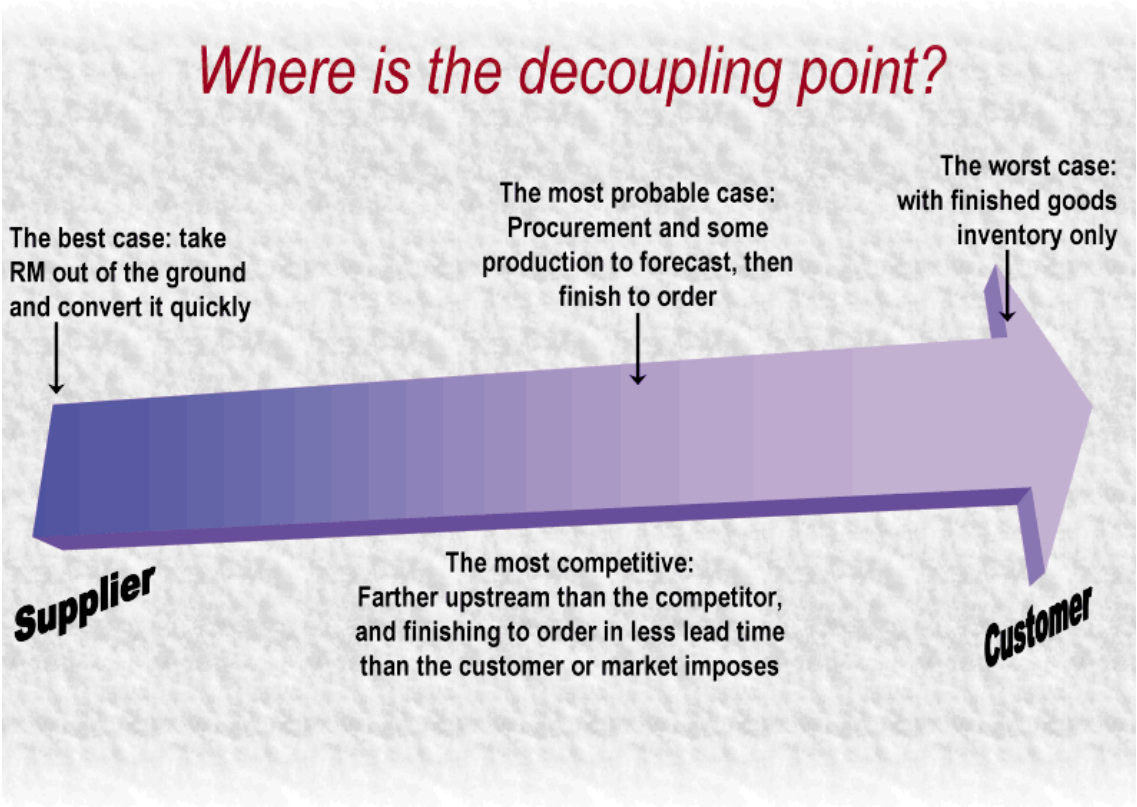
Chatou, February 15, 2005

FOLLOW TAYLOR OR MAKE LACE ?

During an audit that I conducted in a large metalworking company, a shop supervisor said, “Here we apply Taylor and we make lace. In the first part of the production process, we make large metal sheets to stock. Then we cut parts out of the sheets according to customer order. And me, » he grumbled, raising his powerful arms underneath his blue shop coat, « I make the lace! »

The production process in this company displayed a decoupling point frequently encountered. The product is “pushed” up to a certain point according to Taylor’s standard-work approach° to optimize production, then it is “pulled” to the end to satisfy a customer order. Example: our maker of sheets to inventory cuts out pieces to order. Example: an automobile supplier injects plastic parts by batch but assembles finished goods on order. Example; the suppliers of an aerospace factory deliver an economic lot size of parts but the airplane equipment is assembled to customer order.



40, rue des Vignobles – Immeuble le Norway - 78400 CHATOU - France
Tél.: +33 (0)1 30 09 87 60 Fax: +33 (0)1 30 71 40 96 - bbx@billbelt.com - www.billbelt.com

Particularly when a company starts to do Lean Production, it is faced with reconciling production pushed by work orders or purchase orders with production pulled by Kanban. How to reconcile push and pull?

In a memorable comment, Stéphane Nicoli, Logistics Manager of a large aluminum factory, said, « Making to stock is mass customization for the disadvantaged »; it's the **worst case** scenario.

The opposite would be the **best case** scenario: take raw material out of the ground and to convert it fast enough to be able to deliver to customer order.

The **most probable** scenario is being obligated to push the product through the process up to a certain point, and then be able to pull it to the end based on customer order. A **competitive** advantage comes from moving the decoupling point between push and pull farther upstream in the supply chain than competition can do.

Lean teaches us to always do better, one step at a time. A French automobile supplier began pulling its electronic products to replenish its (small) finished goods inventory, from a subassembly level, which was produced in batches because of long changeover time. An improvement came after reducing changeover times to be able to pull production from purchased components.

The next improvement came by generating from the MRP II system a Supplier Schedule but pulling actual deliveries with Kanban signals. The bulk of inventory is continually moved upstream in the supply chain: making lace (meaning here pulling the flow) is gradually replacing Taylor (meaning here pushing the flow).

Even the inventory of metal plates in our metalworking company cited at the beginning, could be managed with Kanban, as is the case with the inventory of injected plastic blanks at our plastics manufacturer. They remake whatever was just consumed, and they gradually reduce the number of Kanbans in the loop, one less at a time, to reveal the next non-Quality problem hidden up to now by inventory. They can also learn to "make lace", by producing the maximum product variety in the minimum interval of time, with the minimum lot size, thus minimizing inventory, by applying pitch from Lean Production (see our Newsletter No. 22).

Even Taylor, if he were alive today, would learn to make lace.

° *According to Frederick Winslow Taylor, father of scientific management*

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