Challenges of Enabling Telehealth

Marc Droste-Franke, Strategic Area Health - Section Telemedicine

Brussels, April 18th, 2013

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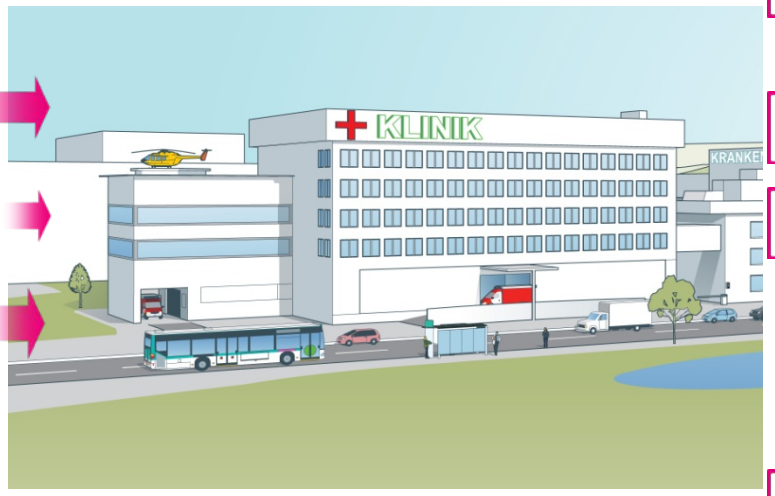
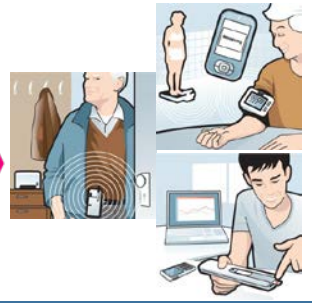
Market model – value propositions.

The virtual clinic as extension of the conventional clinic.





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New chances for telemedicine.

Driver and constraints

Market driver

- Demographic trend
  - aging population
  - lack of doctors
- Cost reduction potential
  - cost pressure
  - cost control
- Technological innovations
  - research
  - growth
- Higher quality of medical care
- Higher quality of life
- Personal responsibility
- Health awareness

Market constraints

- Fragmented market structure
  - low synergy
  - Problems of interoperability
- Missing standards
- No legal framework
- High level of regulation of healthcare market in Germany
- Open financial aspects, deficient reimbursement
- Low level of trust and conflicts between insurance companies, healthcare providers and patients

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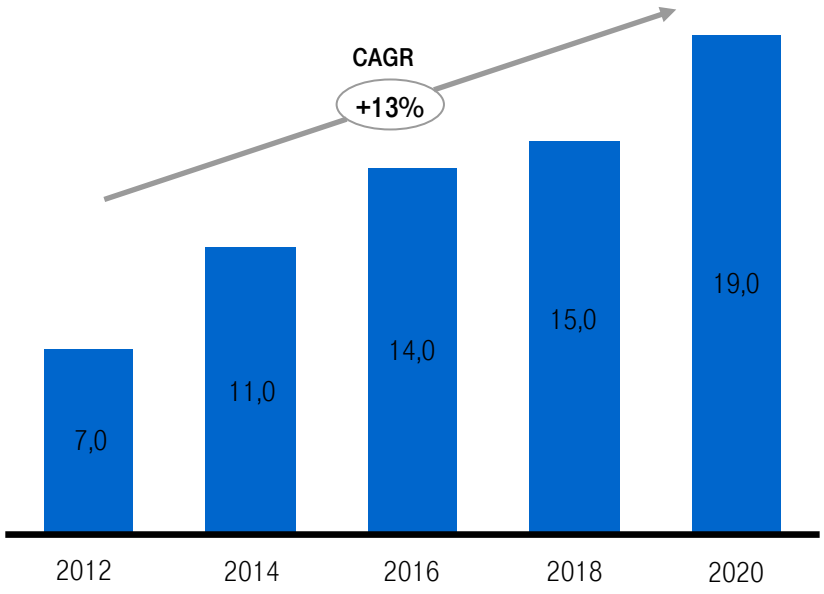
Driver: Telemedicine market development.

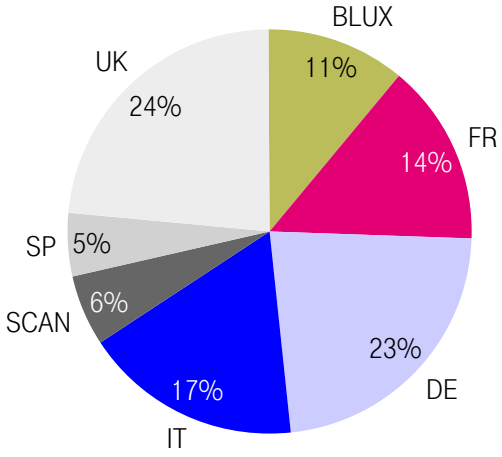
Due to the demographic development and the ongoing financial issues in health care analysts predict a growth rate between 13-17% until 2020.



Roland Berger Study, BCC Research, DB Research, 2010 , Revenue in Billion EUR

Market Trends:

- Increasing demand for electronic health services in Europe
- Telemedicine is an essential part and driver
- Projected growth rate of 13-17% by 2020
- Cost savings by telemedicine driven by less rehospitalization - improved medication up to 5% is possible
- EU legal framework as a driver for cross boarder offerings



TH-Market: Revenue per region in 2015

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Driver: Market model for telemonitoring.

1 **Physicians / Hospitals**

Pharmacy Model

- Telemedicine as part of regular healthcare and therapy (Versorgungsstrukturgesetz)
- Doctor prescribes telemedicine like medication or medicals aids and appliance
- The clinic mandates the telemonitoring suppliers
- Paid by insurances, initial subsidization by public institutions

2 **Health Insurance Co.**

Case management model

- Insurance driven and paid, aims to increase therapy compliance in order to save costs
- Health insurance institute makes an agreement with physicians and telemonitoring-suppliers aiming to reduce costs of attendance, esp. of chronic sufferers
- Cost savings driven by less re-hospitalization, less medication

3 **Consumer**

Personal invest model – self management

- Telemonitoring offers for customers / 2nd healthcare market
- Lifestyle or fitness in combination with online journal or citizen health record („Bürgerakte“)
- Private pay, doctor can be consulted by using IGeL-services

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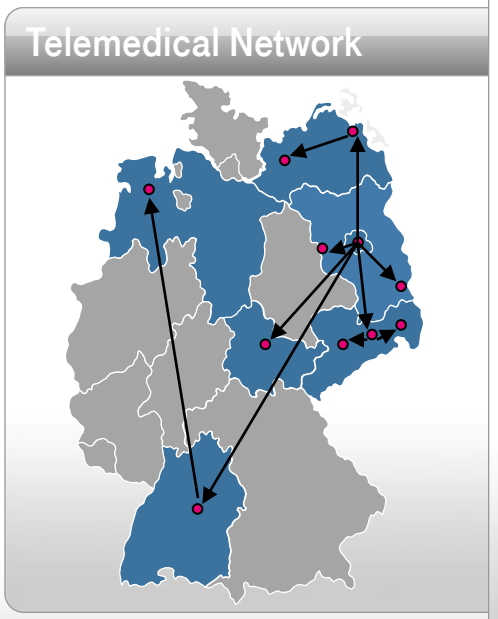
Constraint: Confidence and acceptance.

From “pilotitis” to sustainable region wide services.



From pilot projects to a sustainable implementation of telemedicine

Current situation

- Telemedicine projects as initiative of single doctors, who are confronted with deficits in healthcare
- e-Health@home-map:
  - 277 projects in 118 cities and communes
  - 13 projects in Saxony, thereof 9 not in regular health care provision

Target situation

- Overcoming the heterogeneous telemedicine landscape
- Establishment of model regions
- Establishment of reimbursement models
- Establishment of comprehensive available and interoperable e-health-solutions

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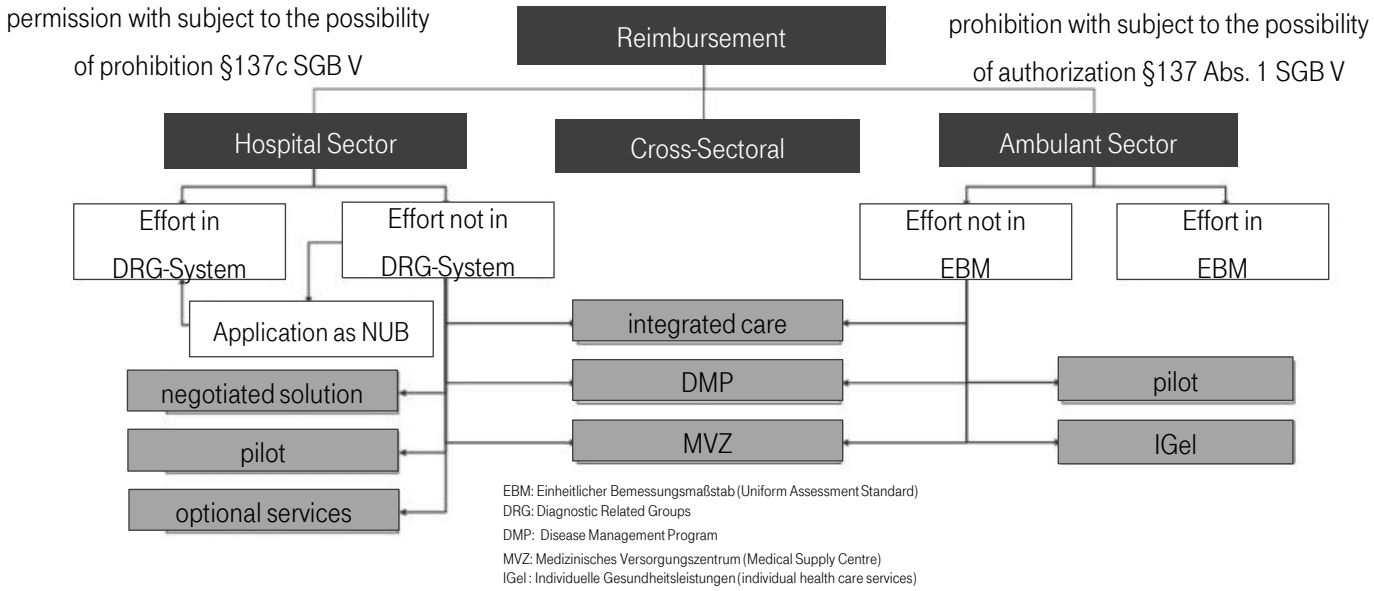
Constraint: Deficient reimbursement.



Reimbursement

- Today: Compensation via selective IC-contracts, pilots, IGeL, etc.
- Regular Care: Catalogues contain just reimbursement for remote technical monitoring of implants – no remote monitoring
  - "Versorgungsstrukturgesetz" defined the task to consider ambulant telemedicine in EBM until March 31st, 2013
  - Discussion ended inconclusive → *Postponed*

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Source: Technikfolgenabschätzung – Theorie und Praxis, Nr. 1, 17. Jahrgang - Mai 2008, S. 43-51, Institut für Technikfolgenabschätzung und Systemanalyse (ITAS), http://www.itas.fzk.de/tatup/081/orpa08a.htm

Constraint: Missing legal clarity.

Restrictions

- Prohibition of exclusive remote treatment (§7 Abs. 3 code of medical ethics) – "Ausschließliches Fernbehandlungsverbot"
  - Definition unclear - it seems to restrict the *exclusive* remote treatment only
  - Sentences against forbidden advertisements of remote treatment and remote diagnostics and therapy*

Data privacy and medical confidentiality

- No consistent data privacy rules: distributed responsibilities between state and countries and institutions
  - The rights of the patient in respect of medical confidentiality require a specific protection concepts – e. g. a complex roles and rights management

Developing a medical product

- Germany: "Medizinproduktegesetz"(medical product law) and "Medizinprodukt-Betreiberverordnung" (medical product operation regulation)
- Medical classification of product depends on claimed intended use
  - depending on classification → Specific product development processes have to be in place (risk management, documentations, handbook, verification, validation, regulatory approvals, studies, ...)
- High risk for manufacturers: A wrong self-classification may lead to production stop and penalties or on the other hand long and costly development processes
- Guidance needed (MEDDEV 2.1/6 as a good approach)

Standards:

DIN EN 60601-1-4
DIN EN 60601-1-11
DIN EN ISO 13485
DIN EN ISO 14971
DIN EN ISO 9001 …

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*Source: E.g. OLG Köln, Urteil vom 10.08.2012, Az. 6 U 235/11 and OLG München, Urteil vom 02.08.2012, Az. 29 U 1471/12

Telemedicine: Socio-technical health and care services.

„Telemedicine is both a health service and an information society service.“*

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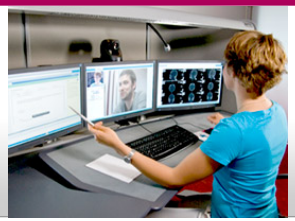
* Source: Communication from the EU COM on Telemedicine: COM (2008) 689 endg., p. 9

Telemedicine topics which are enabled by Telekom.

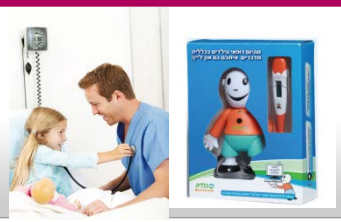
Heart Failure

Stroke



Diabetes

Pediatry



Chronic Wound

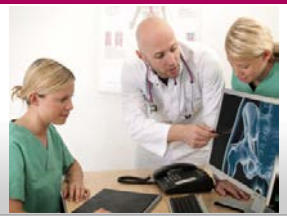
Tumorboard

COPD

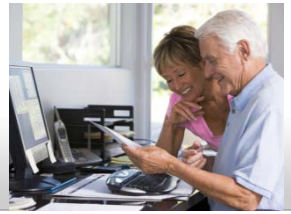
Nurse Agnes

Palliative Care

Multimorbidity



Patient Reported Outcome (PRO)



Virtual Clinic

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Many thanks for your attention!

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BACKUP

Telecardiology - Telemedicine Center Brandenburg.

Remote monitoring D2P

Carl-Thiem-Klinikum Cottbus

klinikum brandenburg

getemed

Brief outline

- Client: Carl-Thiem-Klinikum Cottbus / Städtisches Klinikum Brandenburg
- Partner for telemedical devices: getemed GmbH and ISH Informatika
- Aim: Development and realization of a platform solution by connecting 3 telemedicine centers to monitor in the first phase 500 high risk patients 24 hours and 7 days a week
- 4 years contract with health insurance company AOK Nord-Ost, other insurance companies are going to participate as well
- going live in October 2011
- Initial funding: Federal State Brandenburg


Distress Call


Mobile ECG and SPO2

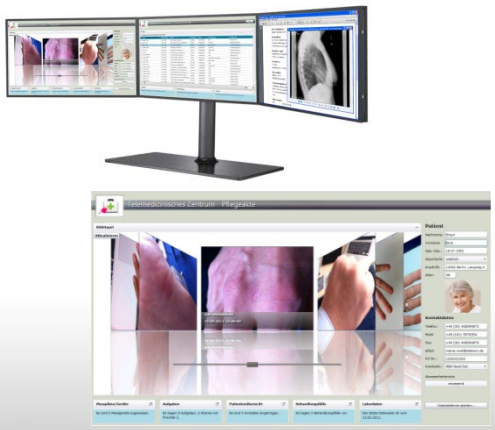

Scale


Blood Pressure


Gateway

Tele wound monitoring.

Teleconsultation D2D



Brief outline

- Partner: “Centrum für Diabetologie, Endoskopie und Wundheilung“ in Cologne
- Goal: Buildup of a wound center with telemedical attendance support, prototype digital wound management:
  - Wound monitoring via ambulant care services
  - Virtual Visit
  - Consult / second opinion
- Use of mobile devices as ‘wound-camera’ for the mobile and secure transfer of picture documentation
- Communication between wound center, care service and doctors via ‘wound portal’

Tele-emergency - STEMO PrioLTE.

A mobile Stroke Unit

Teleconsultation D2D

Brief outline

- Partner: Charité Berlin, fire department Berlin, Meytec
- Key element is QoS on LTE networks – “blue lights on data highways”
- Real-time data transfer and videoconferencing between ambulance and neurologist at the hospital
- Mobile CT to save traveling time and treat stroke patients with lysis as soon as possible – “time is brain”
- Field study and clinical reliability test to set the ground for broad usage
- Development of specific offerings for ambulance services and remote telemedical services
- Definition of standards, prioritization of data traffic

Telemedicine: Socio-technical health and care services.

„Telemedicine is both a health service and an information society service.“*

Telemedicine as socio-technical service

- Warranty of the provision of healthcare in the rural area by the means of telemedicine, which combines medical and technical components.
- Enabling the direct communication between doctors and between doctors and patients.
- Sustainable provision **and further development of** telemedical infrastructure.
- Secure provision and preparation of patient data.

Value chain

- Doctors, nurses, med. staff
- System applications
- Workflow services
- Analysis tools / Viewer (ECG)
- Platform as a Service
- EHR
- Maintenance & Service
- Platform services, data privacy
- Data center, cloud, security
- Network, connectivity
- MedTech

Client

Partner

DT

Partner

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* Source: Communication from the EU COM on Telemedicine: COM (2008) 689 endg., p. 9