Increasing **vitality** in the work environment through smart innovations.

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Design for Vitality

The TU/e-ID TEAM

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Intervention Research
Active Work Tools
Vitality frameworks and theory

Design Methodologies & Processes
Adaptive & Learning systems
Personalisation Tools

PARTNERS

PHILIPS
TU/e
Zilveren Kruis
kenniscentrum sport
heijmans
Leiden University Medical Center
VU University Amsterdam
With an ageing population, and an overly inactive work environment, we need to rethink vitality at work. Through building healthy work environments and stimulating vitality amongst employees, we aim to give employees the tools to better self-manage their vitality.
Both the total volume of sedentary time and its accrual in prolonged, uninterrupted bouts are associated with all-cause mortality, suggestive that physical activity guidelines should target reducing and interrupting sedentary time to reduce risk for death.

Vitality is ambiguous.

> umbrella term for health? (Stucki et al, 2016)
> specific factor of psychological wellbeing? (Guerin et al, 2012)

Vitality is related to a sense of energy available to the self.

“**Energy** is characterized by feeling energized and full of pep, **Motivation** by setting goals in life and putting effort into achieving these goals, and **Resiliency** by the ability to cope with daily life problems and challenges.” (Strijk et al, 2015)
How do we operationalize Vitality?

> **Explore** individual and environmental aspects of vitality

> **Model & Measure** vitality data factors for impact and relevance

> **Operationalize** through designed interventions and learn by mixed methods observations

> Assume uncertainty and apply **data-enabled learning** processes

> Develop an overall framework that integrates this process: **Vitality Index**
Defining vitality within a single metric proves difficult. Measurement is never precise, has no context of situation, person and environment and lacks a capacity to operationalize.

*Needs personalisation, context-awareness, integration of different datatypes and the capacity to learn.*

We develop a **Vitality Index** in order to:

1. Provide a measurement tool for research
2. Have a framework for improving vitality
3. Create a source of inspiration for designing interventions

Actify’s ‘RealAge’ index
**APPROACH**

### Input

- **Continuous Health Data**
- **Incidental Personalisation & qualitative info**
- **Context Awareness & Relevance**

### Process

- **Vitality Index**
  - Integrated modular framework that dynamically weighs relevant vitality determinants. Generates practical insights which are personal and learn over time.
  - Builds on both Qualitative Data & Quantitative Data. Integrates dynamic and static datastreams.
  - Builds complexity and relevance over time through feedback loops

### Output

- **Tweak.work**
  - Smart Work Calendar.
- **Work Walk**
  - Dynamic walk-meeting system.

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**Modular Sources**

- Activity
- Sedentary Behaviour
- Sleep
- Calendar Data
- VITA-16
- Satisfaction
- Persuasive Profile
- Surveys
- Company info
- Weather Data
- Suggestion Relevance
- Social network
Tweak.work assists employees in discovering an active and healthy work environment by delivering intelligent vitality suggestions directly in the calendar.

Features:
- Low-threshold
- Utilizes existing systems
- Personalized
- Context Aware
- Learns over time
- Open and voluntary
Tweak.work system - pilot edition

- Activity Tracking Fitbit
- VITA-16 & Surveys
- Lifestyle-factors (BRAVO)
- Continuous qualitative feedback

Vitality Index

Suggestion List with labels

Smart Calendar integration

Feedback
Tweak.work embeds custom, personalized and context-aware vitality suggestions and events into the work calendar of employees.

Tweak.work uses a qualitative vitality surveys, personal details and connected health trackers to generate a operational **Vitality Index** which is used to select targeted vitality interventions.

Tweak uses **existing digital infrastructures**, such as Outlook. No need for additional apps/plugins.

Tweak can work standalone, but can **personalize** much better with activity trackers and dynamic surveys.

Smart suggestions are tailored to your environment, company and personal schedule.
The Pilot has two purposes

Investigation on whether our Vitality Index framework concept is viable and operationalizable.

Exploration on the Tweak.work concept. Do people use it? What do they think about it? How do they perceive privacy & usefulness?
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>10:00-11:00</td>
<td>Meeting with Lysander</td>
</tr>
<tr>
<td>11:00-12:00</td>
<td>Preparing Meeting with Achmea</td>
</tr>
<tr>
<td>13:00-14:30</td>
<td>Design for Vitality</td>
</tr>
<tr>
<td>14:30-16:00</td>
<td>Preparing Meeting with Achmea</td>
</tr>
</tbody>
</table>

**Notes:**
- [TWEAKED] Pak de trap
- Trappen is een hele gezonde sportieve activiteit. Hoeveel trappen kun je vandaag nemen? Stel jezelf een realistisch doel.
- Appointments:
  - v.dheuvel@tue.nl
Results

The Tweak.work pilot was completed by 8 out of 12 TU/e participants and 9 out of 12 Heijmans participants. In total, the system deployed 160 suggestions at TU/e, and 180 at Heijmans over the course of 4 weeks.

At TU/e, 42/160 suggestions were executed, which is 25.3%. At Heijmans, 61/180 suggestions were executed, corresponding to 33.9%.

Interestingly, at the TU/e, 73 suggestions were found to be relevant (of 160 deployed) and at Heijmans 78 were deemed relevant (out of 180).

A lot of differentiation in participant-engagement was observed; some completed over 50% of suggestions, while others only tried 10% of suggestions.

This indicates again that a one-solution-fits-all approach to vitality interventions is not sustainable; it requires a personalized approach.
MOTIVATIE

wil om te investeren in je werk

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<td>74 %</td>
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ENERGIE

hoge energie levels en mentale veerkracht tijdens het werken

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<td>69 %</td>
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<td>↑ 15 %</td>
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VEERKRACHT

doorsettingsvermogen in zelfs de moeilijkste situaties

<table>
<thead>
<tr>
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<th>WEEK 4</th>
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<tbody>
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<td>71 %</td>
</tr>
<tr>
<td>↓ 6 %</td>
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DAGELIJKSE ENERGIE LEVEL

Echte leeftijd

het aantal jaren dat je krijgt of verliest door (on)gezond te leven

48 -2
Design for Vitality

Motivation

Relaxation

Resilience

Nutrition

Energy

Sedentary

Physical activity
Large A/B study Tweak.work in Q4 2018 @ Accenture & Zilveren Kruis

> Employer Dashboard
> Employee Dashboard

> Machine Learning to identify types of people (clustering) & design personalized vitality strategies & suggestions

> Implementation of social engagement

> Calender deployment system update

> Cocreation of suggestions with experts on activity, stress, relaxation, vitality
Design for Vitality
Instead of replacing work by being active, work while being active!

Installation of the WorkWalk by Heijmans
end of March - Begin April

1.8km long - 25 minutes - book in Outlook

<< a short preview movie >>