

# The “*Customizable Platform*” Paradox: A Flexible Design and Development Model for Platform Devices

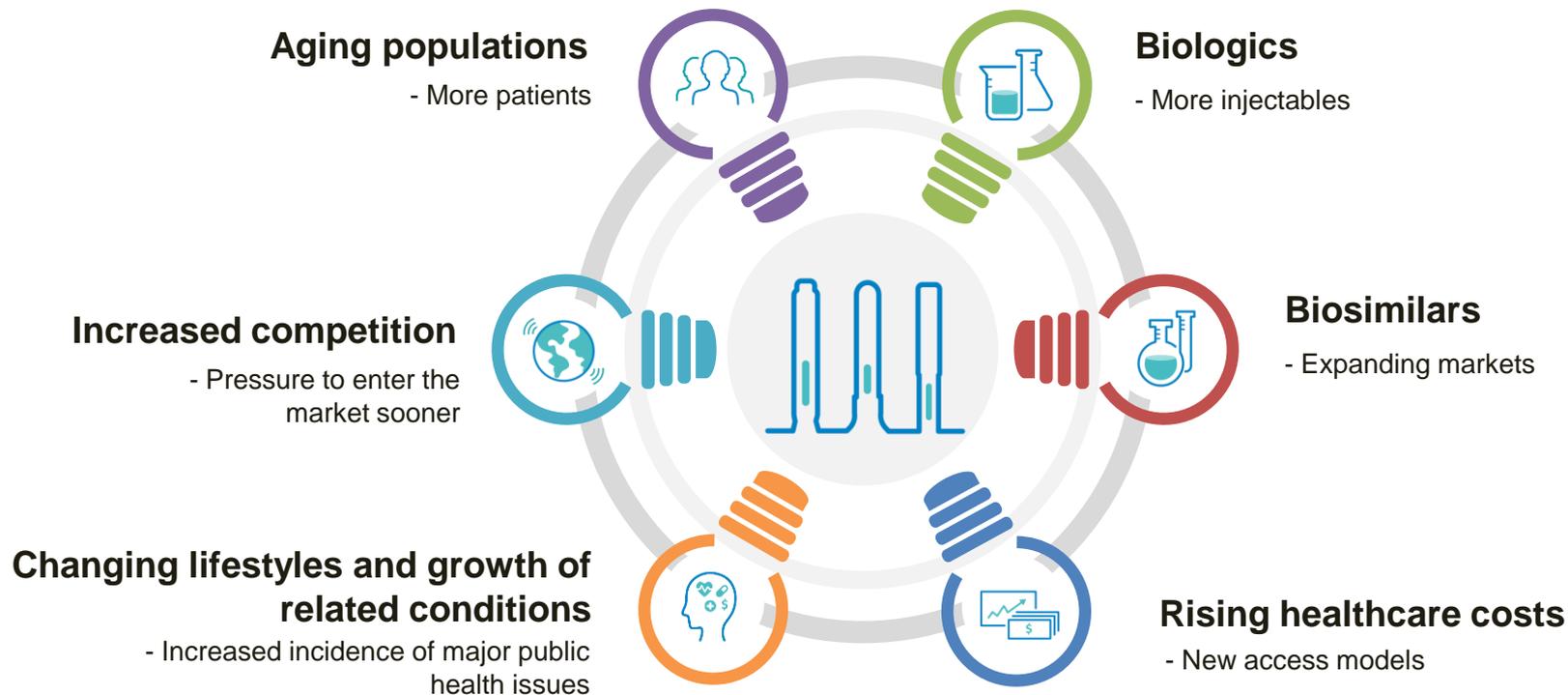


**Lyndon Wild**

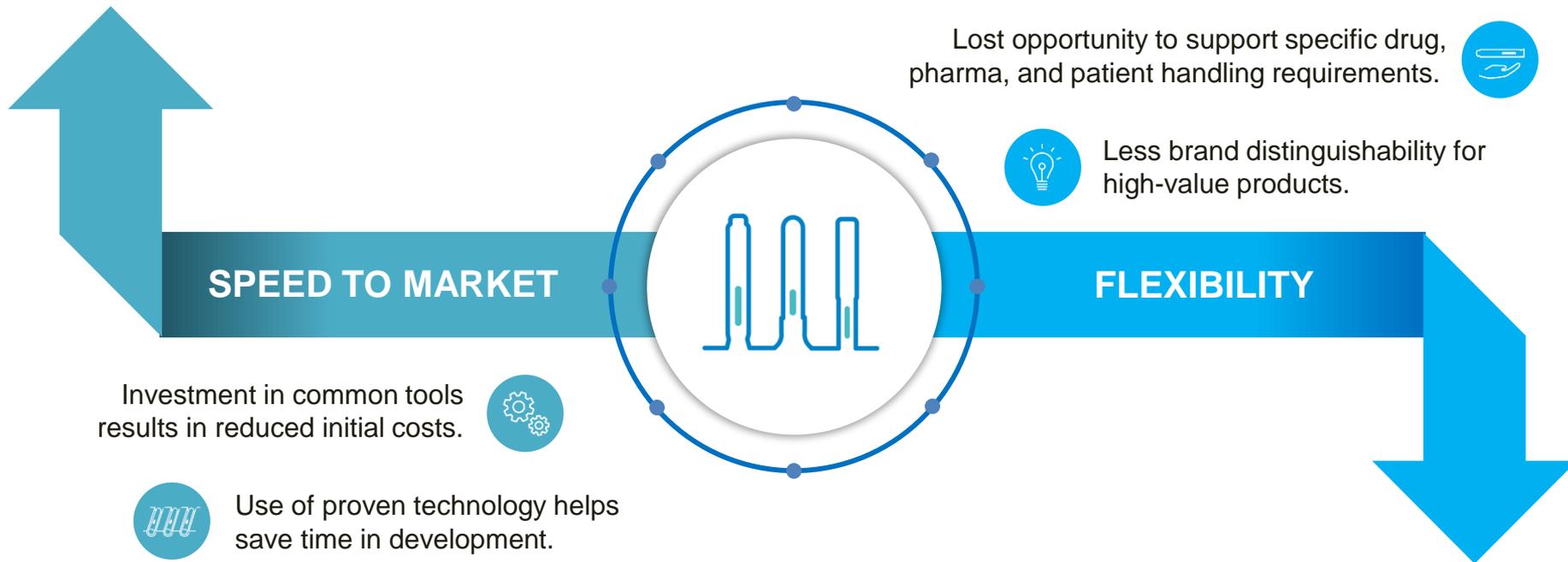
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# MAJOR TRENDS INFLUENCING THE GROWTH OF AUTOINJECTORS



## THE TRADE OFF WITH “CONVENTIONAL PLATFORMS”

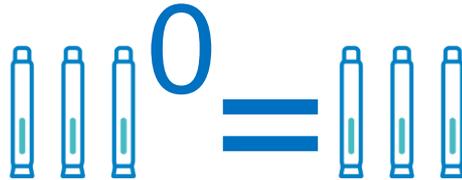


# THE “CONVENTIONAL PLATFORM” BOTTLENECK

Looking at platform devices through the lens of mathematics.

$$x^0 = 1$$

- The zero-exponent rule tells us that any positive integer (x) raised to the power of zero equals 1.
- *Having said that device label is not considered customization*, if we relate this rule to platform devices (**x**) where no customizations exist (**0**), we get:



Let x be any platform device offering raised to the number of finite applicable device customizations corresponding to pharma, manufacturing, patient, etc. requirements.

- Briefly, a platform device offering that does not offer discrete and defined sets of customizations will always result in the same resultant product that **lacks market differentiation**.

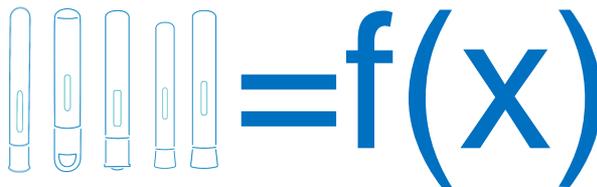
# REIMAGINING THE PLATFORM APPROACH

Although paradoxical, a *customizable platform* offering exists. This is enabled by a robust core technology that allows customizations in the front and rear subassemblies of discrete device projects.

$$y=f(x)$$

- Using the lens of mathematics, we can see the beauty and utility of customizable platform technologies.
- Applying the theory of combinations and algebraic functions, we can exhibit the logical validity of customizable platform devices:

Customized devices based on platform technologies is a *function of* bespoke customizations in the cap, needle cover, and body, to name a few.



where x is a combination function of:

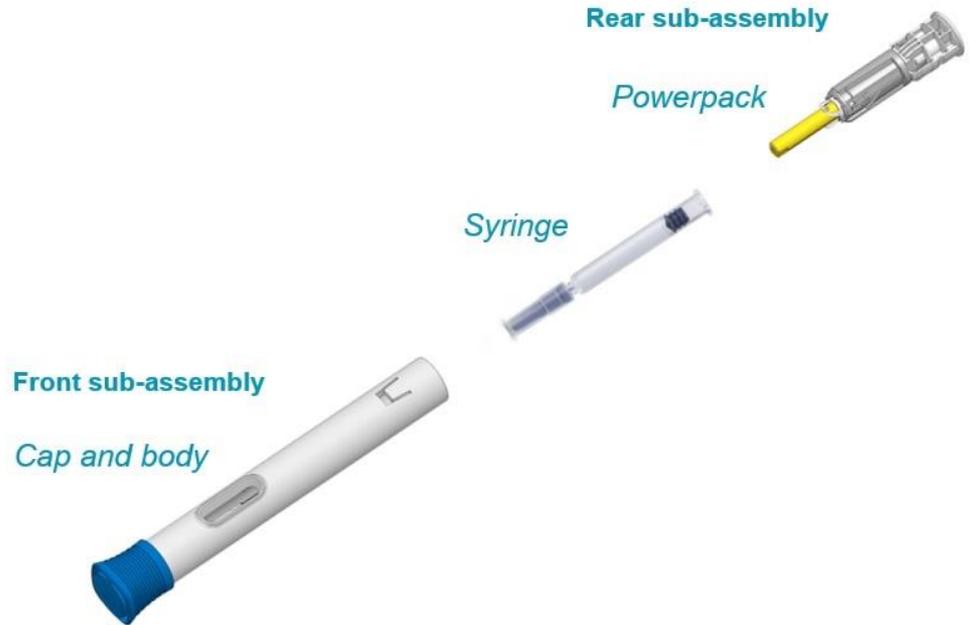


# FLEXIBILITY ENABLED BY A ROBUST DEVICE TECHNOLOGY

The Molly® autoinjector is enabled by a robust technology consisting of 2 discrete modules – the front and rear subassemblies each consisting of standard components that make up the device technology.

Flexibility enabled by standard, modular components along with:

- Flexible spring options
- Customizable colors
  - Plunger rod
  - Needle cover
  - Cap
  - Other components
- Customizable color and/or industrial design
  - Cap
  - Body



## A “CUSTOMIZABLE PLATFORM” SOLUTION

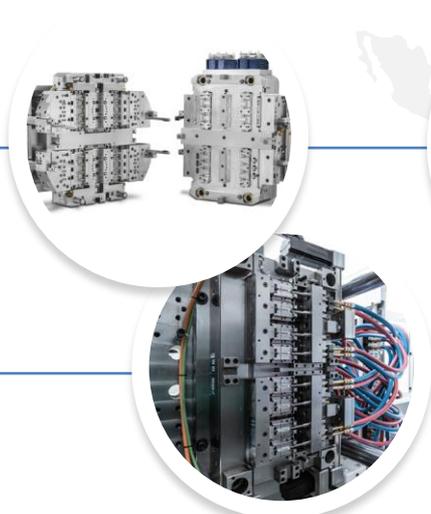
- First introduced in 2010, Molly® is a single-use, disposable autoinjector technology developed to help pharmaceutical companies reduce initial investments and expedite development timelines.
- Built for standard viscosity drugs within the 0.1-2.25 mL fill range
- Compatible with the most prevalent pre-filled syringes on the market
- Robust core technology and full range of in-house capabilities facilitate scalable production output
- Design customization opportunities based on proven platform technology
- Vertically integrated services for faster development
- Flexible infrastructure for lifecycle management



# FLEXIBILITY ENABLED BY ROBUST INFRASTRUCTURE

SHL's in-house capabilities enable parallel development processes as well as scalable manufacturing setups to support clinical and commercial development and product lifecycle management.

## Tooling & Molding



## Verification & Testing



## Lean Manufacturing

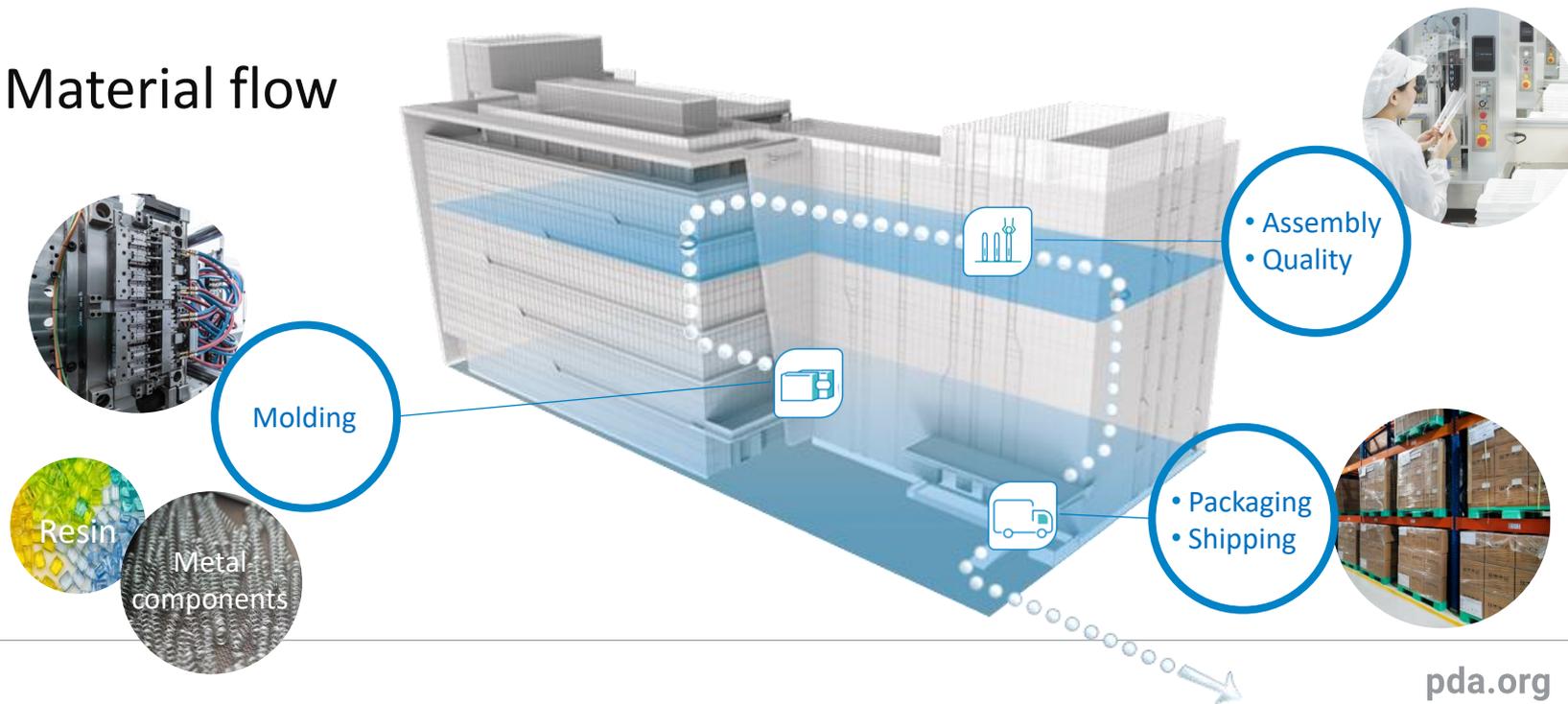


## Flexible Assembly



# MANUFACTURING SCALABILITY THROUGH STREAMLINED PROCESSES

## Material flow



## COMMERCIALIZED PROJECTS

Molly® is SHL's most versatile device offering to date. It has been commercialized with a number of drugs in several markets around the world, and is one of the world's first high-volume autoinjectors to be commercialized.



Migraine

2016



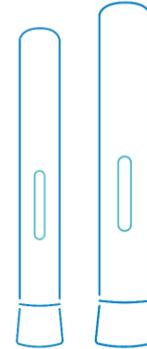
Systemic lupus erythematosus (SLE)

2017



Autoimmune Diseases/  
Inflammatory

2018

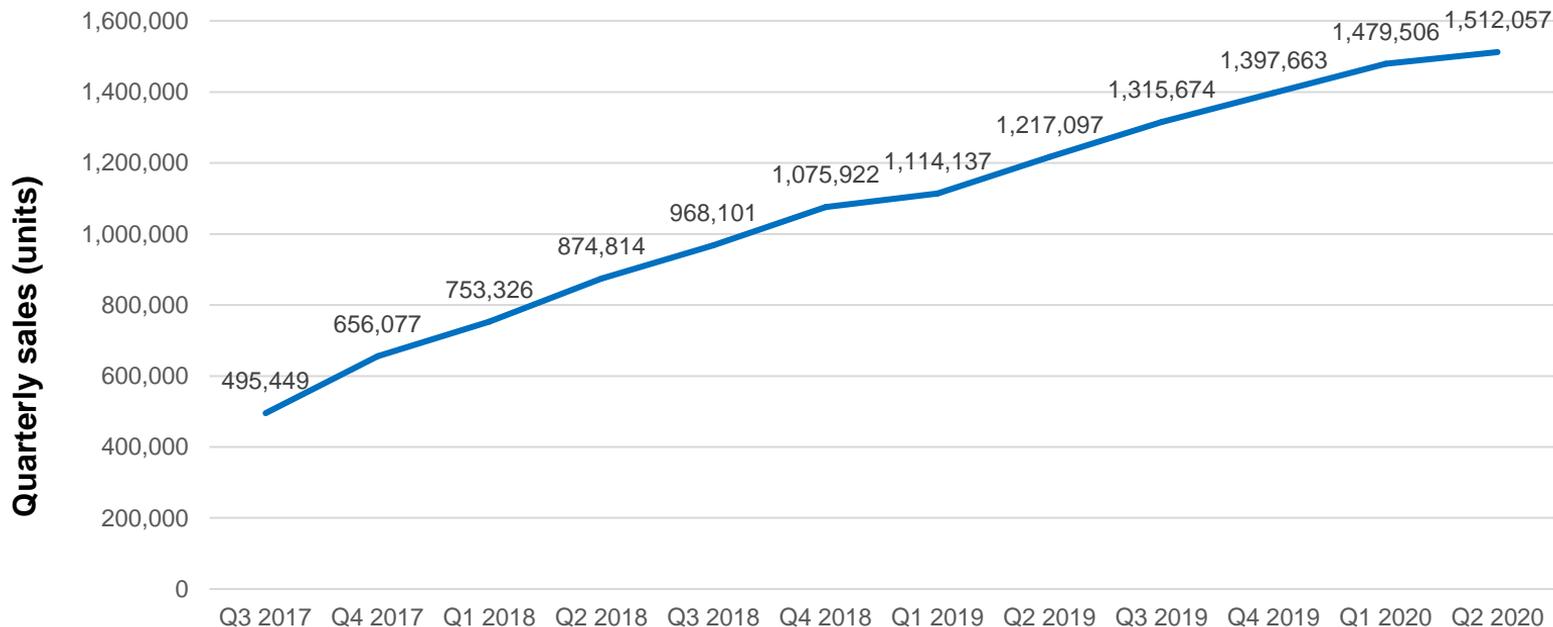


Autoimmune Diseases/  
Inflammatory

2020

# CUMULATIVE END USER SALES OF DRUGS IN MOLLY

Units of drug products sold Q3 2017 – Q2 2020



# A MODULAR DEVICE DESIGN APPROACH ENABLES CUSTOMIZATION

1 mL

2.25 mL

**Standard device**  
**Bespoke colors**



**Standard device**  
**Bespoke cap**



**Bespoke cap**  
**and body**



# BRIEF COMPARISON

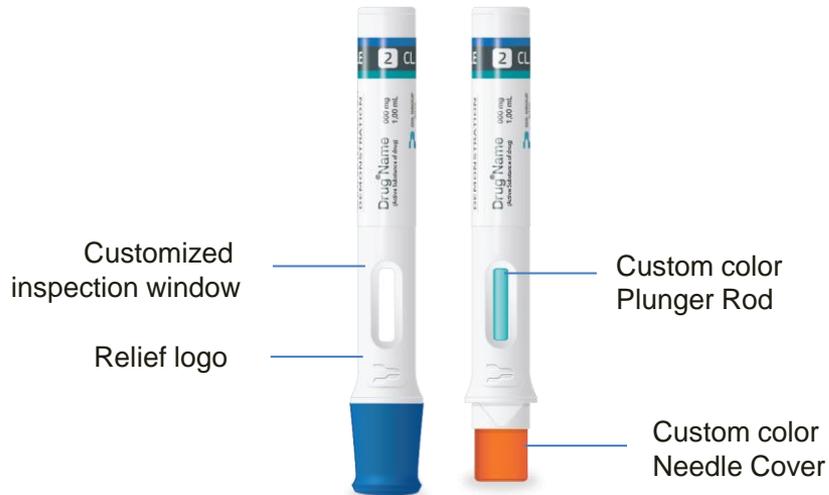
**Standard device  
Bespoke colors**



**Standard device  
Bespoke cap**



**Bespoke cap  
and body**



## CONCLUSION

### STANDARD MOLLY®



- ✓ Flexible branding options
- ✓ Fast development
- ✓ Lower development costs
- ✓ Access to high cavity tools and high-volume production equipment

### CUSTOMIZED MOLLY®



- ✓ Full design flexibility based on proven technology
- ✓ Optimized development timelines
- ✓ Lower development cost compared to a fully bespoke product
- ✓ Competitive unit prices

# THANK YOU

If you have any further questions, please contact:

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