

TOP TEN TIPS

Speaking to **Automation** magazine, **Tim Mead**, commercial director of GB Innomech, discusses the role of automation within the manufacturing process and offers ten tips to ensure successful manufacturing development

One of the toughest challenges in bringing innovative products to market is bridging the gap between 'proof of principle' and volume manufacture. It can be a significant hurdle for any company but particularly for early stage technology businesses that may be manufacturing their first products, as well as integrating new materials, functions and technologies.

Part or fully automated production systems can deliver cost effective perfect products but machine development needs careful managing. Here are the top ten tips, based on GB Innomech's experience of working with SMEs as well as major manufacturers across a broad range of sectors, and help to ensure automated assembly and test systems are delivered on time, to budget and to specification.

1. Involve an automation supplier as early as possible

It sounds obvious but too many companies wait until product prototypes are fully tested and designs are virtually final before considering manufacture. Involve your automation supplier for advice, to identify potential failure modes and to help avoid costly design mistakes. The early design of the product may not anticipate how components will be handled in an automated system, but it is worth remembering that minor design changes with addition of 'poka yoke' (to prevent incorrect assembly) and interlocking location features can significantly simplify the automation and reliability.

2. Produce a specification

Many projects are 'less than perfect' through lack of a well thought out specification. Writing a spec is an iterative process but a good supplier will be able to help and the spec will become a well thumbed reference work as it evolves through the course of the project. Developing a spec may also uncover existing standard or configurable solutions, which should always be checked carefully, as customised automated lines are inevitably more expensive and take longer to develop.

3. Be clear on your cost justification

Establish payback periods to get a good idea of the project budget and to gauge stakeholders' enthusiasm for investment.

4. Tell potential suppliers everything you know

If necessary sign NDAs but do not keep prospective automation partners in the dark – they will just quote for (or even worse supply) something that fails to address the real issues.

5. Be realistic about timescales and deadlines

Take into account acceptance, installation training and production ramp-up. No machine earns its keep from day one.



6. The right team

Put the right team together by working with an automation development company that has the capacity, commitment and track record to build, test and deliver what they develop. A small and focussed development team will be able to make quick decisions, but need to ensure they also maintain good communication with senior decision makers and other stakeholders across the business to keep them updated.

7. Save costs by paying for advice

Remove uncertainties in your product or process by commissioning focussed and scoped feasibility studies. The more you de-risk, the more likely your system will be delivered on time and to budget, without costly dead-ends or awkward compromises on equipment capability or performance.



Above: Tim Mead, GB Innomech

Below: maintenance functions should be designed in from the start so that problems with process steps can be isolated and resolved

8. Problems can arise at any time

Any risks that are uncovered during the development must be addressed. Ignoring them will not make them disappear and they will affect the capability of the system when installed. Maintenance functions should also be designed in as a permanent feature of the final delivered system so that any problems with individual process steps can be isolated, accurately diagnosed and resolved.

9. A close working relationship

Work closely with your automation supplier to ensure a supportive, open and trusting relationship, where information is shared freely.

10. Take ownership

Take ownership of the delivered equipment. Involve technicians and operators in equipment design decisions and sign-off testing to help kick-start their commitment. Also remember to ensure the supplier provides adequate training for operation and maintenance so your team can take control of the new system and run it efficiently.

Automating critical assembly or quality testing tasks can help shorten time to market for new technologies but it can also support companies with established processes looking to cut costs, improve their competitiveness or boost production capacities. It can also help eliminate the need for operators to carry out repetitive,



Above: specifications need to evolve. In this example, an extra UV glue checking step was found to be essential in the automated process

labour intensive or hazardous process steps that can make it difficult to recruit and retain staff, as well as potentially leading to occupational injuries and litigation claims.

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