

# 13% Increase in cell Phone Production

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## OVERVIEW

This week we decided we should have a look at another case study. In this case a European Cell Phone Manufacturer/Assembler with manufacturing plants in China. The Cell Phone manufacturer assembled cell phones for one of a leading global cell phone brands. In this case production was already very high however the client was struggling to meet demand and had undertaken a Lean Sigma program to improve performance.

## THE CONTEXT AND CHALLENGE

The manufacturer had several production lines and one in particular had a lower rate than the others. The initial project objective was to increase throughput rates from 451 units per hour to 527 units per hour. There was plenty of production data available.

## FINDINGS

Initially we started by mapping out the production process and using process maps and 'Gemba' walks ('Gemba' is Japanese for place where the work happens) to identify the operational step which was the process bottleneck. In this case we identified the final testing operation as the bottleneck. Inventory was building up in front of the testing station, providing clear indication this was the bottleneck. Once the bottleneck was identified we used multi level pareto charts to drill down and help us focus on the critical areas.



The high level pareto chart showed throughput was affected by four areas. The top three areas in order of importance were; Potential Quality Assurance testing Improvements, Breakdowns, High failure rates.

Further investigation resulted in 8 potential root causes; Phone Microphone Design and Fit, Poorly Performing QA testing, Computer Handshaking between the Testing operation and the production line, Work stoppages at testing, Poor test machine maintenance, poor placement of the Testing Pallet and missing printing codes.

A root cause analysis was carried out to identify potential root causes for the low throughput rates. Once the potential root causes were identified statistical hypothesis testing was carried out to determine if the potential root causes were in fact true root causes.

## THE SOLUTION

The following solutions were implemented; Automation of the testing operation, the software was updated to the latest version which resulted in lower cycle times, new Printed Circuit Board's used to reduce defect rates, new microphones used with lower defect rates, and missing printer codes rectified.

## THE RESULTS

Throughput increased from 451 units per hour to 551 units per hour resulting in \$270K in benefits per annum for the one line. The results were transferred across all four production lines which resulted in \$860K in total benefits.