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# Rockwell Automation: Leading the Way in Just-in-Time Manufacturing?



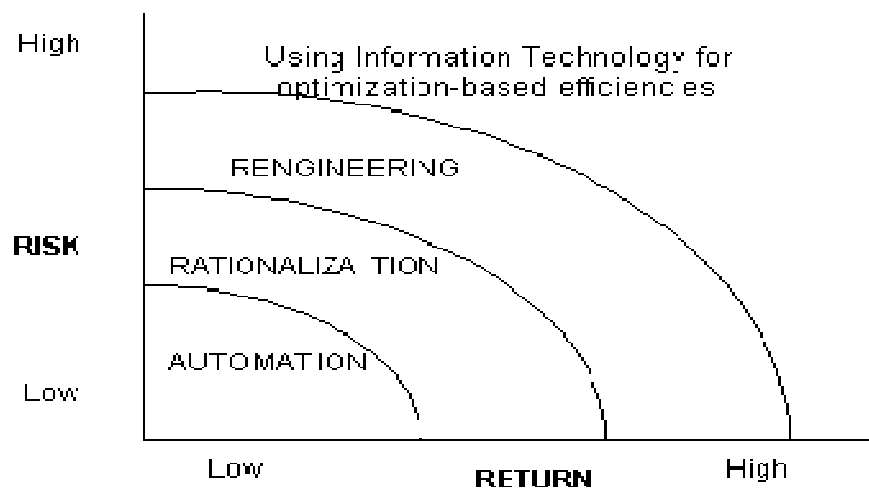
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## Rockwell Automation: Leading the Way in Just-in-Time Manufacturing?



Ex. 0 – IT Risk Assessment (Malhotra)

*"Formally, it's the Marion plant of Rockwell Automation's Power Systems Div., a place where they make nearly 3,000 mounted spherical and tapered roller bearings with shaft sizes ranging from 1 3/16 inches to 5 inches. The plant creatively puts people production processes and IT software to work with industry leading result ."*  
**(McClenahan)**

The success of the Marion Plant of Automation's Power Systems Div. in its ability to compete within the global heavy manufacturing industry vis-à-vis the fledgling Chinese manufacturing industry is a key indicator of how US manufacturing will need to leverage ever more sophisticated just-in-time operations processes if it is to compete to compensate for the low production costs and economies of scale advantages currently enjoyed by a small group of developing manufacturing nations.

Traditionally, US manufacturing operations like the Marion plant had an easier time competing with Chinese firms by leveraging superior product quality and more efficient operations processes combining a synergistic blend of superior engineering expertise, total quality management, and integrated IT processes. For many years these advantages were enough to compensate for the lower personnel and material cost advantages that were present in China. However, in recent years, especially after the Chinese government began to slowly move away from the strict central planning economic system in place since the advent of the communist regime, the Chinese have begun to close the quality gap and in surpass US standards. Some of the major contributors to this trend lie within Chinese adoption of traditional US operations management techniques, IT integration, extensive employee training, and the utilization of what in many cases is a brand new production infrastructure. Given their lower costs they are able to invest a greater percentage of their revenues into the above mentioned areas more substantially than most US firms granting them for their first time in their history a significant competitive advantage in respect to North American, Japanese, and European industries.

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This does not signify the eventual demise of the traditional Western World's manufacturing sector given that eventually the success generated by Chinese manufacturers will help develop their economy and raise operating costs over the long-term thus reducing their current competitive advantage. However, it does mean that in the short term US manufacturers will have to strive to find an alternative competitive advantage in being able to provide on demand just-in-time manufacturing capabilities for a multitude of low shelf-life mechanical and high tech product lines.

*“The result: innovation (wireless and RF systems that allow material handlers, maintenance technicians and quality auditors real-time access to data from anywhere in the plant), industry-leading low costs (Rockwell declines to say just how low), quick delivery (as short as 24 hours) and exceptional quality (first-pass yields of 99.7% for all finished products) in a business that has surged the past few months.” (McClenahen)*

Manufacturing operations like the Marion plant need to maintain a very nimble posture which cannot solely rely on the top down sequential process operational flow which is typical of most manufacturing enterprises. In order to shift gears and quickly change manufacturing requirements to meet the tight deadlines of their customers management needs to retain the ability to design and implement production processes on the fly. In order to be successful in doing so all process related interdependencies need to be understood so that new process flows can be quickly modeled around them

*"Why the 80/20 arrangement on the production floor? "It's really easy to lose track of what's important, particularly when you've got nearly 3,000 finished goods that you produce. And it's easy to let the exceptions dictate the process," notes Fullbright. The big downside to that, he says, is that exceptions drive up cost. "So by focusing on 80/20, it allows us to design our processes for the rules rather than the exceptions and to drive the cost to the lowest possible level that we can," he explains."*

**(McClenahen)**

The largest probable threat to the Marion plant's current success will be success itself. If they feel tempted to expand operations it will be imperative that they keep the current three person team setup for each operational unit comprised of an engineer, a supervisor, and a planner. Larger teams tend to become beaurocratic and typically drive up costs. The entrepreneurial spirit that accompanies these teams provides a synergistic collaboration opportunity where quick and well thought out solutions are implemented without too much time being spent in politically oriented meetings. Thanks to the advances in computer technology it is now possible to plan processes that years before would have required much more time, money, and additional personnel.



*“The Computer Age of the 1970's Provided the tool necessary to support the widespread use of Management Science's quantitative techniques – the ability to process huge amounts of data quickly & relatively cheaply Major contributions include the development of Material Requirements Planning (MRP) systems for production control.” (Wollan)*

The success of the Marion Plant of Automation's Power Systems Div. in its ability to compete within the global heavy manufacturing industry vis-à-vis the fledgling Chinese manufacturing industry is a key indicator of how US manufacturing will need to leverage ever more sophisticated just-in-time operations processes if it is to compete to compensate for the low production costs and economies of scale advantages currently enjoyed by a small group of developing manufacturing nations.

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