

Technical Whitepaper

Build or buy? Assisting OEMs to calculate the TCO tipping point in plastics manufacturing

Technical Plastic Moulders
Your trusted plastics partner

Original Equipment Manufacturers (OEMs) that buy components off the shelf can, in time, discover that they are paying over the odds for parts. As production volumes increase, switching to a custom made tool rather than using parts designed for the mass market can offer a relatively quick return on investment. This new whitepaper from Broanmain Plastics explores the tooling tipping point and examines the counter arguments of bespoke versus off-the-shelf plastic components.

During the early foundation years when developing a product, there's naturally an element of uncertainty. For low volume orders, buying a standard component, for example an electronic casing, may initially make good business sense. It's without doubt cheaper initially as there's no development process or guess work. However, these components are designed for the wider market. Even though technical knowhow is often pooled, buying standard parts can mean:

- There is often a compromise with parts containing features that aren't needed
- You may not be able to source customised features or add personalised branding if it's important to your Intellectual Property
- If the vendor drops out of the market, or encounters a supply issue, finding a critical replacement may be a struggle.

Here, 3D printing can be advantageous. Although the material, time and resourcing costs are likely to be much higher, printing parts from a digital file may be more economical in the short term, especially during the prototype development phase. It may also be beneficial when creating complex customised parts.

Scaling up production

When production levels start to really ramp up, this can be the ideal time to consider contracting out your moulding work to an expert that can help to evaluate the different tooling

options and payback. The exact tipping point will depend on the original unit cost, the price paid for a high spec, quality tool, and the new costs per unit. Typically, for an electronic case, payback would be between 4000 and 5000 units.

At this point, look for a reputable contract moulder that has extensive tool making credentials and understands the moulding parameters and how different additives will perform within the mould.

Given the decline of toolmaking in the UK, there are few firms that possess all of these in-house capabilities. Many outsource to third parties, but tend to take an extensive cut to project manage the process. To avoid hidden financial surprises ask for an all-in fee, with a detailed breakdown and timeframe for mould tool development, testing and sign off.



3D printing can be beneficial for prototyping, but can be extremely costly when mass manufacturing plastic parts

Broanmain can:

- Manage the toolmaking process from start to finish
- Provide design assistance - outsourced to trusted design partner, Jedco
- Keep costs and lead times down by having the tool made by a reputable workshop in China
- Scrutinise the design and review all of the fully hardened samples.

Our estimated timeframe is typically between 15 to 17 weeks from initial design to receipt of the finished tool, including shipment by air. Since embarking on a trade mission to China 18 years ago, Broanmain has managed in excess of 200 tool design projects.

Standing out from your competition

Being the legal owner of the IP for your tool and component can also help differentiate your end product from your competitors and save money long term.

With a mass-market part, there is far less scope to define the exact functionality. Although this might be fine for say a pen, if you need a specific switch for an electrical board it may limit your design options.

Of course, there are many different factors to consider when comparing the differences between buying 'off the peg' plastic components and developing a bespoke tool to mould your own. In most instances, the decision rests on budget. However, there is a transitional point for many plastics parts where investing in tooling will not only speed up turnaround time, but also drive the price down.

Broanmain Plastics can quickly help you to determine the cost savings tipping point.

For more info, email jodavis@broanmain.co.uk, quoting reference TOOL/TIPPING-POINT/19



Being the legal owner of a component's IP can help differentiate your end product from your competitors



Being able to access and modify tool inserts helps to extend the longevity of investments



A high quality, well maintained mould tool should produce in excess of half a million components, often much more

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