



## Identifying the source of **manufacturing production errors** paves the way for real progress.

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Whatever the industry, manufacturing production errors that lead to defects cost money and waste time. In sectors including pharmaceuticals and medical devices, these errors can cost lives. Even in less critical environments, the costs of recall and the implications of faulty goods or components reaching customers can be terminal for the business. Litigation, loss of trust in a brand name and products, and the sheer speed at which bad news travels online are only three of the many reasons why errors are best identified at source and eliminated.

As build-to-order in manufacturing becomes the definitive way to meet customer requirements, increasingly central to business success, the need to eliminate errors becomes even more intense. When a manufacturer is investing vast sums of money in designing, developing and delivering a one-off of a given product, every component that goes into that product has to match specification precisely. The smallest error, mismeasurement or oversight can threaten the entire project, at the very least compromising project costs and timings.



It sounds simplistic to suggest that a zero error mentality is the absolute ideal. Six Sigma more realistically suggests that 3.4 defects per million is an acceptable compromise, the inference being that the expenditure of time, money and effort involved in achieving a zero defect environment is counterproductive.

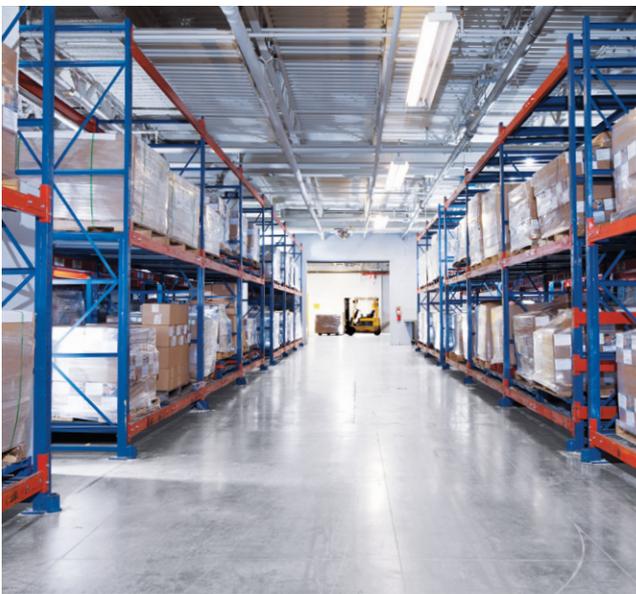
Final inspection or quality assurance immediately prior to shipping isn't the place to pick up inconsistencies, either – inspecting finished product at the end of a process adds little but cost, relying on inspection to ensure quality is the manufacturing equivalent of closing the door after the horse has bolted.

Similarly self-defeating is a situation where the quest for zero defects takes precedence over fundamental business needs, with investments made in technologies that dictate the quality measures to the business rather than the other way around. Only when a production strategy exists, incorporating a built-in commitment to systems and cross-check processes to eliminate errors, can the search for the technology that's fit-for-purpose begin.



Manufacturing Execution Systems help to drive down the effort involved in inspecting for and fixing defects by enforcing error-proofing procedures and 'right first time' execution. Where these systems sometimes fall short is on the ability to really interrogate a given process through rigorous data analysis. From this comes actionable information on which you can base your decision-making for the necessary and achievable improvements to that process.

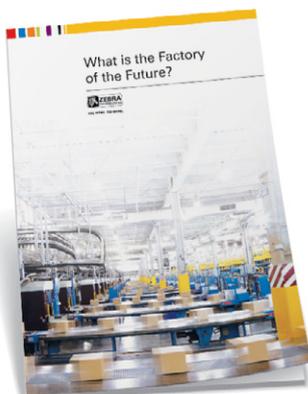
Performing tasks right the first time only works if you can do them right the next time, too. A process can't succeed enterprise-wide if it can't be replicated on each and every occasion. Having full operational visibility of production data is your means of ensuring the right asset is in the right place at the right time, minimising the likelihood of production errors that result in defective goods and the problems they entail.



The best practices and Automatic Identification and Data Capture (AIDC) technologies used to track items through production, including barcodes and passive RFID technologies primarily, are also key tools in terms of sample tracking and quality control. The information these technologies provide is exactly the information you need for a zero error mentality (given that a zero error reality is essentially unattainable).

AIDC technologies eliminate errors and increase efficiency by accurately linking records with products and processes. You can put a series of gate mechanisms in place in your facility that will cross-check, in real-time, what the system believes you have with what you actually have. Any inconsistency will be picked up there and then, making it impossible for faulty goods to leave your site and reach your customer. Just as importantly, you're able to identify the precise source of the error or errors, and adapt your processes accordingly.

In today's highly competitive, global market, where customised production is expected, AIDC solutions deliver the data visibility that ensures you meet demanding customer needs as efficiently, cost-effectively and assuredly as possible, reducing errors, defects and waste, and creating new value.



Find out more about the Factory of the Future. Download our guide at [www.zebra.com/manufacturing-future](http://www.zebra.com/manufacturing-future)



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