Digital Health –
The Future of Swiss Healthcare

Prof. Dr. oec HSG Alfred Angerer
Conference «Life in Numbers 4» – ZHAW Waedenswil
Digital Health today

Source: Northwestern University

Digital Health – The Future of Swiss Healthcare
Alfred Angerer; WIG – Winterthurer Institute of Health Economics
Health data produced today

What is the data volume in megabyte that a healthy Swiss (without any major health incident) produces every year?

Possible Answers
- 0.05 MB (entry in electronic health record)
- 23 MB (right answer)
- 69 MB (yearly data volume using a wearable)
- 103 MB (one X-ray image)
- 900 MB (cruciate ligament rupture)

Source: ZHAW-WIG: Datenvolumina Schweizer Gesundheitsdaten heute und morgen.
Structure of today’s presentation

WHAT?

The basics of Digital Health

WHY?

The influence on our system

HOW?

Call to action for players
Our WIG-ZHAW categorization of Digital Health

Source: Angerer et al. (2017)
https://digitalcollection.zhaw.ch/handle/11475/1458
Global digital health market (in Billion US$)

- Other*
- EHR**
- Telemedicine

<table>
<thead>
<tr>
<th>Year</th>
<th>Other*</th>
<th>EHR**</th>
<th>Telemedicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>12</td>
<td>20</td>
<td>47</td>
</tr>
<tr>
<td>2016</td>
<td>14</td>
<td>20</td>
<td>62</td>
</tr>
<tr>
<td>2017</td>
<td>17</td>
<td>21</td>
<td>80</td>
</tr>
<tr>
<td>2018</td>
<td>19</td>
<td>22</td>
<td>101</td>
</tr>
<tr>
<td>2019</td>
<td>22</td>
<td>23</td>
<td>126</td>
</tr>
<tr>
<td>2020</td>
<td>26</td>
<td>24</td>
<td>156</td>
</tr>
</tbody>
</table>

*Other: Categories wireless health and mobile health; **EHR: Electronic Health Record

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What is the media talking about?
Count of newspaper publications per topic

- Electronic Health Record (EHR): 1,073
- Wearables: 930
- Telemedicine: 749
- Fitness: 131

Source: Angerer et al. (2017) https://digitalcollection.zhaw.ch/handle/11475/1458
Impact on our system

Quality improves

First class

Costs increase

Stars

Costs decrease

Loser

Down-grade

Quality worsens

Source: Angerer et al. (2017) https://digitalcollection.zhaw.ch/handle/11475/1458
The overall expert opinion is cautiously optimistic.

<table>
<thead>
<tr>
<th>EHR</th>
<th>Wearables</th>
<th>Telemedicine</th>
<th>Fitness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality improves</td>
<td>Quality improves</td>
<td>Quality improves</td>
<td>Quality improves</td>
</tr>
<tr>
<td>First class</td>
<td>Stars</td>
<td>First class</td>
<td>Stars</td>
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<tr>
<td>Costs increase</td>
<td>Costs decrease</td>
<td>Costs increase</td>
<td>Costs decrease</td>
</tr>
<tr>
<td>Loser</td>
<td>Down - grade</td>
<td>Loser</td>
<td>Down - grade</td>
</tr>
<tr>
<td>Quality worsens</td>
<td>Quality worsens</td>
<td>Quality worsens</td>
<td>Quality worsens</td>
</tr>
</tbody>
</table>

Source: Angerer et al. (2017) https://digitalcollection.zhaw.ch/handle/11475/1458
Future outlook: Probability of scenarios

Source: Angerer et al. (2017) https://digitalcollection.zhaw.ch/handle/11475/1458
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What does change with digitization? 3 types of drivers

1. Inherent characteristics of product or service
2. Interactions between company and its customers
3. Interactions between company and its partners and competitors

Where to begin? Example patient discharge

Source: Lean Thinking for the NHS (2006)

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The “USA” principle: The right order of optimization

Eliminate the Unnecessary
Simplify the processes
Automate the rest

“USA”

3 basic strategies for your company

- Product Leadership
- Operational Excellence
- Customer Intimacy

Quelle: https://hbr.org/1993/01/customer-intimacy-and-other-value-disciplines
More about our research. Thank you for your attention!

Lean Processes
Lean Healthcare Transformation Body of Knowledge
www.amazon.de

Data Volumes
Schweizer Gesundheitsdaten heute und morgen
www.wig.zhaw.ch

Digital Health
Die Zukunft des Schweizer Gesundheitswesens
www.wig.zhaw.ch
Contact

Professor Dr. oec. Alfred Angerer
Head Center for Healthcare Management
Winterthur Institut of Health Economics WIG
ZHAW School of Management and Law

Gertrudstrasse 15
8401 Winterthur

alfred.angerer@zhaw.ch
www.zhaw.ch/de/ueber-uns/person/ange/

+41 58 934 66 72

www.linkedin.com/in/AlfredAngerer
https://www.xing.com/profile/Alfred_Angerer

@AlfredAngerer