

Case Study: Economic Model for Process Licensing



Executive Summary

Client

Global market leader in the development and licensing of urea technology .

Challenge

Fast and reliable cost estimates of current, re-engineered and new urea processes.

Solution

Flexible Economic Modeling

Benefits & Results

- Better support of sales activities with fast & reliable cost estimates
- Faster evaluation of process redesigns
- Shortened time to market with new technologies
- Cost estimates for multiple locations world wide (Europe, US, Asia, S. America)

Our Client, Stamicarbon, is the licensing and IP center of Maire Tecnimont and global market leader in the development and licensing of urea technology. Their solutions are based on years of high-quality research and in-depth knowledge of the industry. Over 250 urea plants worldwide are using Stamicarbon technology.

Challenge

Common practice for most licensing companies and also Stamicarbon is to provide cost estimates for each customer inquiry separately. Obtaining reliable and fast answers is profitable for both seller and buyer of the technology. Additionally, to maintain competitiveness and lead position in the market, our client continuously improves their existing processes through re-engineering and implementation of new technologies.

With respect to this, our client is looking for a cost effective solution that would allow them:

1. to support sales activities with reliable cost estimates on a short notice, and
2. to quickly evaluate costs of redesigned process alternatives.

Solution

Maturus Optimi came up with an effective solution that allows Stamicarbon to reduce their estimating time and efforts up to 80% as compared to conventional estimating methods. At the same time the reliability and accuracy of the results is notably improved

The fact that the technology and basic equipment specifications are alike makes it very attractive for economic modeling. Maturus Optimi developed a flexible economic model using AspenTech software. Process and economic modeling allows

quick adaptations with regards to material and labor rates, design standards etc. Based on equipment sizes and location information the model will calculate:

- Total installed costs: overall process and process sections
- Equipment weights and costs,
- Installation and bulk quantities and costs, and
- Installation man-hours and costs.

Since the licensed process has been built, actual data on equipment weights, sizes but also installation items will be available and can be used to calibrate the model, so that quantities (for example tons of steel, lengths of pipeline, m³ of concrete and installation hours) and costs (hour rates, material costs) will reflect reality.

The economic model has a modular structure (see Figure). Process sections will typically represent a physical part of the plant (reaction, separation, recovery plant, etc.) containing a number of unit operations. Further on unit operation will contain process equipment with its immediate installation & bulks. The model structure allows the user to easily access and manipulate any project component at each process level.

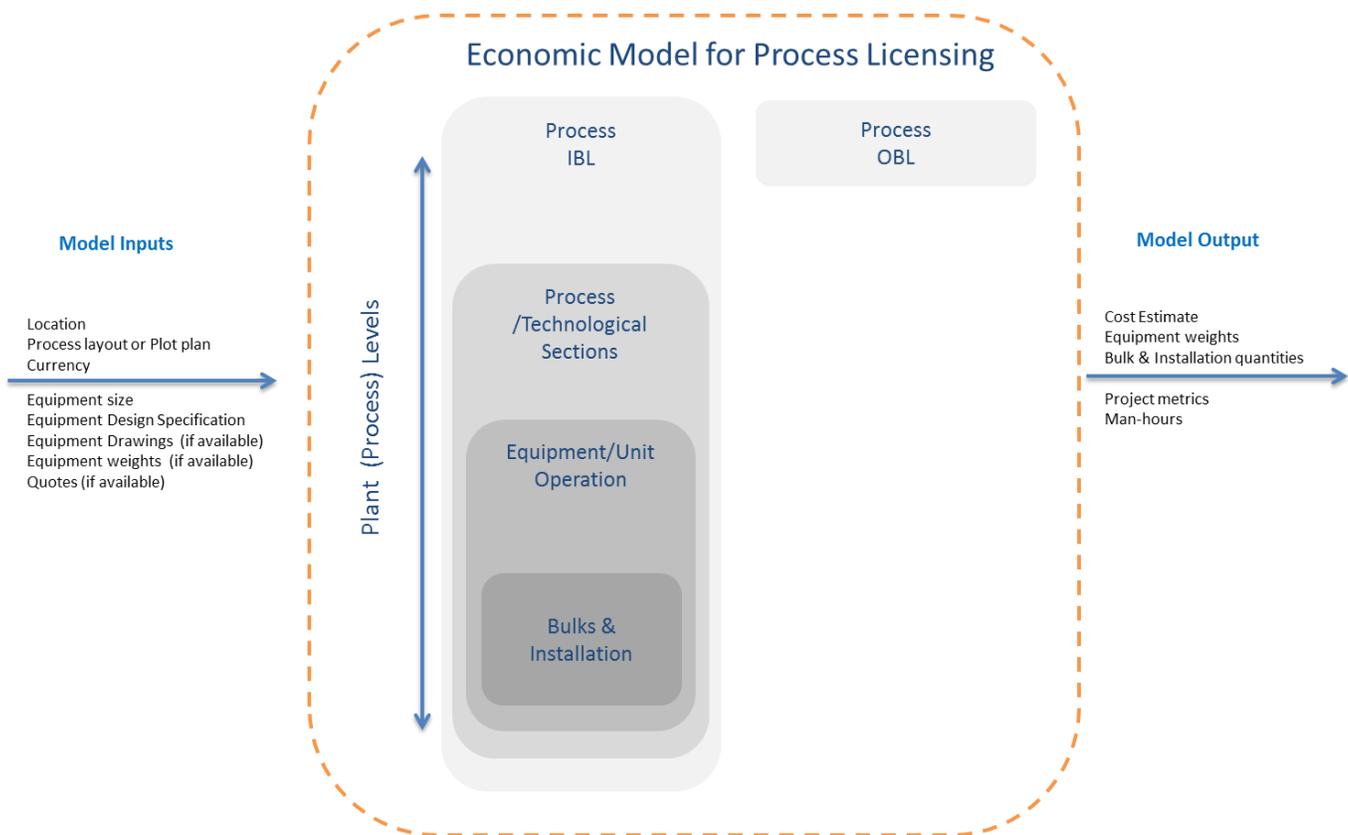


Figure: Modular structure of the Economic Model showing various plant (process) hierarchies and typical Inputs & Outputs

Modular arrangement allows quick replacements or insertion of the entire process sections or unit operations from previously defined models. When evaluating new technologies or comparing different process options this feature proved to be extremely useful .

Results

By choosing for the economic modeling of Urea processes, Stamicarbon has achieved the following results:

- Better satisfaction of their clients and potential technology buyers by providing them with fast, transparent and reliable cost estimates
- In a matter of days obtaining reliable cost estimates of their processes at various production capacities
- Up to 80% reduced time and effort for producing plant redesign estimates
- Shortening time to market by reducing the time to evaluate new technology and multiple process option
- Quickly obtaining cost estimates for various locations worldwide (Europe, US, Asia & South America)

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