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# Process or Technology Innovation of the Year

**AstraZeneca**

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The Power of Continuous Manufacture is Transforming  
the Way AstraZeneca Makes Medicines

# The Power of Continuous Manufacture is Transforming the Way AstraZeneca Makes Medicines



With a growing oral solid dose (OSD) portfolio of life-changing products and global market reach, AstraZeneca's global manufacturing capacity was reaching its previously determined limits and expansion was required. Typically, in pharmaceutical operations like those of the British multinational drug and biotechnology company, development calls for many technical trials at multiple scales. Increasing manufacturing capacity requires scale-up as well as costly and complex technical transfers between multiple technologies or different types of equipment.

Batch processes usually have multiple discrete processing steps/unit operations with holding time between each step making the door-to-door time much longer. Batch processes are limited to the amount of ingredients allocated, usually measure quality only once a batch has fully completed production and tend to have higher unit costs on smaller equipment with more frequent cleaning cycles.

The pharmaceutical landscape is changing with more innovative medicines, a focus on increasing market access and sustainability, fierce competition and the need to be more agile and quicker in bringing product to the market, especially in accelerated approval pathways. In general, current batch processes lack the flexibility to adjust to increasing speed and agility required while delivering benefits in the process.

In response, AstraZeneca developed the innovative tablet manufacturing technology Continuous Direct Compression (CDC), which significantly accelerates development and delivery of new OSD products and enables future real-time release. It changes the way AstraZeneca manufactures tablets.

The company can now accelerate development through digital twins, take advantage of rapid and scalable technology transfer, transform powder into tablets in just 20 minutes instead of several days and produce flexible, on-demand volumes. And it all can be done more sustainably and at a lower cost than before.

AstraZeneca has aligned its global functions around this technology platform standard, ensuring alignment through change and program management. The technology business model is now a shared global standard across development and manufacturing. It removes the need for scale-up and increases the probability of success, allowing AstraZeneca to invest more efficiently in a growing OSD portfolio.

## Benefits

- CDC significantly accelerates the development and delivery of new OSD products at AstraZeneca and enables real-time release. The company expects more than 80% of its future OSD forms — 46% of its current portfolio — to be delivered in this way.
- So far, there's been a 67% reduction in lead time from development to stable production.
- AstraZeneca has seen a 98% decrease in cycle time reduction (door to door).
- Now, 75% fewer batches are needed for process parameter establishment.
- There's been a 30% reduction in factory footprint.
- AstraZeneca has seen a 50% reduction in energy (Scope 1).



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