



Comments on critical success factors identified by Momentum

European Momentum for Mainstreaming Telemedicine
Deployment in Daily Practice



Agenda

Alere Inc. - Company overview

Featured solutions

Success factors



Sophisticated diagnostics & health information Solutions

World's leading provider of near-patient diagnostics that, when combined with our novel health information solutions, enable the effective management of several chronic conditions.

2012 Net Sales
\$2.8 billion

2012 Adjusted EBITDA
\$606 million

Total Employees
17,600

Represented In
100+ countries

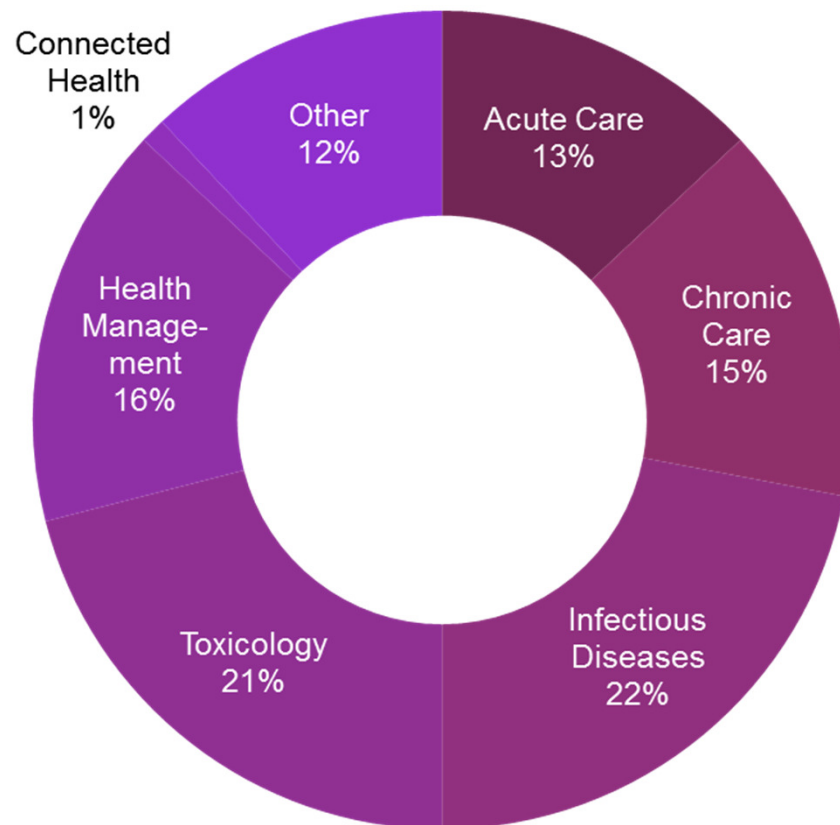
Business Units
6





Strong presence in Europe with a diversified portfolio

Sales by Business Unit



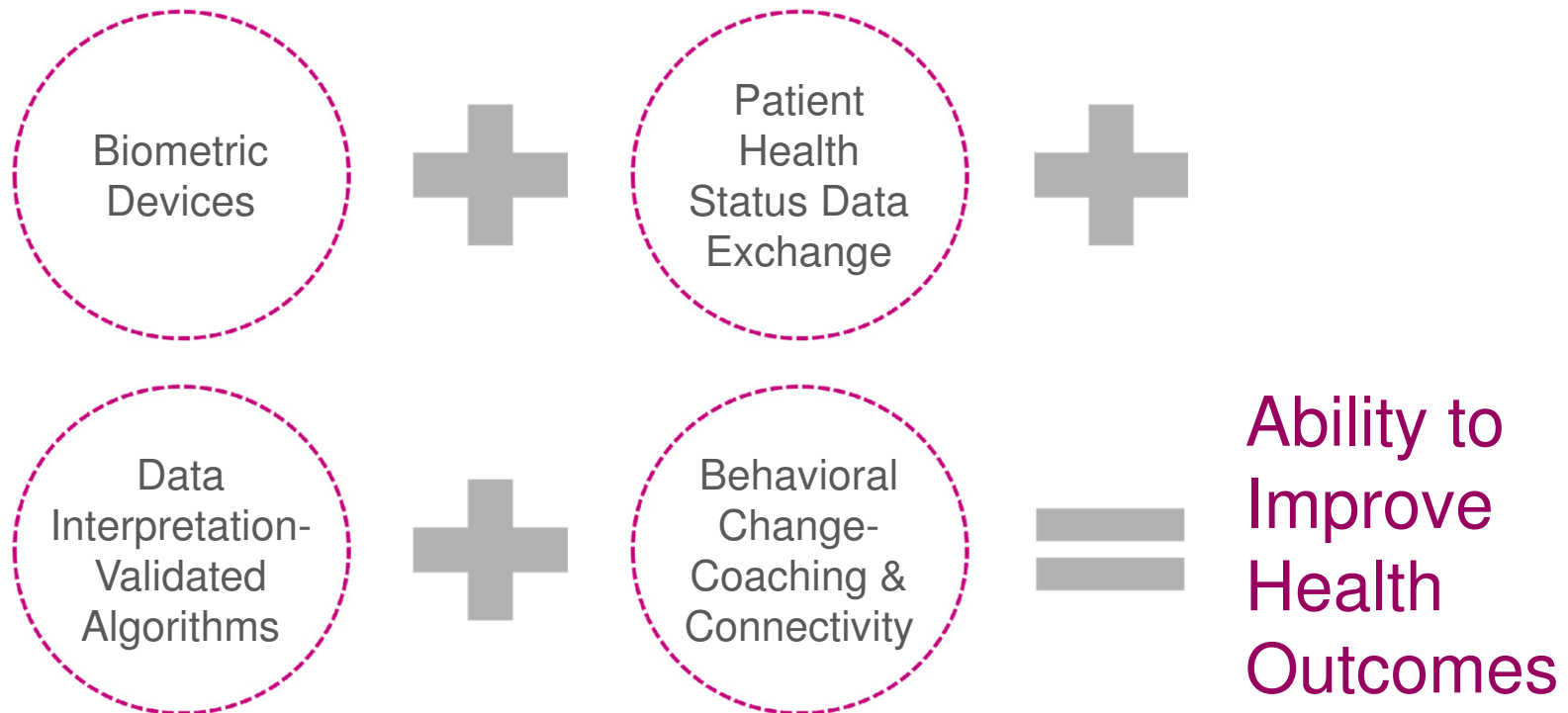
Presence in Europe

- Direct commercial subsidiaries in **12 EU member states**
- Global primary **manufacturing facilities** in Dundee/Scotland and Oslo/Norway; additional manufacturing facilities in Germany, Spain and the UK
- 3 out of 5 global primary **research centers** in Europe (Jena/Germany, Cambridge and Dundee/UK)
- **USD 484 million revenues** in Europe in 2012



Beyond Devices – why we're different

We manage the process that leads to health behavior change.





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Leading in near-patient diagnostics

Acute illnesses

Devices in cardiology, endocrinology, nephrology, infectious diseases, toxicology and intensive care

For example:

Alere I: rapid nucleic acid amplification test; multiple test, including Influenza



Chronic conditions

Avoid diseases

For example:

Alere Cholestech LDX complete lipid profile and glucose in 5 minutes using finger stick blood; **CAD** prevention.



Handle early stages

For example:

Alere Afinion: immediate HbA1C, ACR, CRP; improves time and patient management for **diabetes** and its complications.



Reduce impact

For example:

Alere Heart Check: BNP using finger stick blood; connectivity via GPRS and Bluetooth. Enables continuous treatment optimization in **heart failure** patients from home.



Underlying principle

Point of care measurement
Connect patient and provider
Supported by analytics
Linked to health management





Real-time CDS drives medical evidence into clinical care practice

Alere's Clinical Decision Support system (smartPath, HL7 web service)

Alere Analytics Knowledge Base

Over 30,000 evidence based care rules

Distilled from over 300 medical journals, standard text books, guidelines by leading medical authorities



Connectivity to multiple clinical host systems

Clinical data at EMR technology vendor, physician practice, IPA, hospital system, payer

E.g. Alere Solution Platform, Allscripts, Vitera/ Greenway, Aprima, Polaris, Iowa HIE



Real-time, focused Outputs & messaging

Quality Alerts & Reporting

Chronic Care Management

Point of Care Alerts

Screening Alerts

Patient Safety Surveillance

Patient Focused Alert and Guideline

Probabilistic Predictive Modeling (PPM)

Population Health Management and Clinical Dashboards

Evidence Based Order Sets

Public Health Reporting





Large-scale health management globally impacted thousands of lives

Example heart failure (other health programs include COPD, asthma, diabetes, CAD, pregnancy, smoking cessation, weight loss)

EU impact since 2006

> 26.000 patients

have been cared in Germany,
currently we serve 3 large
German health plans

46 % deaths prevented

already in the first year of care

Up to 40% admissions

have been prevented per
annum, 25% of total health care
costs have been saved

France hosts the service

with 2 pilot projects since 2013

US expertise since 1999

> 290.000 patients

have been managed, 88 large
and mid-sized health plans are
currently contracted

> 171.000 admissions

have been avoided, > \$261
million could be saved per
annum on average

Commercially sustainable

No public funding

Risk-sharing agreements



CORDIVA reduces hospitalizations and health care costs in German program

Program components and workflow

Home remote monitoring + telephone support by nurses + data pattern analysis + rule based decision making.

Customizable guideline-based rules stratify patients prognostically and regarding psychosocial stressors in order to provide individually tailored care

Nurses telephonically follow up so patients comply with their care plan and avoid higher acuity. Patient-specific alerts undergo rule based management

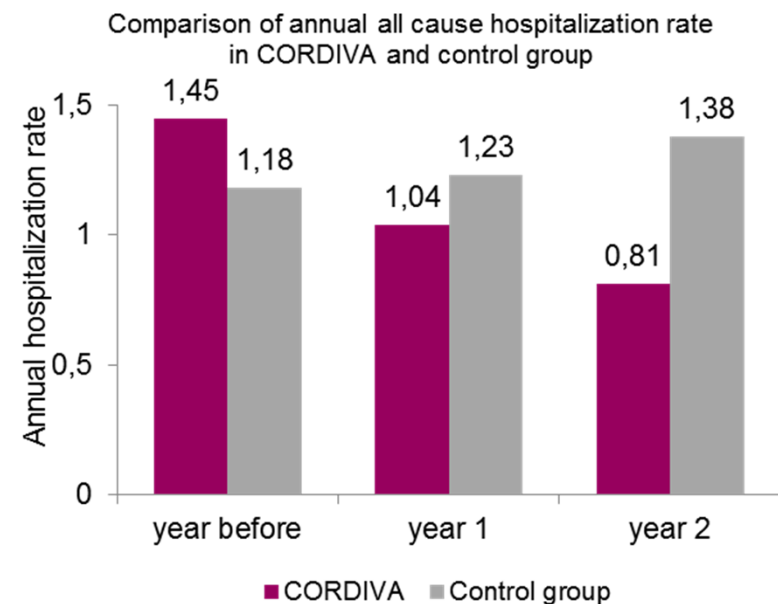
Integration in existing pathways

The programs are part of standard health care processes in cooperation with in- and outpatient facilities, i.e. GPs and specialists.

Physicians will be alerted whenever an intervention above the nurse care level is required, thus alleviating their workload, but keeping them in the loop.

Program impact on hospitalization

Since our German program (CORDIVA) is a real life program rather than a clinical trial evaluation is performed by retrospective comparison with health plan control groups using





eHealth complexity: integration of health management, health information exchange and clinical decision support

Examples for connected health care

Southern New Jersey

Covered Population: 1.8 million

Care Providing Organizations

- 8 Hospitals and EDs
- 200+ Ambulatory Practices
- 800+ Providers
- 6 Ambulatory Surgical Centers

Trading Partners

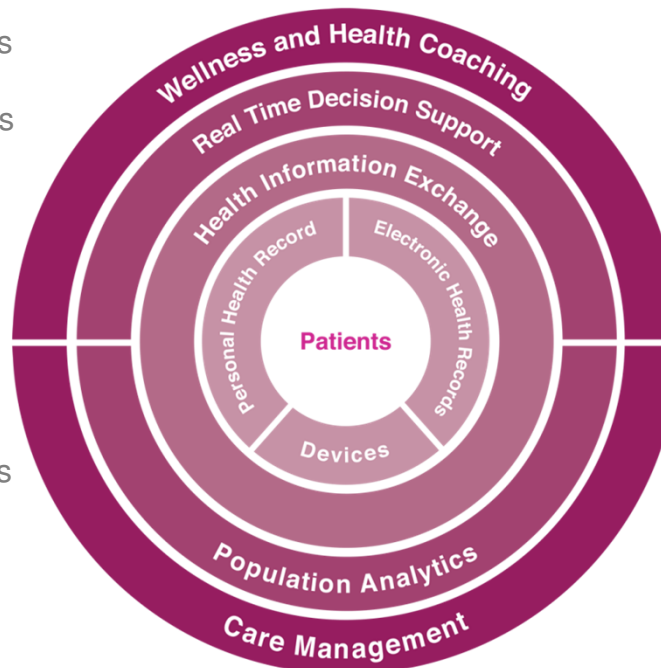
- 5 Imaging Centers
- 5 Laboratories
- SureScripts

Hospital Information Systems

- Cerner
- Epic
- McKesson
- Siemens Soarian

Electronic Health Records

- Alere EHR
- Allscripts
- eClinicalWorks
- GE
- NextGen



UK NHS & City of Leeds

Covered Population: 2.8 million

Care Providing Organizations

- Leeds Teaching Hospitals NHS Trust – 7 NHS Hospitals and EDs
- Leeds Clinical Commissioning Groups – North, South and East, West – 600+ GPs

Social, Mental, and Community Care Organizations

- Leeds City Council
- Leeds Community Healthcare Trust
- Leeds & York Partnership Trust

Hospital Information Systems

- iSoft

Electronic Health Records

- EMIS
- TPP





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Success factors proposed for discussion

The Critical Success factors Momentum has already identified are adequate, relevant and not excessive. I should like to congratulate on that.

In order to strengthen the overall significance one might discuss the following additional factors:

- **Clarity in specifying targeted (eligible) conditions**

- Inclusion and exclusion parameter

- **Clear definition of services that are being offered**

- Services included , when and in which period of time, and not included

- **Derived from these:**

- Clear success (and failure) parameters, linked to eligibility

- Size of targeted population, linked to budgeting

- Screening and inclusion procedures, decisive for inclusion rate

- Intended patient flows, linked to inclusion process

- Exclusion procedures, follow-up offers



Success factors proposed for discussion

- **Tailored care by repetitive assessment**
 - Clinical stratification, enables risk based intervention
 - Psychosocial stratification, allows for feasibility estimation, focuses care process
 - Modularity, ensures personalized care, linked to budget
- **Clear agreement about the non-linear and iterative nature of eHealth development and implementation processes**
 - Clear definition of roles and responsibilities
 - Includes determination of time line and milestones
 - Of utmost importance if the eHealth service will be linked to other services
- **From the beginning, planning, preparation and conduct of evaluation of effectiveness**
 - Based on previously agreed concrete parameters
 - Applies to short-term, mid-term, long-term and continuous follow-up assessment
 - Strictly necessary for operational improvement
 - Basis for performance related compensation



Success factors proposed for discussion

- Careful planning of direct operations

- Most complicated if human workforce is involved

- Also includes ICT maintenance and modification

- Most important if time sensitive services are provided



Success factors already identified – Organization and management

- Address the needs of the primary client(s)

Almost every stakeholder will have to get moving and change their previous mode of operation. But, why should they have to do so?

It is all the more important to develop a matrix of incentives to which every stakeholder can relate. Failing that, either endangers the project by interrupting the process chain or leads to the question of whether it is absolutely essential to involve a particular stakeholder or not.

- Involve health care professionals and decision-makers

Strict attention to their existing processes and working methods is important too, sometimes innovations must even be postponed.

For example, most outpatient facilities have neither the necessary resources nor the required experiences and capabilities to host eHealth services.

Not only their patients but also professionals themselves are at advanced age. In Germany, the average age of GPs is 53 years. eHealth was not part of their training and they often lack personal experience with novel ICT.



Success factors already identified – Organization and management

- Prepare and implement a business plan

This is also true if the service is provided by ‘non-profit or a governmental organization’. Particularly significant are, in this regard, paying customer, revenue model, customer value proposition, existing solutions, competitive differentiation, hurdles to overcome, resources required.

- Prepare and implement a change management plan

The ‘seamless implementation into the existing workflow’ places exceptionally high demands on development and implementation. ‘Each additional mouse click is to much’, a different GUI, such as a web interface, is virtually excluded. Only necessary, actionable information should be delivered and additional details can be given at request.

- Put the patient at the centre of the service

Person-centred care is a highly promising approach to solve central eHealth problems, such as engagement of elderly and women. However, it is much more than ‘developing the service with the patients’ perspective in mind’. It changes the starting point for health care in general and application of person-centred care in eHealth is currently subject of intensive research.



Success factors already identified – Technique and infrastructure

- Ensure that the IT and eHealth infrastructures needed are in place

Without the exception of eHealth ecosystems, normally neither IT nor eHealth infrastructure are in place. Often PMR, EMR, HIS, LIS, HER or PHR are partially established, but interfacing (including HL7 and its different phenotypes) and/ or normalization appear to be most complicated. Establishing connectivity is a notorious resource hog.

The smaller the intended eHealth programme is the greater is the resulting budget burden, for example in regionally or locally organized health care systems.

- Ensure that the technology is user-friendly

Beside handling of technology, appropriateness and economic viability are most important. I.e. integrate only technology, which directly intervene in favour of the success parameters and remove everything not needed, for example, sensors which are not sufficiently predictive to detect emerging deterioration of disease.



Success factors already identified – Technique and infrastructure

- Monitor the service

Operational monitoring is indeed crucial must go hand in hand with operational management and dedicated resources . Please recognize the non-linear and iterative nature of eHealth development and implementation processes.

An eHealth intervention is almost never entirely and finally developed and implemented since the underlying working conditions change constantly.

- Guarantee that the technology has the potential for scale-up (i.e., “think big”)

‘Consider that it may be important to grow and extend the telemedicine service to a larger scale [...] The potential for scale-up can be achieved by using either standard technologies or technologies that are similar and yet are produced/offered by a range of suppliers [...]’

The dimensions of scalability go far beyond technology. It is highly recommended to think of scalability right from the beginning, for both customer and companies involved, since eHealth have the capability to shape the ways health care is delivered entirely.



BACKLOG



Success factors already identified – Strategy

- Check that there is cultural readiness towards telemedicine
- Ensure leadership through a champion
- Identify a compelling need
- Put together the resources needed for deployment and sustainability



Success factors already identified – Regulation and safety

- Establish that the service is legal
- Ask advice from legal, ethical, privacy and security experts
- Apply relevant legal and security guidelines
- Ensure that telemedicine doers and users have “privacy awareness”



eHealth complexity: various medical interventions with different scopes of application

Patient self-management support	Patient behaviour change programme	Patient education	Information technology <ul style="list-style-type: none">• Clinical engagement and coordination• Remote patient monitoring• Secure data exchange
Home care support	Internet support	Nurse-led support	Physician <ul style="list-style-type: none">• 24/ 7 triage and nurse advice• Care coordination• Patient decision support
Predictive modelling	Risk assessment and stratification	Clinical data aggregation and reporting	Outcomes measurement survey
Pharmacy management	Health coaching	Wellness coaching	etc.

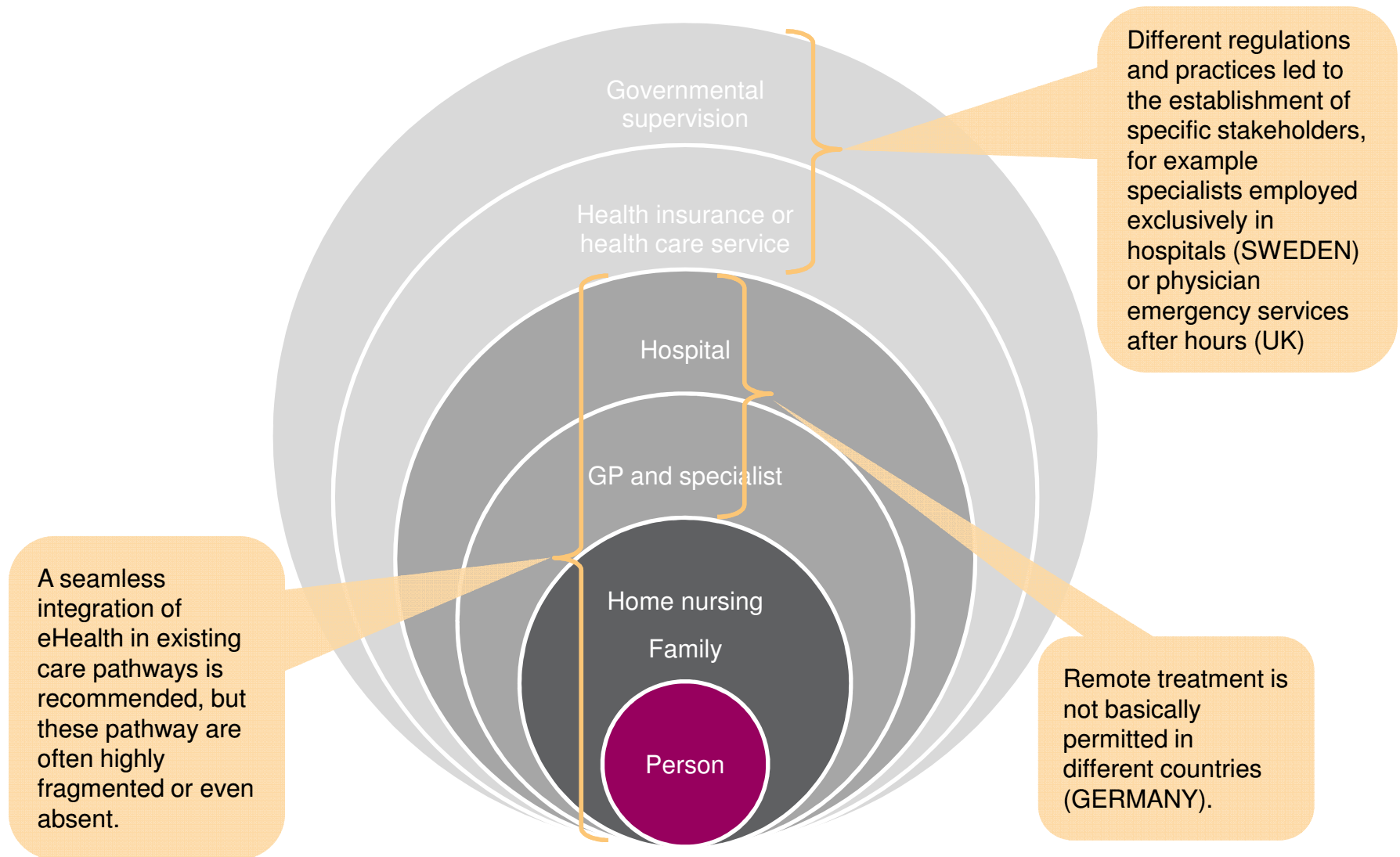
It is easy to get overwhelmed at the sheer number of possible interventions, which significantly complicates both implementation and evaluation.

In this context, the identification of eligible pts is crucial, but related standards are still missing

The decision as to whether or not comparability exists between different eHealth programmes has to be taken carefully.

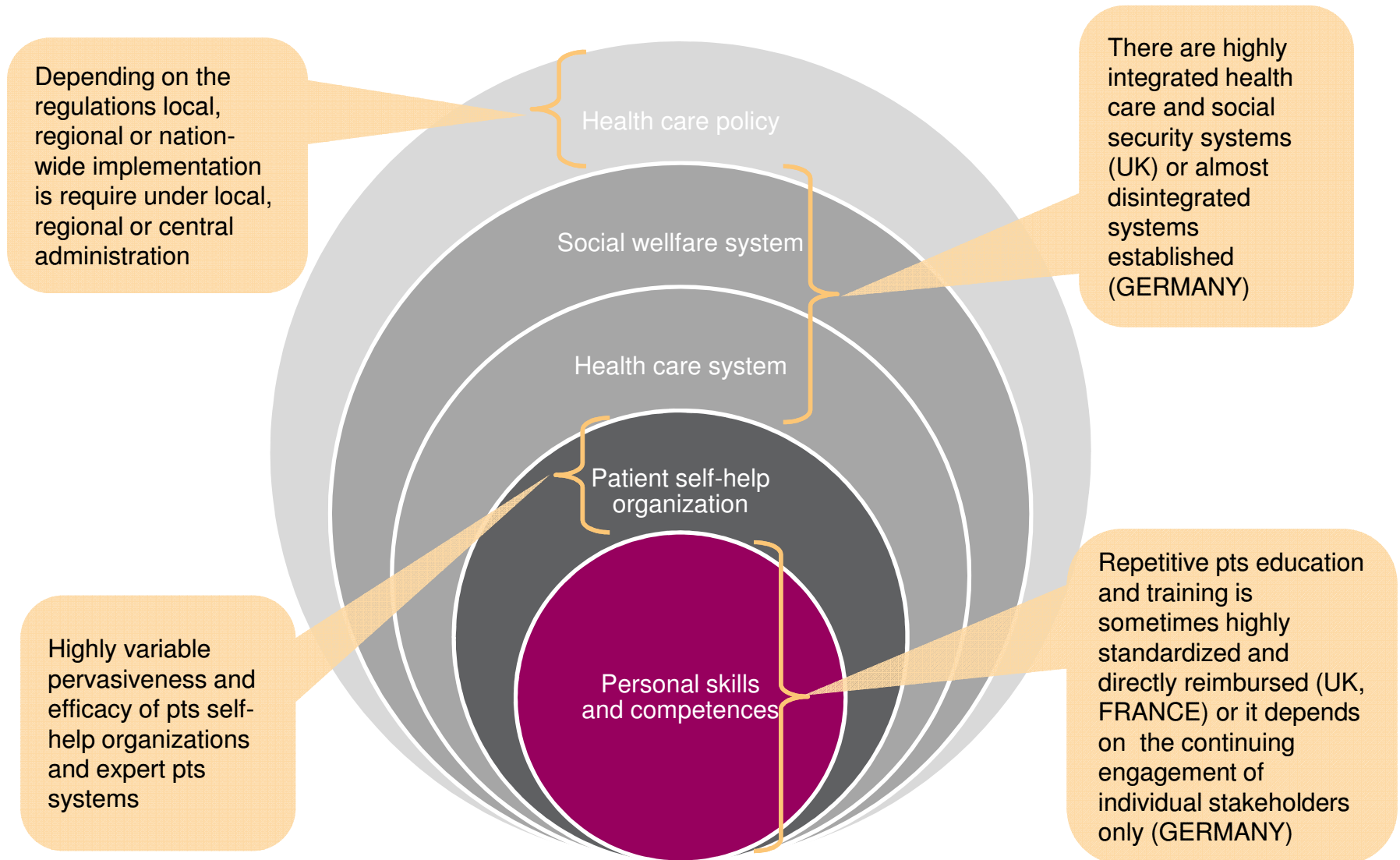


eHealth complexity: individual health care context involving different stakeholders



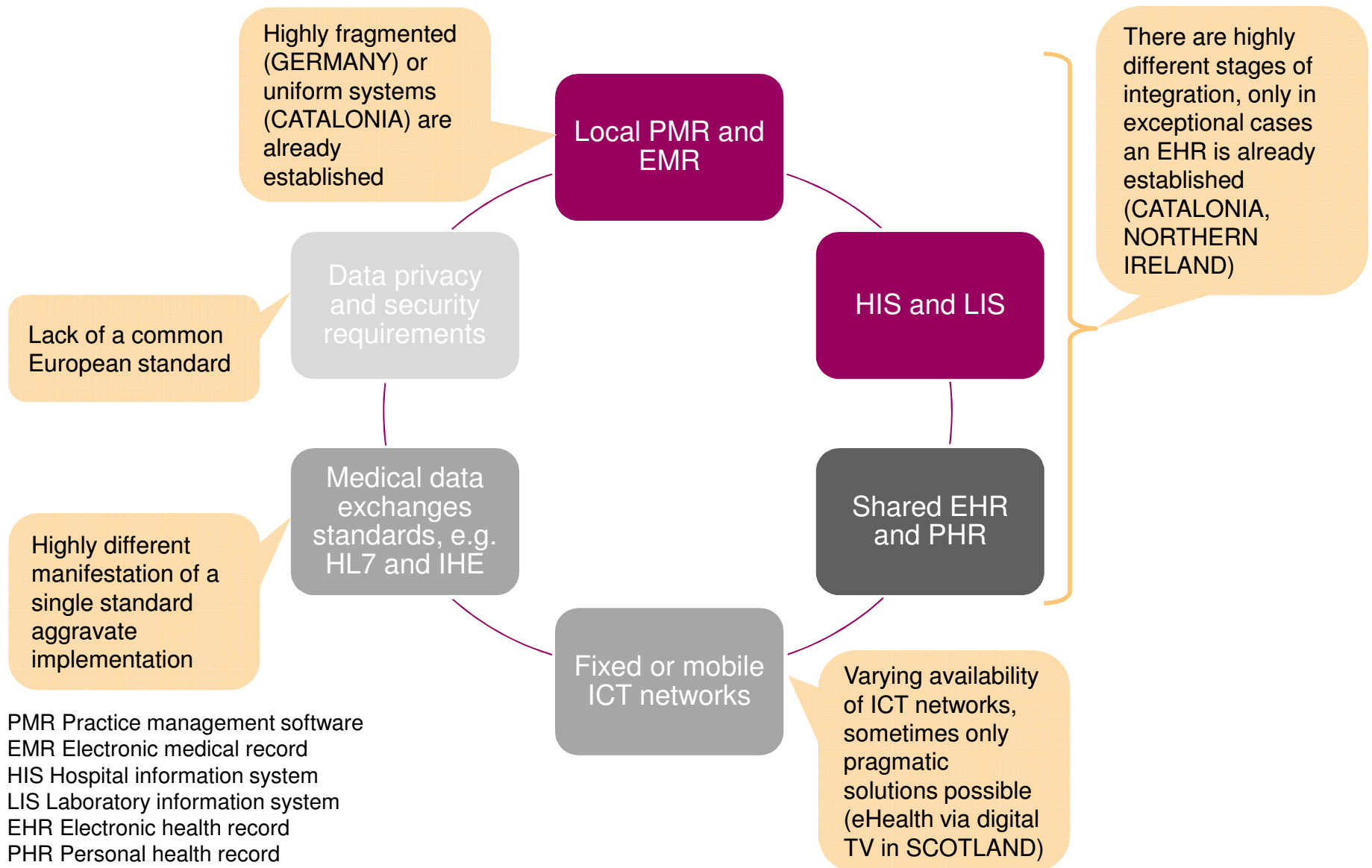


eHealth complexity: varying national health care and social welfare systems





eHealth complexity: different pre-existing information and communication infrastructures





eHealth complexity: diverse business environments based on different reimbursement systems

