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## **Automate Or Die!**

### **Warns Stirling Paatz of specialist robot integrator and supplier, Barr & Paatz**

If news that robot investment is still booming in China, with a 20% increase reported in the latest figures, and that it is expected to install more than 100,000 industrial robots by 2015 doesn't sound alarm bells, then it should. As should reports that demand for robots is also increasing in the so-called low wage economies of Eastern Europe and South East Asia, not to mention India and Russia. All are seeking to reduce production costs, increase output and enhance quality by turning increasingly to flexible automation.



Industrial robots are recognised as the key components in the drive toward automation and represent one of the quickest ways of boosting productivity and reducing labour costs. The latest statistics indicate that the emerging markets clearly recognise this, with countries like China, Taiwan, Russia, India and Malaysia all busily automating their manufacturing plants, in order to be competitive on the global market.

Yet, sadly, the UK continues to lag behind most other industrialised nations, with robot shipments to this country down once again, and, aside from the automotive sector, flexible automation is comparatively sporadic within British manufacturing. If we accept robot density as an accurate indicator of automation, then with less than 100 robots per 100,000 people employed in our manufacturing industry, we are below almost every other advanced or emerging nation.

Whether that is due to traditional suspicions that robots cost jobs, to shareholders favouring dividends over capital investment or simply that we were beguiled by the notion that we are now a service economy, with no need to actually make things, is difficult to determine. But how many more old-fashioned factories will go out of business in this country, before we grasp the nettle that is automation and invest in our manufacturing sector? Starkly, it is now a matter of automate or die, because only the leanest and fittest producers will survive in the global marketplace. So let me summarise the many compelling reasons to automate.

**Your competitors will.** Rival producers in this country many not automate, but be sure that companies you've never heard of on the other side of the world will. Global competitors are the most likely to steal your next order and those with the leanest, automated manufacturing process will surely grab market share.

**The maths make sense.** During a period when hourly wages have doubled, the real price of robots has halved. Mass production has pushed down prices, while flexibility and functionality have hit new peaks. Most machines will pay for themselves within two years and give an average service life of 15 years.

**It's the right time.** Coming out of the recession is a good time to take business from competitors, especially as it is easier to implement new systems when not running at full capacity. There are deals to be done on prices and, when the market improves, you'll be leaner and more productive.

**Cut back labour costs.** Automation allows you to take out labour costs from the production process, by using robots to load machine tools, handle raw materials, pick & place components, offload conveyors and replace many manual tasks. They also ease the worry of recruiting, training and retaining labour.

**Protect employees' jobs.** Automation shouldn't be seen as a threat to the workforce, but as a means of becoming more productive and competitive, thereby protecting jobs. Automation increases the revenue generated per employee and allows machine-tenders to be reassigned more demanding tasks.

**Robots don't get sick.** Industrial robots are designed to work 24 hours a day, 7 days a week, with extremely limited downtime. They don't get sick, need to rest or take regular breaks, nor do they get bored with tedious, repetitive functions, carrying out each cycle precisely as before.

**Meet safety standards.** Nowadays, health and safety standards mean restrictions on heavy lifting, handling hazardous materials and working in explosive environments for manual workers, with strict legal sanctions for employers. So when the task is potentially difficult or dangerous, a robot can do it instead.

**Automation is 'greener'.** Meeting energy reduction and carbon footprint targets are easier, because today's servo-controlled robots use less power than hydraulic or pneumatic machinery and can operate in darkened or unheated environments. Robots will also turn off power-consuming peripherals and require less airflow velocity in closed booths.

**Reduce material wastage.** The extreme precision and repeatability of modern industrial robots leads to far fewer defective parts, minimal scrap and less raw material wastage. Process fluids like paint and coatings are applied accurately, while vision systems will detect faulty products on fast-moving conveyors.

**Boost your productivity.** Faster cycles times for automated processes and the capacity for robots to work timelessly without any drop-off in performance add up to greatly increased throughput. Unattended lights-out production also extends the working week, without having to take on extra labour.

**Work more precisely.** Robots can work more precisely than humans, with outstanding repeatability, and can readily cope with the growing miniaturisation of parts. That means better finishes, cleaner welds and more accurate positioning, which translates into improved quality and premium prices.

**Maximise machine time.** The automated handling of machine tools, parts and materials will maximise the utilisation of existing machining centres, reportedly by as much as 95%. Using robots to replace manual operators for managing tools and loading or unloading workpieces will enable machines to keep running 24/7.

**Save valuable floorspace.** Industrial robots have increasingly compact bases and working envelopes and can also be installed on the ceiling or walls, saving valuable, industrial floorspace. A number of compact robot workcells could also be fitted into the same work area, to increase production capacity without adding heating, lighting and real estate costs.

**More production flexibility.** Industrial robots increase flexibility in the manufacturing process, whether it's their ability to handle multiple product in one process, the multi-function flexibility of performing different concurrent tasks or the capacity for reprogramming and deploying as the product mix changes. This in turn helps reduce time-to-market and in-process inventory.

**Flexible better than fixed.** Flexible automation is better than fixed or hard automation, because it allows the manufacturing process to be more versatile and agile. Production is moving away from constant, unchanged processes, to greater variety in product lines and shorter life cycles, where the low cost of changeover gives robots strategic value.

**Improve your competitiveness.** Superior precision and output that is unaffected by tiredness or inattention translate into enhanced product quality and consistency, while increased throughput and energy savings lead to reduced costs. These factors will become increasingly critical in the global marketplace and automation is the gateway to competitiveness.

**If not, semi-automate.** If you simply cannot justify the cost of full automation, you should at least consider semi-automation, which entails implementing a robot workcell for a specific production process. A strategic, affordable automated workcell can eliminate a production bottleneck, remove a hazardous manual function and cut associated labour costs.

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