Consistent calculation of multiple system models and improved integration of regionalized data

Swiss Centre for Life Cycle Inventories

Emilia Moreno Ruiz, Bo Weidema, Gregor Wernet

CILCA 2013, Mendoza (Argentina)

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- Data Providers
  - Easier integration of your data in the database
  - Easier maintenance
  - Prepared for Regionalisation
- End Users
  - Flexibility of choice: allocation, system expansion
  - Automatic assembly of regionalised supply chains

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The structure that makes this possible

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1. Distinction between Activity and Product
2. Independent unlinked multi-output Unit Processes
3. Markets are also Unit Processes
4. Linking through the markets (geography)
5. Different algorythms for linking the activities into System Models

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1. Distinction between Activity and Product

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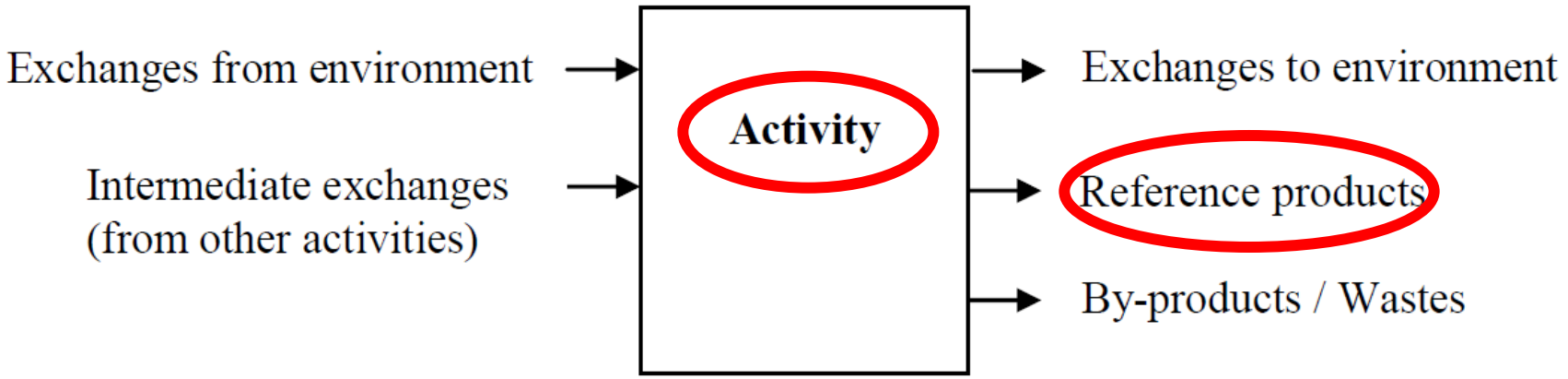
- An ecoinvent activity dataset represents a **unit process of a human activity** and its exchanges with the environment and with other human activities.



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2. Independent unlinked multi-output Unit Processes

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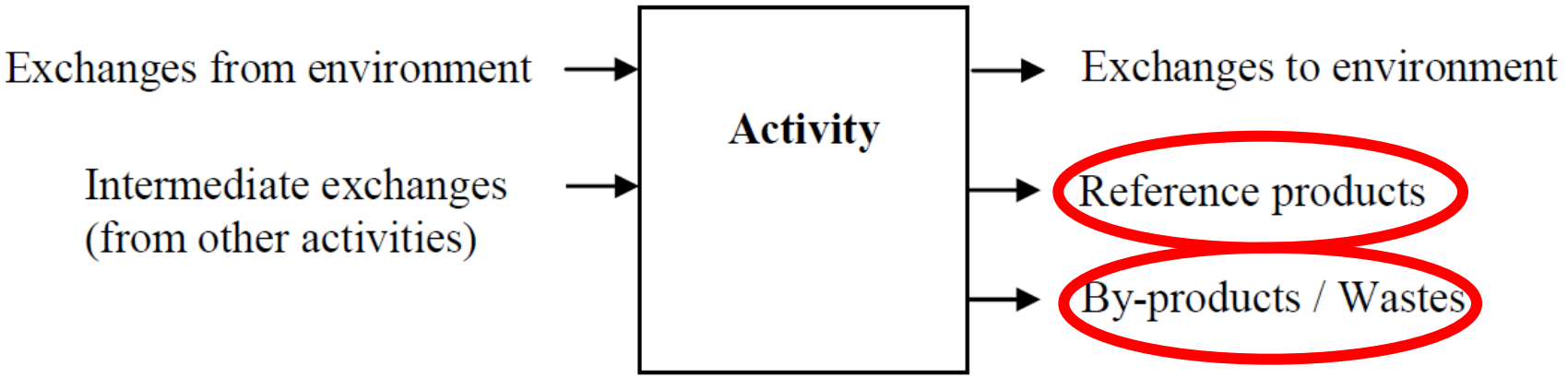

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3. Markets are also Unit Processes

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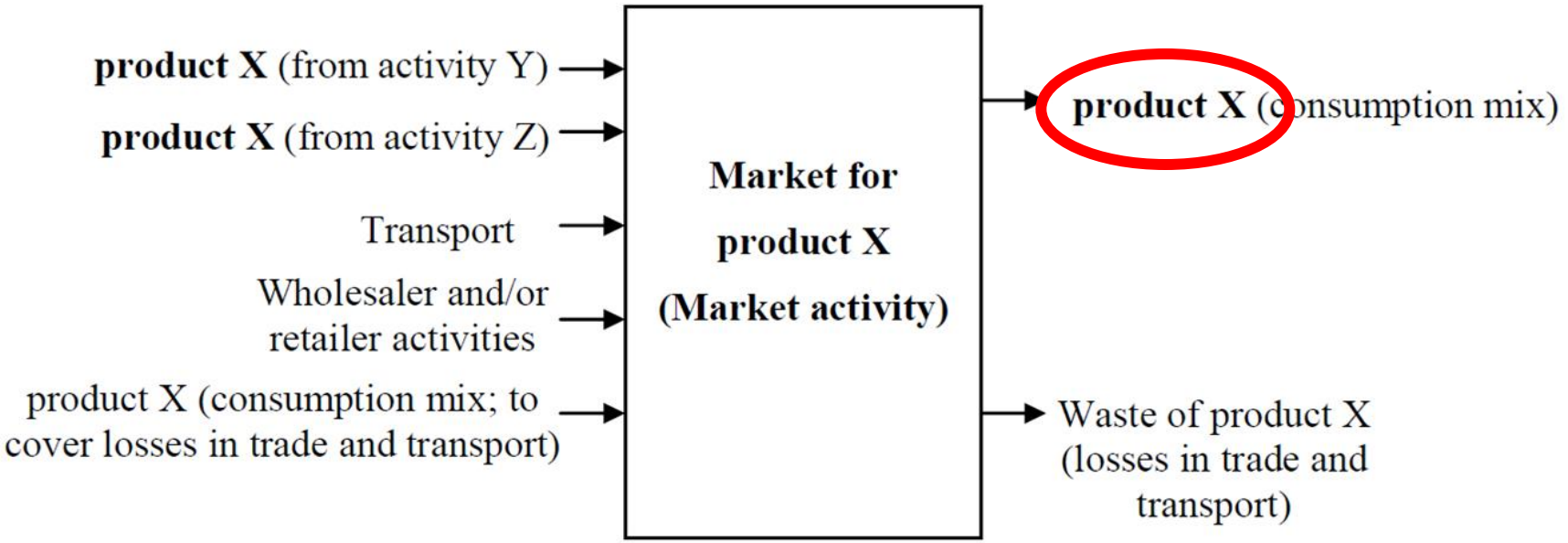
- Market activities represent the “consumption mix” of a product in a given geographical localisation.



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4. Linking transforming datasets through the markets

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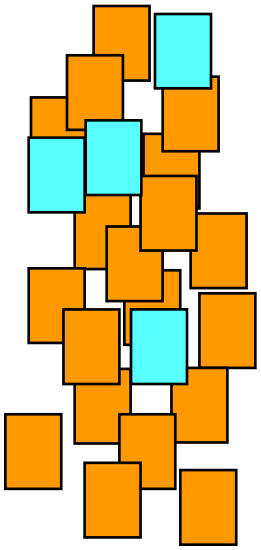
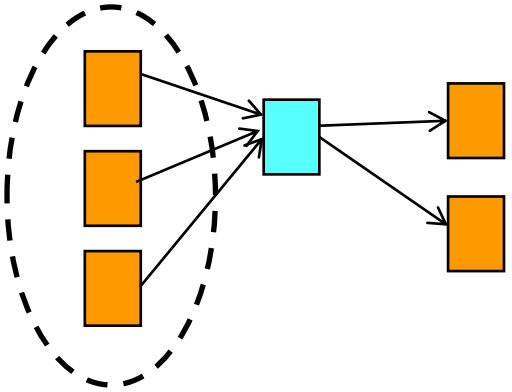
- Linking happens through the markets, based on their geographical localisation.



Unit Processes



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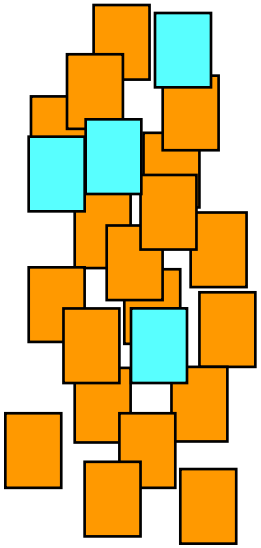
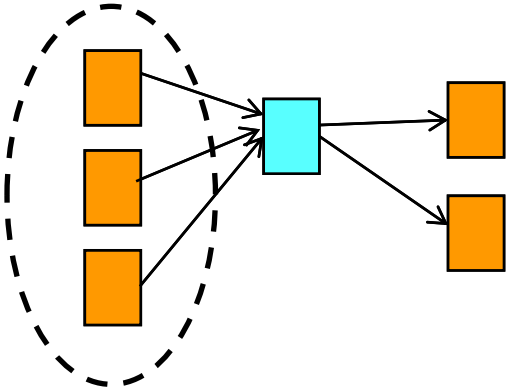
4. Linking transforming datasets through the markets

Automatic update of the supply chain





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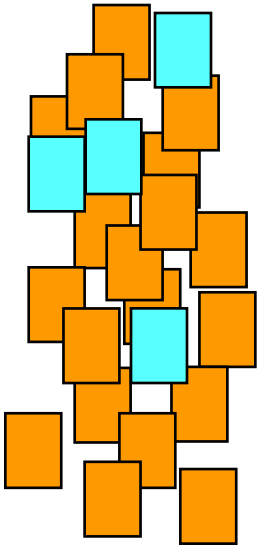

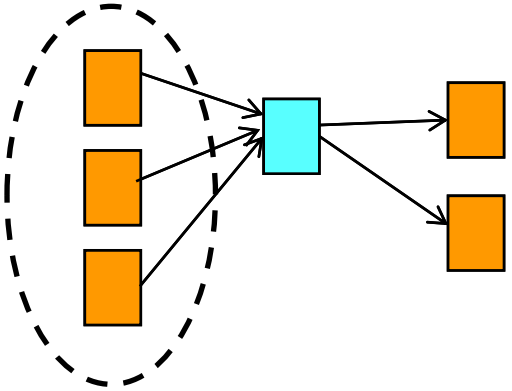

New activity!

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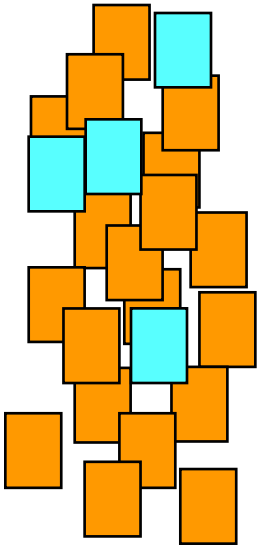

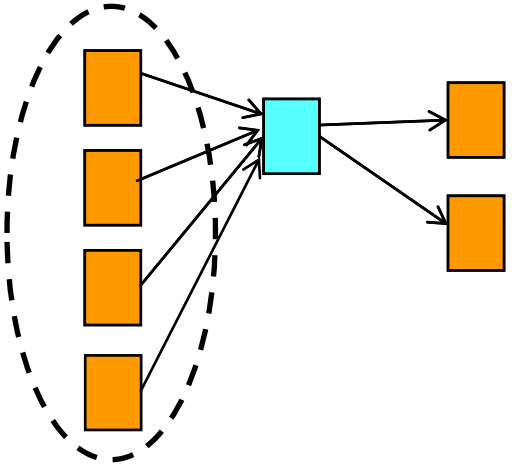

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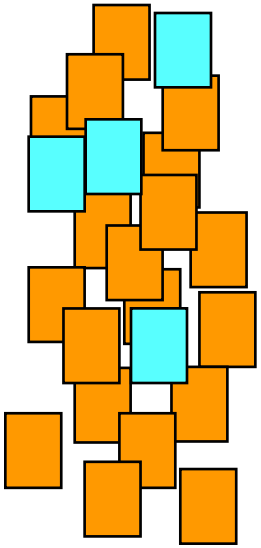

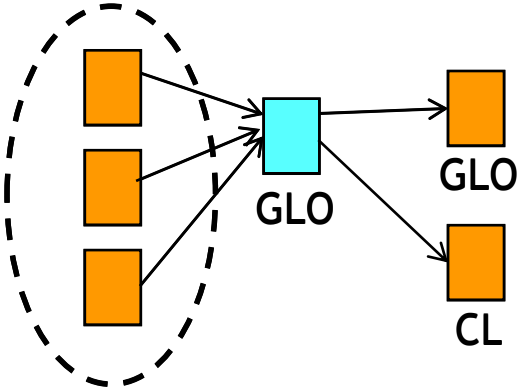

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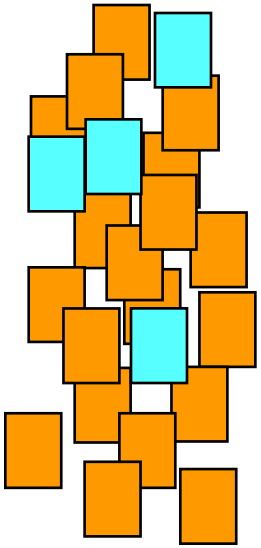

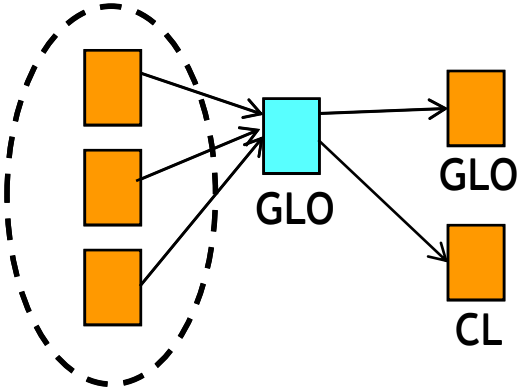

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New activity
and new market!

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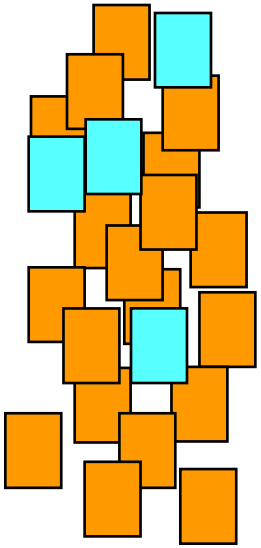

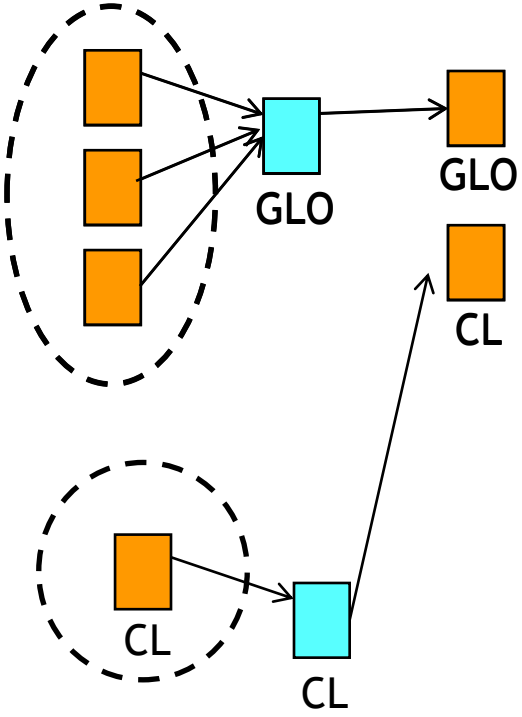

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5. Different algorythms for linking

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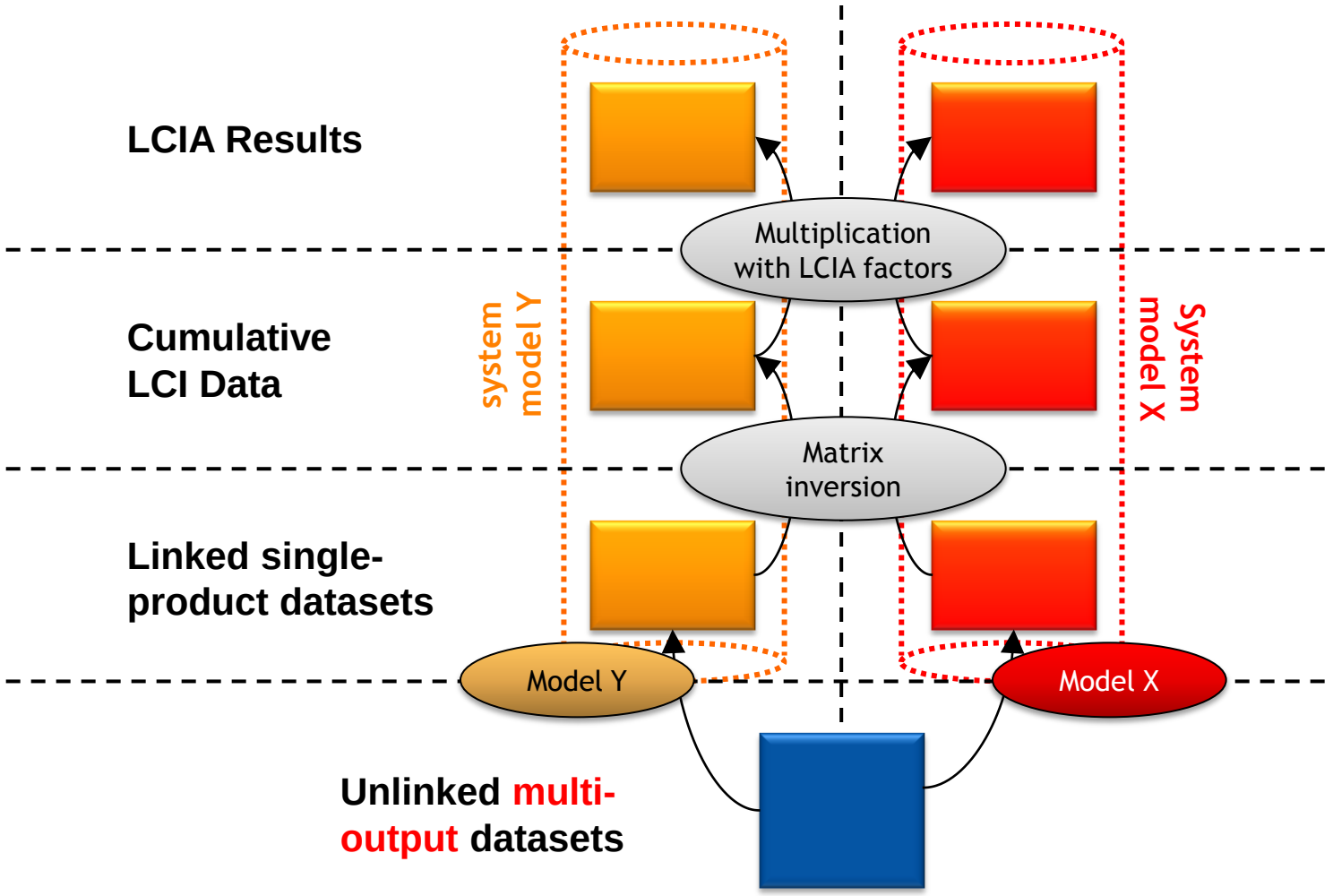

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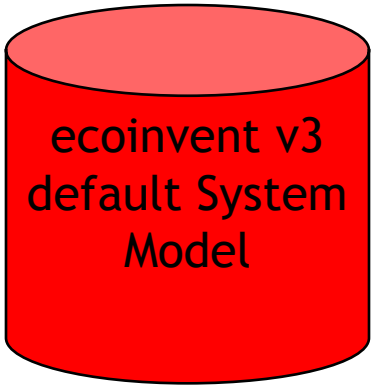
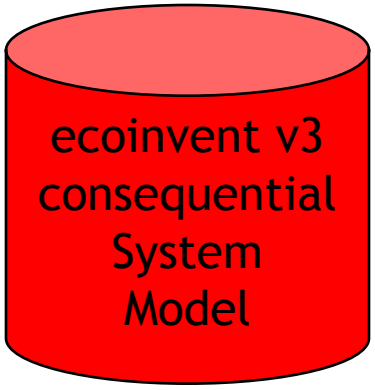
5. Different algorythms for linking
Different System Models



- All activities supply the market (average suppliers).
- By-products are allocated.



- Unconstrained (marginal) suppliers.
- By-products are treated by substitution (system expansion).

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Different System Models

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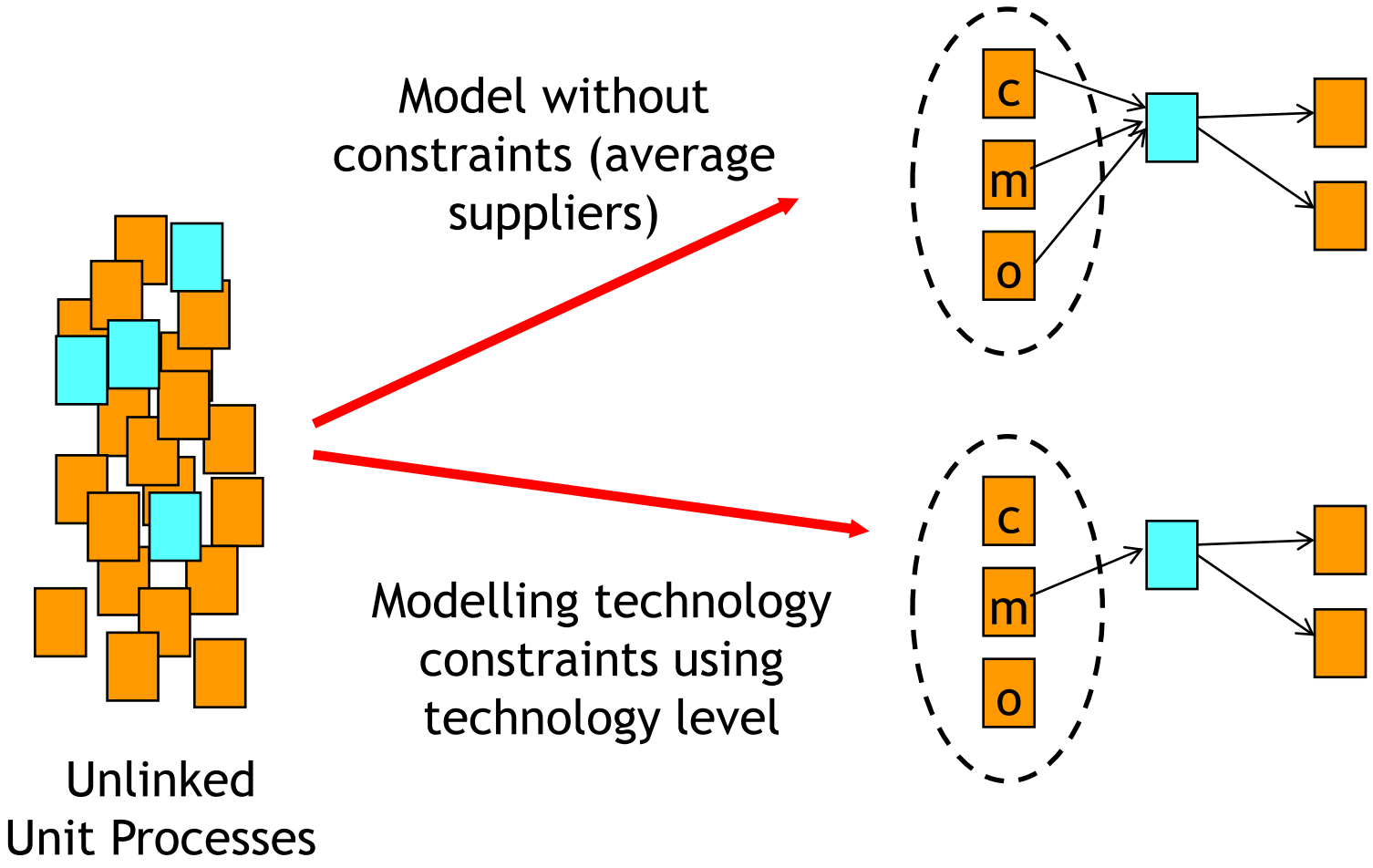

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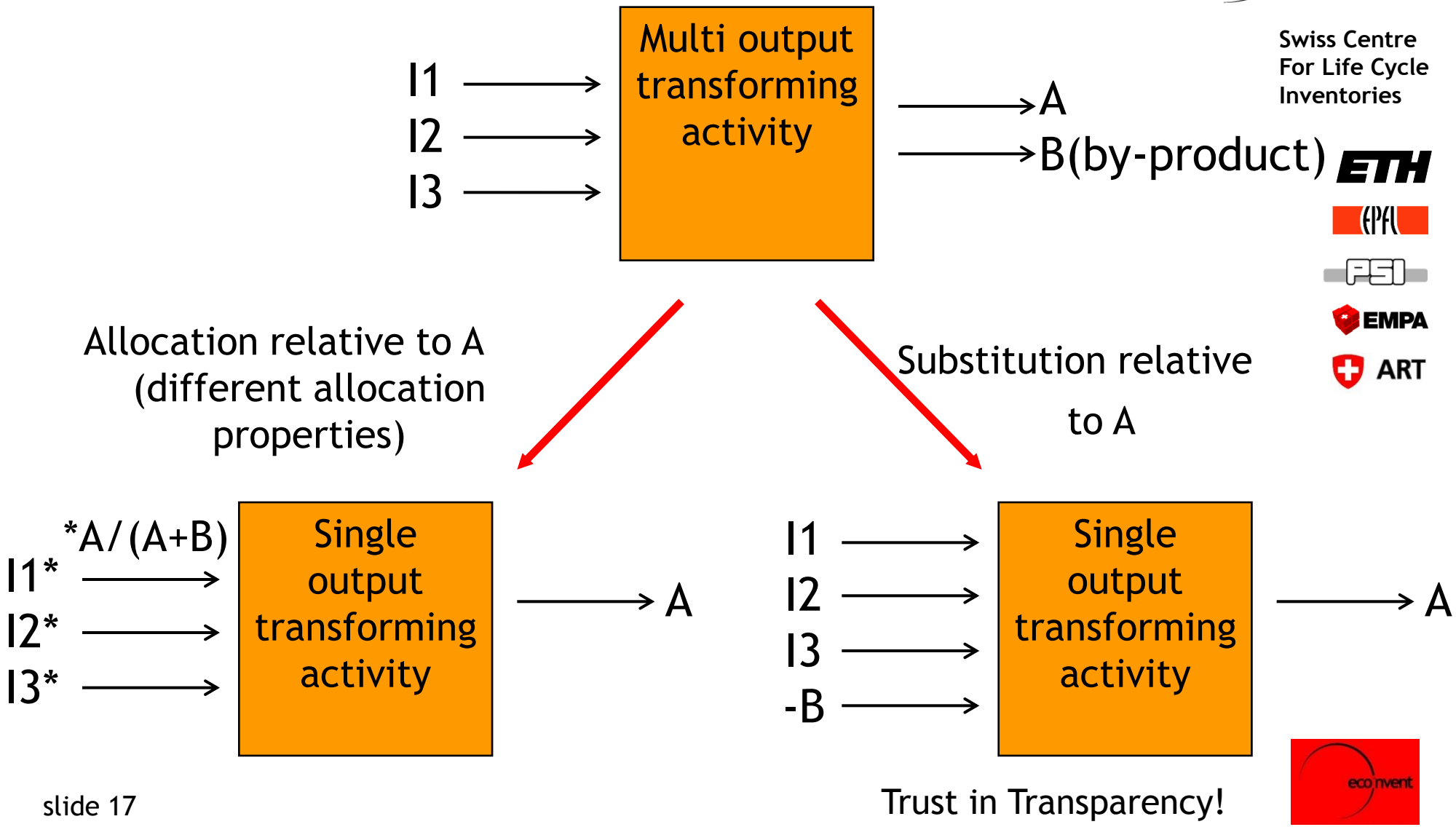

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