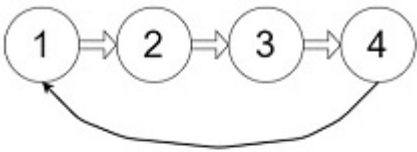
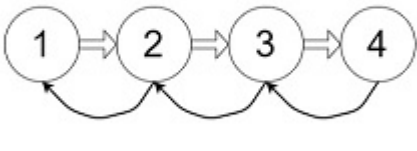
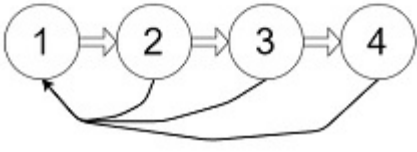


Customized Lean Case Studies

Author	Manouk Nijhof
Abstract	Reduction of lead time by making use of a customized version of POLCA (material control system of QRM), namely G-POLCA, or Generic-POLCA.
Keywords	G-POLCA, Generic-POLCA, Quick Response Manufacturing, Lead time reduction
Anonym	Ja
Company name	
Company address	
Company country	
Line of business	Rubber And Miscellaneous Plastics Products
(Approx.) yearly turnover	1.000.000€ - 5.000.000€
Number of employees	25 - 50
Percentage temporary workers	0% - 5%
Principal range of products	Products tailored to customer specifications
Major product quantities	Make-to-Engineer (one-of-a-kind)
Principal type of production organisation	Shop fabrication
Who was the trigger / customer of the project?	Managing Director
Project Type	Lead time reduction
Lean is already fully established	Neutral
What was or is the main trigger to implement Lean?	Increase quality
Case Study	<p>The central question of the research focused on what kind of pull system could reduce the lead time of a project company with extremely high variations and low volumes. The researchers made a distinction between three different systems, namely ConWIP, POLCA and Generic Polca (G-POLCA). The researchers concluded that G-POLCA would fit the organisation best.</p> <p>G-POLCA is a variant on POLCA. All POLCA-cards of the complete process should be available before the production will be started.</p> <p>ConWIP</p>  <pre> graph LR 1((1)) --> 2((2)) 2 --> 3((3)) 3 --> 4((4)) 4 --> 1 </pre> <p>POLCA</p>  <pre> graph LR 1((1)) --> 2((2)) 2 --> 3((3)) 3 --> 4((4)) 4 --> 3 3 --> 2 2 --> 1 </pre> <p>GPOLCA</p>  <pre> graph LR 1((1)) --> 2((2)) 2 --> 3((3)) 3 --> 4((4)) 4 --> 1 3 --> 1 2 --> 1 </pre>
Top 1 waste	Defects
Top 2 waste	Waiting

Top 3 waste	Inventory																	
Starting Situation	<p>The organisation is a project organisation with a high variety in lead time. The organisation received a high number of complaints about the products of the company. The customers experienced problems with the quality of welding, gluing and the accuracy of measurements. The organisation wants to improve its quality by reducing its lead time. A better structure and overview results in less intermittent interruptions, and thus less mistakes by employees.</p> <p>All projects of the company were divided over medium and large projects. Long lead times are caused by the absence of a pull system. The central question is as follows: What kind of pull system will reduce the lead time of a project company with extremely high variations and low volumes? (See the figure below for the MCT (Manufacturing Critical-path Time) of the starting situation.</p>																	
	<div><h3>MCT huidige situatie</h3><table><tr><th>Project Type</th><th>Engineering white</th><th>Engineering gray</th><th>Productie white</th><th>Productie gray</th><th>Total MCT</th></tr><tr><td>Middelgrote projecten</td><td>2,5</td><td>0,2</td><td>5,5</td><td>1,7</td><td>9,9</td></tr><tr><td>Grote projecten</td><td>8,5</td><td>0,8</td><td>10,0</td><td>3,3</td><td>22,6</td></tr></table></div>	Project Type	Engineering white	Engineering gray	Productie white	Productie gray	Total MCT	Middelgrote projecten	2,5	0,2	5,5	1,7	9,9	Grote projecten	8,5	0,8	10,0	3,3
Project Type	Engineering white	Engineering gray	Productie white	Productie gray	Total MCT													
Middelgrote projecten	2,5	0,2	5,5	1,7	9,9													
Grote projecten	8,5	0,8	10,0	3,3	22,6													
Evaluation	<p>Flow efficiency</p> <p>Flow efficiency = Processing time/ lead time * 100%</p> <p>Large projects: from 13,1% to 24,9% (Goal was 24,3%)</p> <p>Medium sized projects: 10,6% to 12,3% (Goal was 13,6%)</p>																	