



Innovative injection platforms

Current platform successes and next generation device solutions

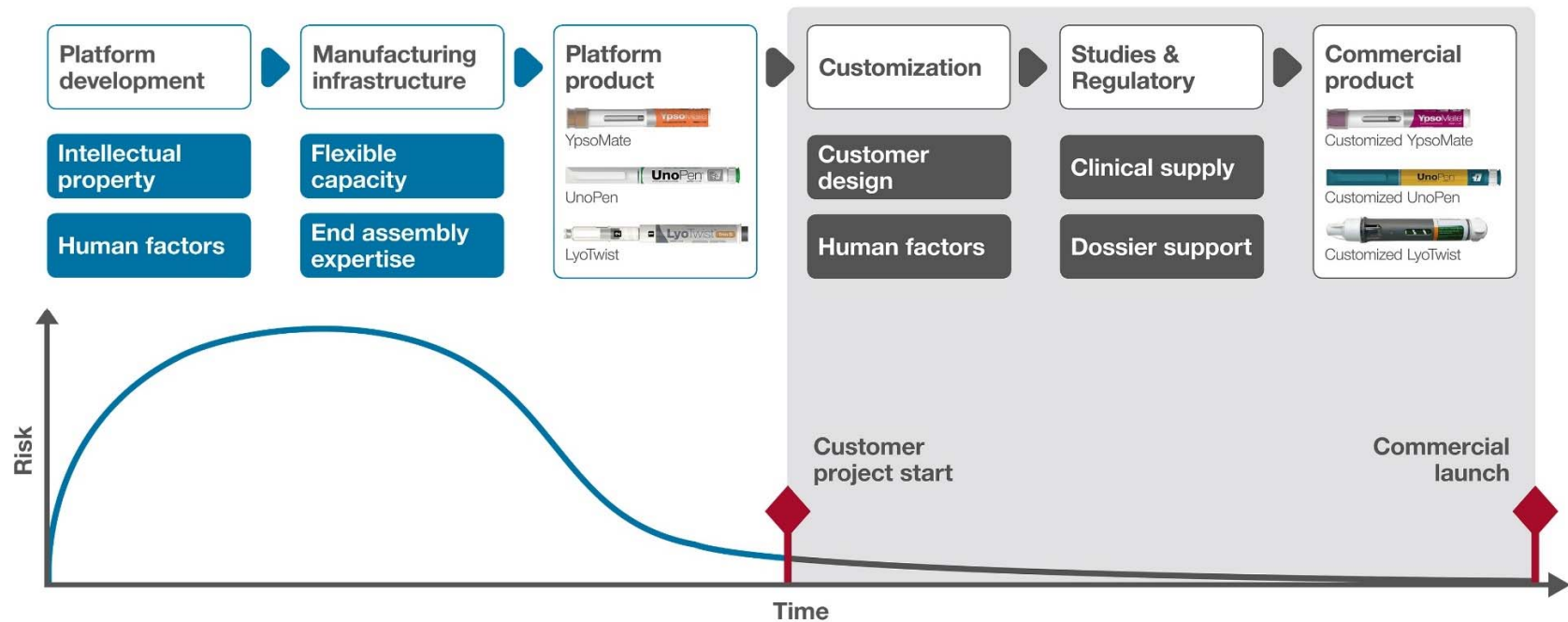
*PDA Europe , Universe of PFS & Injection Devices
Workshop: Innovative Drug Delivery Systems
Vienna, 06. October 2017*

*Ian Thompson
Ypsomed Delivery Systems*

- Platform technology success
- Innovative device solutions



Development of new platform products **decoupled** from customer projects. Risk moved in-house covering platform development and manufacturing infrastructure.

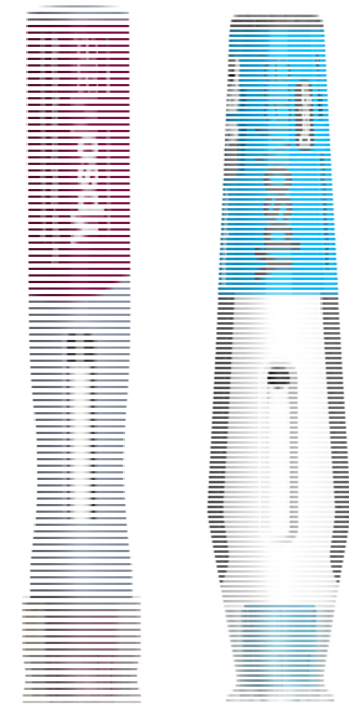


Why develop a platform?

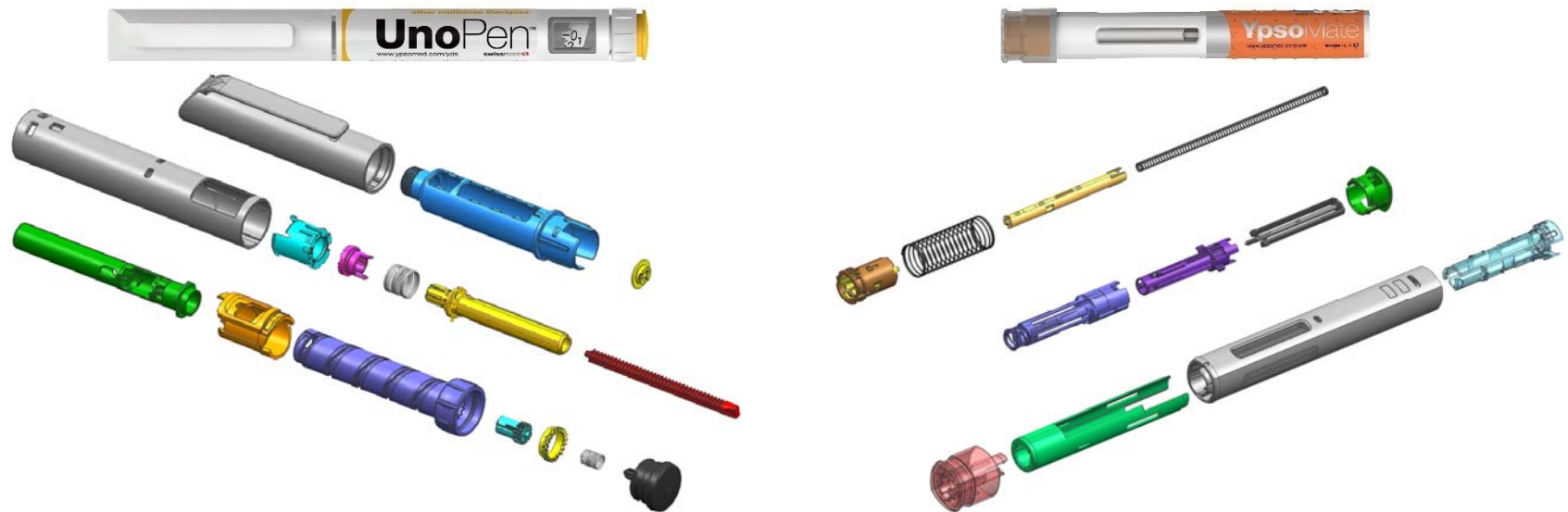
- **Innovate** by developing new features **without time-pressure**
- **Reduce project risks** by basing customer projects on **proven technology**
- **Shorter and more reliable** commercial project timelines
- **Prototype devices available** immediately for handling studies
- **Clinical devices available quickly**
- **Reduce project costs** and **share manufacturing equipment**
- **Known and established patent position**



- State-of-the-art device, based on proven technology
- Available quickly (short time-to-clinic and time-to-market) at **low risk**
- No changes to the device **between clinic and market**
- **Flexibility** for use with **different drug entities**
- Clear **differentiation** from competition for originator drugs
- Product differentiation based on sound **usability**
- Designed for automated **large-scale manufacturing** with **flexible capacity** availability and **supply-chain security**
- **FAST, SHARED, FLEXIBLE, DIFFERENTIATED, LOWER COST....**



- 1-cavity moulds only used during innovation phase
- Typically 2-cavity base moulds only used for customer specific parts → basis for commercial tooling
- Fully automated manufacturing infrastructure available for clinical and commercial quantities → simplifies scale-up and increases supply reliability





SmartPilot™
Go for smart guidance



YpsoMate® 2.25 Pro
Go for 2-step



YpsoPump®
Go for ease-of-use



YpsoDose®
Go for pre-filled

- **Intended product use**
 - Delivery of single, fixed dose from:
 - 1ml long PFS with staked needle
 - 2.25ml PFS with staked needle
- **Features and benefits**
 - 2-step operation
 - Easy to remove needle cap
 - Large viewing window
 - **Push-on-skin** triggering mechanism
 - Start and end-of-injection "CLICKS"
 - Locking needle shield providing full needle safety to prevent needle-stick injury
- **Dose range**
 - Up to 1.0 ml in original YpsoMate
 - Up to 2.25ml in YpsoMate 2.25



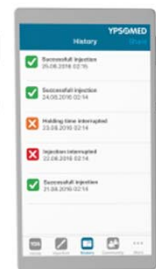


SmartPilot™ for YpssoMate

- Flexibly provides SmartPilot connectivity without modification to YpssoMate
- Detects different use states, such as dwell time and shares qualitative information on injection events with mobile app
- Real-time patient feedback guides patients during use and provides historical information on mobile app
- Identifies the YpssoMate combination product → expiry date, correct dose information



Screen A

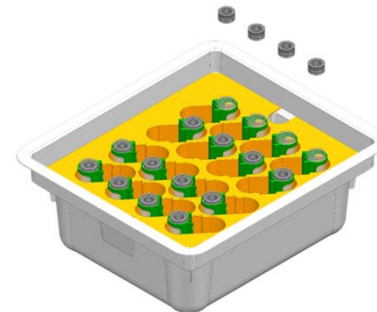


Screen B



YpsoDose® Patch Injector

- Patch device, single dose, pre-filled, disposable
- Designed for fixed doses up to 5ml and 10ml
- Injection time of 5-15 minutes
- Automatic needle insertion and safety
- Controlled speed of injection
- User feedback regarding device functioning and status
- Standard prefillable glass cartridge in ready-to-fill format and in combination with innovative Needle Unit





Thank you for your attention...
ian.thompson@ypsomed.com

