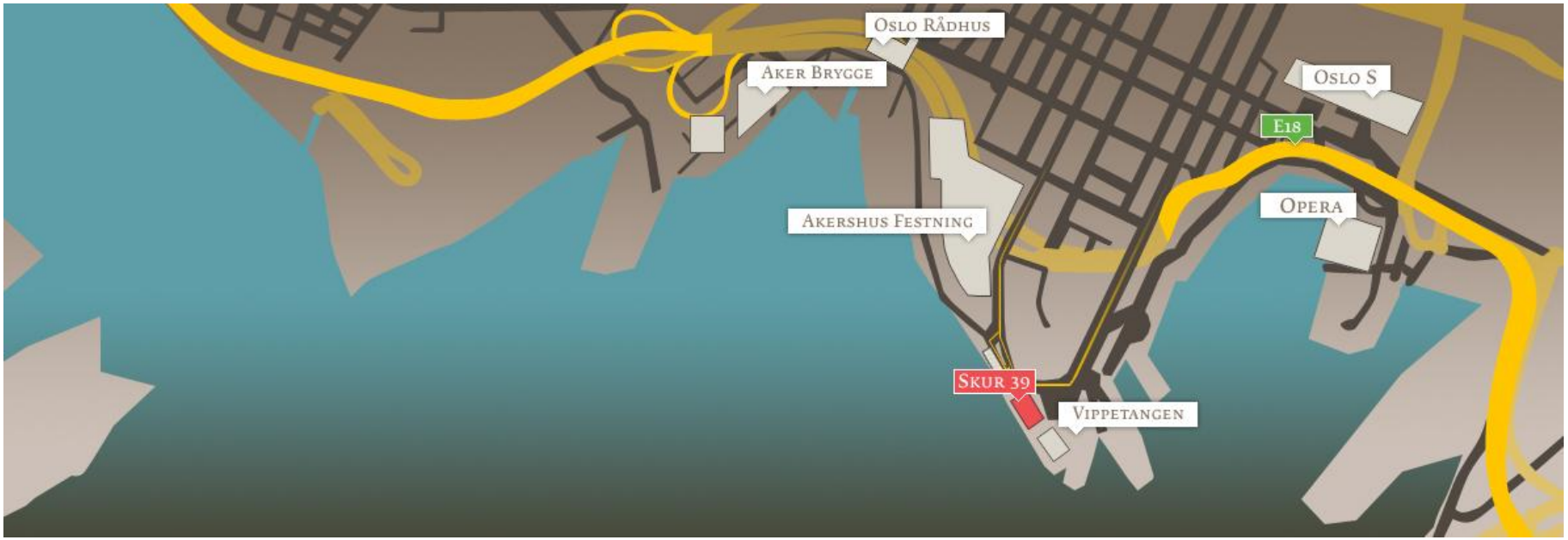
9

På tide å kaste ut relasjonsdatabasen?

Enkel
Fleksibel
Skalerbar
Rask
Pålitelig
Rimelig


Pris
Kompetanse
Enkelhet


Summer
Oppgjør
Kvitter
00
06
15



Takk for at du hørte på!

Spørmål?
trond.arve.wasskog@bekk.no

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