

Implementing an eco-design process in major food manufacturing companies

Jacopo Colombo, Dušan Stojanović

● About Selerant

Software company specializing in

- **Product Lifecycle Management** software
- **Environmental, Health & Safety** software

Industry served

- Food & Beverages
- Chemicals
- Flavors & Fragrances
- Household goods & Personal Care
- Specialty Ingredients

Global presence

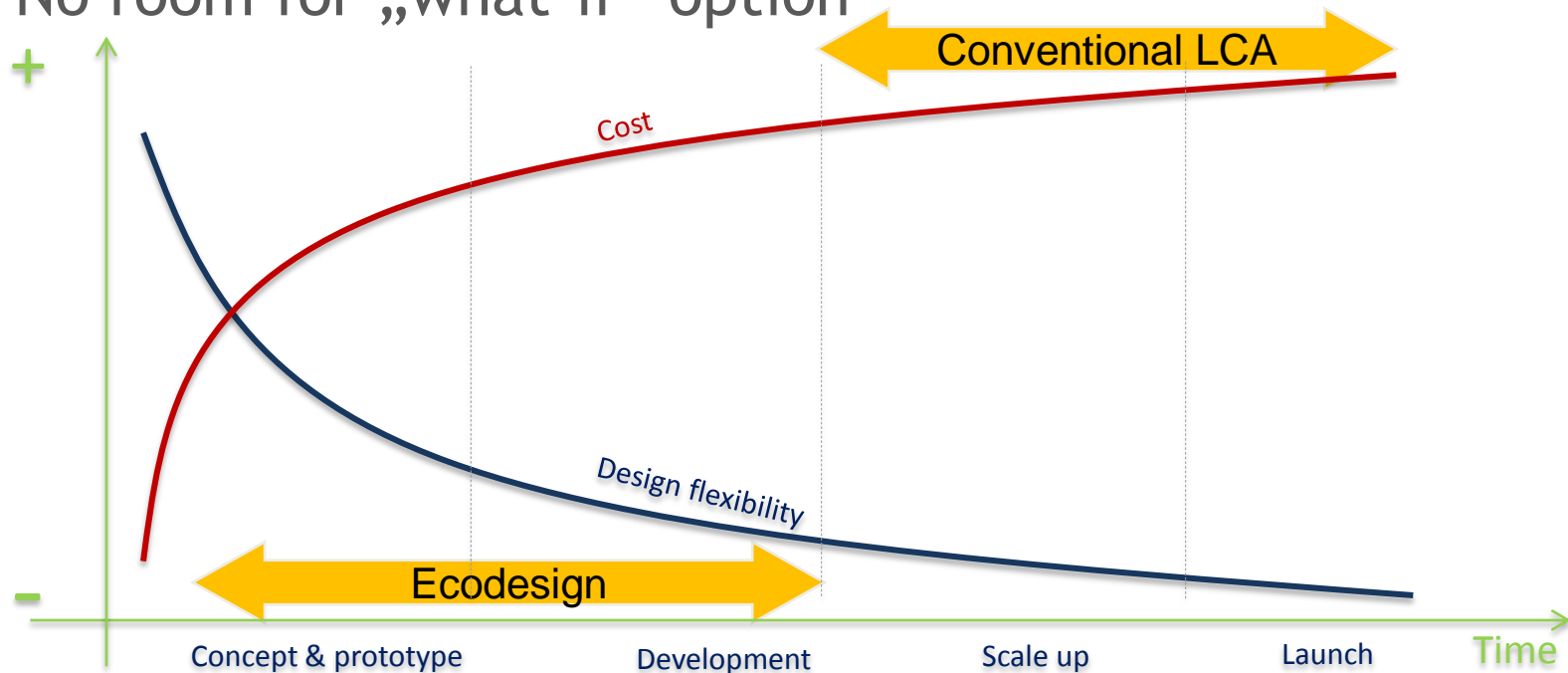
- Europe, North America, China, India
- Founded in 1990

● Customers Include:



● Conventional LCA shortcomings

- Standard LCA is a time-consuming and expensive process
- Not enough freedom of choice during the project
- No room for „what-if“ option



- A lesson from a pioneer

Il semble que la perfection soit atteinte non quand il n'y a plus rien à ajouter, mais quand il n'y a plus rien à retrancher.

Antoine de Saint-Exupéry
(*Terre des Hommes*, 1939)



● Needs of a major food manufacturing company

- Simplified Eco-Design LCA methodology
- Usage by non-LCA experts - requires guidance
- Transparent, credible and independent data and methodology
- Fact-based decision making leading to product improvement
- Discussion with suppliers and customers

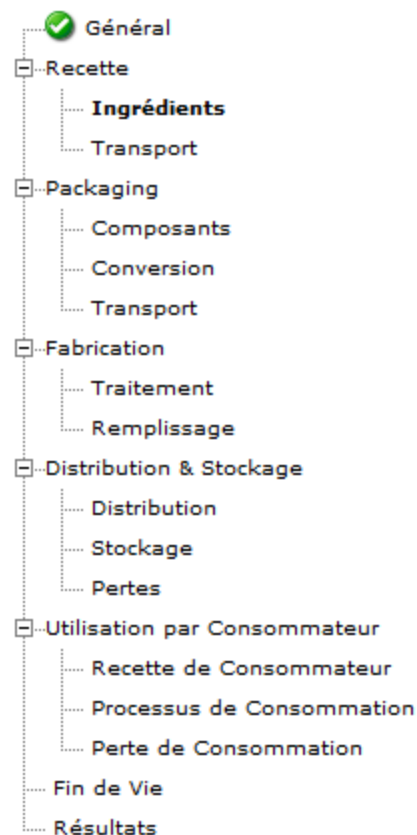
Valid and credible communication

● Required features

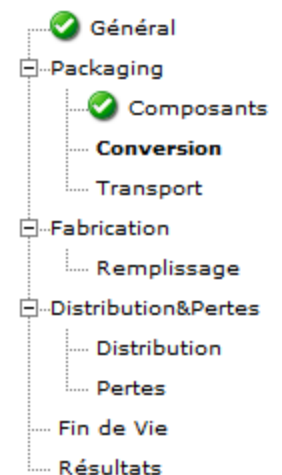
- System linked to SAP (or other PLM used)
- Usage of ecoinvent (or other peer-reviewed) data
- ISO 14040-14044 certified methodology
- Ease of usage
- Support for „What-if“ analysis
- Rapid view analysis
- Multi-language support

- Predefined set of steps
 - Easier to understand
 - Easier to gather data
 - Simplifies data entering
 - Full food product and packaging only scenarios
 - Cradle-to-grave analysis

Food product



Packaging



● Pain points to be solved in the process

- Reduce possible number of data errors by usage of previously verified data
 - Link the LCA software to company PLM system
 - Use LCI profiles from the peer-reviewed databases
 - Use the known statistics as default data
 - Reuse the scenarios - make new ones as copies of existing ones
- Make the assessment fast enough to be competitive
- All possible security issues must be foreseen

● Pain points to be solved in the process

- Non-expert users must be guided
 - Wizard-like software
 - Help available everywhere
- Nobody wants to work with slow and uncomfortable software
 - Good design reduces the impact of fatigue
- Control the input

Ingredient ?	LCI Profile Ingredient ?	% ?
Milk	milk, liquid soluble concentrated, Switzerland	75.000
Carrot	carrot, conventional, Europe	15.000
Sugar	<input type="text" value="sugar, from sugar beet, IP, Switzerland"/>	10.000

Negligible

None Available

sugar, from sugar beet, IP, Europe

sugar, from sugar beet, IP, Switzerland

● The Times They Are a-Changin'

- Customers are getting interested in the environmental footprint of the product
- Smaller companies also need LCA
- Dedicated infrastructure is expensive
- Limited palette of products - no need for big PLM

Software as a service (SaaS)

Mitigating the lack of PLM

- Recipes creation and import must be performed in an appropriate and controllable way
- Excel template - simple and effective way of data distribution

The screenshot shows an Excel spreadsheet titled 'RecipeImport - Microsoft Excel'. The main content is a 'Recipe Import' template. It includes a section for 'Instructions for use' and a table for recipe data.

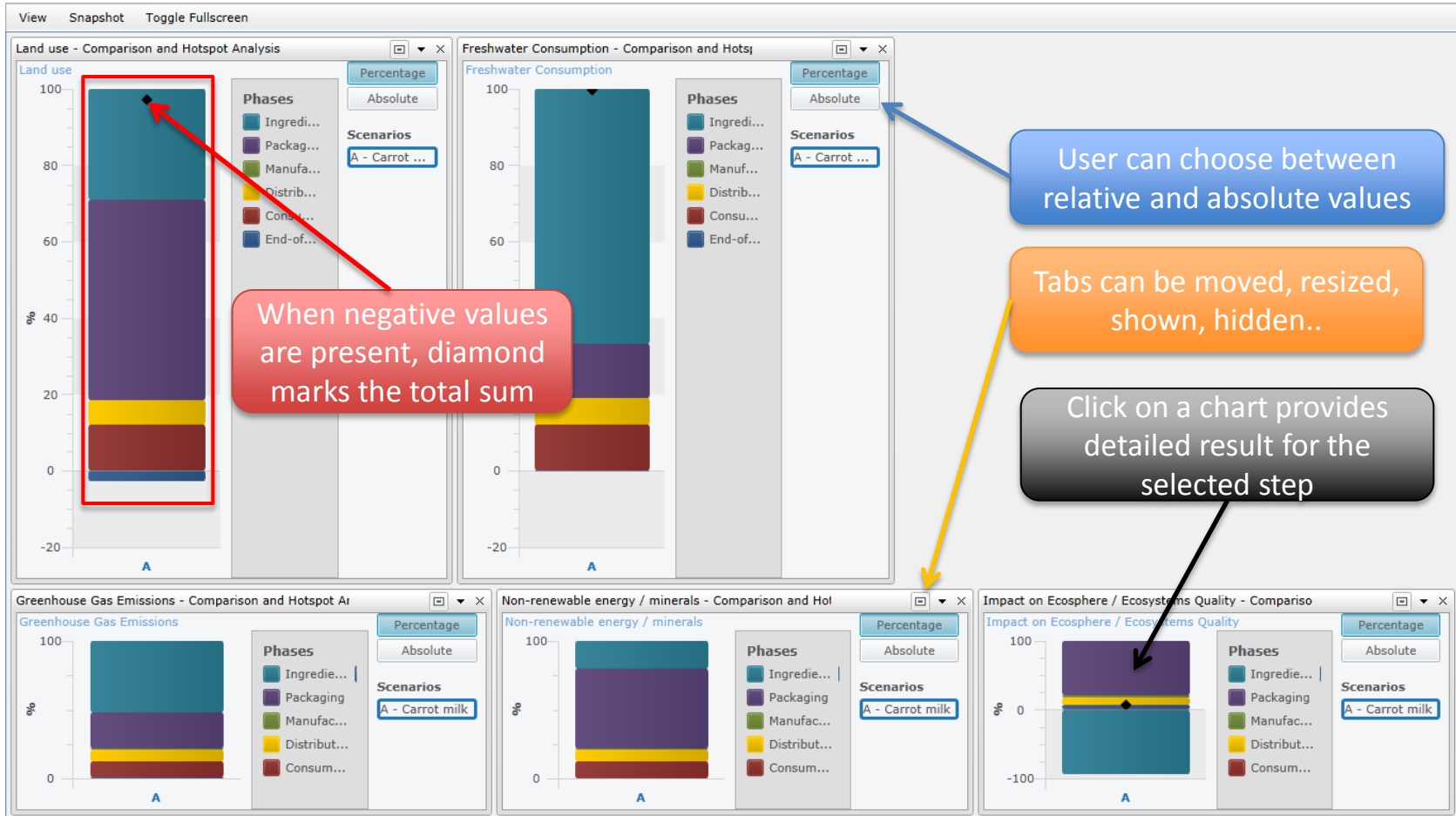
Instructions for use:

1. Enter the Recipe's Name in cell B16 (not mandatory).
2. Enter the Recipe's Code in cell D16 (not mandatory).
3. The first line of data must be on row 19.
4. The following Columns must be present, in the correct Excel column.
 - A. Code – Ingredient Code (leave blank for Stage) [Max Length 32].
 - B. Ingredient Description – Ingredient or Stage Description [Max Length 256].
 - C. Hierarchy Group – Place Ingredient in Hierarchy (leave blank for Stage).
 - D. LCI Profile – Assign Default LCI Profile to Ingredient (leave blank for Stage).
 - E. Percentage – Percentage of the total Recipe (leave blank for Stage).
5. The Hierarchy Group and LCI Profile should be selected from the list, if you suspect that the list is not up-to-date you can request a new template.
6. The first blank row is taken to be the last row, any data after this will be ignored.

Recipe Data Table:

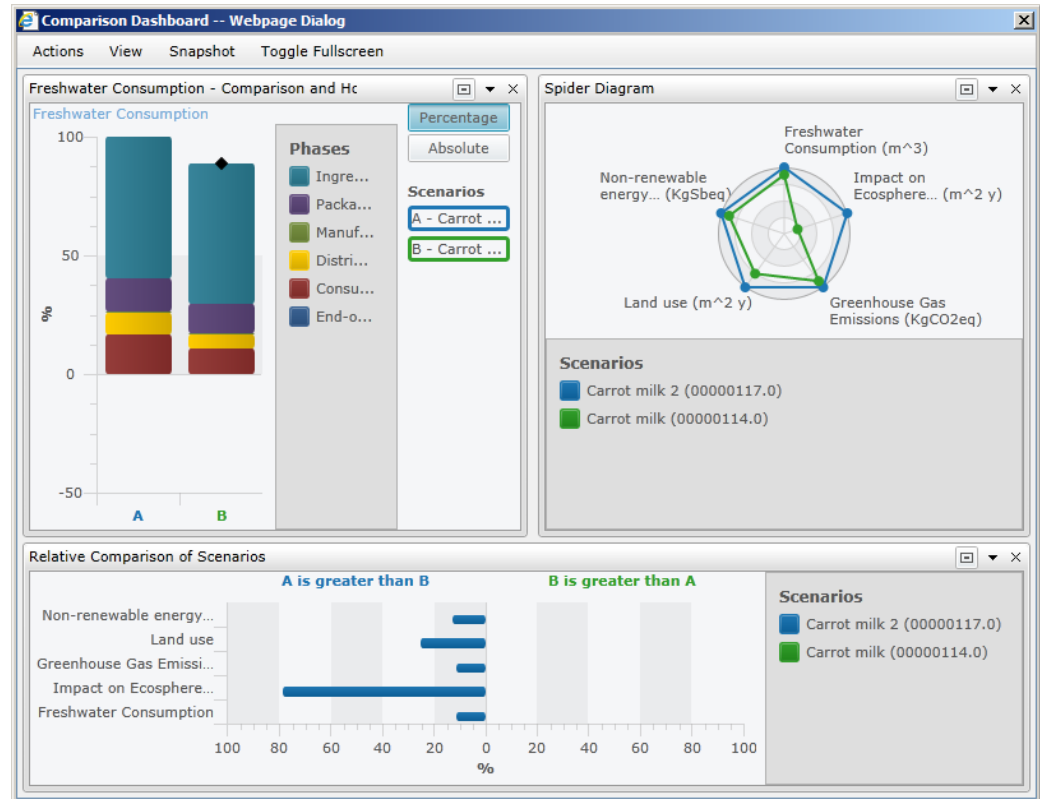
Code	Ingredient Description	Hierarchy Group	LCI Profile	Percentage
RI0001	Lait	01.1.1.1 - Milk (plain) \$ DxMaterialGroup milk, liquid soluble concentrate		75
RI0007	Carotte	04.2.2.3 - Vegetables (including mushro carrot, conventional, Europe \$ D		15
RI0002	Sucre	11.1.1 - White sugar, dextrose anhydrou sugar, from sugar beet, IP, Euro\$		10

● Attractive and comprehensive final results display



Getting better results with scenario comparison

- Scenario comparison reduces the impact of simplification
- Some data can be omitted if equal on both sides



● What next?

- Align the methodology with legislation and business associations guidance
 - Credibility
- Peer-reviewing of the LCI data and LCIA methods
 - Reusability
- Detailed documentation of the gaps between the eco-design assessment and a full LCA
 - Simplify moving towards full LCA

- Any questions?

- Thank you for your attention!
- <http://ecodex.selerant.com>
dusan.stojanovic@selerant.com