Finding the optimum process

Professor David Simchi-Levi from the Massachusetts Institute of Technology speaks about the challenges and benefits of applying the principles of lean production to the Bayer supply chain.

You acted as adviser on the master’s thesis “Lean Supply Chain Management in the Pharmaceutical Industry – Models and Simulation of an SAP Environment.” What particularly interested you about this topic?

Prof. David Simchi-Levi: The master’s thesis of my student Billy Hou, which Bayer sponsored, offered a good opportunity to apply the principles of lean production in a completely different and very challenging environment. The concept of lean production actually originated in the automotive industry in the 1980s. The pharmaceutical industry discovered these ideas only recently. Whereas the automotive sector is a production industry, the pharmaceutical sector is a process industry. It was therefore unclear how lean production could be implemented in this sector. Concepts such as one piece flow require the production of individual parts. To understand how lean production can be used in the process industry, you have to look at its key principles – eliminating waste, continuous improvement and staff motivation. These three interrelated basic principles are universally applicable and also relevant in sectors other than the automotive industry. Billy Hou’s research provides clear proof of this. I was also pleased to be a part of the cooperation between the MIT and Bayer.

Was this the first joint project between the MIT and Bayer?

No, we have been working together for around seven years now. Up to now, though, this has mainly involved us organizing lectures for Bayer specialists at MIT events and vice versa. This is our first joint research project.

In your opinion, how can Bayer benefit from the research?

As I see it, Bayer can benefit on three levels. The first is by directly implementing the recommendations, which apply specifically to the plant that Hou focused on. Secondly, Bayer can transfer the tool to other areas of the Group. It is flexible and can be adapted to different environments. The third level – and the largest area of application – is for Bayer to take the concept as a whole and determine where and how specific measures can best be implemented within the Bayer Group. We should bear in mind that lean production does not look for optimum solutions in an existing process but for the optimum process. In most cases, an attempt is made to find the optimum production schedule in a given environment, but the aim of our project was to use an optimized process to change the production environment.

The interview was conducted by Rüdiger Strempel.