

# Internet of Things in the context of the latest medical technologies

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**Dr Achim Regenauer, Chief Medical Director, Munich Re**

11<sup>th</sup> Annual Liability Regimes Conference

Keeping the Floodgates Shut? Mastering Accumulation  
and Bodily Injury Exposures in a Rapidly Changing Environment

4–5 November 2015, Rüschtikon



Image: Brand X / Getty Images

# Internet of Things in the context of the latest medical technologies

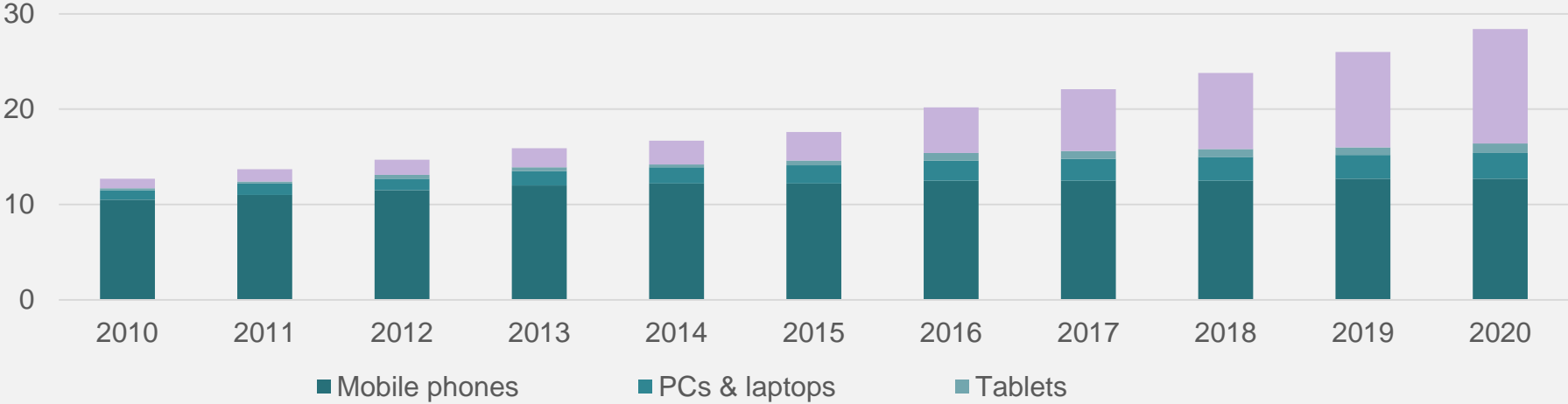
Annual Liability Regimes Conference

Zürich-Rüschlikon 5 November 2015

Dr. Achim Regenauer

- Web 1.0 → only reading & writing
- Web 2.0 → mobile & social
- Web 3.0 → Internet of Things

Connected devices [billions]



**Machines go online:** The number of everyday objects connecting to the Internet will exceed PCs & Smartphones

# Ubiquitous (24/7) recording of health data just started ...

Web 1.0 → only reading & writing

Web 2.0 → mobile & social

Web 3.0 → Internet of Things

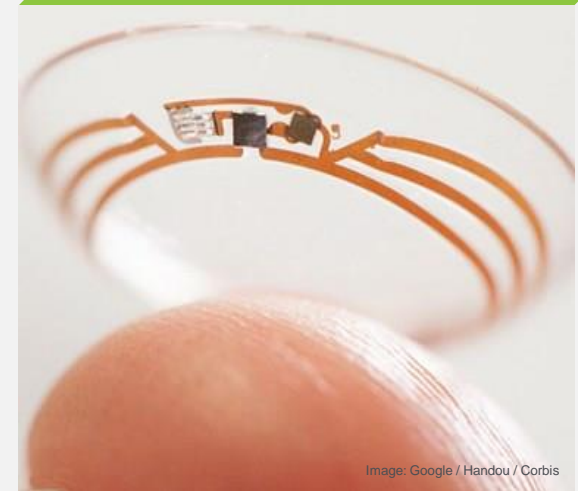
Glasses ("Medical wearable")





iWatch ("Fitness wearable")



Lenses ("Medical wearable")



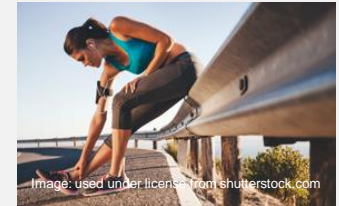
 Fitness  Medical

# Wearables: turning smartphones into medical monitors

Fitbit  
 Nike+  
 Runtastic  
 Consumer

Steps, heart rate, calories, fitness level, mood, sleep, etc.  
 >100.000 in Apple Store

Personal vs. Private health data?

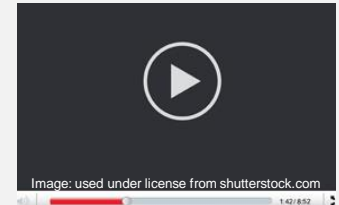


Wello  
 \$200  

 Consumer

Smartphone + Sensor  
 Blood pressure, oxygen, heart rate, temperature, respiration  
**“Fever thermometer”**

Wrong alarm?



iBG Star  
 €59.90  
 Patient & Physician

Blood sugar in “real time”  
 Share data with GP

Malfunction?



MelApp  
 \$1,99  
 ?

Melanoma risk assessment through ABCDE criteria (**A**symmetry, **B**order, **C**olor, **D**iameter and **E**volution)  
 Not cleared by the FDA

Wrong Recommendation?



Source: MelApp risk assessment tool for skin cancer

## Usability

- Easy to understand, to operate ...
- Too technical

## Functionality

- Too narrow (no multiple functions)
- Different hardware components
- Interface to mobile devices, cloud etc.?

## Quality

- Lack of standardisation & quality control
- USA-IMS Institut 2013: 90% der Apps “poor performance”

## Compliance

- Inefficient utilization for persistent change to behavior
- USA: 2/3 applying > 1 year

## Evaluation

- Untested/unvalidated
- Only descriptions – Insight, outcome, conclusions?
- Impact on mortality and morbidity?

Data

Information

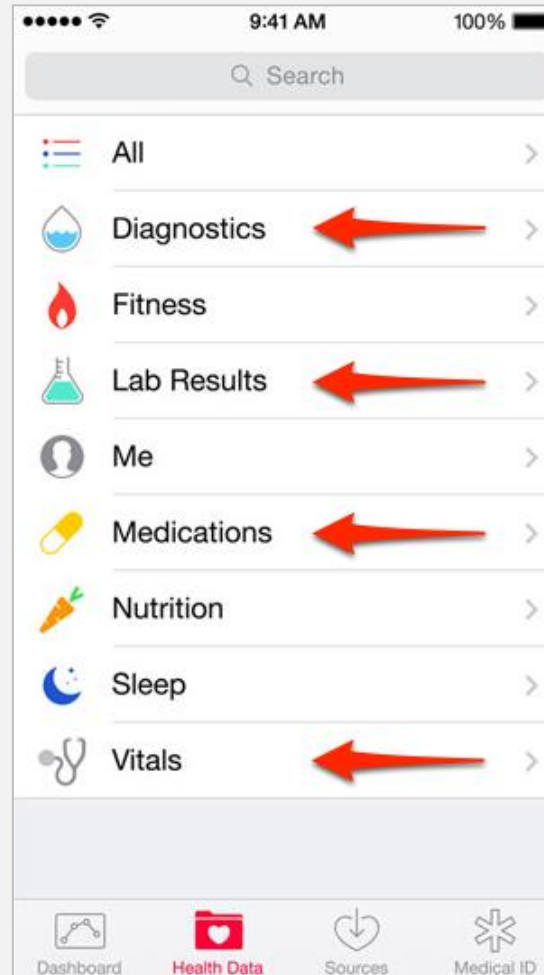
Actions

Clinical outcomes

Financial results

# Next big “thing”: Evolution of Health data

## Fight for platforms



Images: Apple health Kit

- Single platform for all health data (Central Hub)
  - Exchange between health apps easier
  - Health profile
- **Apple** (Health Kit; healthbook)
- **Goggle** (Goggle Fit)
- **Samsung** (S Health, Sami biometric bank)

iTunes (music) ?

# Insurance aspects

## Asymmetric information of health data



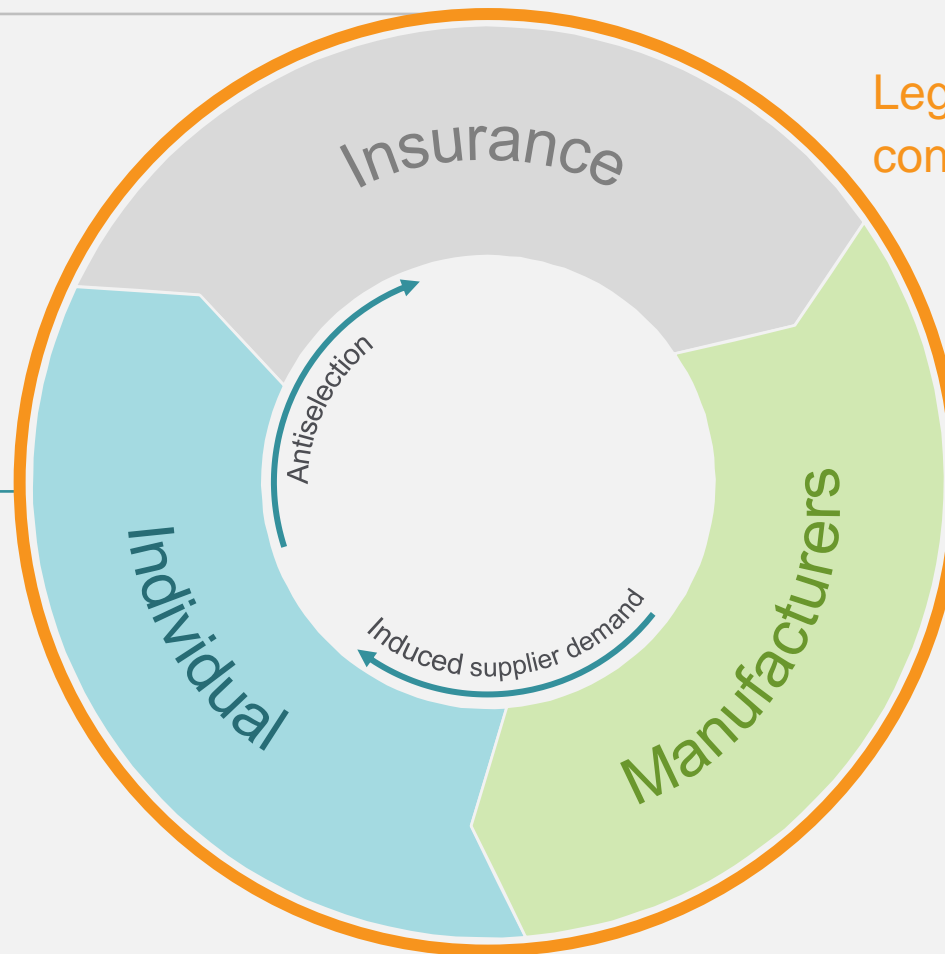


### Privacy

- Transparent client
- Data protection
- Cyber security

### Discrimination

- “Empowered”
- Self diagnosis



Legal framework  
constant state of flux?!

### Medical devices regulations

- Malfunction?
- Liability?
- Which requirements?

## Medical technologies

1

### Wearables/Health Apps

- Immature market
- Health data as goldmine
- Big potential in health care sector

2

### Acceleration by

- Internet of Things
- “i-Tunisation” of health data

3

### Insurance (Liability)

- Regulations lagging behind technology advancement
- Many grey zones  
→ Potential for new business?

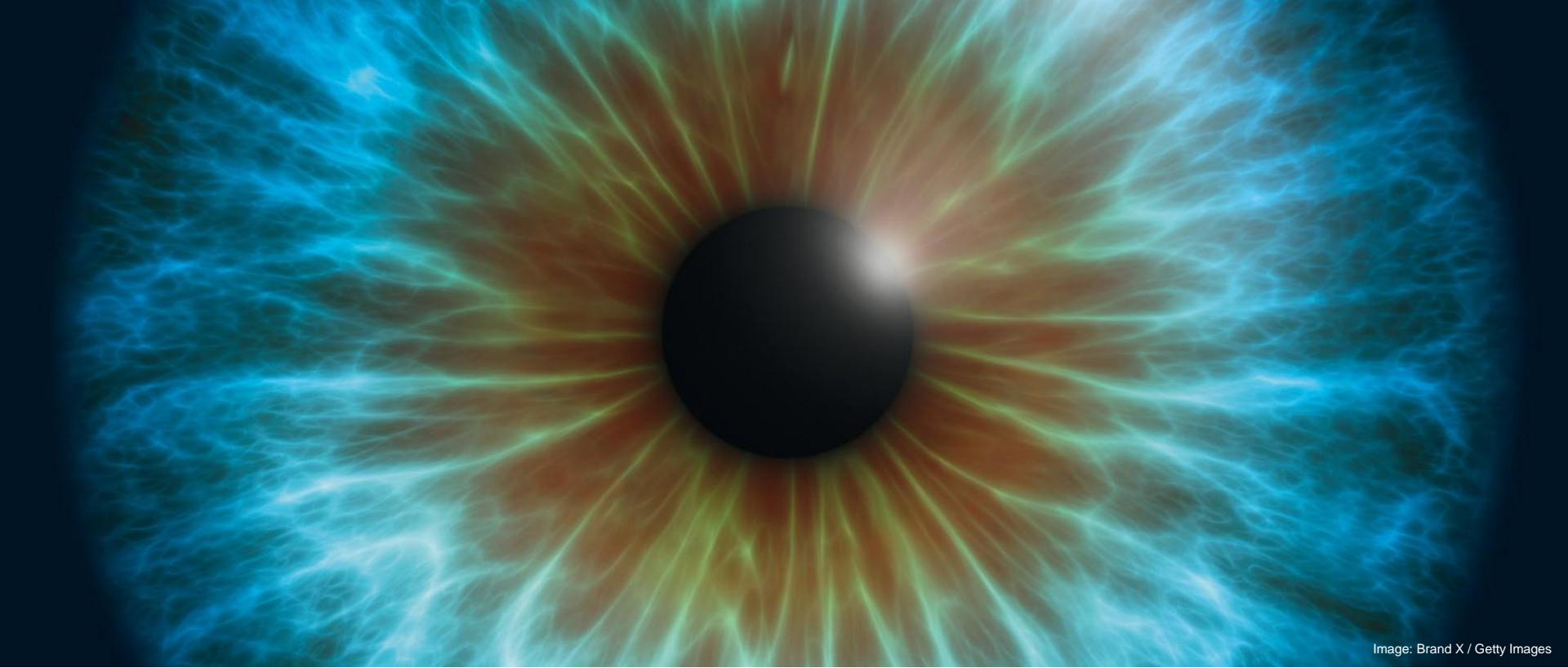


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Thank you for your attention!

ALRC  
Achim Regenauer

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