BPTrends
BUSINESS PROCESS TRENDS

Email Advisor

Volume 9, Number 3 February 8, 2011

February Sponsor

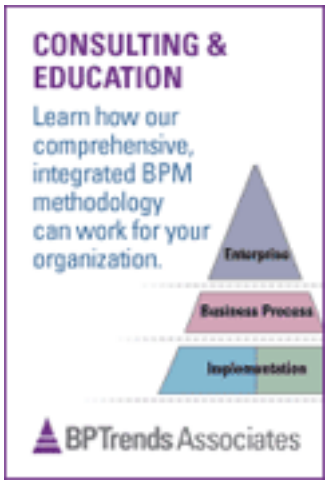
PROGRESS SOFTWARE

Materials Reuse Processes

The past decade has witnessed a growing awareness of the consequences of the many environmental problems we are facing and an increased effort on the part of many organizations to become more environmentally responsible. Many companies are working hard to reduce the amount of energy they use or to reduce the amount of pollutants they release into the atmosphere. Many of these initiatives quickly evolve into challenges for process practitioners.

Reducing energy use often involves rethinking how materials are transported and that, in turn, requires organizations to rethink their supply chains. In some cases, it is an internal supply chain that needs to be improved, but frequently it is a supply chain that involves multiple companies requiring plans and agreements among many different companies.

The Supply Chain Council's SCOR methodology is a good example of an approach to supply chain modeling and improvement that is frequently used for multi-company efforts. SCOR provides a common nomenclature and notation for describing the flow of goods and services among many different companies. Companies using SCOR may use different internal names, but when they are designing SCOR models, they agree to use the SCOR vocabulary. In a similar way, the SCC provides a mechanism for

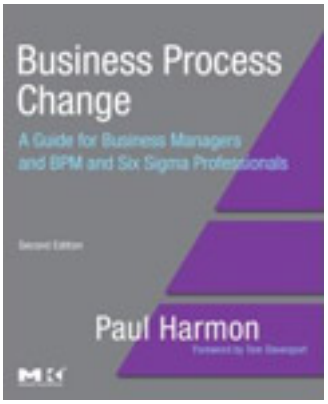


companies to store data about their performance against the SCOR metrics and access abstracted versions of this data to determine how well their performance compares with other companies in the same industry or the same supply chain.

A recent article in *Science* magazine – "Materials Ecology: An Industrial Perspective" by Paul Collier and Carina Maria Alles -- focused my attention on another type of complex multi-company process that companies will increasingly need to create and use.[1] We are all thinking more about recycling wastes, but how many of us think about the processes involved in recycling waste back to manufacturers.

In essence, to save money and to optimize the use of materials and chemicals, it is necessary to recycle them by means of closed loop systems. In other words, increasingly, companies using various materials will not think in terms of acquiring raw materials and disposing of wastes. Rather, they will purchase materials, process them and recycle the bi-products to other companies that will process them and recycle the bi-products to other companies that will process them and recycle them to still other companies and, ultimately, they will return to the original company, closing the loop.

A good example is polyethylene terephthalate, a chemical used in many different "plastic" products, including fibers and bottles. In some cases, bi-products generated when the chemical is used can be recycled. In other cases, the fibers or bottles, once used, can be broken down and made available for reuse. In either case, the goal is to reduce the need for new chemicals and to stop the generation of wastes that can't be reused.



Industrial Ecology is a new engineering discipline and the goal of recycling chemicals is also new. In many cases, companies will need to substitute newer chemicals in order to make recycling more cost effective. In any case, the chemical cycles are not the direct concern of business process professionals, however, the task of designing and managing the actual recycling process chains is. One immediately imagines that recyclers will form business partnerships, very much as key members of large supply chains do now. One can further imagine companies locating plants near each other to facilitate the transfer of materials. One can also imagine some companies making changes to their packaging or introducing incentives for consumer recycling that will facilitate the recovery of items needed to close the reuse loop.

Perhaps a group like the Supply Chain Council will address this issue. A variation of the SCOR approach could be developed to define various key materials or chemical recycling processes and the SCC could play a role in bringing together companies to design, manage and share measures of recycling efficiency and effectiveness.

For those involved in enterprise process architecture work, it seems obvious that the future is going to require more inter-company process work. One imagines that a single manufacturing company might be a unit within a supply chain, and simultaneously might also be a unit within two or three separate recycling chains – all requiring daily coordination and ongoing management. Clearly, as a manufacturer grows, it will require that other members of the recycling chain increase their capacity, and vice versa. Equally, as a manufacturer decides to shift technologies and the chemicals it uses, it will need to coordinate with other companies in various recycling loops.

When Michael Porter described the Value Chain in a March 2001 article on "Strategy and the Internet" [2] he suggested that value chains that involved multiple companies were properly termed "value systems." A supply chain that involves a number of different companies is a good example of a value system. A materials recycling loop that involves a number of different companies is another example of a system – except that in the latter case the ultimate customers are the companies themselves, all of which seek to optimize their individual performance by cooperating with each other to create and maintain an efficient recycling process.

Expect to see more articles on the creation and the management of multi-company recycling chains.

Til next time,

Paul Harmon

[1] Paul Collier and Carina Maria Alles. "Materials Ecology: An Industrial Perspective." Science, Vol 330, p919. Nov. 12, 2010.
[2] Michael E. Porter. "Strategy and the Internet." Harvard Business Review, March 2001. p63-78 (Reprint RP103D

:: email us
:: Visit BPTrends