

Toyota Manufacturing UK is the United Kingdom manufacturing operation of Toyota, established in December 1989. The vehicle manufacturing plant at Burnaston, Derbyshire, where they assemble cars. At its fastest speed, a car can come off the end of the production line approximately every 60 seconds.

Problem.

Toyota needed a system to inform the workers of actions the production line was taking e.g. start, stop, Kanban (just-in-time). They wanted to use music (segments) as markers.

The problem was the complexity of the requirements; shift work, overtime, shutdowns, etc.

All the chimes/music had to be programmed for specific times to match up with actions on the production lines. Also, timings could be shifted by overtime and the number of shifts per day.

‘Music Bites’.

These music ‘bites’ must be at specific times to specific areas (zones), under specific conditions. Up to two simultaneous messages may be required.

Kanban overtime etc. - timing was required to the nearest 5 seconds, so was interfaced with a Rugby real time clock, and is programmed by importing a spreadsheet. Toyota decided to use the Phonetica system as the main hub to control the timing of the production lines and paint shops etc.

So in 2004, the PA system became the controller (start/stop) of all the production lines producing 179,233 vehicles in 2013.

Solution.

In 2010 Toyota asked us to increase the resolution of the system from 5 seconds to 1 second. Although this was not an excessively difficult task, it needed to be tested on a live system before installation.

Therefore, we went to Derby in the August shutdown. During the testing, Simon, Phonetica’s CEO, asked why this increase in resolution was necessary. He was told it was because they had improved the start-up time of the production lines from 15 seconds to 12.

So they could lose 3 seconds per start/stop per production line per shift.

As one car comes off the line every 30 seconds, this time amounted to a lot of cars in a year.

Toyota Case Study

Control Production lines, Increase Profits…

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PROJECT INFORMATION

Construction: Manufacturing

Type: Factory

Partners:
[www.**wtparkergroup**.co.uk](http://www.wtparkergroup.co.uk)

Date completed: 2013

Produced by: Madison Gallagher

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