GreenDeltaTC
sustainability consulting + software

e-DEA as a Practical EcoDesign Tool

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GreenDeltaTC / Berlin, evea / Nantes
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Outline

1. Ecodesign (-problems)
2. E-DEA as a new webtool for EcoDesign, differences
3. The implementation for BIC
4. Conclusions, and discussion

1. EcoDesign

EcoDesign, 1

- Most of the environmental impacts of a product are determined in the design stage
  - Choice of material: Product weight, durability, required maintenance, ...
  - Recycling options
  - Use patterns

    → DfE, DfX, ...

EcoDesign, 2

- Simple assessment rules and methods may be misleading
  - Recycled material with higher environmental impact
  - Wood in railways, underfloor construction: much higher impacts than similar construction from Aluminum (Kunst, Ciroth, Gerner 2001)
  - ...

(in the end, main reason for the development of the LCA method!)

EcoDesign, 3

- Product designers are not (and should not necessarily become) LCA experts
- Design process very different from LCA modelling
  - Need for quick decisions and quick results
  - ‘playful’ (ideally)
  - Visual

→ Does not fit to existing LCA software, but software is required to allow more sophisticated modelling.

2. E-DEA for EcoDesign

e-DEA

- Idea 1: Use "full power LCA"
  - full LCA software (modelling and calculation)
  - Large databases (generic, company-specific, up-to-date)

- Idea 2 : Prepare and guide
  - "chunks" of LCA models, modelled by LCA expert, following consistent methods, provided in LCA software
  - Default LCA methods provided in LCA software (LCIA, allocation, categories, ...)

- Idea 3 : Connect "Appealing" web-tool to the LCA software and database, and allows flexible modelling

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e-DEA, Structure

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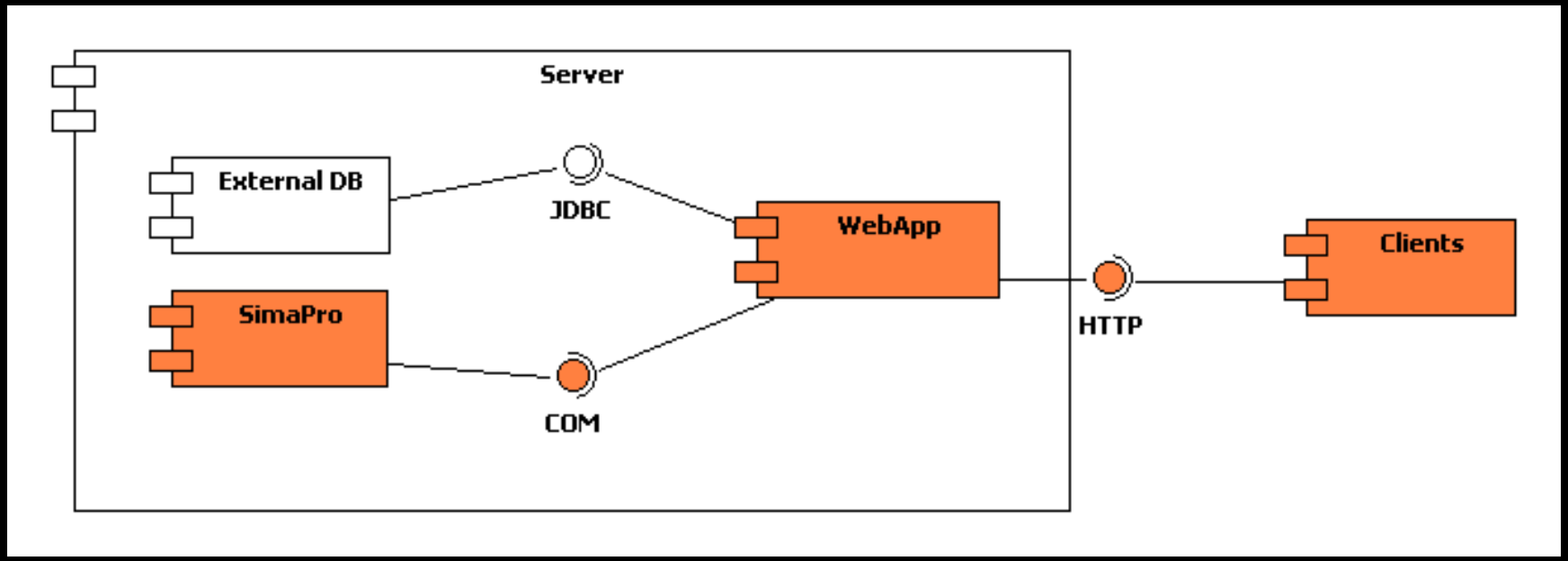
e-DEA, Structure 2



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e-DEA, Access to one central server over LAN or WAN

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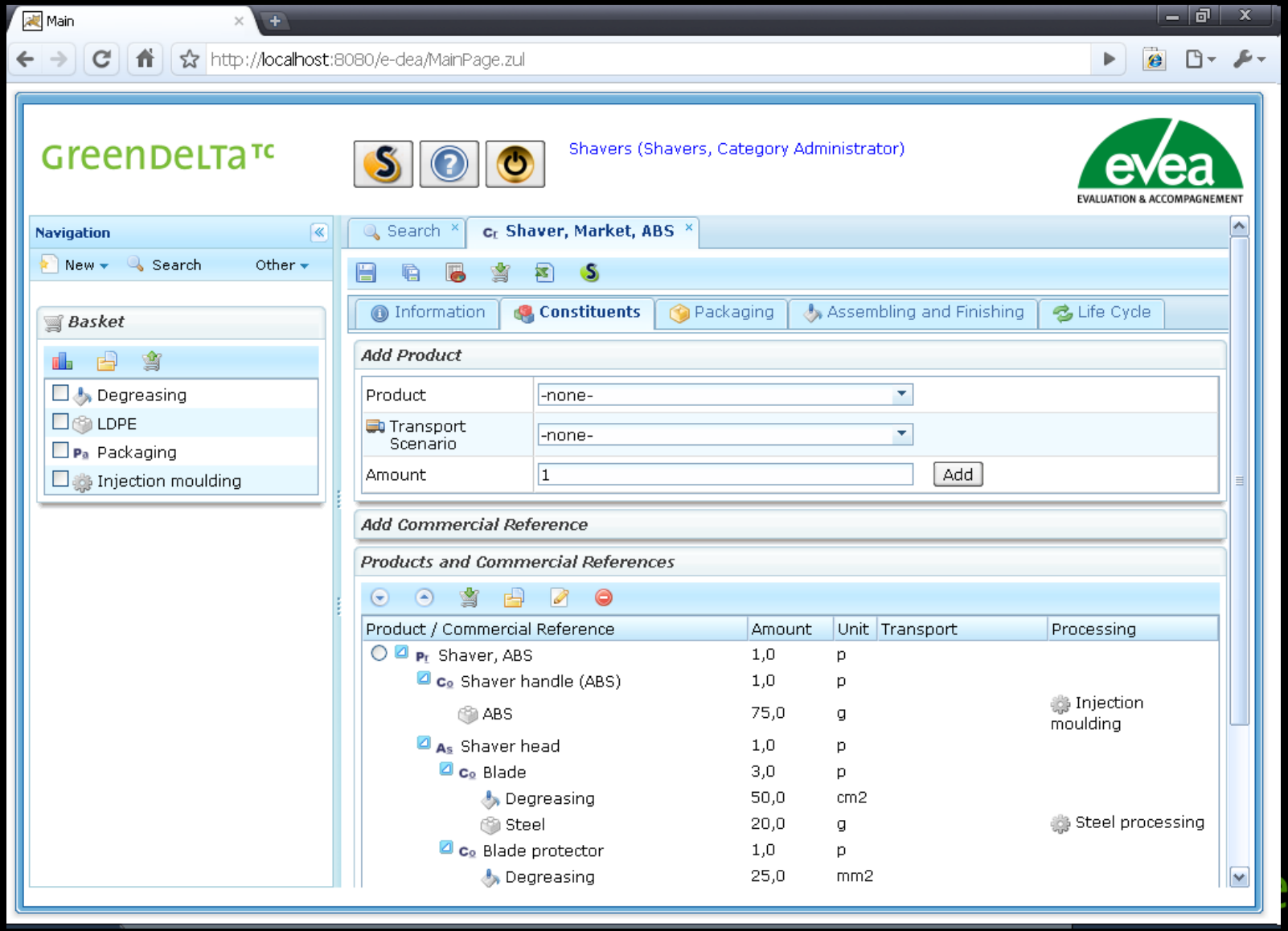
3. Implementation for BIC

e-DEA implementation for BIC

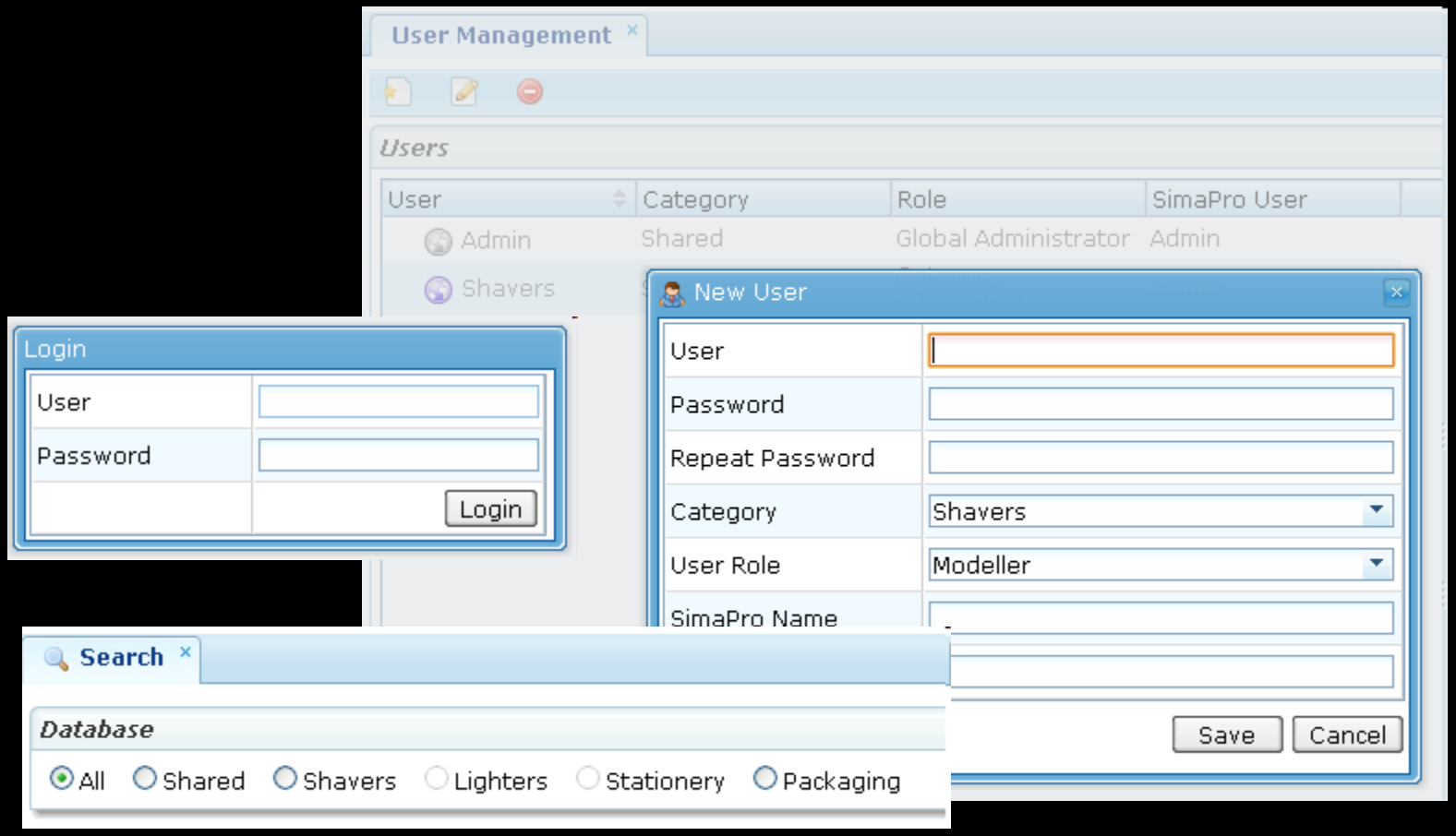
- Collaboration
  - evea (France): LCA modelling, data, local training
  - GreenDeltaTC (Germany): Implementation, training
- Implemented summer-autumn 2009, go live Dec. 2009, since then in use
- BIC: French multinational pen, razor, lighter company, www.bicworld.com

Design offices worldwide

e-DEA: a Rich Internet Application



Database and user management



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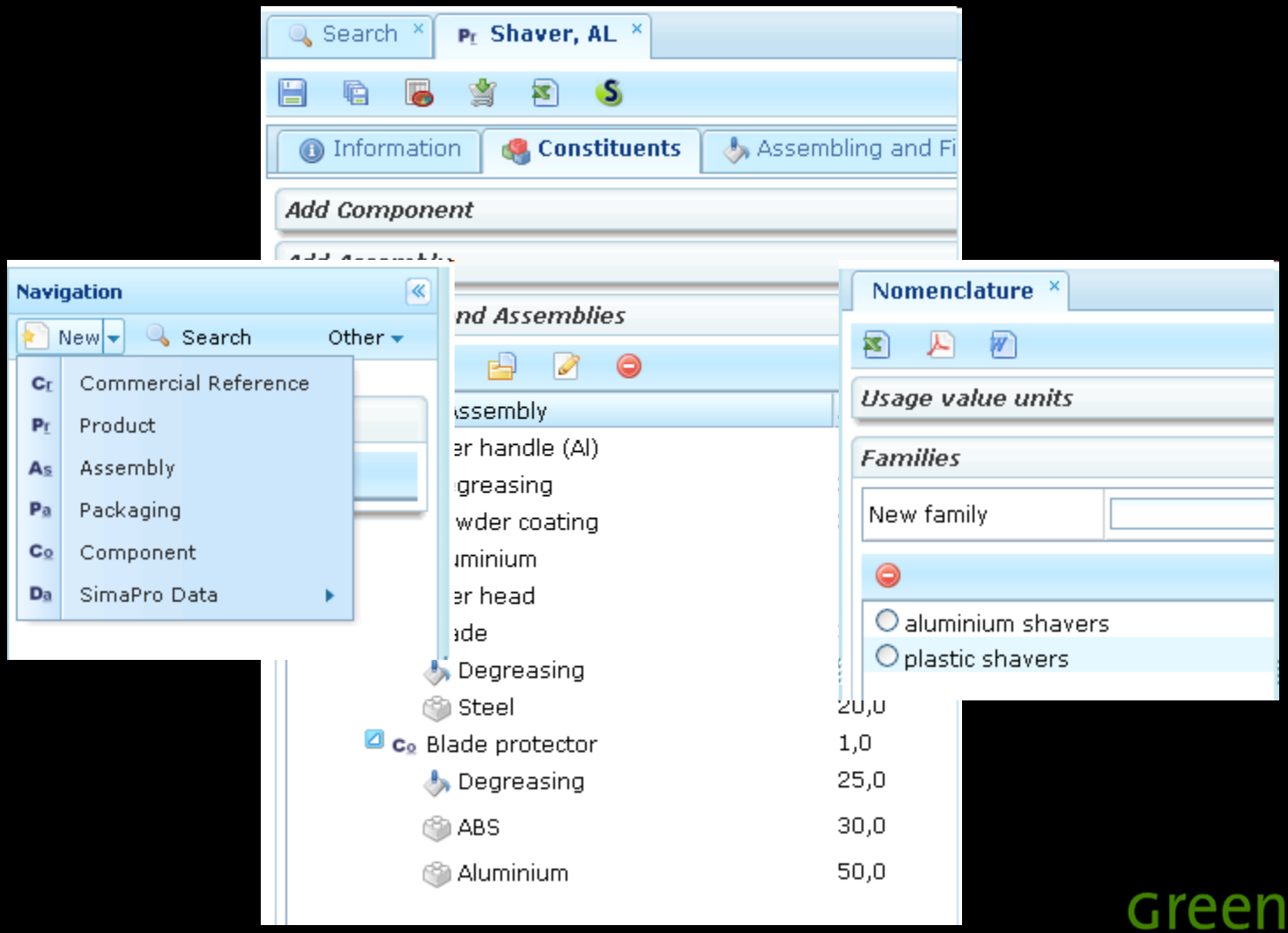
Design models



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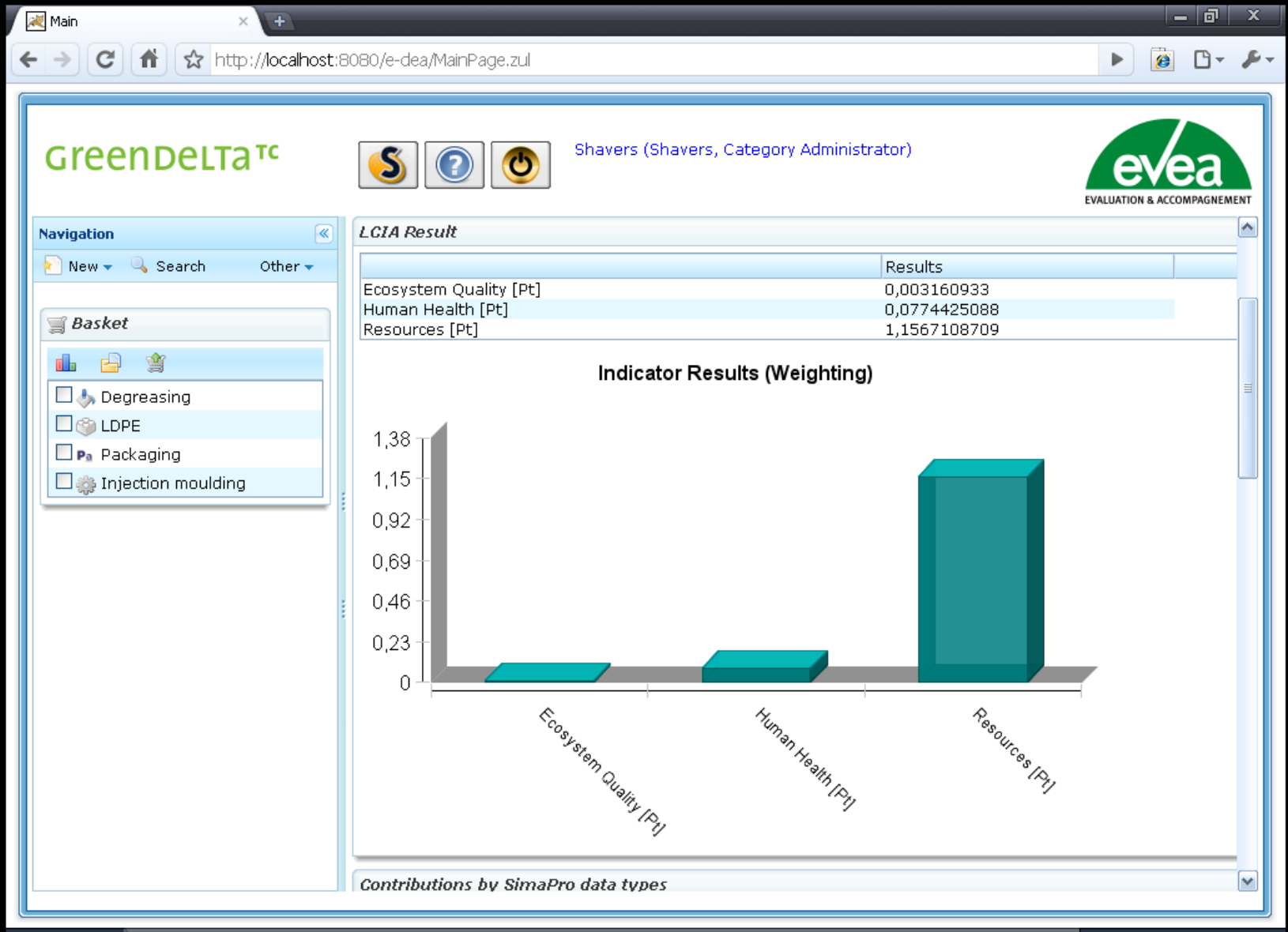
Reporting


Main
http://localhost:8080/e-dea/MainPage.zul
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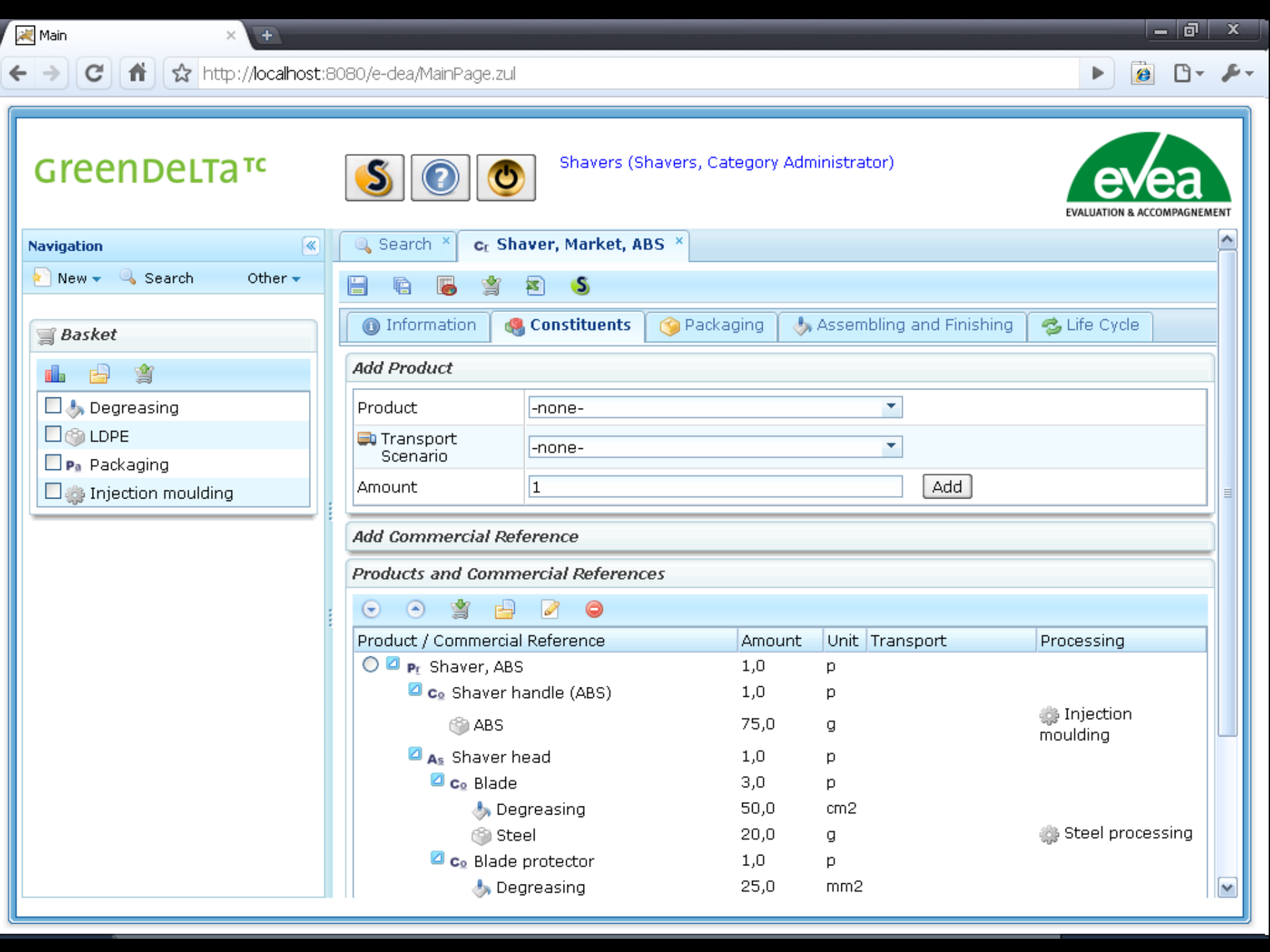
Shavers (Shavers, Category Administrator)
evea
EVALUATION & ACCOMPAGNEMENT
Navigation
New
Search
Other
Basket
Degreasing
LDPE
Packaging
Injection moulding
LCIA Result
Results
Ecosystem Quality [Pt] 0,003160933
Human Health [Pt] 0,0774425088
Resources [Pt] 1,1567108709
Indicator Results (Weighting)
1,38
1,15
0,92
0,69
0,46
0,23
0
Ecosystem Quality [Pt]
Human Health [Pt]
Resources [Pt]
Contributions by SimaPro data types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LDPE
Packaging
Injection moulding
Search
Shaver, Market, ABS
Information
Constituents
Packaging
Assembling and Finishing
Life Cycle
Add Product
Product
-none-
Transport Scenario
-none-
Amount
1
Add
Add Commercial Reference
Products and Commercial References
Product / Commercial Reference
Amount
Unit
Transport
Processing
Shaver, ABS 1,0 p
Shaver handle (ABS) 1,0 p
ABS 75,0 g Injection moulding
Shaver head 1,0 p
Blade 3,0 p
Degreasing 50,0 cm2
Steel 20,0 g Steel processing
Blade protector 1,0 p
Degreasing 25,0 mm2

4. Conclusions, and discussion

Conclusions

- e-DEA is an EcoDesign tool that combines “full-power” LCA software and data with an intuitive web tool that is tailored for non-LCA experts
- The web tool interacts with SimaPro, triggering LCA calculations; one central database is accessible worldwide, enabling company-wide cooperation
- A first implementation was tailored for BIC, and is in use since end of 2009
- Key to success at BIC was careful attention to needs of design departments, and adaptation of e-DEA (nomenclature, LCA structure, data, user interface options)

Thank you.

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