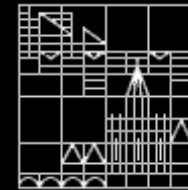


**Lehrstühle: Prof. Dr. Reiterer/ Prof. Dr. Scholl**  
**Betreuung: S. Mansmann (wiss. Ang.)**  
**Seminar: Business Intelligence**

**Universität Konstanz**

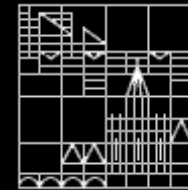


# Emerging Trends in Business Analytics and Business Intelligence

**Sonja Öttl**  
**Master IE, 2. Semester**

# Business Intelligence Overview

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- Definitions
- Situation
- Evolution
- Actors
- Pipelines
- Trends
- Hype Cycles

## Business Intelligence

### Definition of Business Intelligence (BI)

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„BI is neither a product nor a system. It is an architecture and a collection of integrated operational as well as decision-support applications and databases that provide the business community easy access to business data.“

[Moss:2003]

„BI is all about how to capture, access, understand, analyse and turn one of the most valuable assets of an enterprise – raw data – into actionable information in order to improve business performance“

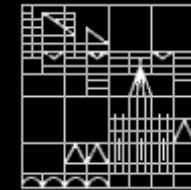
[Azvine:2006]

## Business Intelligence Definition of Business Analytics

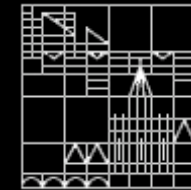
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Business Analytics is the analytical process of reasoning, forecasting and measuring business actions and processes based on extracted patterns in collected business data and business plans.



- Approximately 5 Petabyte data per year  
[Lyman/ Varian:2003]
- Data growth rate in companies between 30-70% per year  
[EMC:2006]
- Knowledge workers spend about 15-35% of their working time to find information  
[Feldman:2004]
- Estimated 20% of data in companies is used to extract value  
[Dragoon:2003]



„from custom, single-purpose, inhouse-application to prepackaged, multipurpose products“ [, which] „integrate and interoperate with many heterogenous data sources“

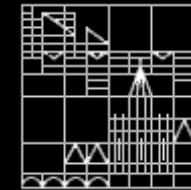
[Ortiz:2002]

„Business value is measured in terms of progress toward bridging the gap between the needs of the business user and the accessibility and usability of analytic tools.“

[Kohavi et.al.:2002]

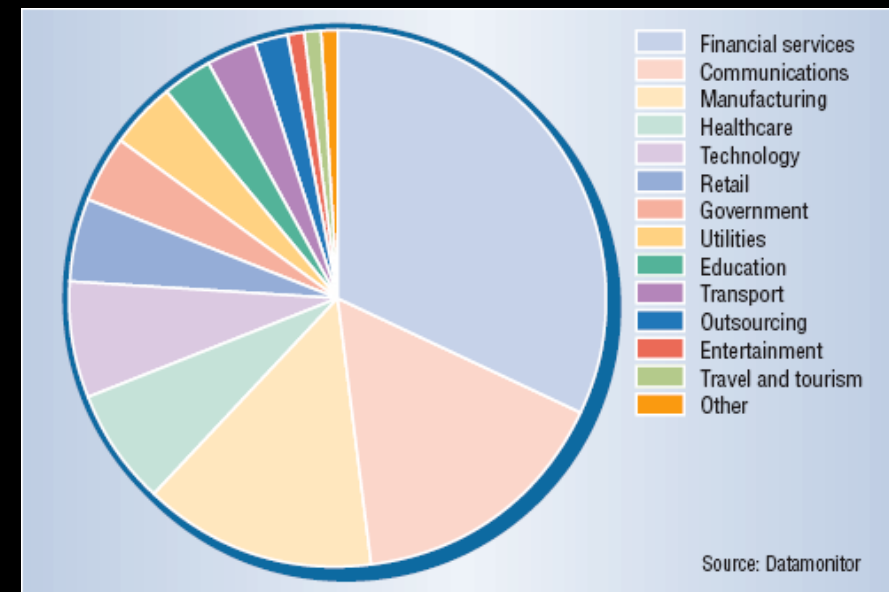
## Business Intelligence Actors: Business Users

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### Business Users:

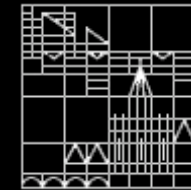
- produce data, access data
- experts in their major field, but normally no experts in analytics and statistics



[Ortiz:2002]

## Business Intelligence Actors: Vendors

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### Vendors:

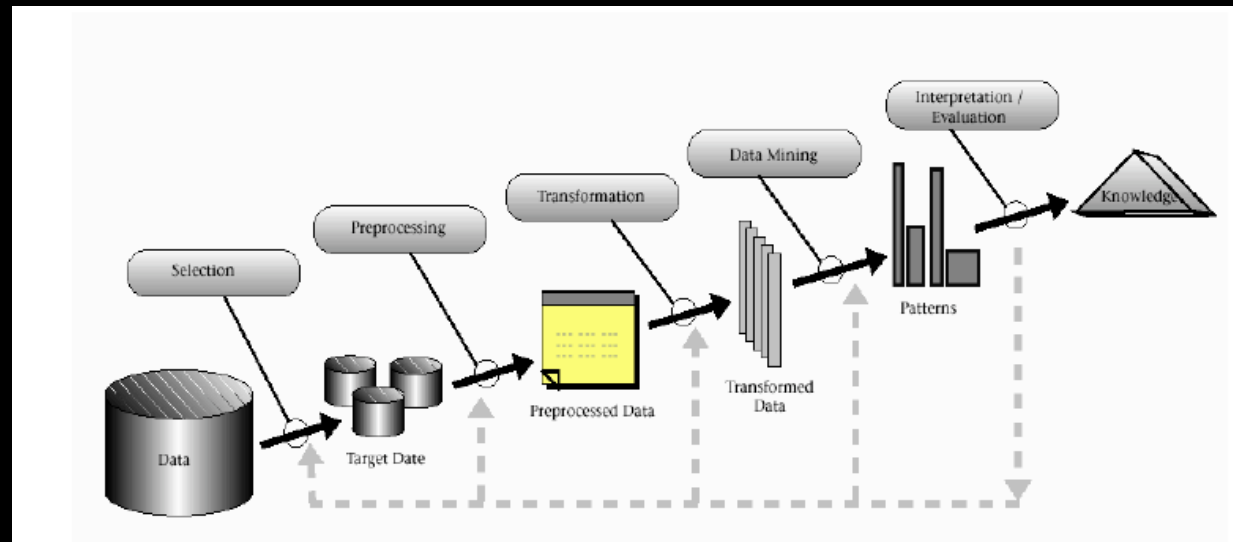
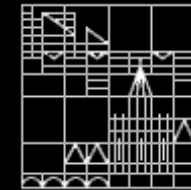
- need to find new ways to satisfy business users and optimize their products
- design to cost

Gartner Research Magic Quadrant  
for BI platforms, 1Q06–  
no publication allowed!

[Schlegel:2005] Printed with permission of Gartner Research – no publication allowed!

# Business Intelligence KDD-Pipeline

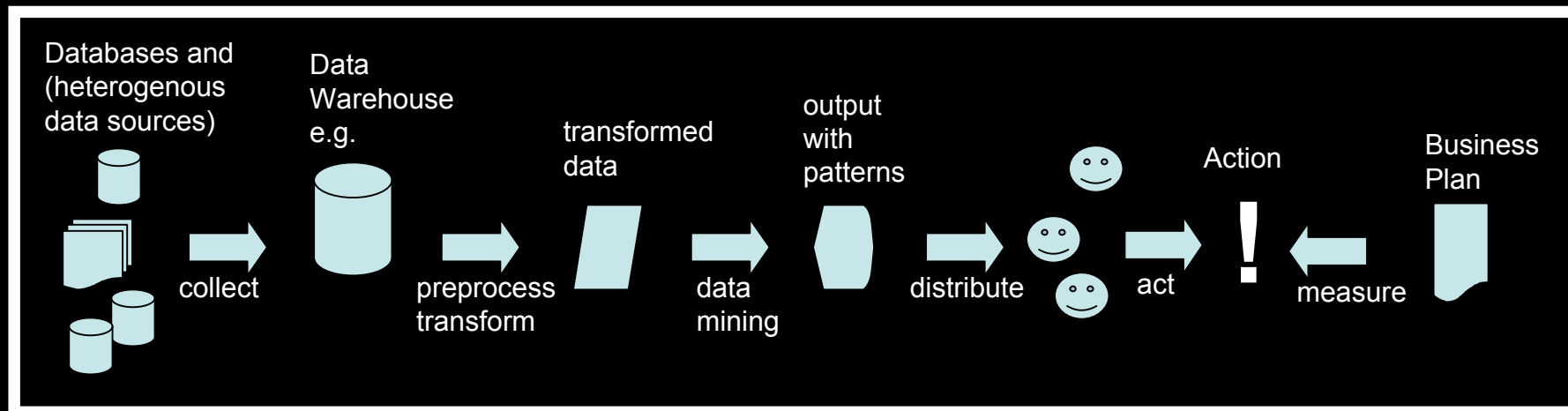
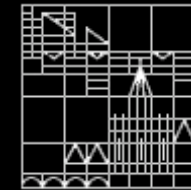
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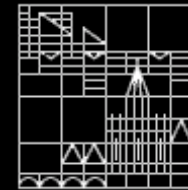


Keim:2006 (Foliensatz Infovis im SS 2006)

# Business Intelligence Pipeline-Interpretation for BI and BA

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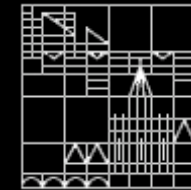


- Reduction of cycle time and analytic time:  
*„high performance analytics“*
- Data collection, transformation and integration of data from multiple sources, even external data sources
- Boost and verticalization of distributing analysis results as well as expertise
- Realistic adjustment of business goals and metrics

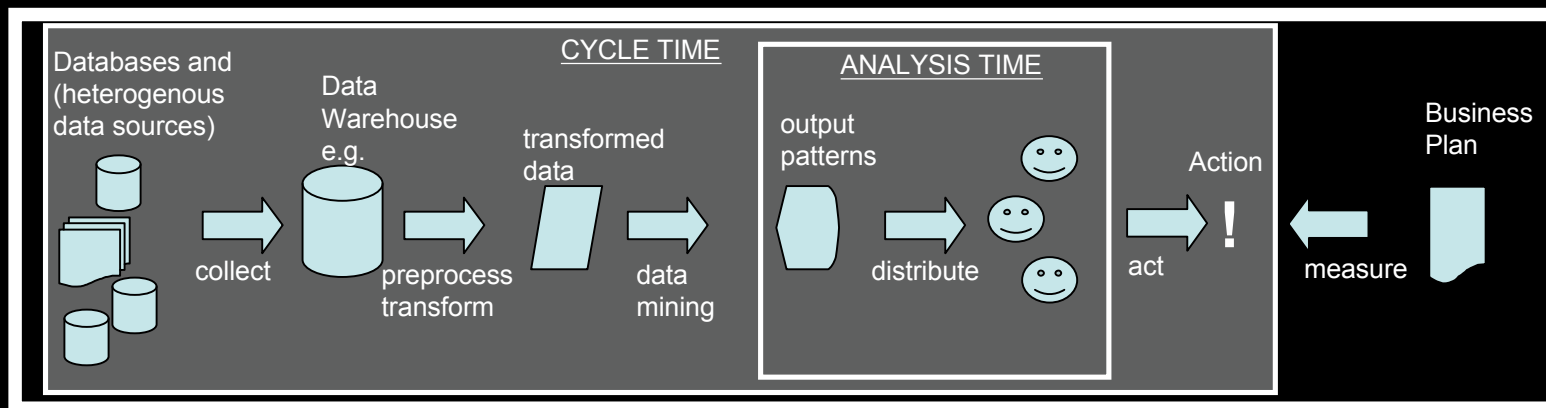
[Kohavi et.al.:2002]

## Business Intelligence Cycle and Analysis Time

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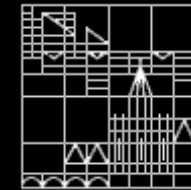


- Reduce Cycle time – until real time
- From (extract, transform, load) ETL-Approach to OLAP and „high performance analytics“ to ?
- E.g. Realtime Decisioning, In-Memory Analytics on 64Bit-Hardware, Enterprisewide Realtime CPM, BAM/ Realtime-BI, Advanced Analytics



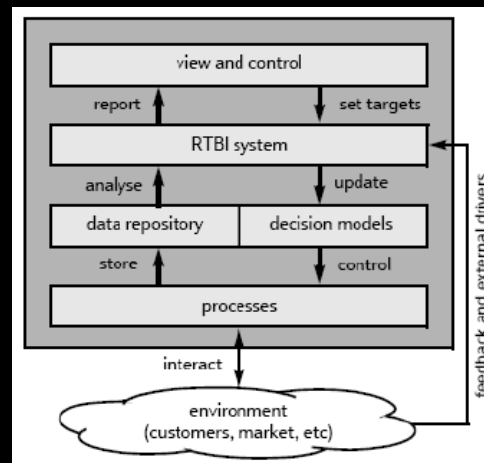
# Business Intelligence

## Excursus: Realtime BI (RTBI)

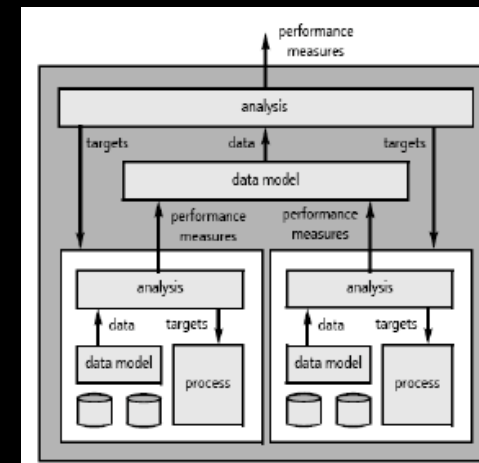


- „RTBI provides the same functionalities as the traditional business intelligence, but operates on data that is extracted from operational data sources with zero latency, and provides means to propagate actions back into business process in realtime“
- „seamless transition from data into information into action“
- RTBI needs automatic processes and intelligent systems (adding semantic web techniques and advanced analytics)

[Azvine:2006]



Embedded RTBI [Azvine:2006]

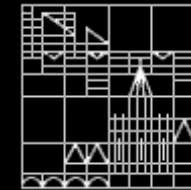


A recursively embeddable RTBI structure [Azvine:2006]

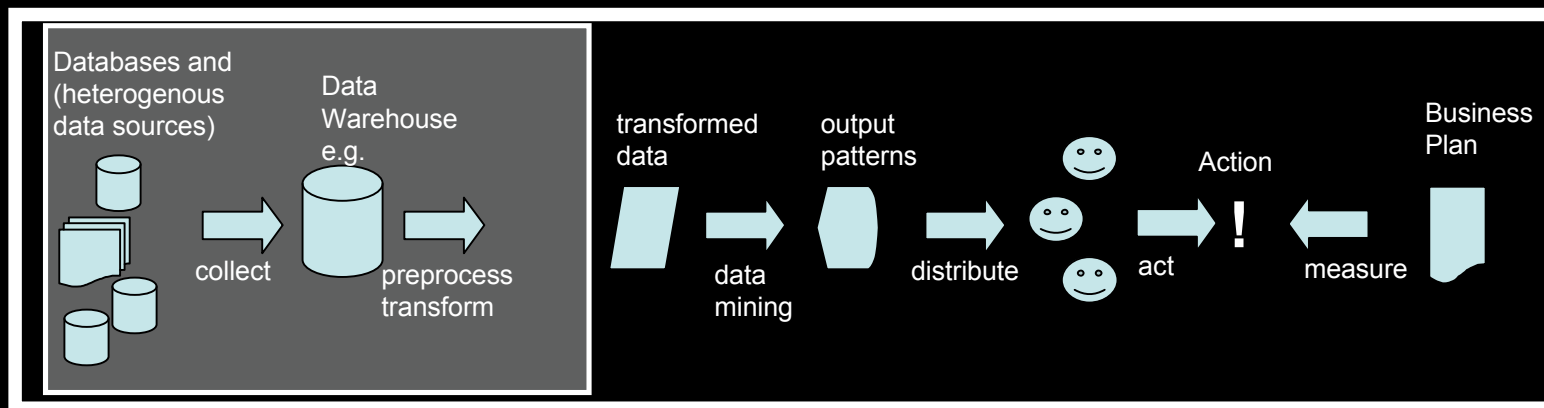
# Business Intelligence

## Data Collection and Transformation

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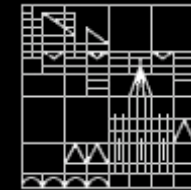


- integrating data from multiple sources, even external data sources such as webpages, while adding unique identifiers
- embedding analytical capabilities in back-end customer-relationship management, supply-chain management and ERP systems or offer interfaces for integration
- Integrating unstructured data
- e.g. Textmining, Webanalytics, Data Quality, Embedded Analytics



# Business Intelligence Distributing Analysis Results

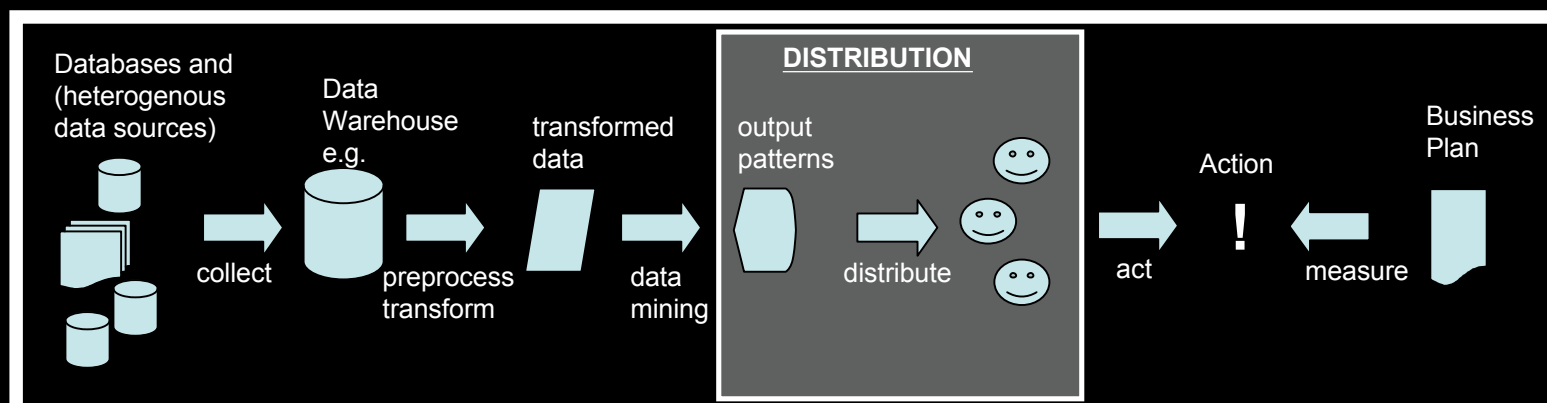
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„BI for the masses“

[Computerweekly:2002], [Computerworld:2004], [Azvine:2006]

- Improve interfaces and boost intuitive visualizations
- BI embedded in used applications
- Task relevant output
- (Mobile Solutions)
- e.g. B2B BI extranets, Collaborative BI, Visual BI Development Tools, Advanced Visualization, Enterprise Information Management, Web Analytics, Dashboards/ Scorecards, Excel as BI/ CPM frontend



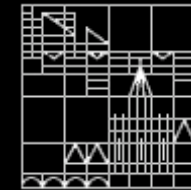
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# Business Intelligence

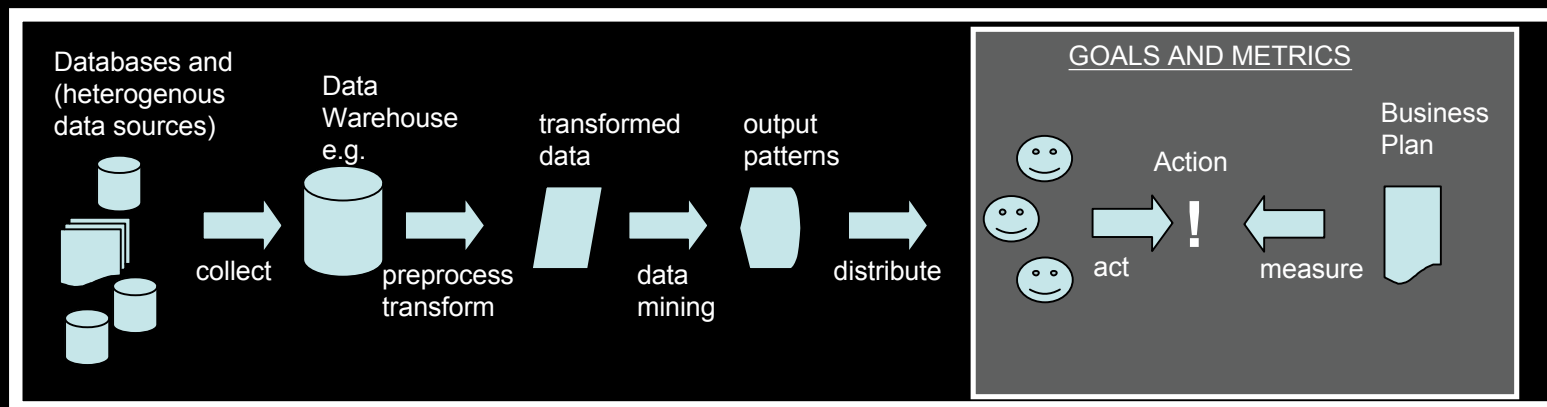
## Business goals and metrics



Different views on Metrics and Goals from employees' side and company's side:

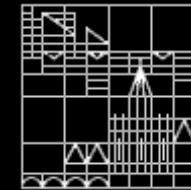
- „individuals are satisfied with their access to knowledge of others in companies, while from but if they take an organisational perspective existing in-house knowledge is underexploited“
- business plans and goals set often unrealistic expectations on data mining or are not know by the employees
- metrics are hard to identify and affect the data collection and transformation process (reciprocal relationship)
- E.g. planning, budgeting and forecasting

[Swaak:2004]



# Business Intelligence Hype Cycle 2005 (Gartner Research)

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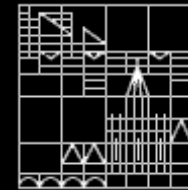


Gartner Research Hype Cycle  
for BI and Data Warehouses 2005—  
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# Business Intelligence Hype Cycle 2006 (Gartner Research)

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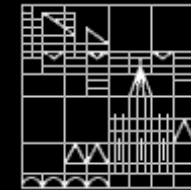


Gartner Research Hype Cycle for BI and CPM 2006—  
no publication allowed!

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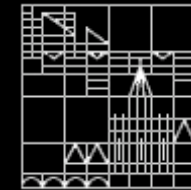
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**Thank you very much for your attention.**

**Any further questions?**