View on ProductVision

By Anny Dentener

Programme: ProductVision 4.5
Function: Formula management.
Supplier: Advanced Software Designs Inc., Chesterfield, USA.
Cost: confidential
Website: www.asdsoftware.com
Rating: Not given (full access for testing not provided).

When an ex-UK/now NZ food technologist described this software as "fantastic" and compared it favourably to similar software, I knew I had to check it out. I had come across it before but the scarcity of technical information on the Advanced Software Designs (ASD) website meant I had not pursued it any further. A request to the sales department provided access to the ASD Powerpoint demo, outlining features and benefits. During a subsequent live web demo the sales person demonstrated the software, and I had some access to it with mouse and keyboard, while talking on the phone. All in all I spent a few hours with the software in limited test mode, much less scrutiny than I usually can subject software to when I have full access. The justification for their reluctance for access was that it was too complicated to understand in a few hours. I can therefore only describe the software features and outline its possible usefulness for R&D in the food industry, but can not attest to its stability, ease of use/setting up and so on, and whether it represents value for money (it is expensive).

Overview

The heart of the system is the Formula Management module, centred around recipe and ingredient management and labelling. Other modules cover regulatory declarations (e.g. MSDS & dangerous goods), project management, workflow control, testing and formula design. The module called Experimental Design is a "what if" scenario testing to compare features and costs between formulas. Strict security rules can be set for individuals and/or groups (R&D, QA, production) covering access and editing rights.

ASD, started in 1985, has approximately 20 staff and services around 250 customers worldwide of which around 100 are large food business customers (e.g. Pepsi, Gerber, McCain and Sara Lee). The software, originally designed for paint manufacturers, was later adapted for food & (alcoholic) drink and nutraceutical, fragrance & flavouring and cosmetic companies. ASD claims that it integrates with other common enterprise, financial, plant automation and laboratory packages.

Using the software

To start off formulations, first resources (raw materials, labour, etc) need to be defined. Raw material records can include measurements with conversions, trading partner(s), naming for different languages, countries or customers, costs for different sizes/sites, losses, test results, notes and substitutes. For instance, artificial sweeteners substitution rates would be defined by relative sweetness. In all up to 300 properties can be entered. It can also contain rules as to maximum levels used in certain products and/or for certain countries. If this rule is not followed an automatic alarm comes up.

Other alert functions may apply to allergens, approved/non-approved status, current Kosher/Halal certificate, and these ingredients are flagged red with an alarm in the formula. Nutrition information can be entered here as well. Nutrition data entry can be from all types of databases. To date they are from Genesis R&D (ESHA) and/or Leatherhead (UK), but ASD expects to be able to use Australian/New Zealand food data in a similar way. The raw material file can also have attachments (e.g. specifications, application notes or website links), so all info is kept together, without the need to dig through a filing cabinet or physical raw material specification file. A search function is available to find ingredients or existing formulas with certain properties, e.g. "GMO free" AND "cost below x" AND "fibre above y", etc. When changing raw materials and/or suppliers the software offers a "Global replacement" option which will identify all formulas using that raw material, and adjust selected formulas.

Formula management

New formulas can incorporate ingredients and resources (Figure 1) but also cover by-products, tasks, etc, and these can be entered from defined standard phrases to ensure consistency. Existing formulas can be searched and compared. Ingredients can be dragged and dropped into the formula. The formula allows for scaling up, ingredient losses and product yields, normalising (scaling to 100%) or setting one ingredient to "100" for "bakers percentage". Also the formula can be set to indicate compliance with certain criteria, e.g. allergens, GMO, Brix, proof or acid. It can be set up in different sub-versions for different sites/plants or batch sizes. With formulas it is possible to assign "customer rules" e.g. Customer A wants no GMO material, customer B needs to be certified Halal, etc. Anything in the formula not complying with this will be flagged.

A useful feature for beverage manufacturers is the capability to work out formulas based on often fluctuating compositions of raw materials such as juice concentrates. It will calculate the formulas to specified Brix/acid level ranges and ratios. For an ice cream company ASD has set up typical calculations. When reconstituting ingredients it is easy to work the added water into the formula by nominating reconstitution ratios and preference of addition. The programme will then work out how much water, if any, is left over and places that in the correct location in the list of ingredients.

The formula in its properties list can identify what % of a property comes from which ingredient, a handy feature during formulation when looking at costs or nutrition parameters like fat, sugars or salt. Each formula can become a sub-ingredient in another formula, e.g. stacked into one another, and a recipe tree is shown. The declaration of ingredients in the ingredient listing of a label can group like materials such as leavening agents. Raw materials not identified as part of a group will be listed in descending order.

Protocols

The software uses US, Canadian or European rules for nutrition labelling, and ASD is confident that it can do a similar set-up for Australia/New Zealand. To generate a label the only extra information required is serving size and number of servings per pack. It was mentioned that it is possible to add other nutrients to the standard labelling list, but I have not seen that in action. Missing values are flagged. No reference was found to how it handles %RDI/serving declarations. The software can be multilingual if required, but exact translations are up to the client. The translation feature is for instance used to generate MSDS sheets in the 18 languages of the EU.

The software keeps an ongoing Audit History, so if something goes wrong with a product it is easy to track if this coincides with a change of raw material or formula, as it records what is changed, how and by whom. Versions are updated at each change (can be disabled for experimental formulas). An "approval routing" system can be set up. Numerous reports can be generated, from text, rtf, excel to html files. It is possible to send e-mails with links to formulas for comments/checking etc.

Additional Modules

The Workflow module may be of interest to R&D management, where projects can be set up, assigned time lines and action points, email alerts/reminders, approval systems. It can also take holidays into account for the timing of the project. The typical R&D "what if" scenario testing allows for comparing formula options in one screen view. When aiming for instance for a reduced fat level the different formula columns make it easy to see what would happen to lots of different properties. The program can optimise formulations for least cost within set property boundaries.

Time to installation is from a few months up to 1 year, depending whether a similar installation has been done before. For instance, McCain piloted the system in the US and then quickly rolled it out in Canada and Australia. It is typically run out with an Oracle or Microsoft SQL server.

Feedback

References have been glowing. The ex UK/now NZ one particularly liked the user-defined interface option, "goal-seek", alert and comprehensive reporting features and being able to run 2 "entities" concurrently, one live and one for training. Initial support from the UK agent suffered from "Chinese whispers", but subsequent direct support was excellent. Its inbuilt costing function and the handling of water losses did not work well, but this may have improved. In another large international

company it replaced a custom built system. Practically all its features were used including storing packaging specifications by some 300 users (from plant floor personnel to PhD food scientists) in 6 countries, and in at least 3 languages. Support rated as excellent. Their comment: value for money, paid itself in the first year!

On the costs of the software: The company did give an indication but wanted it to be kept confidential, which I reluctantly agreed to. The company sees itself as mid to upper tear market and is typically only installed by companies with over US$50 million turnover p.a. Tellingly the website has a “software justification” paper.

Overall conclusion

If you are a large company that needs to manage its formulations better, I do suggest you put ASD ProductVision on your list of potentially suitable software. However only you can decide its value for money by checking it against your requirements and budget.

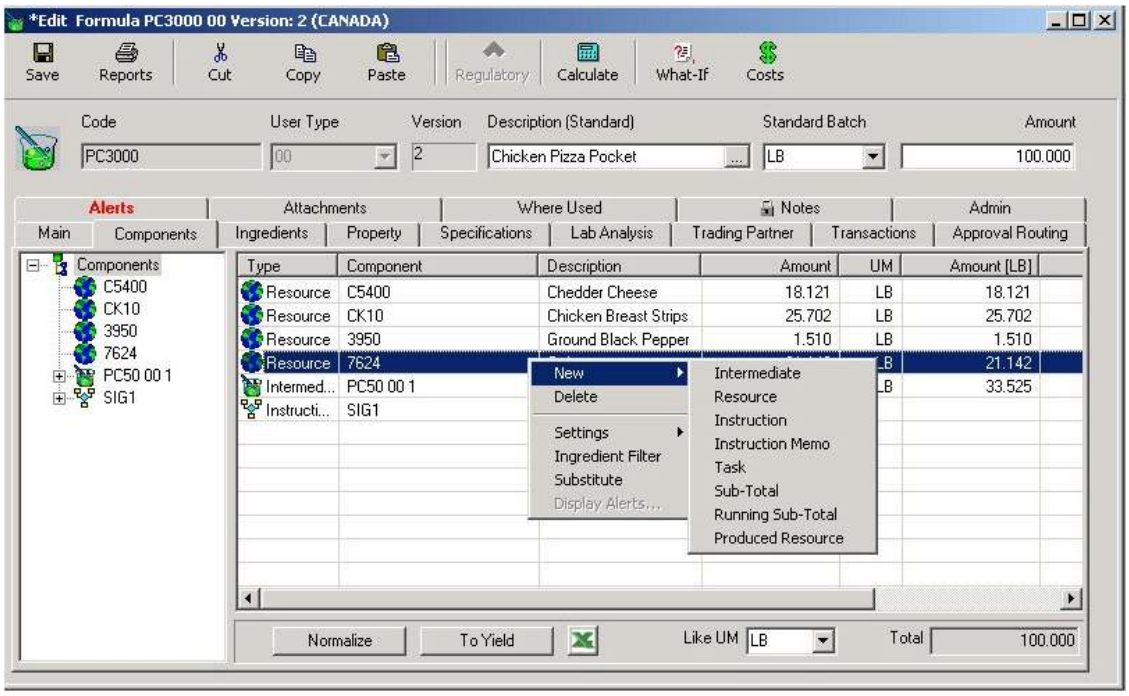

Figure 1: Example of formula elements

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