The digital therapy & prevention against back pain
Behavioral chronic diseases are a cost driver in industry nations.
Back pain is the most common reason for work inability.

**RAILWAYS ARE PART OF OUR GLOBAL ECONOMY DEVELOPMENT**

The most expensive of all chronic diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Total cost ($ billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic pain</td>
<td>592</td>
</tr>
<tr>
<td>Serious mental illness</td>
<td>318</td>
</tr>
<tr>
<td>Smoking-related diseases</td>
<td>300</td>
</tr>
<tr>
<td>Diabetes</td>
<td>245</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>224</td>
</tr>
<tr>
<td>Obesity</td>
<td>147</td>
</tr>
</tbody>
</table>

The #1 cause of disability worldwide

“In 2016, Users Will Trust Health Apps More Than Their Doctors”

Forbes Magazine, Dec 2015

*The human factor is strategic to development and not a bottleneck*
Executive Summary
Kaia provides real-time & remote access to the most effective back pain therapy digitally scalable to the mass

The problem:
Real-time access to therapeutic protocols for back pain as a primary care for any citizen is a massive issue worldwide. The effective yet costly multimodal therapy is available to few patients. It takes three years on avg. to find adequate therapy, while experiencing depressive periods and 112 days of absence from work.¹

Golden standard of back pain therapy
Enabling access to multimodal therapy, the most advanced therapy against back pain

Fast and lasting results
First evaluations show a reduction of pain levels by 43% in 20 days.

Developed by medical professionals
Collaborating with the Munich university hospital and leading chronic pain experts

Certified and tested as a medical product
In addition to a CE-certificate, our data security is independently certified according to ISO13485.

Pioneering value-based healthcare
Value-based reimbursement of Kaia lets you pay for outcomes, not access

¹ Schneider et al. (2013)
Primary care shortage leads to substantial direct and indirect health costs for any employer.

Absence from work is costly and the costs of presenteeism insufficiently considered.

Primary care doctor shortage (US)

Employees do not get *access to adequate treatments* and *avoid to declare their sickness* leading to mental illness and additional costs. This should be avoided if the patient can *address his/her back pain satisfactorily by remote & real-time access to an effective treatment.*
Railway workers in particular are facing musculoskeletal disorders
Office of Railway Regulation (UK) finds back pain therapy to be cost effective and necessary

„Risk factors can be found in virtually every railway workplace, specifically arising from prolonged static postures and task repetition“¹

> 70% of railway workers suffered from lower back pain at one point in their career²

ORR is expecting a ROI of more than 300%, a reduction in employee sickness absence and improving employee retention³

¹ Office of Rail Regulation; position paper on musculoskeletal disorders 2014
² Ganasegeran et al. (2014); Psycho-behavioural risks of low back pain in railway workers
³ Office of Rail Regulation; Network Rail Physiotherapy Pilot 2016
Approach of the multimodal therapy compared to conventional therapy

The multimodal therapy benefits from an interdisciplinary approach

**Conventional Therapy**

- Physical Exercises
- Pain Killers
- Surgery

**Problem**: no coordinated care, not guideline-conform

**Multimodal Therapy**

- Physical Exercises
- Psychological Exercises
- Patient Education

**Problem**: very costly & only available at pain centers!
Kaia's first product is an app-based multimodal therapy
Real-time, remote access to the gold standard back pain therapy, customized to the mass
Kaia’s first product is an app-based multimodal therapy (II)
A digitalized gold standard treatment for chronic pain

Physical Exercises

Psychological Exercises

Education

Today we are going to talk about the structure of the spine and the lower back. Choose a topic to get started!

What is a motion segment?

A nerve emerges from the spinal cord channel at each level between each pair of vertebrae.

The pair of nerves emerging at each level, the disc, and the two vertebrae make up a motion segment.

A segment is the smallest unit, on which the spine can move. The spine has 25 such segments between the upper cervical spine and the connection to the sacrum.

The segments in the cervical spine and the lower lumbar spine are the most mobile, hence they are most prone to pain.

Not only can the mobility at the level of each
Kaia's first product is an app-based multimodal therapy (III)
A digitalized gold standard treatment for chronic pain and amazing UX & UI

Entry-level test

Coaching

Documentation

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Step 3 of 5
Where is your pain located?

- Lower back
- Sacrum
- Radiating to thigh
- Radiating to lower leg
- Other spine area

I do not have pain at the moment

Next

Coach

Hello, I am Thomas, your Coach. Do you have questions about the program or anything else? Please write me a message here - every message is answered by hand.

Progress

Good Day, Moritz
You are on day 20.

Pain intensity
Last 10 entries

Sleep quality
Last 10 entries
The therapy adherence is maximized by technology & design.

A rewarding therapy that actually makes fun to stick to with interactive features (A.I.).

**Trusted experience**
- No pressure on the patient & pleasant therapy atmosphere

**Visual appearance**
- Reminder for training & check upon pain and sleep level

**Recurring notification**
Our technology value proposition: Kaia’s therapy algorithm

AI and machine learning is leveraged to customize the therapy to each individual user.
Multimodal therapy significantly reduces sickness absences compared to conventional therapy. Comparable studies show the positive impact of the multimodal therapy.

Reduction of sickness absence at work:

Multimodal therapy vs. conventional therapy vs. Kaia

$- 58\%$

via AI + Individualization
- reduce human error
- mass customization
- real time

$^1$Lambeek et al, BMJ, 2010
First results of our study
A therapy with Kaia reduces the pain level remarkably

- Internal study with (n=48) participants
- After 20 therapy days the pain level reduces on average by 43%
- 85% of the patients experience a significant pain level reduction
- Kaia started 2 clinical trials in Germany in April 2017 in cooperation with “TUM” and “Klinikum rechts der Isar”
Payers are able to save a remarkable amount on healthcare costs. Case studies show a potential savings of more than 90%.

Avg. cost of a absence of a trackman that could be avoided with adequate therapy: $8,148

92% savings

Avg. yearly costs of a treatment with Kaia: $609

1 Office of Rail Regulation; Network Rail Physiotherapy Pilot 2016
The Kaia team
Doctors, digital-experts and designers at the same table

Konstantin Mehl
CEO, Co-founder
prev: CEO, foodora.com

Prof. Dr. Dr. T. R. Tölle
Chief Scientific Advisor
Neurologist, Psychologist, Interdisziplinary pain medicine TUM

Manuel Thurner
CTO, Co-founder
prev: CTO, foodora.com

Prof. C. Schiessl
Medical Education Advisor
Anesthesiologist, Master of Medical Education

Moritz P. Weisbrodt
CMO, Co-founder
prev: Rocket Internet

Dr. Stephan Huber
Full-time resident Kaia
Orthopedic surgeon
The opportunity to be awarded the UIC Digital Awards will greatly contribute worldwide

Turn 7 million staff members into digital health and digital therapy

• The dissemination of our digital therapy will improve healthcare provision in industry such as the UIC railways members!
• Working with UIC will leverage this statement and savings billions of € to your national states, these savings can then be deployed even further into smart railways!
Smart railway companies invest in their employees

There’s a great ROI for adding Kaia to UIC’s digital platform

At the heart of smartness is human wellbeing! KAIA HEALTH DISRUPT PAIN MANAGEMENT
Scientific recognition & award winning Digital Therapy

Do you want to learn more?

www.kaia-health.com

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