Energy market and CO2-footprint-driven paper production

UNIVERSITY OF MANNHEIM
Data and Web Science Group

Team Project HWS 2024 together with ABB

FOREST Project

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FOREST
FRAMEWORK FOR RESOURCE, ENERGY, SUSTAINABILITY TREATMENT IN PAPER PRODUCTION

ABB, sappi, VOITH, PTS, SCHOELLERSHAMMER, MODELL FABRIK PAPIER, RWTH AACHEN UNIVERSITY, TECHNISCHE UNIVERSITÄT DRESDEN, wepa, FH AACHEN UNIVERSITY OF APPLIED SCIENCES, Bundesministerium für Wirtschaft und Klimaschutz

www.modellfabrikpapier.de

Tasks

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1. Market Research
   - Business Value Addition through CO2 Footprint Information (on paper products)
   - Analyze consumer behavior, market trends, and competitor strategies
   - Evaluate
     - Potential premium pricing for products advertising lower CO2 footprints
     - Market trends and acceptance on digital product pass, especially wrt. sustainability information

Tasks

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2. Development of an Analytical Dashboard

- Develop a dashboard that display real-time data
  - Energy pricing, CO2 emissions, and paper production metrics
- Provide tools to optimize the production processes
  - Based on energy costs and carbon footprint data
- Utilize data visualization techniques to present this complex data

Tasks

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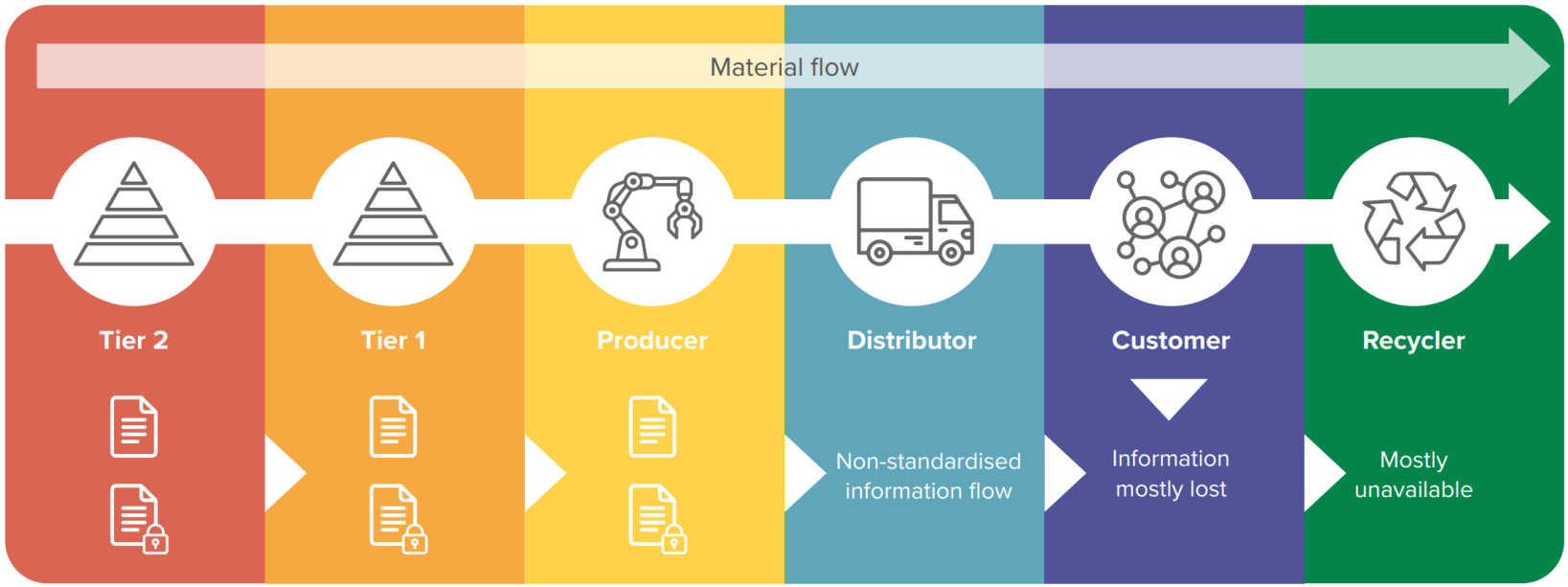
3. Connect to the **Digital Product Pass**

- EU regulations aims to improve EU products' circularity, energy performance, etc
  - Includes a Digital Product Passport, a data carrier that provides information about products' environmental sustainability, carbon footprint, etc
  - Evaluate different implementations of this Digital Product Passport
- Investigate the interplay between the Digital Product Passport, the Dashboard, and users



Supervisors

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Organisational information

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- The project runs for one semester (six months)
- 3-4 students

- Required skills
  - Attended (or attending) the following courses:
    - Data Mining (or comparable ML course)
  - Some experience with frameworks for dashboards is helpful
    - Javascript: dc.js / d3.js / chart.js / Apexcharts (React, Vue JS)
    - Grafana

Questions?

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