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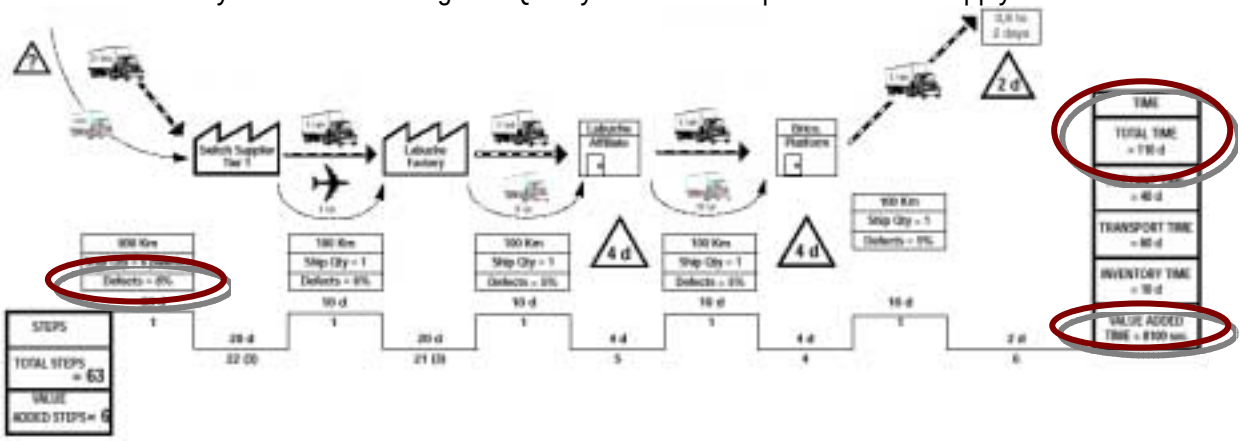
THE RISKS IN YOUR SUPPLY CHAIN:
how to identify and reduce them

Patrick Pirrat, former Supplier Development Manager and currently Industrial Expert at the Chantiers de l'Atlantique shipyards, has great knowledge and experience in industrial and logistic management. Patrick is one of our long-time BBX Partners.

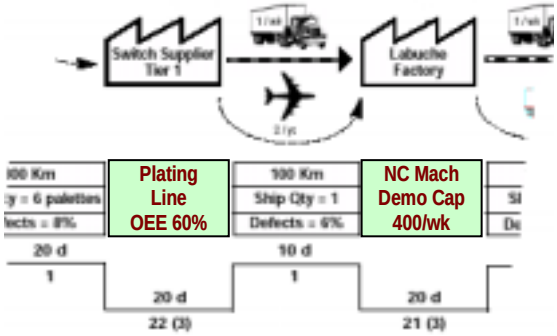
With more than 3000 suppliers participating in the construction of the *Queen Mary 2* and the other passenger ships built at the shipyard, Patrick deals every day with the benefits and the disadvantages of the upstream supply chain.

To measure the risk of non-performance in the supply chain, he suggests going beyond standard value-stream mapping. Long lead times are revealed by value-stream maps, as well as excessive inventory and the increasing non-Quality as we move upstream in the supply chain:



But the value-stream map does not show the dependency of overall supply-chain performance on a few critical resources at suppliers, either machines or manpower. These are shown in the value-stream map of a production process, but not in one for the supply chain. But an automobile supply chain may depend on the mold-maker of the foundry molds for valves. Or a compressor supply chain may depend on the thermal protector made in Malaysia.

The risk may be highlighted simply by adding a data box under the factory icon in the value-stream map, with a line indicating the critical resource and giving its demonstrated capacity (or its cycle time), and perhaps its Changeover Time and Availability



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Then, to reduce a risk judged unacceptable for the supply chain as a whole, the techniques of Lean Production (Quick Changeover, Kanban, Preventive Maintenance, etc.) and of Total Quality (multilevel Pareto Diagram, Cause-and-Effect Diagram, Control Charts, etc.). Focusing the application of these techniques on the weakest point in the supply chain, contributes to the performance of the entire supply chain.

On the Anticipation side, the risk of non-delivery may be reduced by measuring the Demonstrated Capacity via the Supplier Schedule. This may seem like an invasion of the supplier's territory, but in a supply chain measuring the supplier's capacity is in fact best done by the customer!

SUPPLIER SCHEDULE:
SUPPLIER PRODUCT FAMILY

Component	Firm Zone				Planning Zone					
Week	1	2	3	4	5	6	7	8	9	10
A	4	2	6	2	5	1	4	2	0	5
B	0	2	1	3	1	2	6	3	0	2
C	1	0	3	0	1	8	0	5	3	0
D	2	0	3	1	1	3	2	1	2	2
Total	7	4	13	6	8	14	12	11	5	9
Avg Capacity Requirements	7.5	7.5	7.5	7.5	9,8	9,8	9,8	9,8	9,8	9,8
Demonstrated Capacity (from deliveries)	8	8	8	8	9	9	9	9	10	10
					(Planned Capacity)					

Dis-covering the risks in a supply chain and analyzing them is the best way to reinforce a supply chain which often is built purely to satisfy lowest-cost objectives. "It opens up a series of possibilities for improving the whole supply chain's performance," confirms Patrick Pirrat.

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