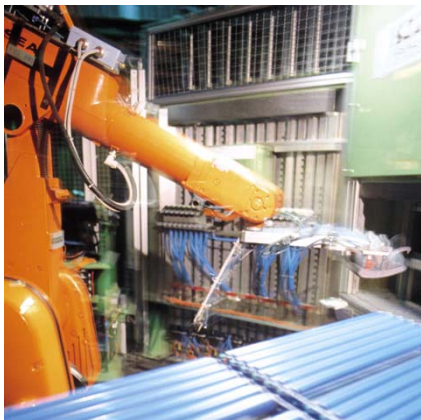


## Case Study

*How a leading manufacturing firm improved its productivity and efficiency through offline programming of industrial robots*



## Offline programming of industrial robots for a manufacturing firm

### Business Situation

The customer, a manufacturing company that is in the pursuit of continuous improvement, introduced a robot as part of its flexible manufacturing systems. The customer was facing challenges in programming robots used in the manufacturing cell. The programming time in many cases represented high costs and downtime, which affected the manufacturer's profitability.

### Mahindra Satyam's Role

Mahindra Satyam adopted a concept called 'Offline Programming' for industrial robots. The opportunity cost of programming robots online is higher than that of offline programming.

The manufacturing cell, set up at one of the manufacturer's plant location, was equipped with arc welding robots for welding application. Arc welding robot was offline programmed by workspace, robotic-based simulation software. It provided the capability in construction of virtual cell, building mechanisms, importing and exporting of neutral files such as IGES, SAT. The weld programs were written in AS, a programming language for Kawasaki controllers.

### Business Benefits

- Cost savings by reducing programming cost, scrap and costly rework
- Enabled rapid development of work cells and reduced impact on production schedules
- Set up the sequence of operations even before all the sub-systems of workstations are manufactured and put into place
- Facilitated realistic simulation
- Better working conditions with increased programmer safety

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