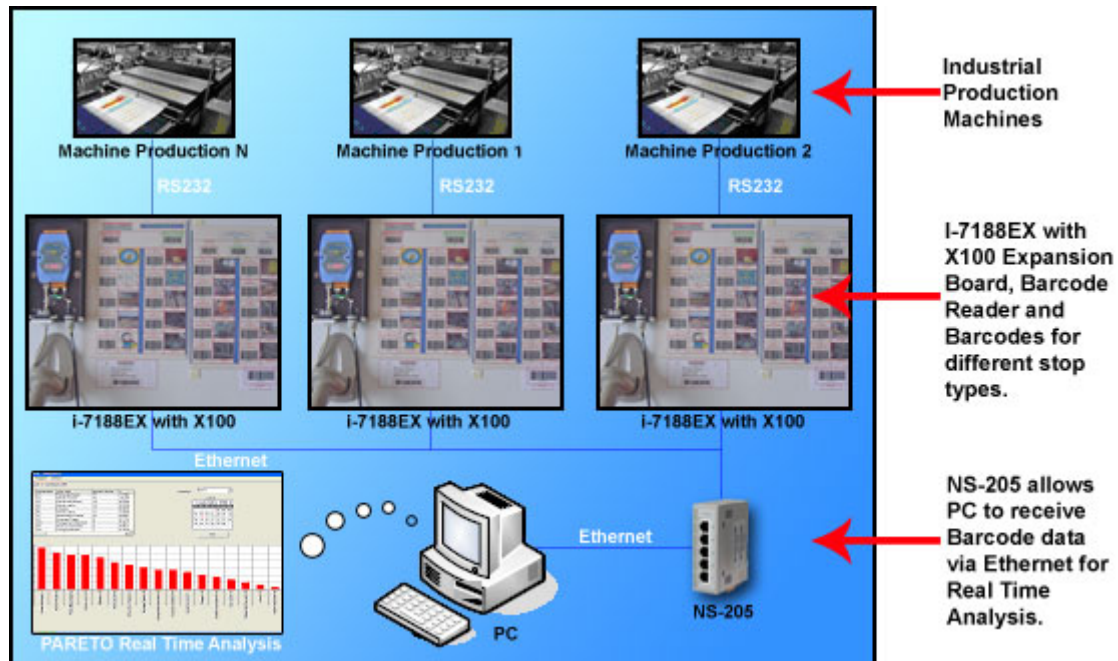




## ANALYSIS OF INDUSTRIAL MACHINE FAILURE MODES IN REAL TIME GEMTECH SUCCESS STORY



Knowledge of production machine failure is crucial for implementation strategies to minimize failure and increase industrial productivity in industrial fields.

When a production machine stops, operators usually manually note stop times and times of production resumption with inaccuracies. This documentation is usually done in Microsoft Excel and usually results in delays in processing time by the production department.

The machine failure data acquisition system designed by GEMTECH using ICP DAS USA products, detects failure at the precise moment a machine stops. The operator scans production stops and restarts the machine. Then the operator scans the type of stop and the moment of resumption of production through barcodes. The number of most significant stops is known automatically in real time for a large number of machines. The PARETO analysis is done in real time. The system automatically shows the duration of stops per type. It also logs very important information such as the frequency of a given stop type over several months, as well as the gravity of each stop. The barcode scanners use the [I-7188EX](#) Embedded Controller in 232 entry, and the ICP DAS USA [NS-205](#) (5 Port Industrial Ethernet Switch) to network the barcode information.

[I-7188EX](#) has an [X100](#) (8 Channel Digital Input Expansion Card) installed to allow automatic recording of the produced quantities, the machines stop times, and to establish economic ratios for the cost prices near real time.

The application of this technology in a packaging products printing house allowed the identification of machine failures occurring 1.5 hours a day to be reduced to less than 30 minutes a day. This is equivalent of saving 12 to 13% per day. The Company spared the costs of buying a new machine and hiring two operators. The industrial operators gained knowledge, reacted and won.