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**“... just the beginning”**

*Why innovation efficiency matters*

## Forward-looking statement

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Information set forth in this presentation contains forward-looking statements, which involve a number of risks and uncertainties. We caution investors that forward-looking statements contained herein are based upon management's expectations and assumptions as of the date of this presentation. Such forward-looking statements are neither promises nor guarantees, but are subject to a variety of risks and uncertainties, many of which are beyond our control, and which could cause actual results to differ materially from those contemplated in these forward-looking statements. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any such statements to reflect any change in our expectations or any change in events, conditions or circumstances on which any such statement is based.

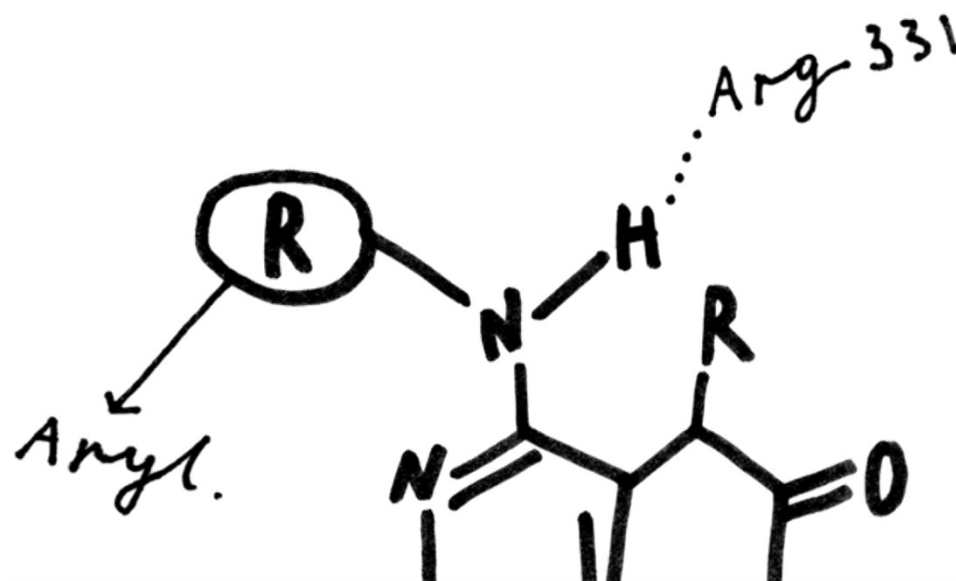
# Agenda

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## A little intro to Evotec

The Megatrend

What is changing



# Leading external drug discovery & development

## Company snapshot

**100+**

Co-owned pipeline programmes with significant milestone & royalty potential

**€ 400 m+**

Revenues<sup>1)</sup>

**€ 100 m+**

Adjusted Group EBITDA<sup>1)</sup>

**10+**

Co-owned companies & corporate ventures

**3,000+**

Top-class employees<sup>1)</sup>

**200+**

Long-term partnerships

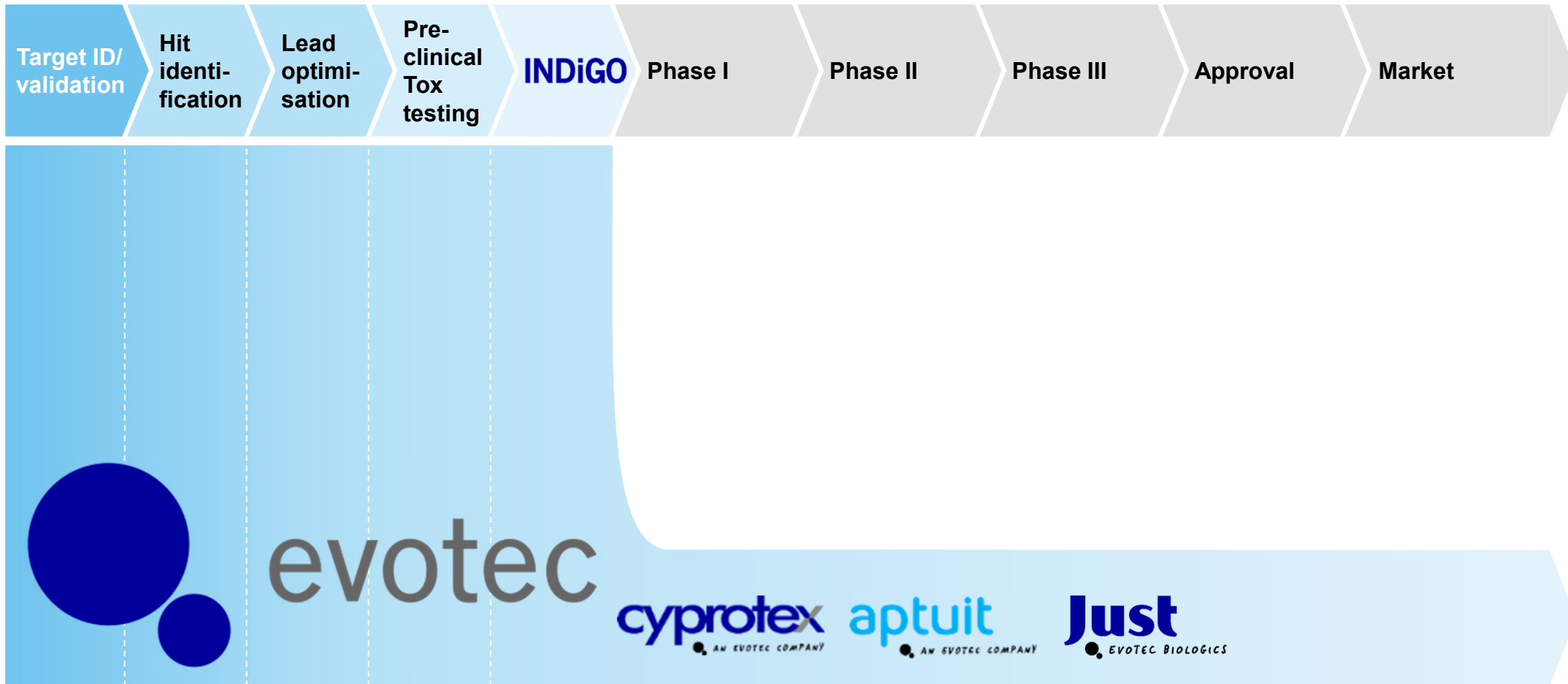
# Our sites underline the outsourcing trend

Global centres of excellence



# Product candidates still have a long way to go

Our core competencies



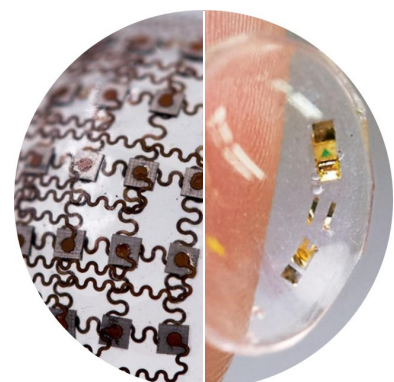


# „Just the beginning ...“ for the best medicine ever

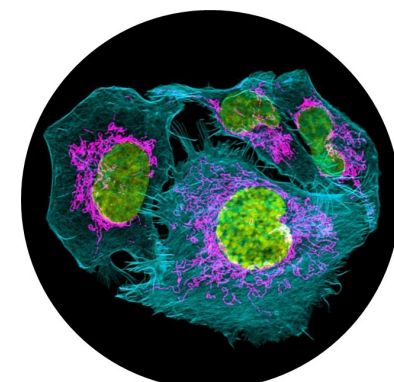
Trends towards „convergence“ and more personalised medicine



**Combination therapies**



**Wearables**



**Optimised diagnostics**



**3D Printing – customised treatment**



**DNA sequencing for personalisation**

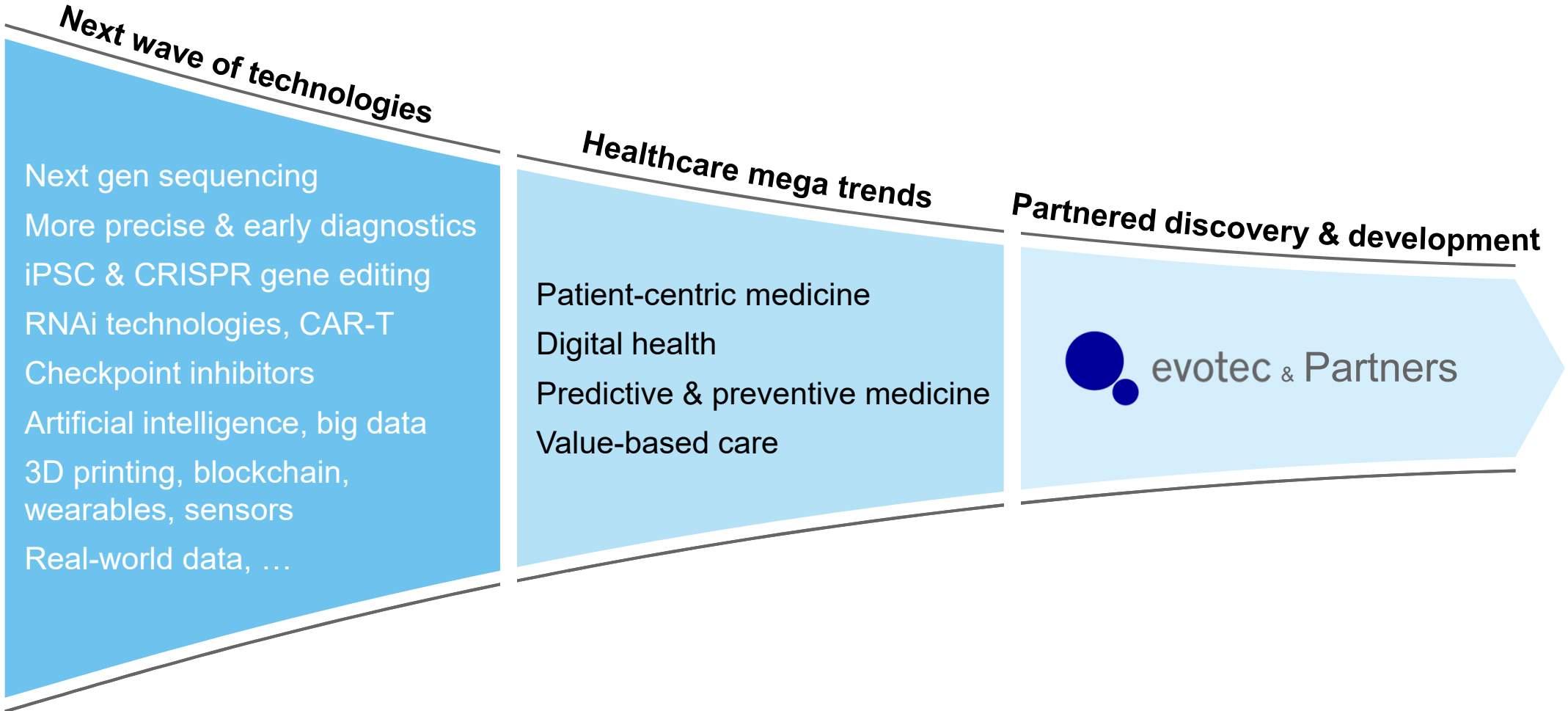


**AI & robotics**



# Medicine of the future comes with radical change

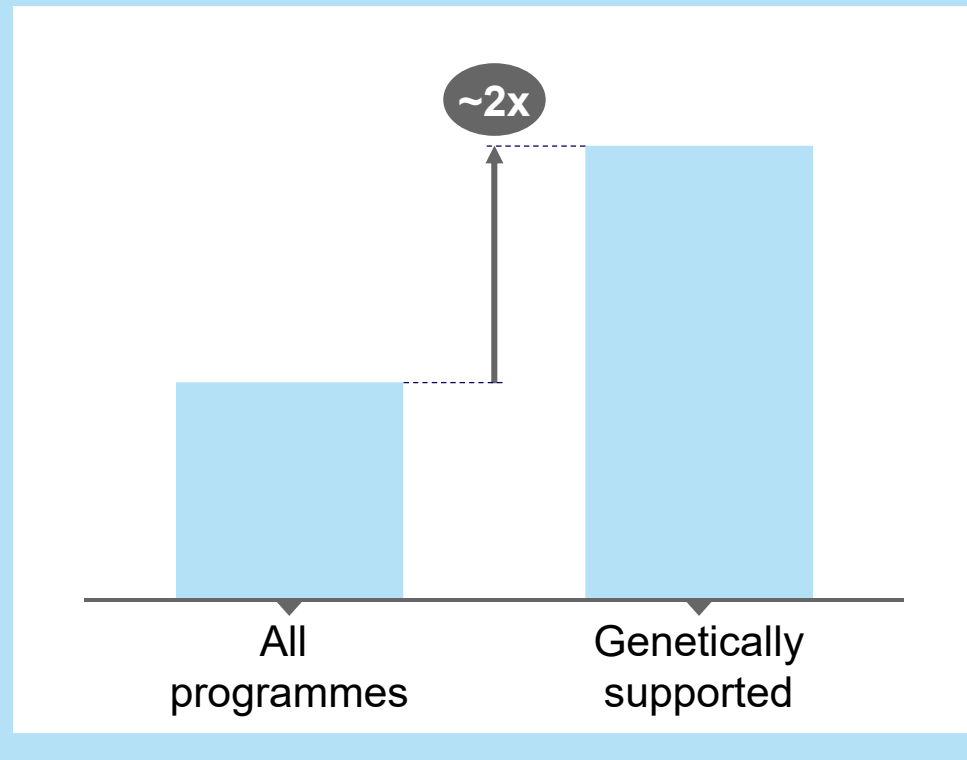
Technologies & mega trends



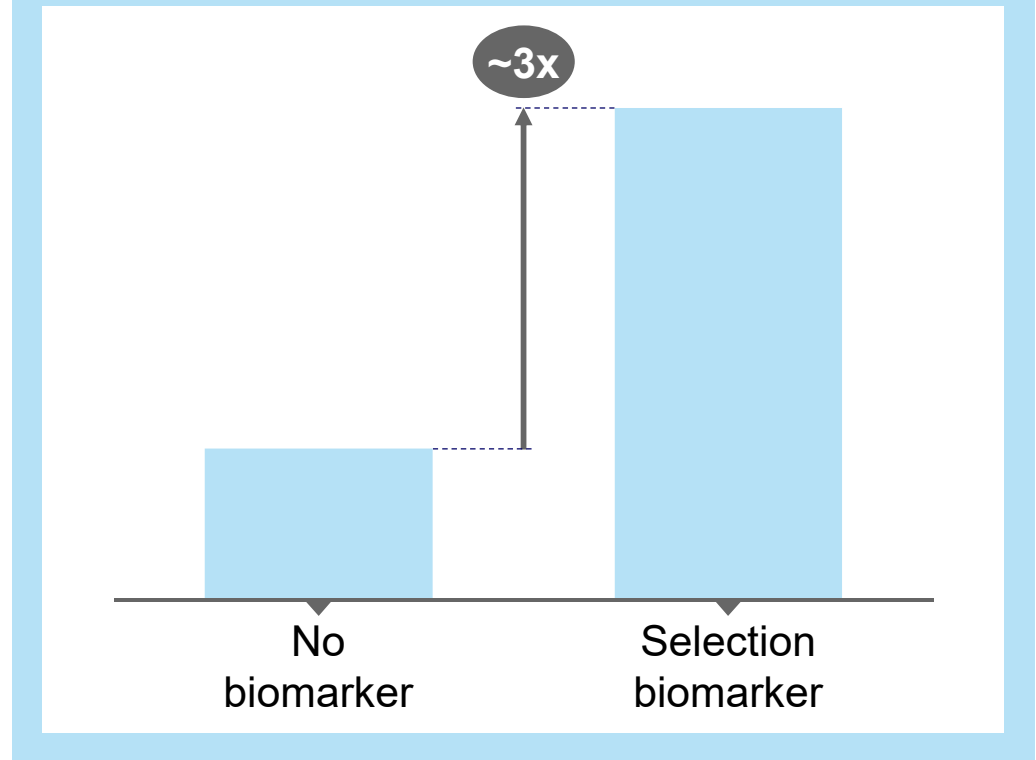
# Patient-centric approaches will give us better drugs

Genetics, biomarkers, and better technologies improving success

## Human genetics supported targets<sup>1)</sup> % success



## Biomarker-based patient stratification<sup>2)</sup> % success



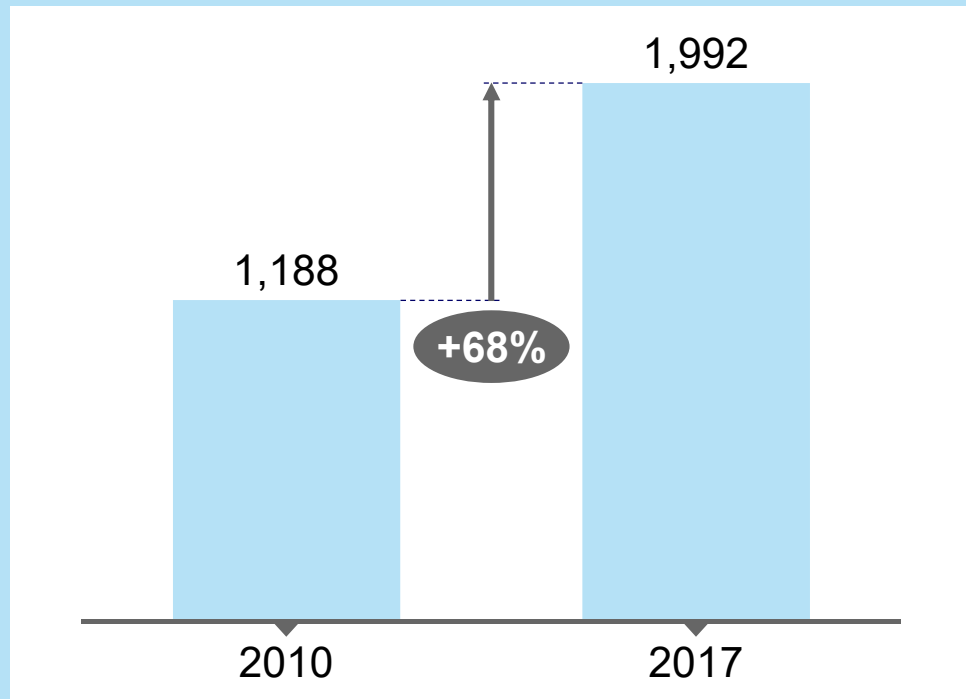
<sup>1)</sup> Source: Nelson et. al., Nat. Genet. 2015

<sup>2)</sup> Source: Bio: Clinical Development Success Rates 2006-2015

# Productivity challenge is accelerating dramatically

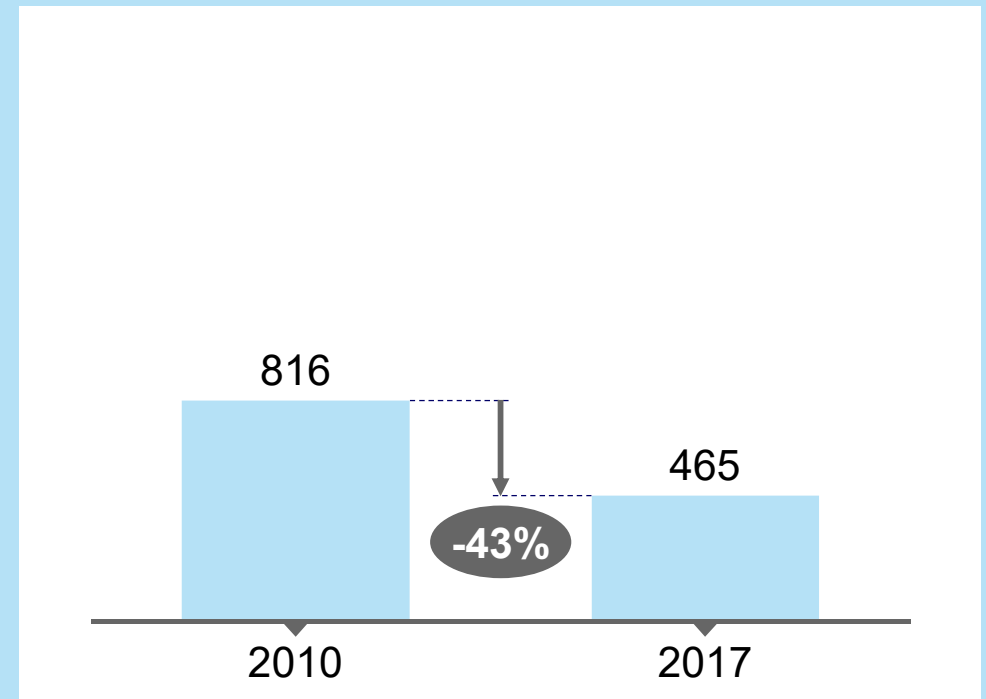
Development costs vs. average peak sales

Development Cost, \$ m



Cost per asset increased ~2/3<sup>rd</sup> since 2010

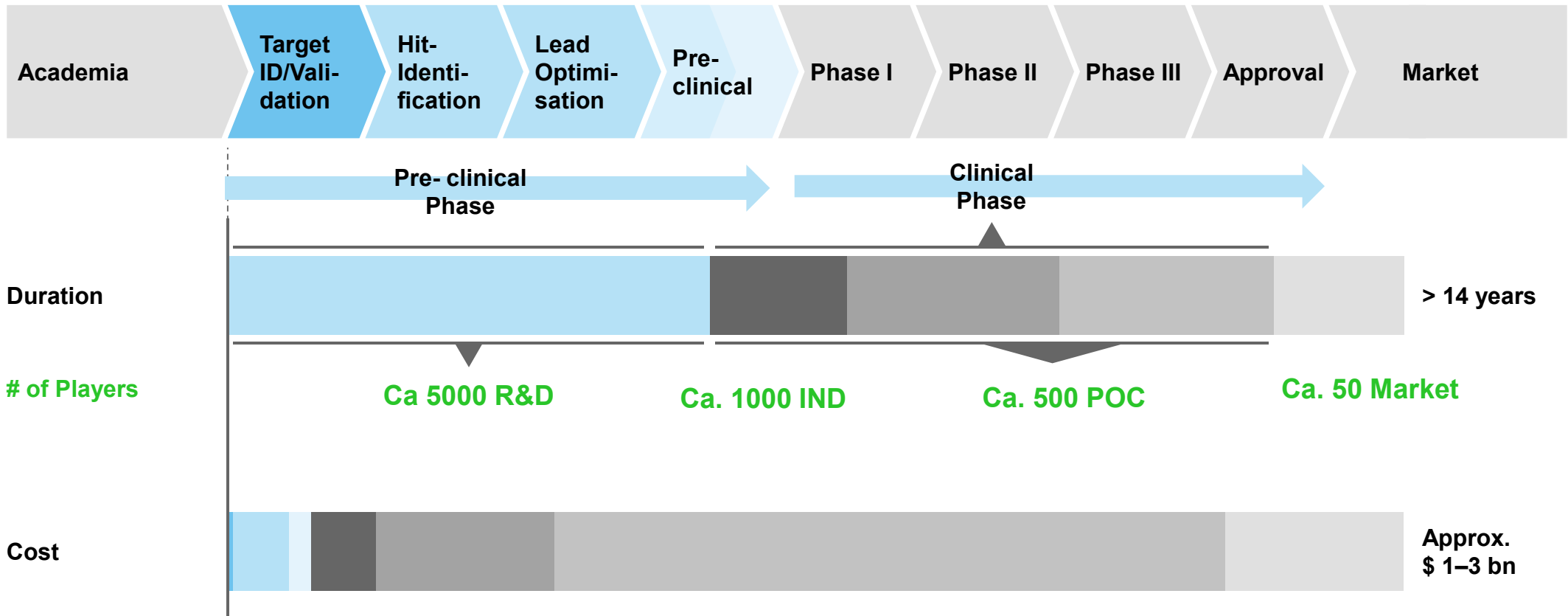
Sales, \$ m



Average peak sales almost halved since 2010

# No more “exclusivity” to Pharma

Complete fragmentation of the value chain



Evotec's core competencies

# ... just the beginning of a megatrend

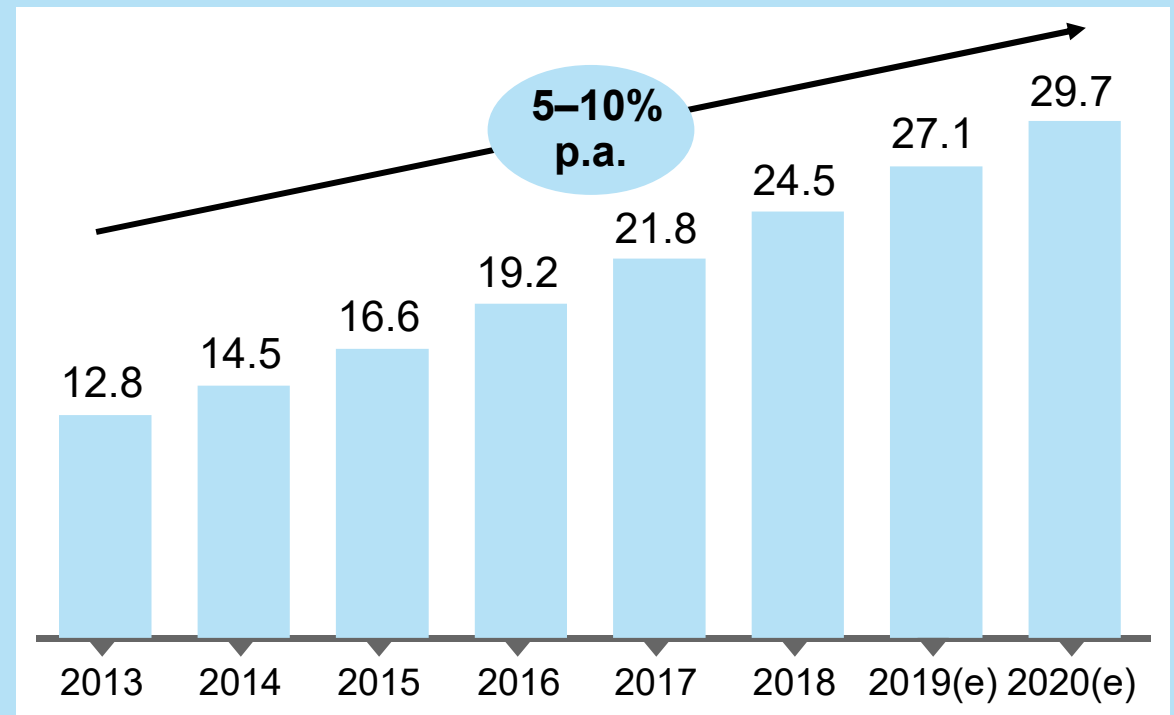
## Market dynamics in R&D outsourcing

### Key growth drivers

- 1 Increasing comfort with high end “western” or “low cost” eastern outsourcing – **Access to Capacity**
- 2 Higher R&D capital efficiency through switch from fixed costs to variable business models – **Capital Elasticity**
- 3 Ability to adjust investments proportional to portfolio needs – **Capital Intensity**

### Early R&D outsourcing is a macro trend

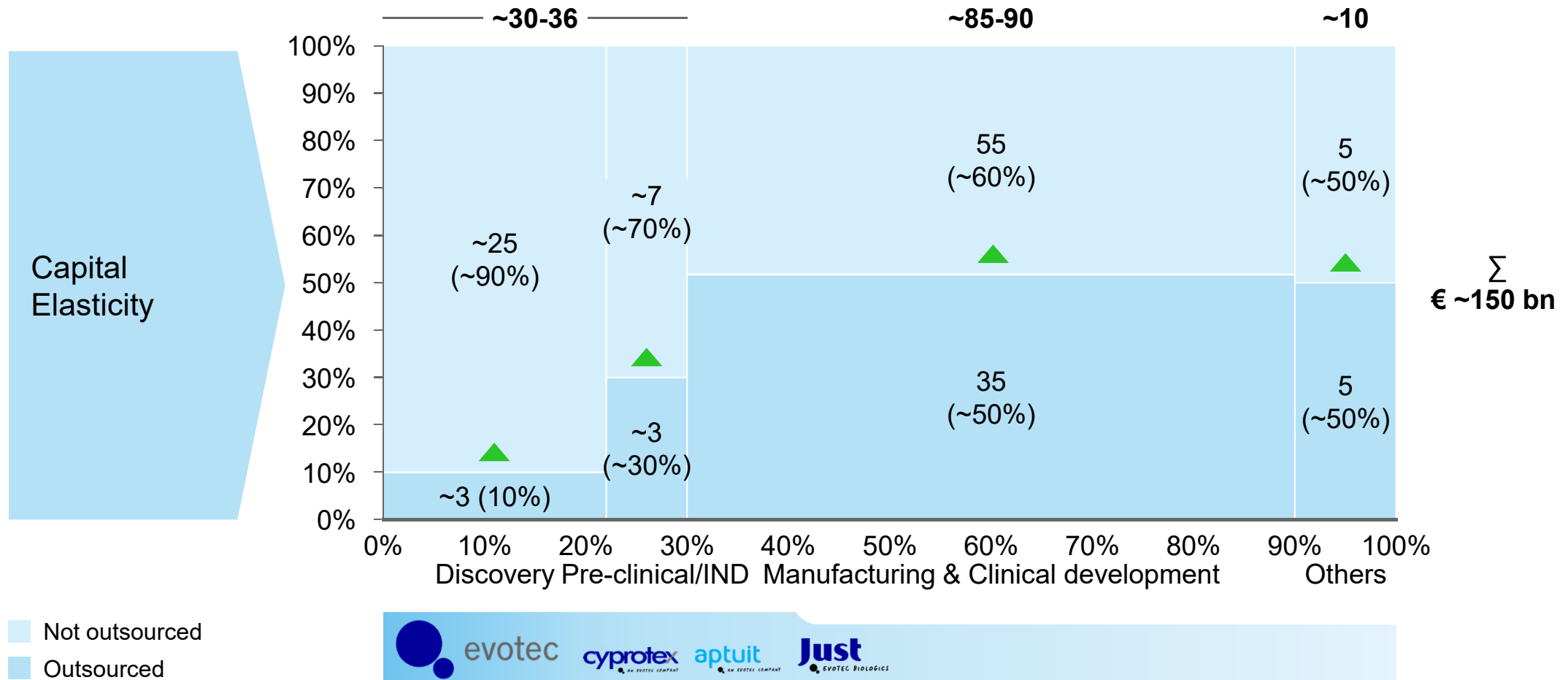
Market overview – Revenues, in \$ bn



# R&D holds great potential for further outsourcing

## R&D outsourcing & External Innovation

in € bn



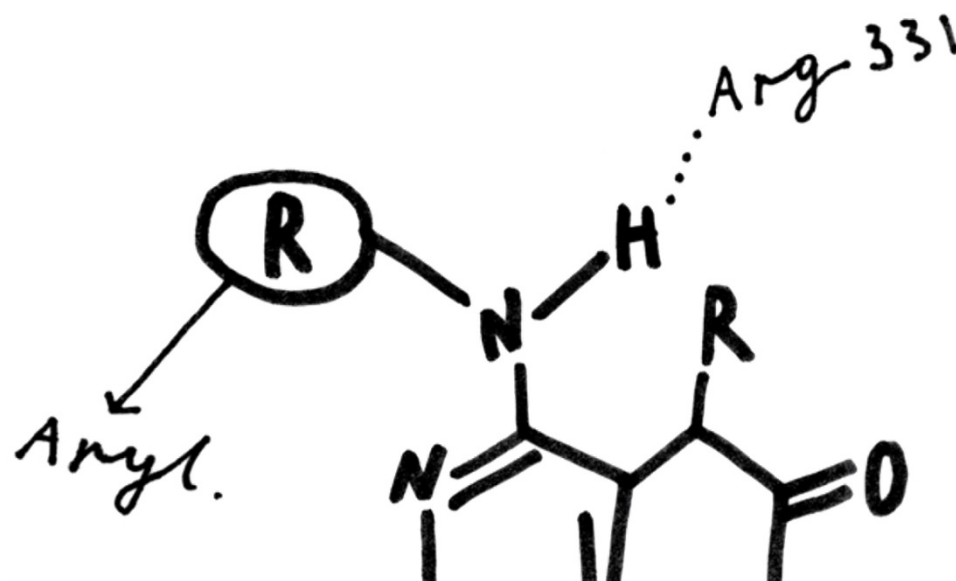
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A little intro to Evotec

The Megatrend

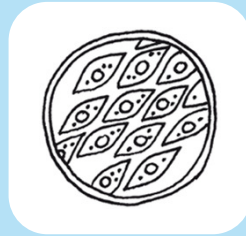
**What is changing**



# Disease-relevant profiles to deliver better drugs

Patient-centric and holistic approach

## Translational Models



### Define relevance

- Medical records
- Patient iPS cell lines
- Patient tissue samples

## Holistic Profiles



### Gain PanOmic insight

- Transcriptomic, proteomics, metabolomics, genomics data integration
- PanHunter data interpretation

## Superior Knowledge



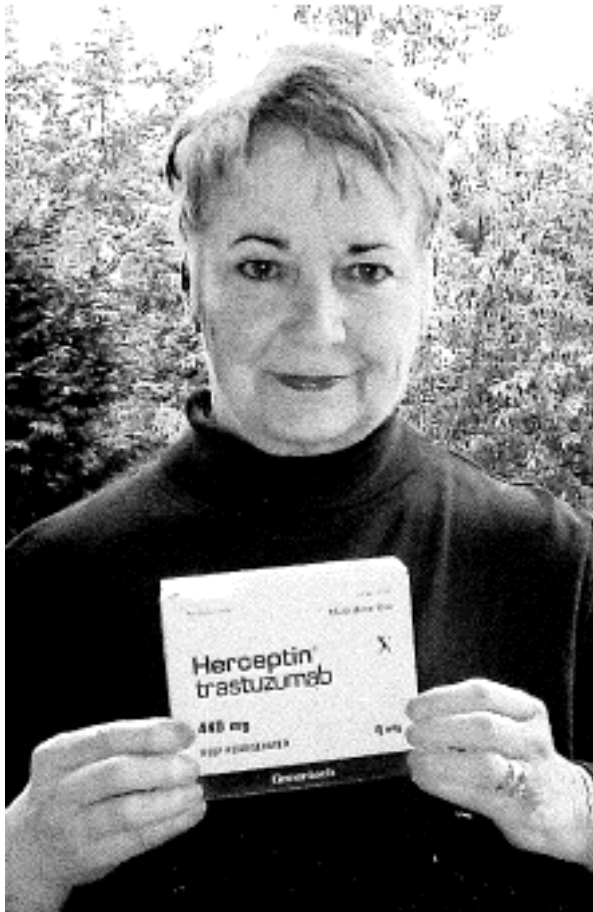
### Convert data into drugs

- Hypothesis building
- Defining health and disease
- Efficacy/Safety profiles building

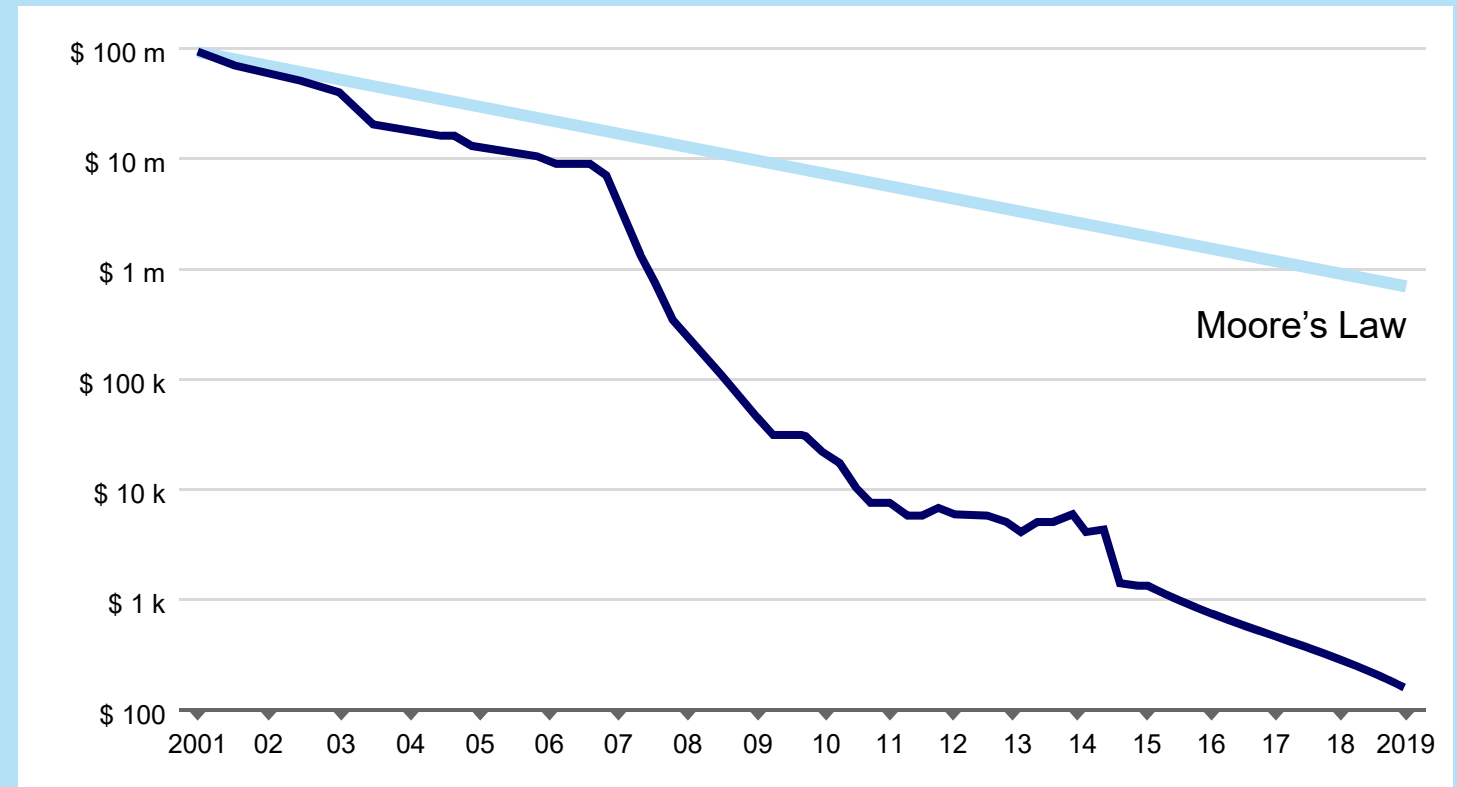


# Dramatically decreasing costs open new routes

DNA sequencing: from global challenge to commodity



## Costs per genome – Faster than Moore’s Law



## Where innovation gets lost in translation ...

Lack of predictive pre-clinical models leads to high clinical failure rates

### Current CNS drug discovery based on

- Animal models
- Recombinant cell lines
- Primary human cells



**Animal models**  
*(in vitro and in vivo)*

**Limited**  
**disease relevance**



**Primary**  
**human cells**

**Limited**  
**access / availability**



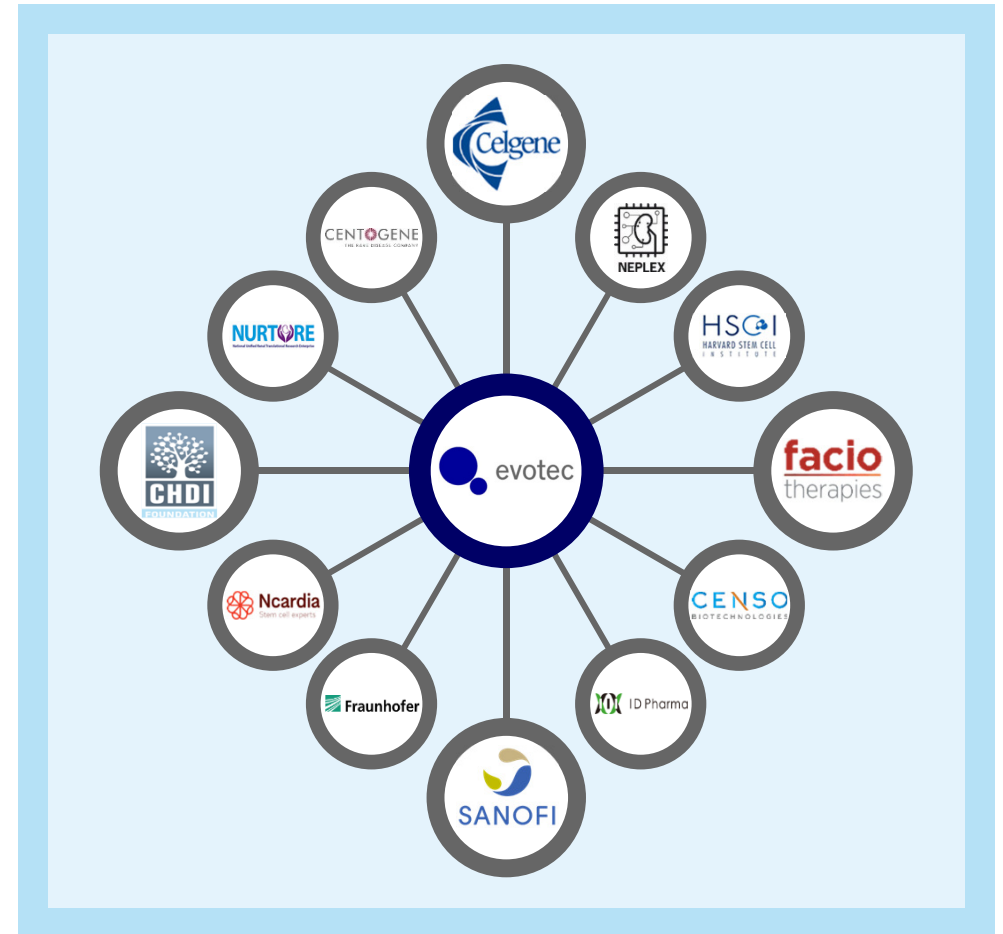
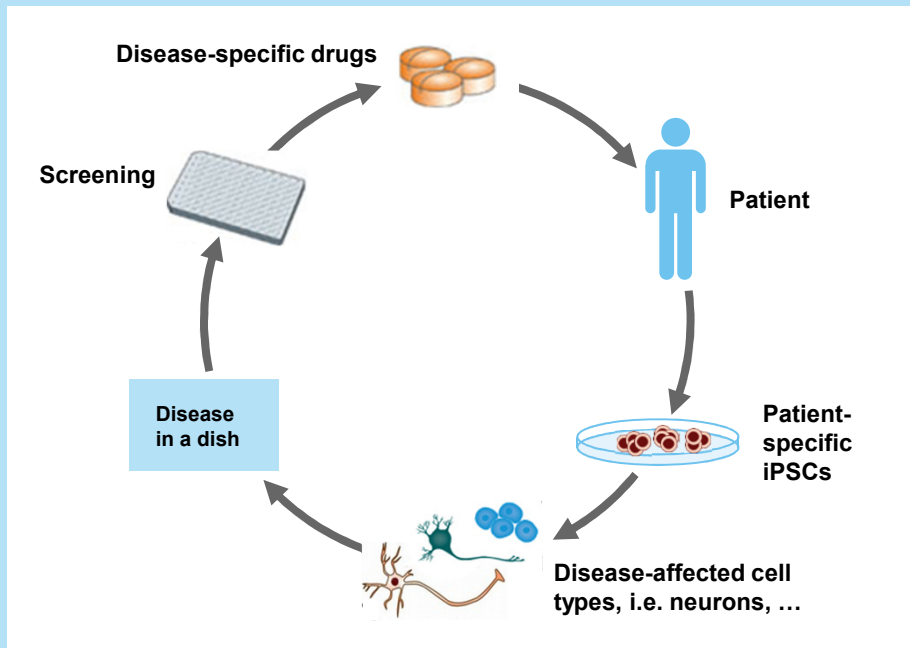
- Limited understanding of disease mechanisms
- Limited disease relevance of *in vivo* models
- Limited stratification of patient populations

# Patient-derived assays as new gold standard

World-leading iPSC processes and network

*“IPS cells can become a powerful tool to develop new drugs to cure intractable diseases because they can be made from patients’ somatic cells.”*

**Shinya Yamanaka, Nobel prize laureate**

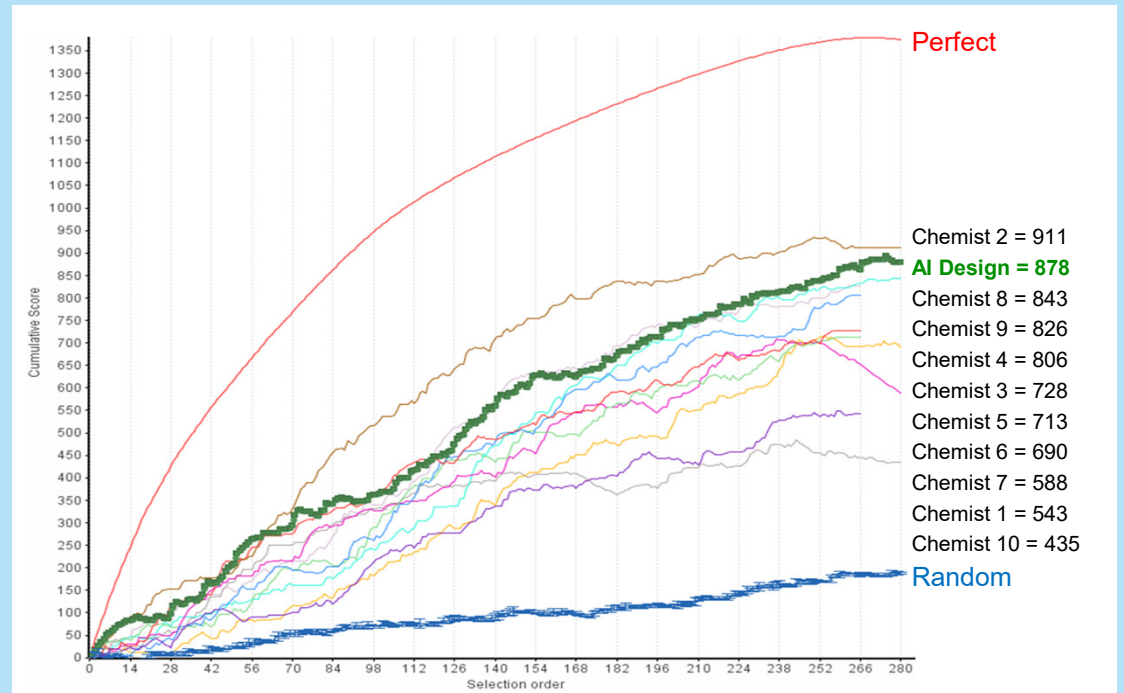


# Game AND players are changing at rapid pace

Artificial Intelligence (AI) in drug discovery – Human AND Machine



2016 alphaGo  
Lee Se-dol loses to alphaGo

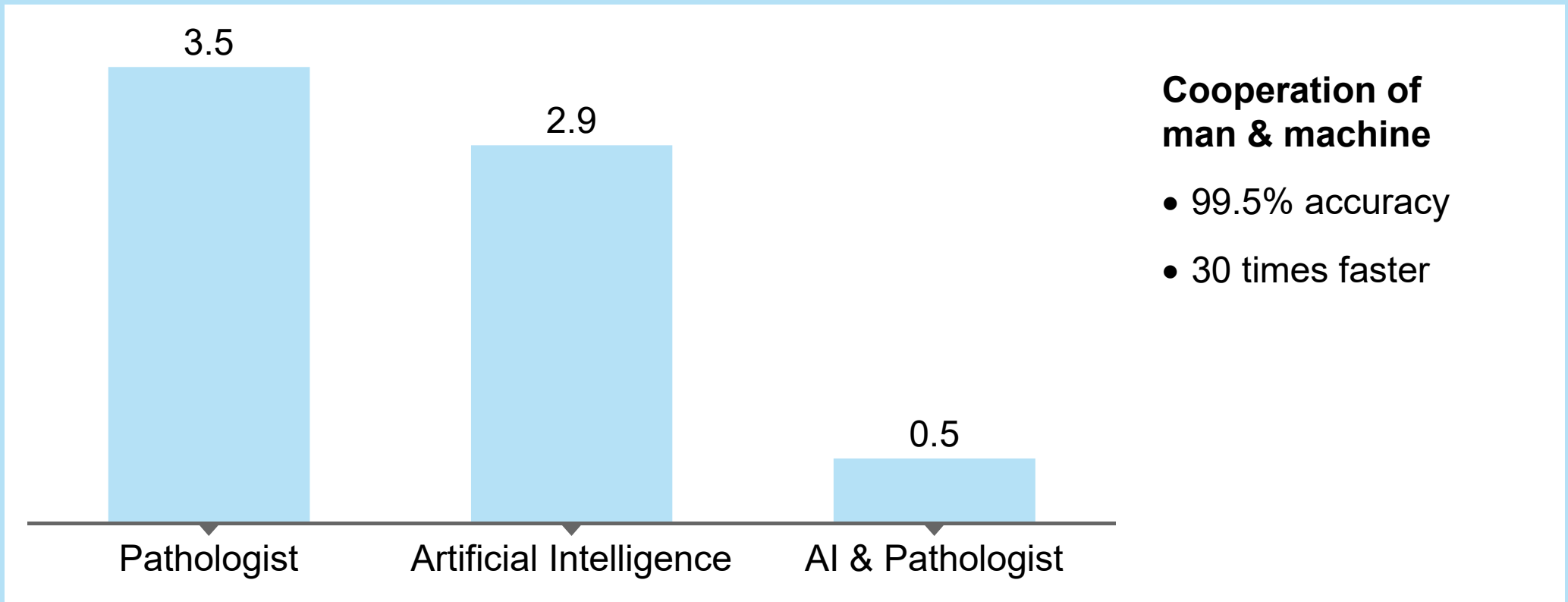


AI driven drug-design is surpassing conventional endeavor

# AI a new and important partner

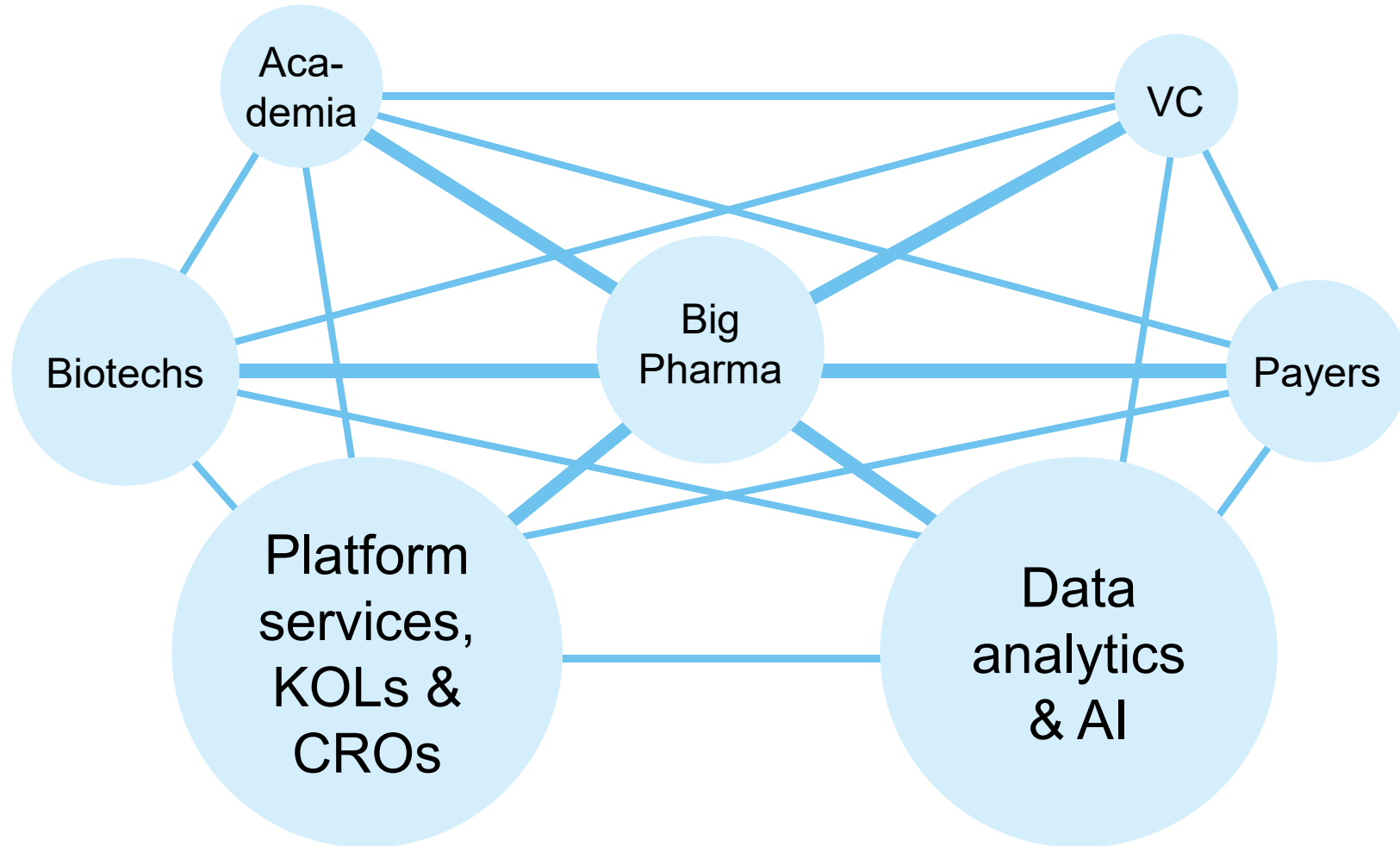
Opportunities through cooperation with artificial intelligence

**Error rates of breast cancer diagnoses (in %)**



# Innovation ecosystem transforming into true network

New roles & rules for Biotechinnovation



# Towards a “sharing economy“ in R&D

Just the beginning of a mega trend



# The new normal




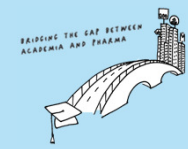
Selected paradigm shifts in early R&D – Innovation efficiency

## Old Paradigm

<b>Defined therapeutic areas</b>
<b>Fix cost infrastructures and integrated value chain</b>
<b>Biologics or small molecules or vaccines or ... XYZ</b>
<b>Late validation via P&amp;L and inefficient Venture Capital “hand over games”</b>



## New Paradigm

	<b>Combinations and personalised medicine</b>
	<b>Variable networks along disaggregated value chain</b>
	<b>Multimodality</b>
	<b>Partnership models that bring down cost of capital in R&amp;D</b>

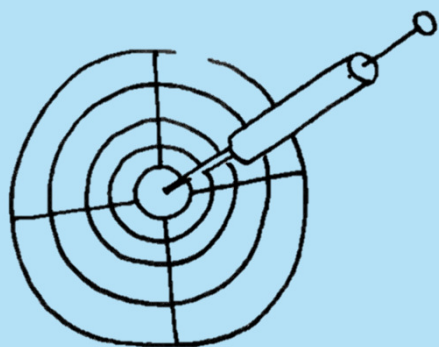


## **Selected trends for European biotech**

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Translating paradigm changes into innovation efficiency

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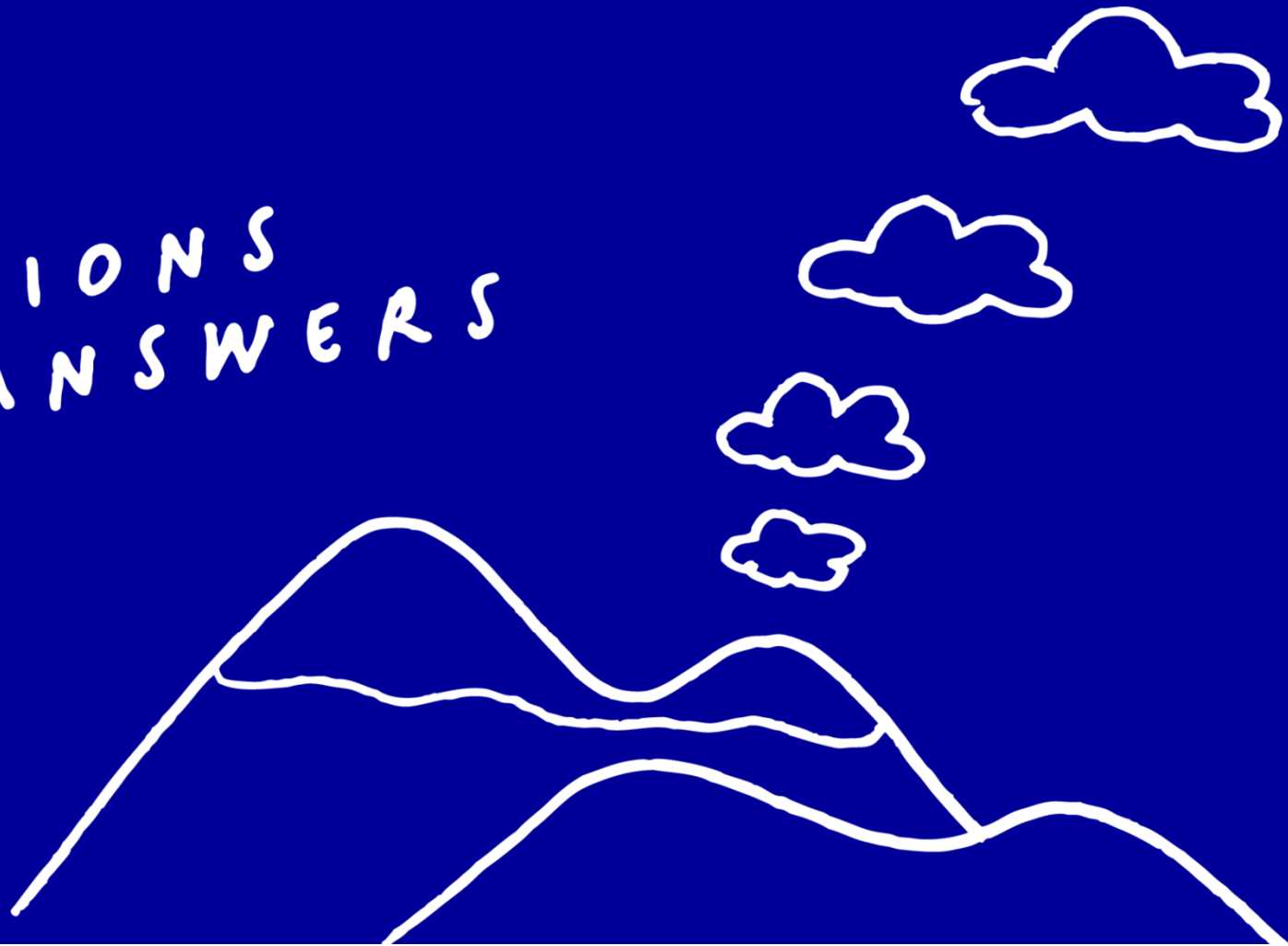
**1. Holistic ways of treating patients rather than diseases**

**2. Digital health and artificial intelligence to use patient data and customise treatment options**

**3. Increasing interest in efficient academic translation for efficient drug development and company formations**

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QUESTIONS  
AND ANSWERS



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