# COCIR Conference

The role of digital health ecosystems

November 16th 2020

Current health trends offer new opportunities for ecosystems...

... which are already visible today

I **Demand and supply** are increasing and generate an opportunity

II **New opportunities** in regulatory environment have come up

III **Acceleration due to Corona** leading consumers to change their behavior shifting towards digital
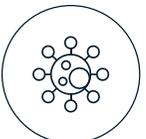
IV **An integrated ecosystem** can drive substantial value for orchestrating healthcare players

Why are health ecosystems exciting right now?
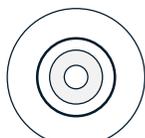
Patient expectations have already evolved toward digital

Regulatory momentum, particularly in the context of reimbursement

European teleconsultation market is growing by ~2-3x each year[1]

Activities of competitors demonstrate the high pace and the ambition to achieve a win-takes-it-all-effect

What is a digital health ecosystem?

A Digital Health Ecosystem…

…enables personalized **patient journeys**…

…by connecting **existing** digital health applications…

…based on technology foundation that allows a **convenient** and **seamless user experience**…

…differentiates itself from single solutions through access and control of **large volumes of data**…

…helping the orchestrator to **navigate patients** through an **online-offline care continuum** of the health system of the future

eHealth and digital health are "different universes" – with little connection so far

eHealth universe

- Hospital
- GP practice
- Doctor
- Pharmacy
- Specialist practice

Digital health universe

- Mobile data
- Cloud
- Digital solutions
- Web solution
- Patient
- Web site infrastructure
- Sensors
- Home delivery
- Call
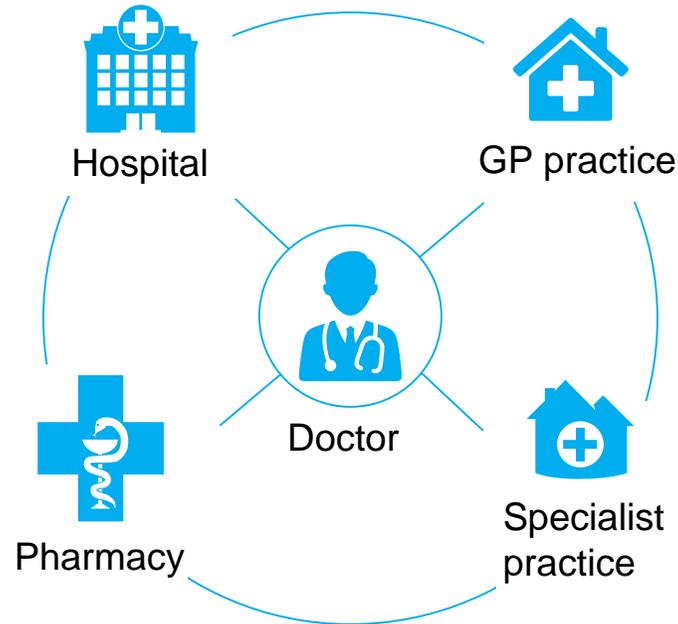
National eHealth programs

Nationally focused

Perceived benefits for HCPs low

Fragmented IT, many with old SW architecture

High stickiness

Change resistance
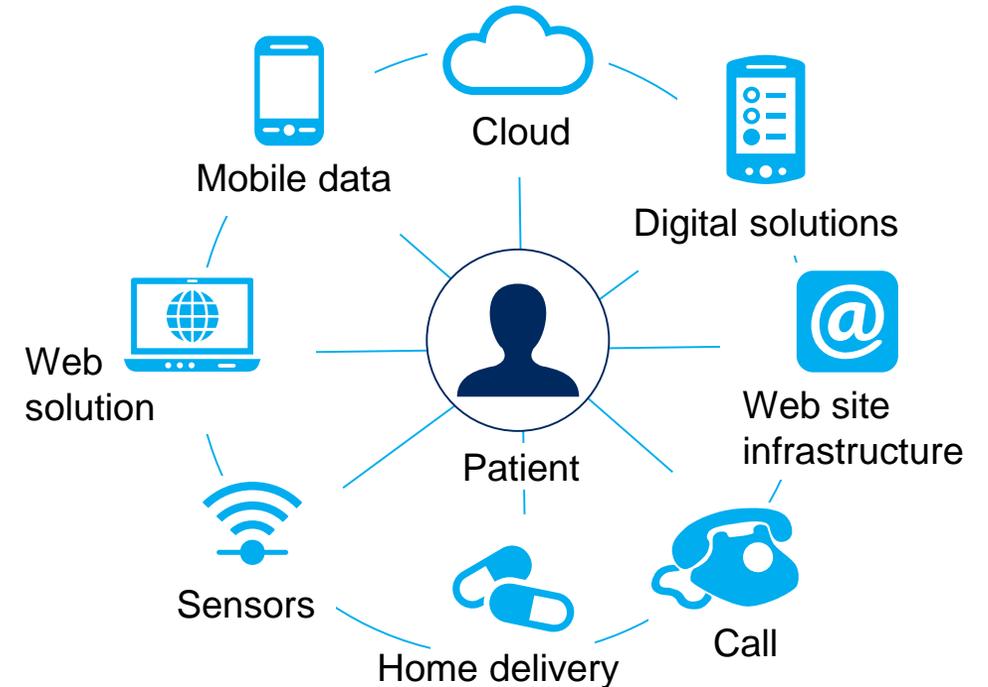
Digital health doesn't look at national borders

Global scale

Intrinsic interest in connecting

Modern IT

Test & learn & improve: Data ownership & algorithms

Hyper competition -> Winner-takes-it-all logic

Patient behavior largest predictor for Health outcomes – Digital Health an important lever

Health outcomes are multifactorial

Social circumstances
15-40%

Environmental and physical influences
5-20%

Behavior
30-50%

Genetics
20-30%

Medical care
10-20%
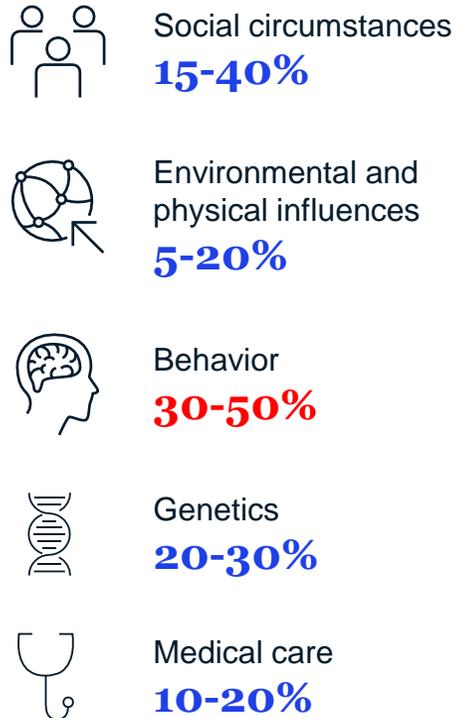
Relevant data outside medical systems

60%
Exogenous factors

1,100 Terabytes
Generated per lifetime

30%
Genomics factors

6 Terabytes
Per lifetime

10%
Clinical factors

0.4 Terabytes
Per lifetime

?%
Patient generated data

? Terabytes
Per lifetime
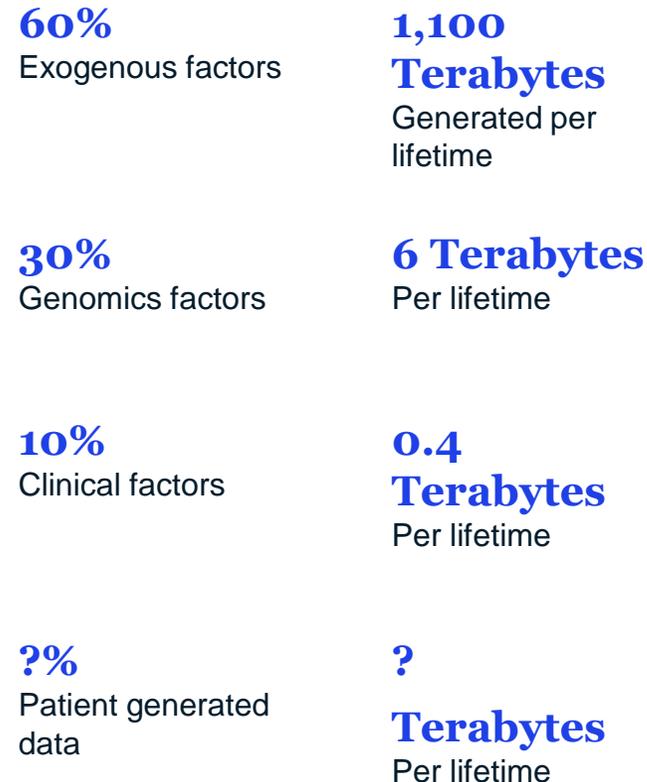
Digital Health

- Establishes a **direct relation** to the patient

- Works independent of national telematic health infrastructure

- Supports the patient **24/7**, not only while with the doctor

- Behavioral change takes time and requires **ongoing interaction and nudging**

- **Data** are the foundation for **driving behavioural change**

- Solutions that work for one patient group work **across country borders**

While single solutions exist already, patient expectation for seamless and integrated care journeys yet to be met

Company names for illustrative purposes only

Minimal patient journey forms the basis for further growth

Wellness/ Nutrition

Online diagnosis

Online consultation with doctor

eRx

Sends e-prescription

Online pharmacy

Medication mgmt.

MyNetDiary

ada

TeleClinic

DocMorris

MyTherapy

GP (Specialist)

e-Booking

mySugr

Cleo

Klara

...

Various disease specific solutions
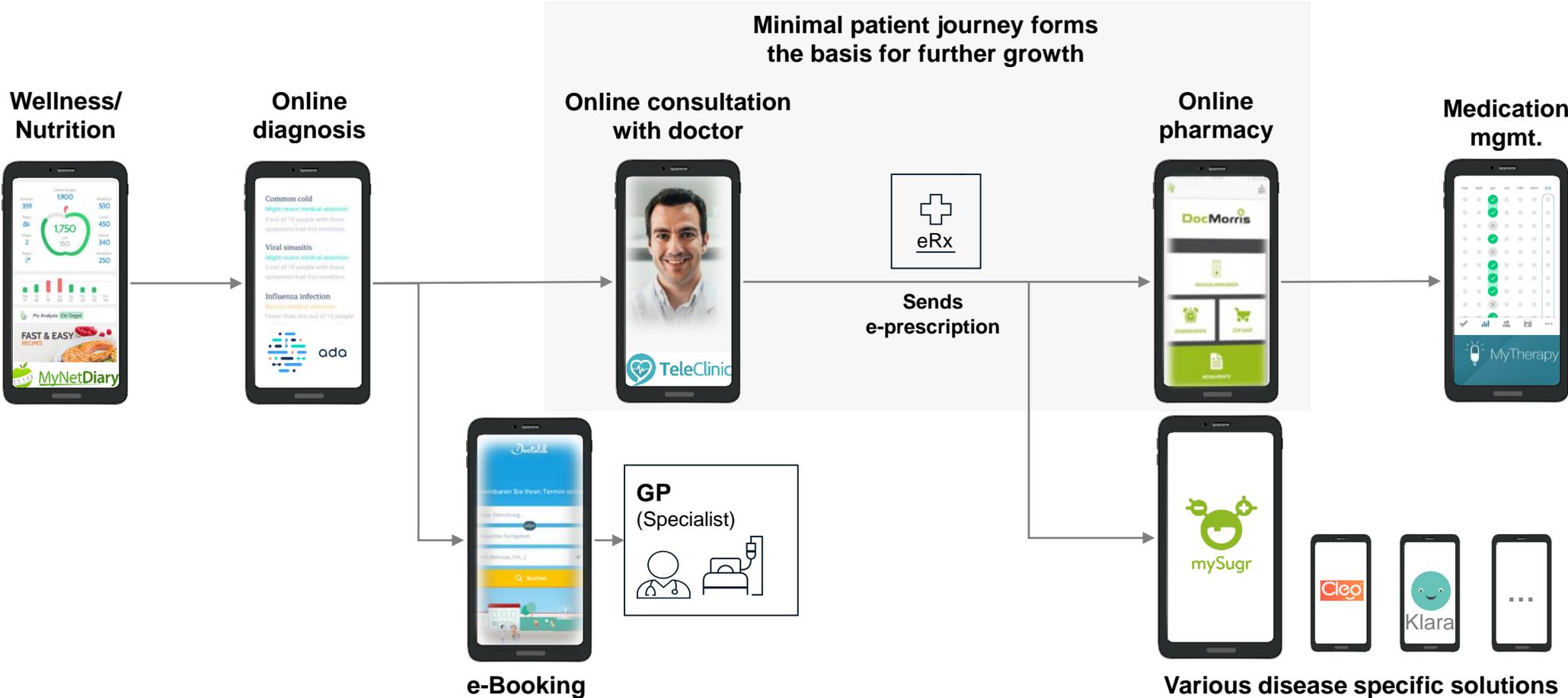
These value pools can be addressed by various digital health providers

Value pools in Germany and exemplary digital solutions addressing them

Category	Value pool	Amount
E-health	Workflow automation	6.1 (~18%) bn EUR
	Outcomes transparency	5.6 (~17%) bn EUR
Digital health	Online interaction	8.9 (~26%) bn EUR
	Patient self-care	3.8 (~11%) bn EUR
	Patient self-services	0.5 (~1%) bn EUR
Enabler	Paperless data	9.0 (~27%) bn EUR

E-health:
- Nurse mobile connectivity — ADVANOVA, SMART REPORTING — 6%
- RFID tracking — iDTRONIC — 3%
- Bar coding medication — mediteo — 3%
- Vital parameter tracking — 2%
- Hospital logistics robotics — 1%
- E-referrals — 1%
- Process automation — 1%
- Performance dashboards — Klipfolio, SISENSE — 6%
- Patient flow management — caspio — 5%
- Clinical decision support — Diagnosia — 4%
- Advanced payor analytic — Climedo — 1%
- Genetic testing — <1%

Digital health:
- Teleconsultations — patientus, medlanes, medexo, KRY, TeleClinic, BodyTel — 13%
- Chronic patient remote monitoring — MyTherapy, Cardiomatics — 10%
- e-triage — ada, BetterDoc. — 4%
- Chronic disease self-management — mySugr, Emperra Digital Diabetes Care, KENKOU, evivecare, Tinnitracks, Cardiolyze, caterna — 6%
- Medical chatbots — ada — 3%
- Disease prevention — PREVENTICUS — 1%
- Patient support networks — 1%
- VR for pain mgmt. — <1%
- Digital diagnostic — <1%
- Online Booking for physician — Doctolib, samedi — 1%

Enabler:
- Unified electronic health record — Vivy, TK Die Techniker — 19%
- E-prescribing — DocMorris Die Apotheke., eht eHealthTec — 3%
- Intra-hospital staff communication — Staffbase — 3%
- Virtual assistants — medrespond — 2%

Σ **34.0 bn EUR (100%)**

Note: Rounded figures may result in slight deviations

# Compared to other industries, healthcare lags behind in digital
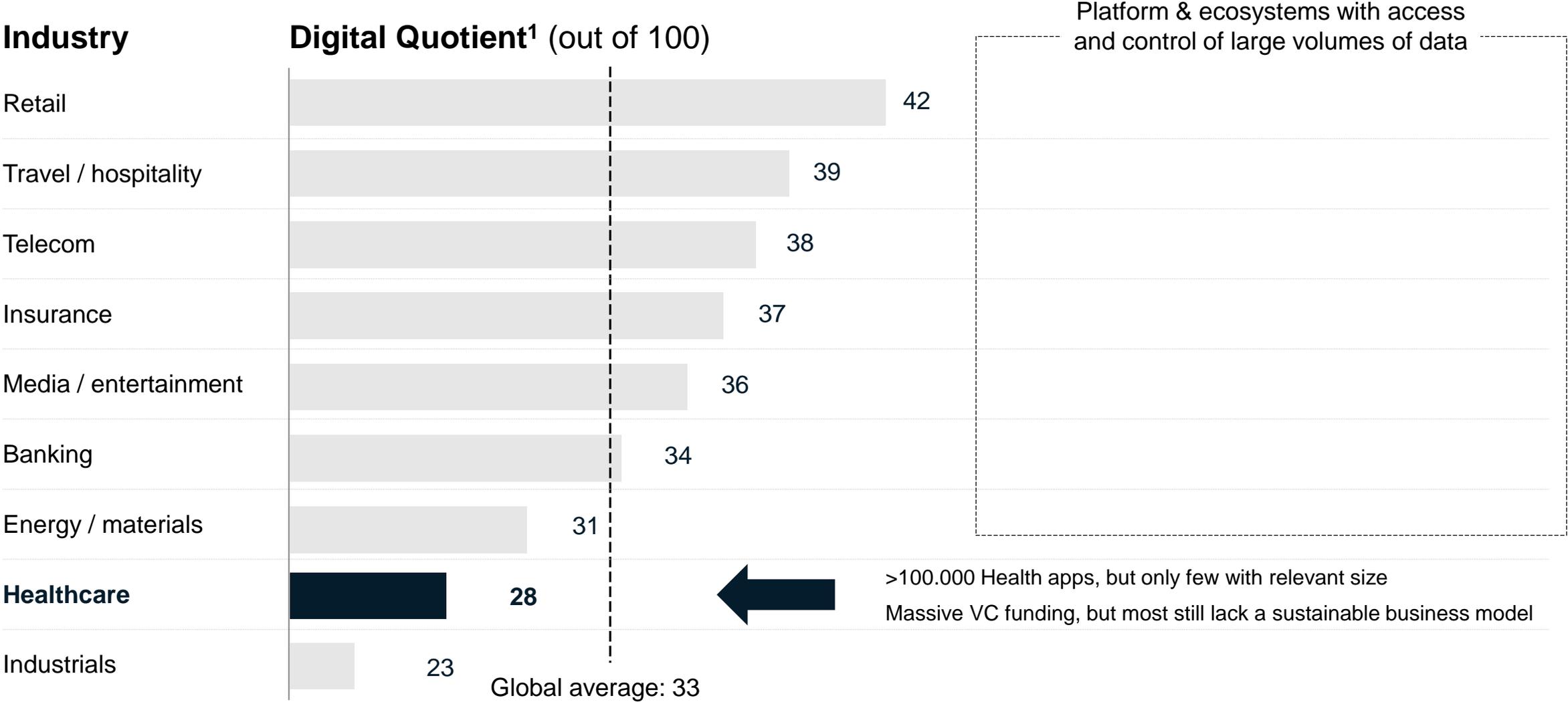
Industry

Digital Quotient¹ (out of 100)

Platform & ecosystems with access and control of large volumes of data

Industry	Digital Quotient
Retail	42
Travel / hospitality	39
Telecom	38
Insurance	37
Media / entertainment	36
Banking	34
Energy / materials	31
Healthcare	**28**
Industrials	23

Global average: 33

>100.000 Health apps, but only few with relevant size

Massive VC funding, but most still lack a sustainable business model

In today's world, patient face digital health solutions that cover most steps in a digital care journey

However, they are not connected and can't share data

TeleClinic

KRY

Telemedicine

Disease specific solutions

Online pharmacy

Patient

Non-disease specific solutions

DocMorris

MyTherapy

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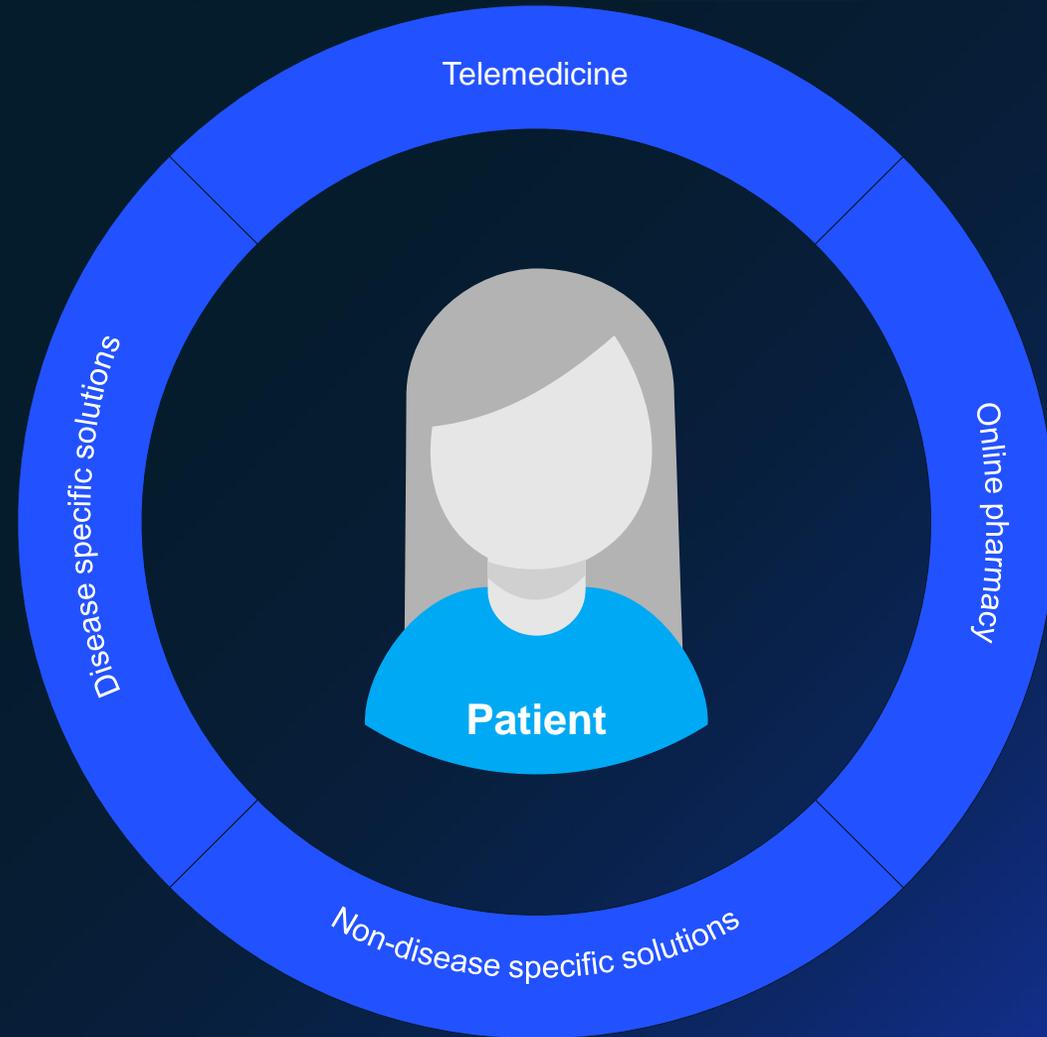
Digital health ecosystems will connect digital health solutions across categories and allow patient control flow of data – managed via the ecosystem platform

# Such an ecosystem requires an orchestrator

- Digital Health solutions
- Ecosystem platform
- Health infrastructure

Telemedicine

Consent and control

Identity

Disease specific solutions

eRX

Online pharmacy

Patient

Data & algorithms

Pathways and workflow

ePR

Non-disease specific solutions
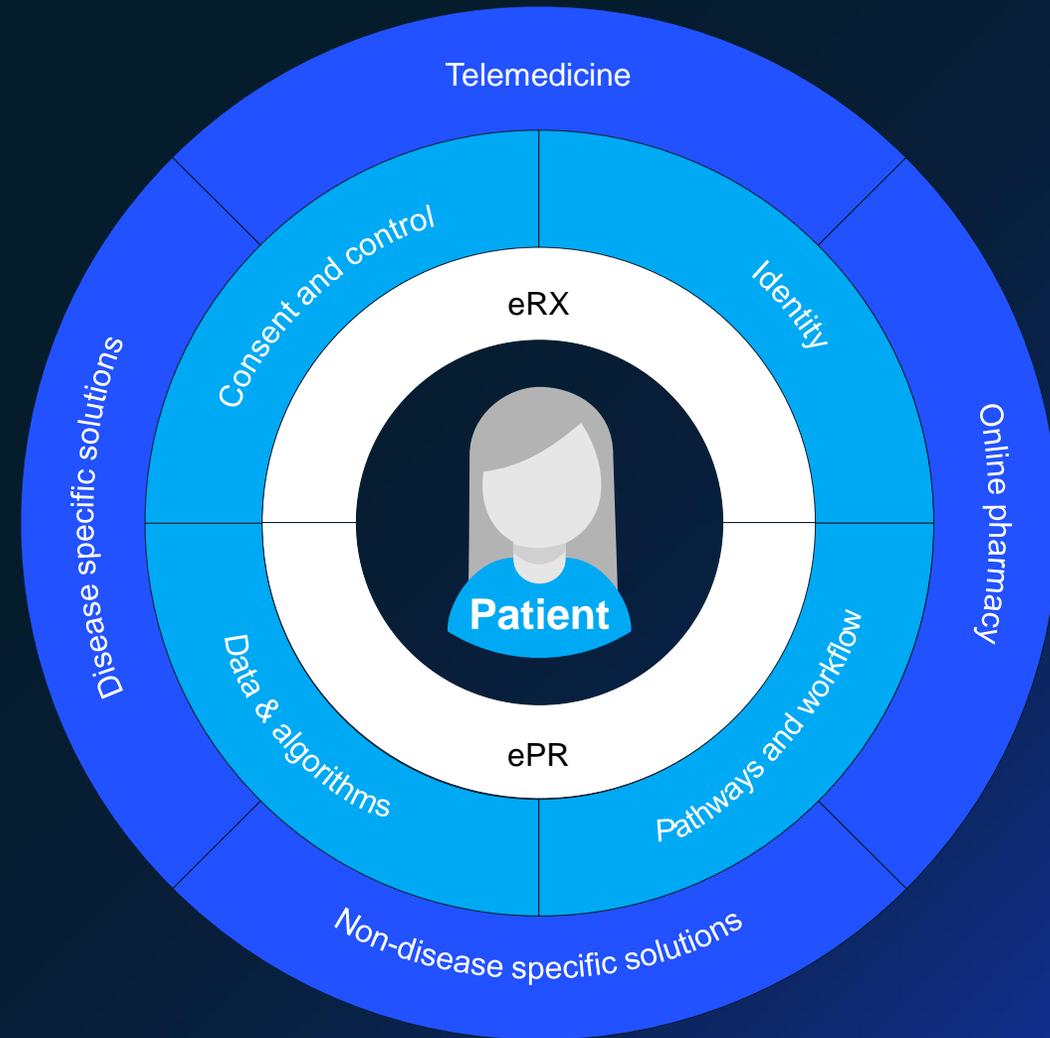
Over time we expect that digital health ecosystems will build a bridge to traditional care and allow an online-offline care continuum

Existing stakeholders will have to redefine their position vis-à-vis the ecosystem

Digital Health solutions
Ecosystem platform
Health infrastructure
Offline world

Providers

Hospitals

Payors/ Insurers

Pharma/ MedTech

Specialty physicians
Disease specific solutions
Online pharmacy
Tech-players

Hospitals
Consent and control
Identity
Online pharmacy
eRX

GPs
Data & algorithms
Pathways and workflow
Telemedicine
ePR

Pharmacies
Non-disease specific solutions

Stakeholders in any health system have to address the following questions

1   What role do we want to play in the emerging world of digital health ecosystems?

2   How will it affect our business? Do we need to get closer to patients?

3   Are we in the position to play the orchestrator role? And what is our model to capture the value?

4   Are we building data assets that we allow us to build innovate and patient centric solutions?

5   Do we have the necessary skills and the DNA to thrive in the digital space?

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