The year was 1991…

Microsoft had just started shipping Windows 3.0, Lotus 123 was ruling the spreadsheet universe and Sir Tim Berners-Lee had only recently invented the World Wide Web. Computers needed a separate math co-processor to run network optimization solvers, the only clouds we knew were those 30,000 ft above us and the Bulls had just won their first NBA title.

And Technologix implemented a fully integrated supply chain optimization system for Chemtrade Logistics (Marsulex Inc., at that time).

Chemtrade Logistics was, and still is, one of the largest North American suppliers of sulphuric acid, spent acid processing services and liquid sulfur dioxide, and a leading regional supplier of sulfur, sodium chlorate, potassium chloride, and zinc oxide. The supply chain optimization system was implemented for their sulphuric acid and sulphur dioxide business.

A quarter century and thousands of scenario runs later, and still going strong!

Over the years the system has gone through a number of major upgrades and is now run by the 6th generation of Chemtrade users.

Based on Opti-Net™, our proprietary planning and optimization development platform, the system has been interfacing with Chemtrade's SAP ERP environment since the mid 1990's, automating the flow of large volumes of input data (demand, freight, cost, etc.) and hence expediting the generation and optimization of new scenarios.

Over the past decade Chemtrade has grown considerably, including major acquisitions, and the system has been deployed to support other business units. New constraints, enhancements and reporting capabilities have been incorporated as the real world business has changed.

Even the most objective observer would consider it an amazing feat to find a planning tool (or for that matter, any IT solution!) that continues to run and perform well after 25 years. In fact, depending upon which academic study you read, the failure rate of IT projects in general is reported as being between 50%-70%. Given the natural human tendency to hide bad news, true actual figures are probably worse. Because of their complex nature, the planning and optimization category most probably sits close to the upper end of this ugly failure range.

Relatively speaking, our solutions have done well. Sure, we have had our share of failures, yet a typical Technologix application has an average 'life expectancy' of 6 to 8 years, serving its first and second generation of users very well. Let's explore how.

Three Secrets to a Long & Happy (Supply Chain Optimization System) Life

The longevity of our planning and optimization solutions is driven by our customized approach to problem solving and application development. Three common factors are behind this:

1. Generating good quality solutions and recommendations

2. Evolving and adapting to change

3. Making life easier, not more complicated, for our users

Generating good quality solutions

It really won't matter how powerful the analytics are, how colorful the maps or how slick the interface. If the solutions and recommendations generated by the system are invalid or inefficient, it is doomed to fail. Invalid or poor quality solutions point to a model that does not reflect reality accurately enough. It is probably missing or misrepresenting an important characteristic of the operation (a constraint, a business rule, etc.).

Whatever ails logic or model, once the issue is identified it is pretty straightforward to correct it in a customized application. Not quite so, if at all, in out-of-the-box alternatives.

Adapting to change

Thanks to acquisitions, new product lines and different business rules the Chemtrade of 2016 looks dramatically different from the Marsulex/Chemtrade of the early 1990's. One of, if not the main reason the supply chain optimization system continues to perform well after these many years has been its ability to adapt to this change. Adapting usually requires modifications to all four components of a supply chain optimization system – model, data, interface and analytics, something a customized environment can handle well.

Making life easier, not more complicated

If it will take our poor user hours to construct a new scenario, run it and then analyze it, it really won't matter how good or optimal the solutions are, or how powerful the analytics. He or she doesn't have THAT much time and will have no choice but to revert to the old Excel model. It wasn't perfect, it was far from optimal, but it sort of worked, (at least enough to satisfy the boss).

Making life easier for users is by far the heaviest component of our projects.

It requires developing the necessary programs and logic to automate time consuming tasks such as importing, auditing and massaging of scenario data. We have yet to encounter two organizations with the exact same needs (even if in the same industry AND with the same ERP platform!), another reason we feel that customization is key.

At Technologix we have been modeling and solving all sorts of interesting supply chain and related problems since 1991. If you are interested in the subject you will find a well organized (or so I think!) gallery of Projects on our website.