



I N N  P E D E

INNOVATION FACTORY

OPENLY SHARING INNOVATIVE IDEAS

VISION:
**ON-DEMAND PERSONALIZED
MEDICATION PRINTING**

DISRUPTING PHARMA PRODUCTION & LOGISTICS

HOW TO DISRUPT PHARMA PRODUCTION AND LOGISTICS?

- For decades, **pharmaceutical manufacturing and logistics have remained largely unchanged.**
- The current model relies on **standardized drug production**, a traditional **wholesale distribution network**, and **siload inventory management** at each stage of the value chain:
 - **Pharmacies** have to **manage their stock, forecast demand and order.**
 - **Pharmaceutical wholesalers** manage their stock, forecast demand and **order.**
 - **Pharmaceutical companies** forecast demand and **manufacture** and **ship** their drugs.
- **No personalized medicine or combinations** are possible.

HOW CAN WE ENABLE ON-DEMAND, CUSTOMIZED DRUG MANUFACTURING AND A MORE EFFICIENT, PATIENT-DRIVEN SUPPLY CHAIN?

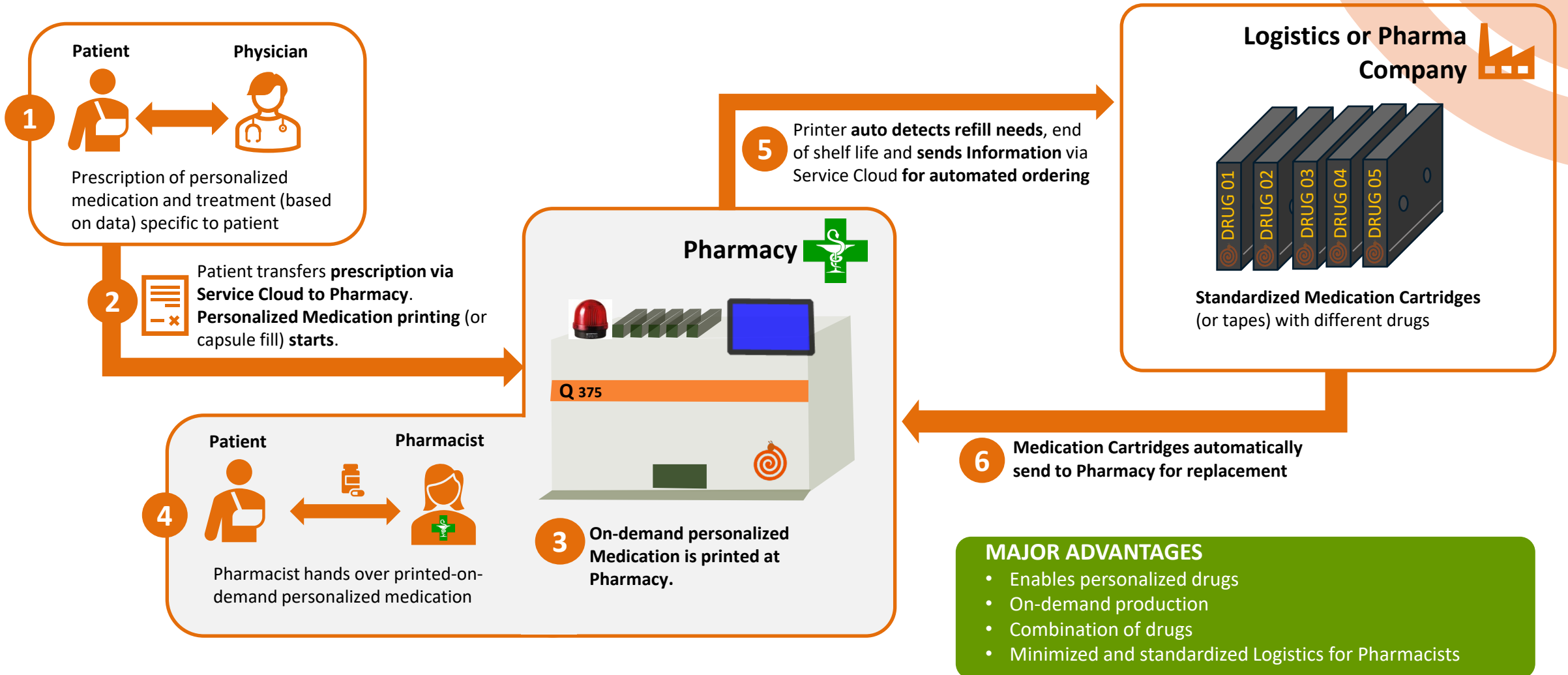


WHAT IF...

- ✓ ...your pill/capsule could be produced/filled or **printed just in time** in the pharmacy or at a logistic provider?
- ✓ the **dosage and drug release profile could be personalized to your specific needs** (e.g. age, weight, sex, ...)
- ✓ ...**different drugs could be combined** to one individual pill?
- ✓ ...the **drug printer automatically re-orders** new drug cartridges if drug is running out or expires

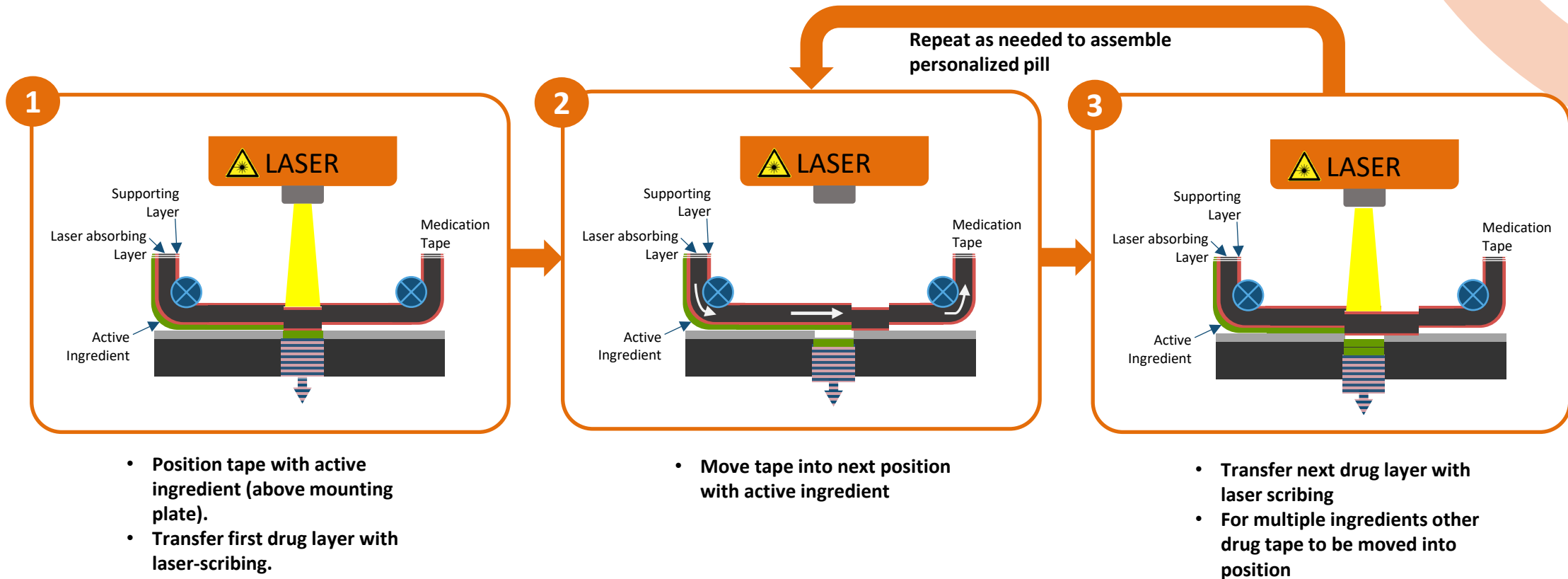


THE VISION: PERSONALIZED MEDICATION PRINTING ON DEMAND



POTENTIAL SOLUTION:

PRINTING MULTI-COMPONENT TABLETS USING LASER-TECHNOLOGY AND MEDICATION CARTRIDGES/TAPES



This innovative drug printing technology using laser and medication tapes is described under *EU WO2017190994A1 "Process for the manufacture of a solid pharmaceutical administration form"* [Stockum W., Schindler A., Vogelgesang S., Goldfuss D., Authenrieth M., Beresheim M.]. ([Direct Link](#)).

Other potential technologies could be e.g., automatic capsule fill technology with ingredients in cartridges.

NEW INNOVATIVE TECHNOLOGIES...

- **have the potential to disrupt pharma production and logistics**
 - by **simplifying stock** management and **order processes**
 - by enabling **on-demand production**
 - by allowing **new competitors** entering the market: **3D drug printers and cartridge/tape standards** to be developed and licensed to Pharma by a big logistic company like e.g. Amazon?
- **have the potential to revolutionize personalized medicine**
 - by enabling **multi-compound pills**
 - by enabling **different pill structures** to allow **different dosage or bioavailability**





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INTERESTED TO DISCUSS
THIS TOPIC OR WORK
TOGETHER?



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