

SHARPS practice

With their increased convenience, ease of administration and enhanced safety, the market for prefilled syringes - already worth \$2bn a year - is set to grow rapidly over the next few years. But because most prefilled designs feature an integrated needle and come housed in a significant amount of secondary packaging, this growth could lead to a significant increase in post-consumer waste, some of which will be considered biological and hazardous. With the US alone producing 6,600 tons of medical waste per day, dealing with proper disposal is already a significant and expensive problem. But what if there was a way to reduce this waste, at least in the context of the prefilled syringe?



Mother of invention?

Nobody likes to feel a financial squeeze. It can be stressful, prevents investment and damages morale. For many organisations it means getting back to core competencies. A return to what they came from and what they know. But this is a process that swaps long-term value for short-term savings.

It doesn't have to be like this. Rather than a limitation, financial constraint can be a source of opportunity, a stimulus for innovation in business process and strategy, supporting the delivery of more with less, and the development of new, more efficient ways of working. Rather than proving restrictive, financial constraint can enable the development of a leaner and more competitive organisation, uncovering latent capability. Whilst simple cut-backs may provide a short-term cure, they risk a decline into strategic drift and potential failure to remain competitive in the medium to long term. Without an innovative approach founded on the longer-term business goals, any changes can never be anything more than a quick fix.

Necessity is a powerful force. After all, as the saying goes, it is the mother of invention. Making a radical change when under pressure

is therefore often the best thing to do at the time. There will be no need to develop a sense of urgency to enable change as the sense of urgency will be clear to all. If you are forced as an organisation to make changes because of your financially constrained environment, you can go one step further and convert an inevitable outcome into an opportunity to be more radical than you would be under normal operating conditions, not because you have nothing to lose, but because there's every chance you'll come out stronger once the business environment changes.

So how can this power be harnessed? A structured approach to more radical performance improvement is required, using key stakeholders to brainstorm around the major cost and value drivers to identify opportunities, all set in the context of the future business

While the concept of reducing waste is an admirable goal, most companies perceive this as an additional expense that does little to contribute to their bottom line. However, there are substantial business opportunities for those willing to embrace waste reduction and target increased efficiency. One way to approach these opportunities could be to rethink the essential requirements and attributes of the prefilled syringe.

Prefilled syringes are typically made up of a cylindrical glass primary drug packaging staked with a stainless steel needle, a plastic plunger and a stopper made of an elastomeric material. These components are often delivered to the patient in a paperboard carton containing four to ten syringe assemblies. While this configuration has typically been considered the industry standard, other options do exist.

It makes most sense to begin the re-evaluation of the prefilled syringe concept with the most fundamental part of the syringe, the glass drug container. Since the birth of the prefilled syringe, the drug packaging has been composed of glass, primarily due to the inherent inertness of the material. However, technological developments during the last decade have made it possible to produce plastics, such as cyclic olefin polymer (COP), that are as inert as glass. Changing the primary container from glass to injection-moldable plastic opens up a world of possibilities

in terms of alternate geometries, assembly processes and new device features. In addition, the potential for syringe breakage is all but eliminated.

With this concept in mind, the paradigm of secondary packaging can also be reassessed. If a prefilled syringe can now have a plastic primary packaging, why does it need a secondary packaging? Why not integrate the two, creating a self-contained drug delivery device where the prefilled syringe itself has effectively become its own secondary packaging?

This integrated packaging concept can greatly reduce the size and weight of the overall device, allowing more devices to be shipped and stored per unit area and potentially leading to huge savings in terms of fuel and logistics costs, not to mention a reduction in carbon emissions and waste packaging.

So now that the concept of a 'greener syringe' is a potential reality, the key question is whether companies will view it as an opportunity for cost savings, market differentiation and environmental responsibility, or as just another cost burden. Our view is that any business prepared to be the first to alter the archetype of the prefilled syringe could enjoy significant market and financial gains, as well as helping reduce harmful medical waste.

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environment. Identified opportunities then need to be explored in detail and refined, with the necessary stakeholder engagement and support to drive through the finalised changes. This basic approach can be applied at any scale, from taking out cost in specific products and product lines, to the realignment of a division, or an entire organisation. It's about challenging what was previously thought impossible and uncovering new opportunities. All in a context that supports change.

The key to success is a clear goal, a strong team with the authority to carry through change, and an external viewpoint to bring a fresh perspective. Organisations can struggle to see beyond their immediate constraints and limitations. A new viewpoint heralds a new approach, promoting such practices as working across previously unbridgeable organisational silos, and making people think twice about how and why they do things.

Far from being a limit on innovation, financial constraint can be a significant driver, yielding benefits for both the short and long term. Now is the time to develop a more competitive, more dynamic, and more innovative organisation.

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