Complexity and Characteristics of Enterprise Applications

Trend & Concepts in the Software Industry - Lecture
June 2011

EA requirements are diverse and complex

SAP for Consumer Products:

customers with multiple million sales order line items per day

SAP Human Capital Management:

compute the payroll for 500.000 employees within a few hours

SAP Enterprise Resource Planning:

no maintenance downtime allowed for, e.g. the Apple iTunes Store

SAP Netweaver Portal:

handle 300.000 users in a web portal (40.000 concurrently active)

SAP Supply Chain Management:

customers with over 3 million different product configurations

SAP Business Intelligence:

customer with a live database of 40 terabytes in size

EA have different interaction paradigms

process-centric

user-centric
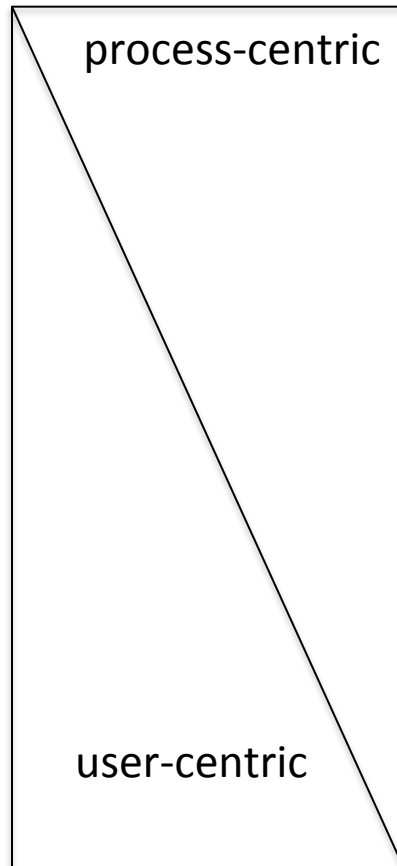
Automated, machine-to-machine interaction

Repeated, batch-wise processing of data sets

Data entry (repetitive, transactional, isolated)

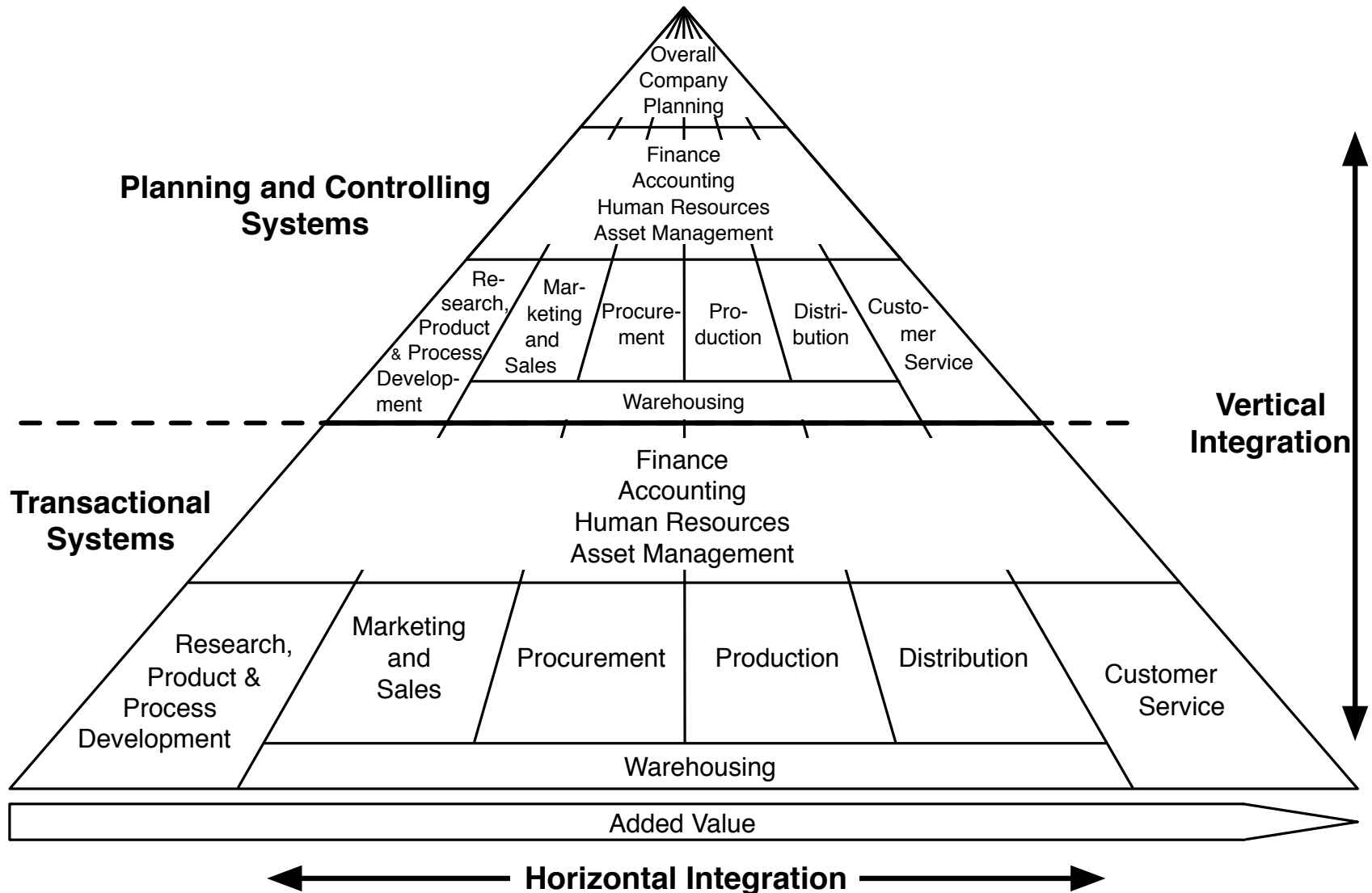Transactional work with human workflow

Collaborative workflow amongst people
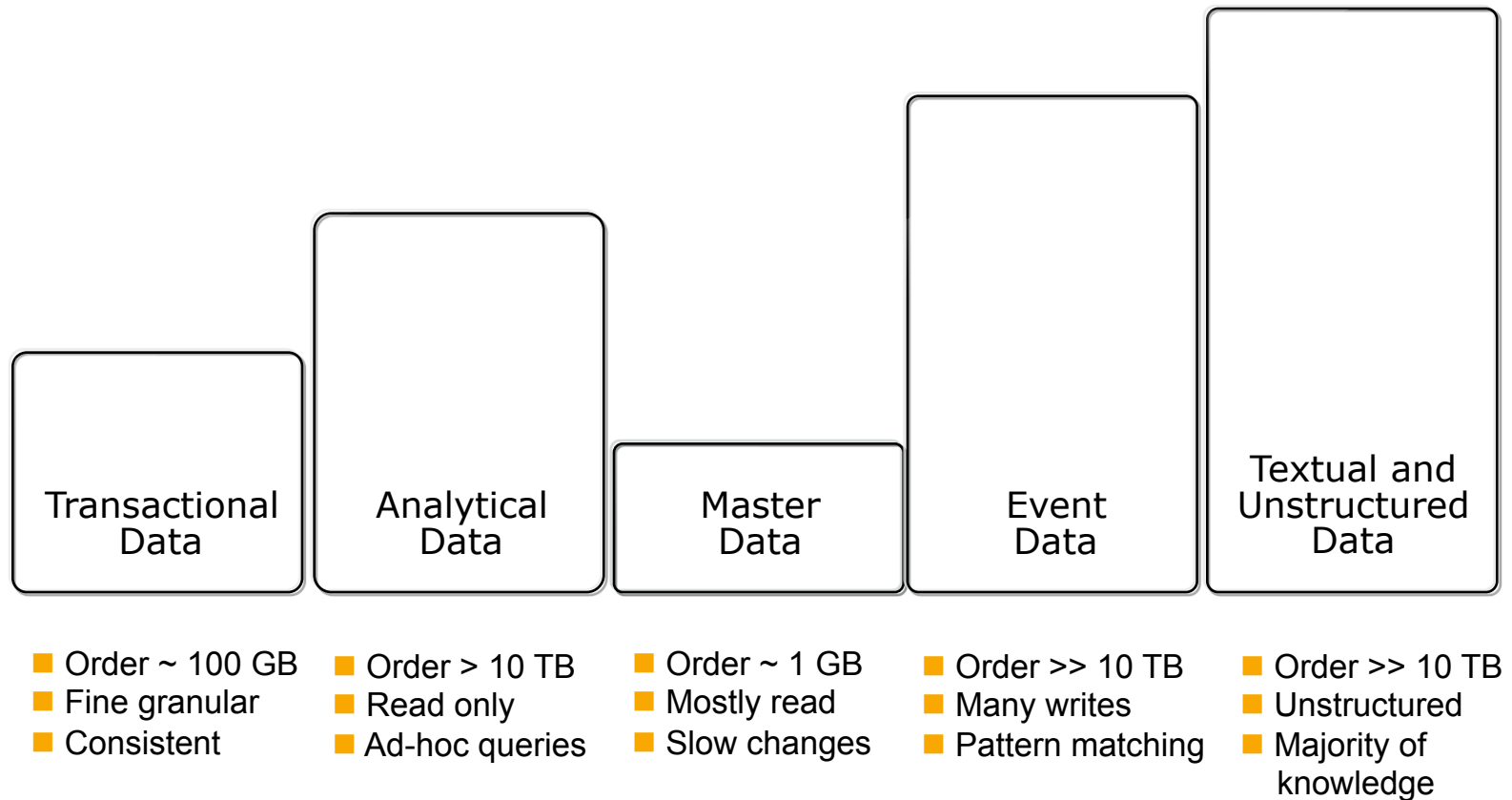
Unstructured, ad-hoc collaboration

Planning and Controlling Systems

Overall Company Planning

Finance
Accounting
Human Resources
Asset Management

Research, Product & Process Development | Marketing and Sales | Procurement | Production | Distribution | Customer Service

Warehousing

Transactional Systems

Finance
Accounting
Human Resources
Asset Management

Research, Product & Process Development | Marketing and Sales | Procurement | Production | Distribution | Customer Service

Warehousing

Added Value

Horizontal Integration

Vertical Integration

EA process data that is not alike

Transactional Data	Analytical Data	Master Data	Event Data	Textual and Unstructured Data
■ Order ~ 100 GB ■ Fine granular ■ Consistent	■ Order > 10 TB ■ Read only ■ Ad-hoc queries	■ Order ~ 1 GB ■ Mostly read ■ Slow changes	■ Order >> 10 TB ■ Many writes ■ Pattern matching	■ Order >> 10 TB ■ Unstructured ■ Majority of knowledge

EA comprise multiple layers
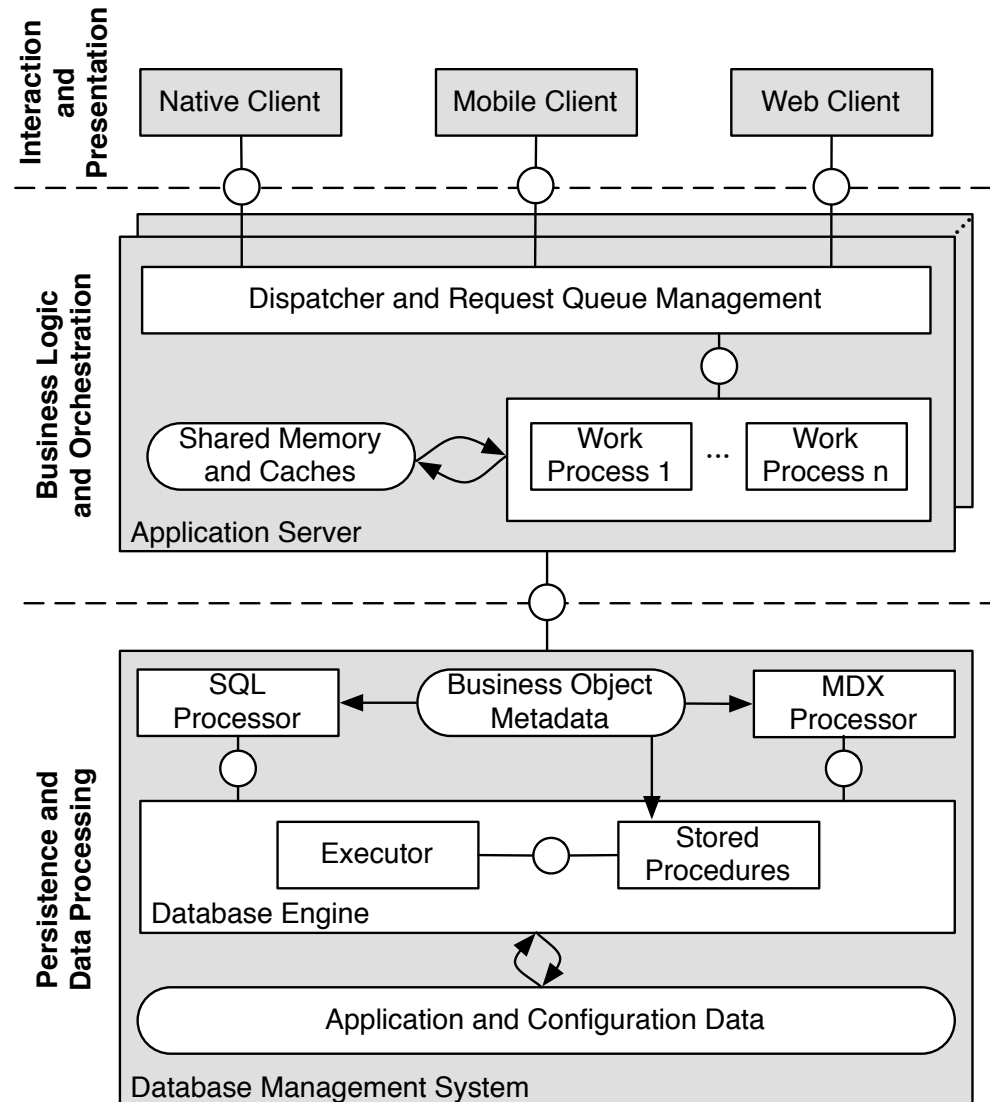
So What?

Facebook has more than 100 terabytes of data…

So What?

Facebook has more than 150 terabytes of new data per day

Reflect on what you've heard so far ! Does Facebook ...

… have to deal with different customer requirements in various industries in different countries ?

… have to provide an infrastructure to support individual customizing ?

… have to be afraid of being sued when they have a downtime ?

… have to consider different user interaction paradigms ?

… have the need for consistency ?

… send you an invoice ?