How Smalltalk helps HRworks to overshadow the competitors

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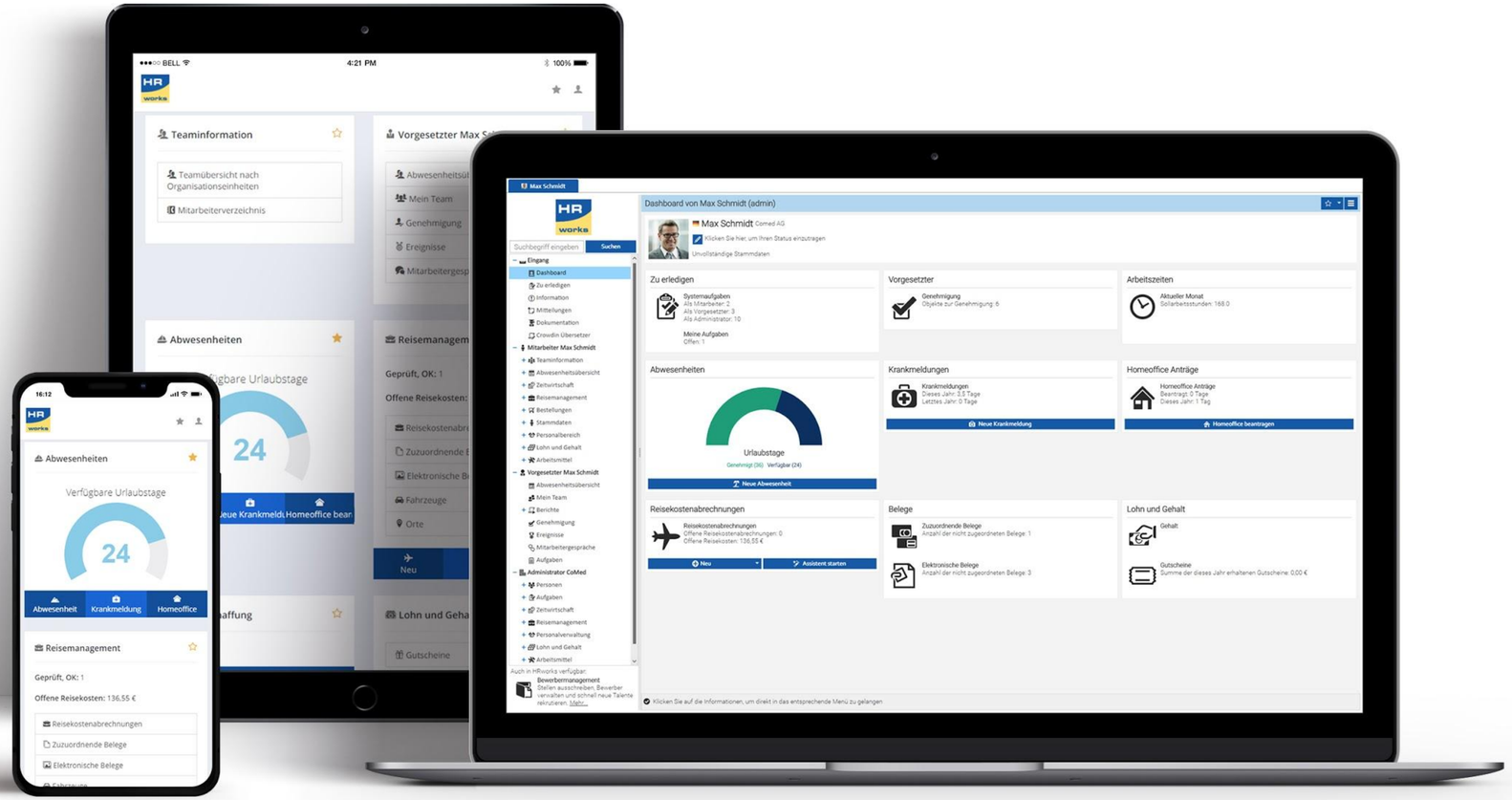
Agenda

1. **About HRworks**
2. Technical advantages in general
3. Meta level programming for business success
4. Experience, potentials and value
5. Outlook

About HRworks - Software

1. Timekeeping
2. Travel expenses
3. Sick notes
4. Wage
5. Personnel administration
6. Tax saving



About HRworks - History

1998	**Beginnings.** Beer garden idea, starting with travel expenses management
1999	**First customer.** And still customer today!
2003	**Starting HR functions.** Core data, absence time, banking information etc.
2008	**Second GUI generation.** "Rich Ajax GUI"
2009	**Starting with AWS.**
2013	**First mobile GUI.**
2014	**Reaching the 100,000 user mark.**
2017	**Implementation applicant management.** Job ads, onboarding etc.
today	★ **680,000 lines of code** ★ **1,300 customers** ★ **150,000 users**

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Development environment

- VAST since version 4.5
- GUI: SmartClient (Desktop), Boostrap/Metronic (Responsive)
- OODB: VOSS

= Efficient development environment!

Advantages Smalltalk

- Simple syntax
- Extensive class library
- Superior debugger
- Mighty browser
- Interactive development environment, living source code, no compiler
- ENVY/Developer in VAST

Amazon Web Services

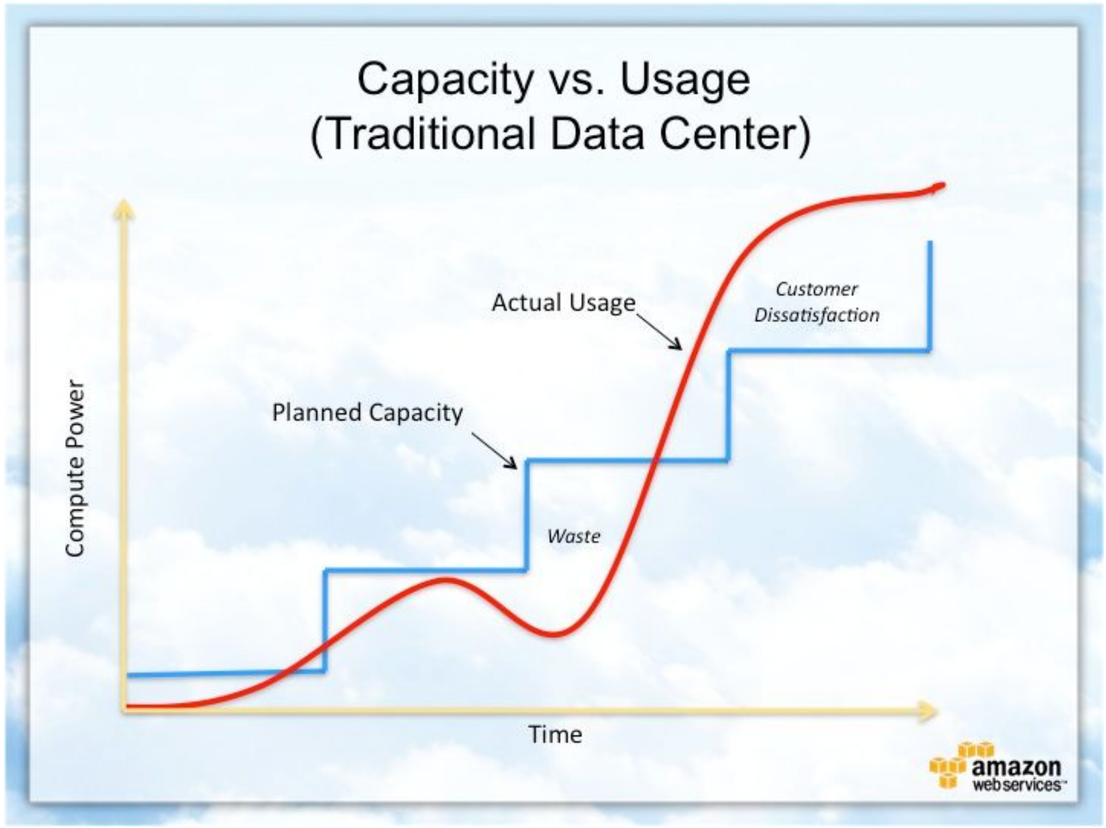
- EC2, EBS, ELB, S3, SQS, SES, DynamoDB
- Own OO-based AWS framework
- A lot of unused potential! Steplike scaling at the moment

Technical advantages:

\+ Scalable software

\+ Easy, flexible, safe

= Scales up comfortably besides HRworks itself



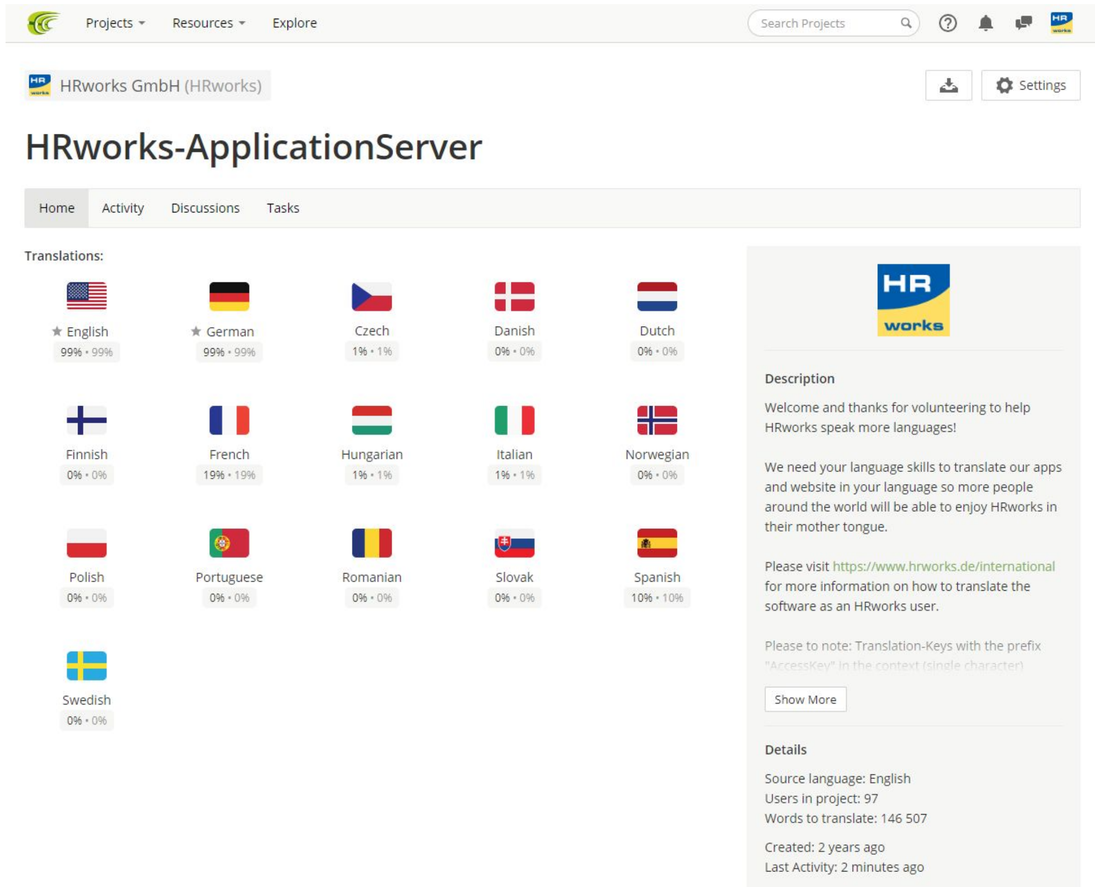
Multilingualism

- No hard coded text
- Atoms, similar to symbols
- Internationalization management by using Crowdin, example: *##LabelPlace* will be “Place” in English, “Ort” in German, “Località” in Italian etc.

  Inside the code:

  self translationFor: ##LabelPlace

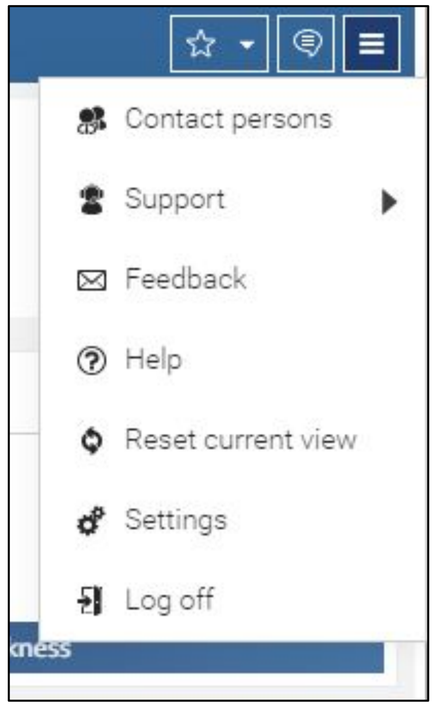
= Basis for an internationally usable software



Development cycle

- New main version every 4-5 weeks
- 4 stages: developer → area51 → demo → productive

- Issue management with JIRA



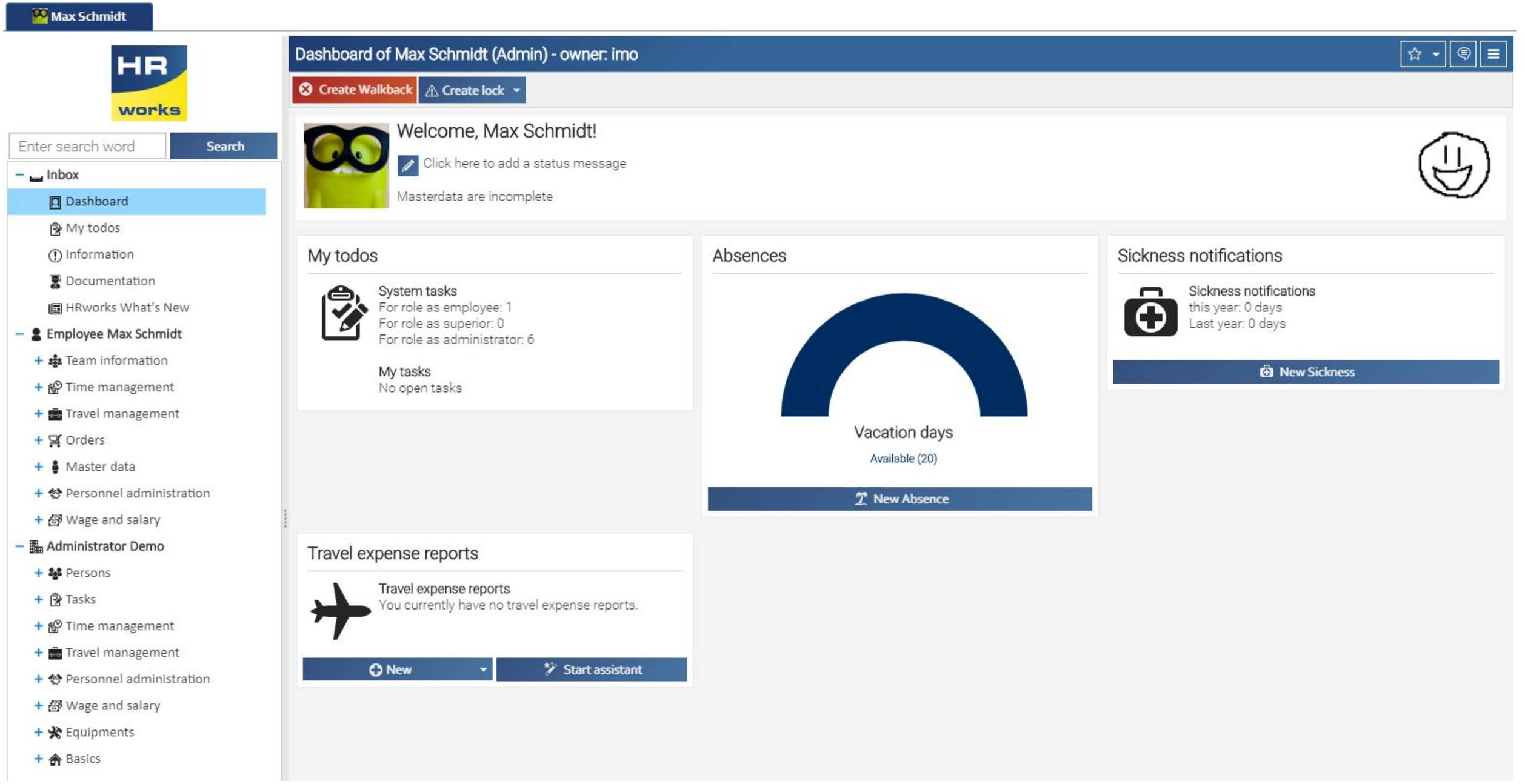
Feedback culture:

- Evaluation of customers' input via feedback button
- Developing feedback solutions asap

Development cycle

Fix culture:

- Instant bug fix, daily branches
- 3,800 test cases and a special developer role: Officer of the day


Max Schmidt
HR works
Enter search word
Search
Inbox
Dashboard
My todos
Information
Documentation
HRworks What's New
Employee Max Schmidt
Team information
Time management
Travel management
Orders
Master data
Personnel administration
Wage and salary
Administrator Demo
Persons
Tasks
Time management
Travel management
Personnel administration
Wage and salary
Equipments
Basics
Dashboard of Max Schmidt (Admin) - owner: imo
Create Walkback
Create lock
Welcome, Max Schmidt!
Click here to add a status message
Masterdata are incomplete
My todos
System tasks
For role as employee: 1
For role as superior: 0
For role as administrator: 6
My tasks
No open tasks
Absences
Vacation days
Available (20)
New Absence
Sickness notifications
Sickness notifications
this year: 0 days
Last year: 0 days
New Sickness
Travel expense reports
Travel expense reports
You currently have no travel expense reports.
New
Start assistant

Advantages HRworks from OODB approach

- No impedance mismatch, the model object is the DB - no RDB in the background
- Changing objects by migrating in main version, iteration updates all instances
- Hereby, design changes can easily be rebuilt without taking care of elder versions
- This allows minimal viable product approach: First 1.0 then iterating until reaching 90% of the requirements
- By using “normal” approaches, the RDB backend would need to be dragged behind afterwards

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Meta level / instance based programming of exports for business success!

It seems to be technical playground for freaks

It’s more. It’s a business success generator! HRworks supports ~ 60 interlayers towards accounting.

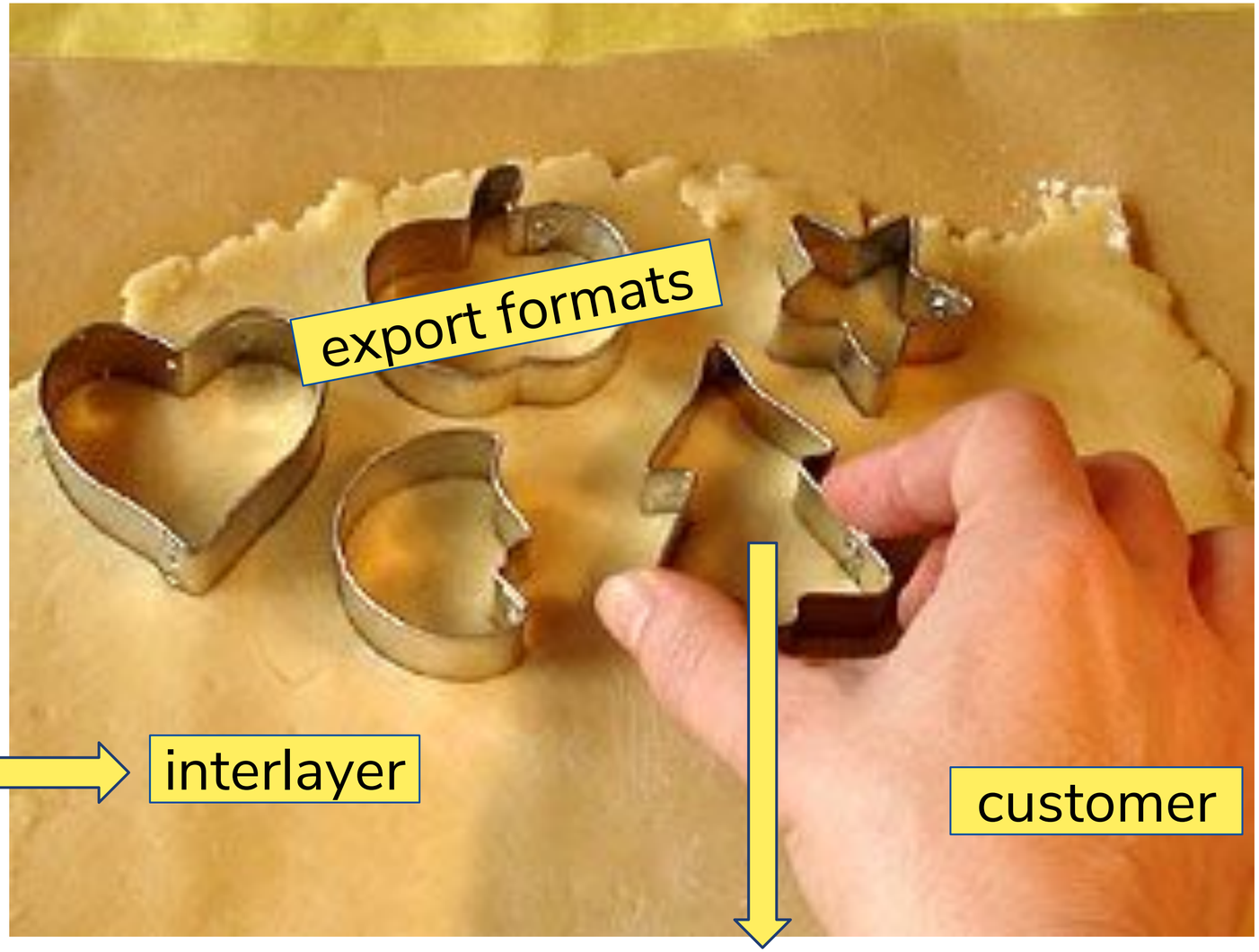
- Each of the export data looks different: column width, separators, numerical or text formatting etc.
- BUT! All interlayers are only programmed once!
- Interlayers are made of special objects and the customer decides how the interface shall look like:

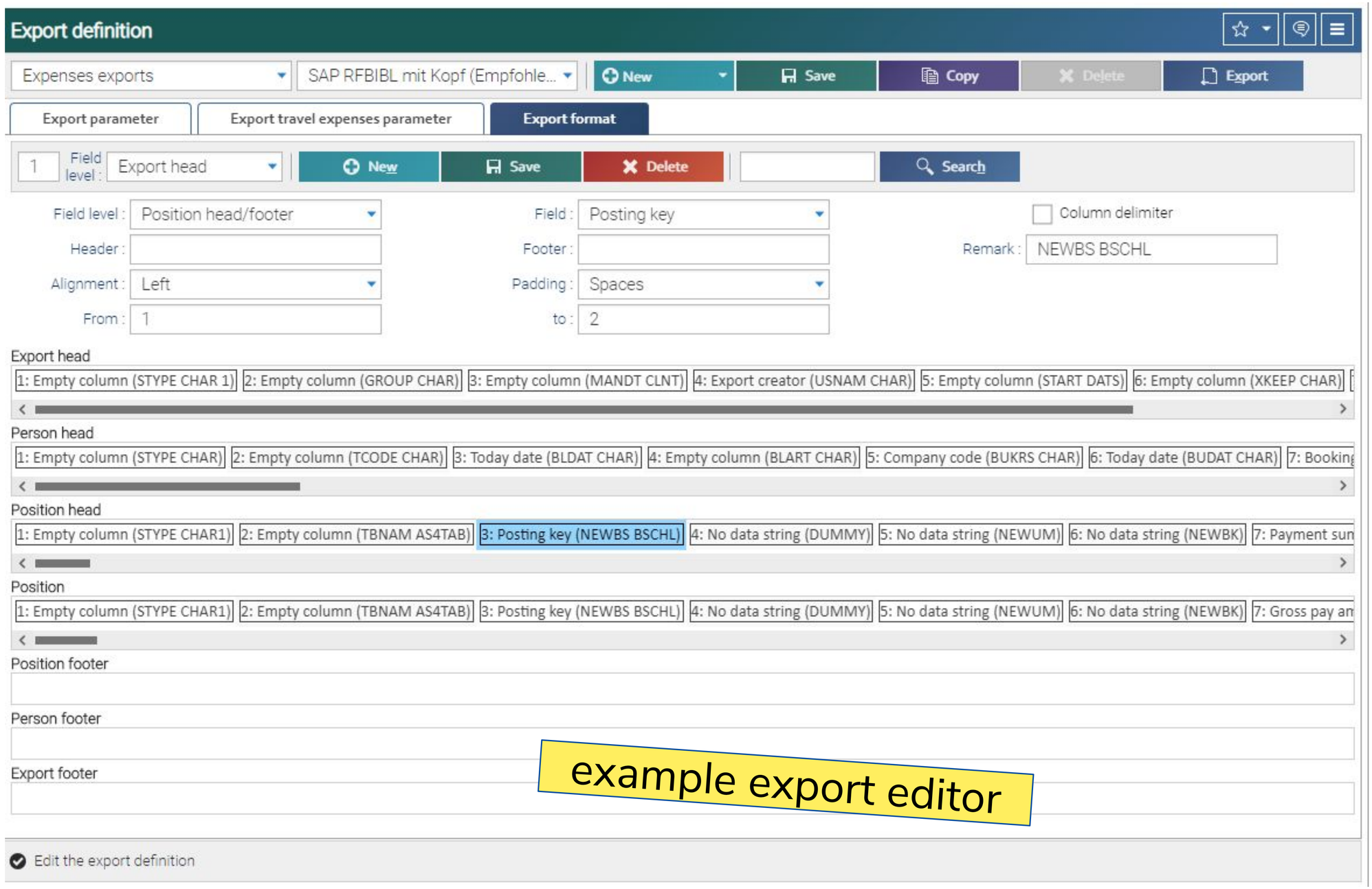
  → Export format.
- Customer finds the attributes which can be outputted via #perform:

```
0Reisekosten 100Max Muster          X/
1FB01              08092015RK##  080920159 EUR  /        /        /        
```

Meta level / instance based programming of exports for business success!

travel expense report





example export editor

Meta level / instance based programming of exports for business success!

Huge value in only coding this once:

- No need to implement it for each customer again
- Creating or adjusting interfaces can be done outside the code, but within the GUI
- Adjustments are done within minutes, where competitors need days or weeks!

→ Without this open meta level of Smalltalk, without #perform:, this would never be possible!

→ HRworks profits from competitive advantages by short lead and adjustment times

Meta level / instance based programming of exports for business success!

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Meta level / instance based programming of exports for business success!

→ **Only use super power against super problems!**

Meta level / instance based programming of exports for business success!

→ **Only use super power against super problems!**

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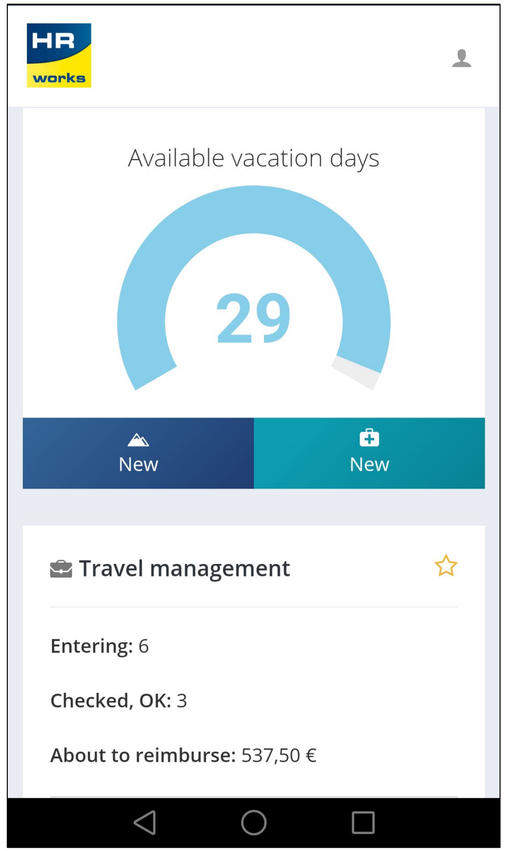
Our experience

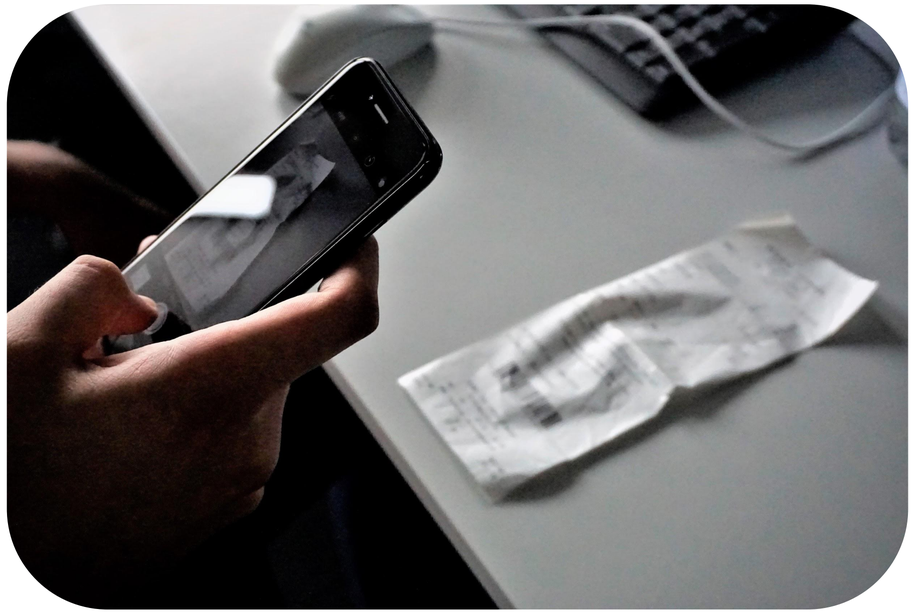
- It’s not only about the main purpose but the sum of small user advantages, e.g. low latency, good usability
- Good model code lives forever, bad one is just annoying
- Quality code as a dogmatic attitude → don’t produce legacy

A billion ideas - so much potential!

Examples of latest own ideas:

- Job portal for all HRworks customers
- Client Management Tool (vacant project!)
- Responsive client desktop<>mobile (vacant project!)
- … many more





Examples of latest customer ideas:

- Training event administration
- Bill reading function via OCR / ML (vacant project!)
- … many more

Advantage HRworks = advantage customer

Advantages HRworks

- Tech stack → efficient development cycle
- Long life quality code
- Scalable software, market potential
- Comparable low development costs
- Enables price & function leadership

max. 4 € / user

Advantages customer

- All-in-one solution
- No excel sheets etc. any more
- High quality, low price
- New functions without extra costs
- Global, safe and paperless use

High return on investment on both sides

Customers

Kawasaki

HONDA

SEAT

dpd

KYOCERA
Document Solutions

AUTHENTIC
FOSSIL

Customers

na news aktuell
ALMiG Compressor Systems
RCI Banque Niederlassung Deutschland
bouwfonds investment management
DGAP
amtico
CHEMINOVA
CALLWEY
MITSUBISHI MATERIALS
Rabobank
FOLLEA
DIN
GARBE LOGISTIC AG
Juzo
Dethleffs Ein Freund der Familie
msx INTERNATIONAL
HONDA
dyson
computop
PLUGGIT
Marc O'Polo
VOLLENDA
TROY
RIEMSER
NEUMAYER TEKFOR
SENATOR INTERNATIONAL
First Class Global Logistics
SEAT
jas FORWARDING WORLDWIDE
Kawasaki
vivanco
TOM TAILOR GROUP
ADITYA BIRLA
BIRLA CARBON
VOSSCHEMIE
systec & services
SENACOR
T.K.maxx
LOWA
simply more...
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neurotech
Physical Electronics GmbH
SONAX
FOSSIL
primacom
LAMY
bk Group
SUCCEED
dpd
AUTOMOTIVE GROUP EUROPE
PRO DUO
STOKKE
KYOCERA Document Solutions
GlenDimplex DEUTSCHLAND
K.D. FEDDERSEN
emsa
Otsuka Novel Products GmbH
ezono
GEDA
acrolinx
DDB
taa travel agency accounting
PV BEWEGT
KnausTabbert Wir bewegen
eterna
FrislandCampina
CASEA IM AUFTRAG DER ZUKUNFT
BITO LAGERTECHNIK
HH HELLY HANSEN
Almirall
DEFINIENS the tissue phenomics company
hans im glück
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KRYOLAN
BECKMAN COULTER
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SIGOS
globalconcepts
ic consultants
ISS
hgv publishing services
STOLL Der Frontlader-Spezialist.
TRISTONE
IC INOUTIC / GERMAN PROFILES INGENEERING CREATIVITY
CRODA
EUROPE GERMANY
SOPHOS
ORTEC
Teldat
pixi
REGIOCAST
consurance
DRV Deutscher ReiseVerband
Expedia
DAIDO METAL EUROPE GMBH
HAZEMAG
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oerlikon metco
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Hoval
MENCK
TeleCash
ZyXEL
AEQUITAS
Log-in consultants
ILLIES
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ebmpapst
NorthgateArinso
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CHRISTIAN PFEIFFER
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dr. lübke Makler & Consultants
LEICHT
Vecoplan
TVM
First Sensor
MITSUBISHI ELECTRIC
Schleich
SUGARCRM

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Outlook - expansion & growth

Permanent establishments:

- Freiburg (Headquarter)
- Frankfurt
- Berlin

Planned:

- Switzerland
- Austria
- ? (focus on Development) - wherever the best Smalltalkers want to live :-)

Outlook - Pharo

- Addition to VAST
- Portation of internal frameworks

  → convenience code (country, currency, multi-language-system, AWS etc.)
- Status quo: "break through" by one of our students

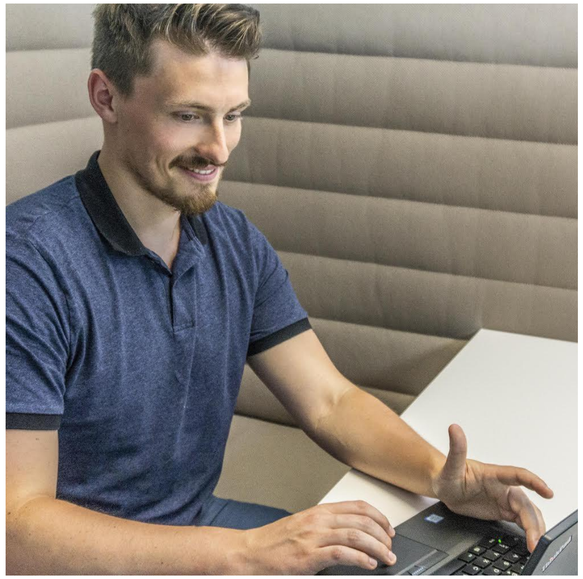
  → The frameworks can also run in Pharo
- Next steps: Stabilize break through

Outlook - Projects

Current development projects:

- Client management tool
- Conversion server
- OCR bill reader / CV reader
- Total encryption

Let’s keep in touch!



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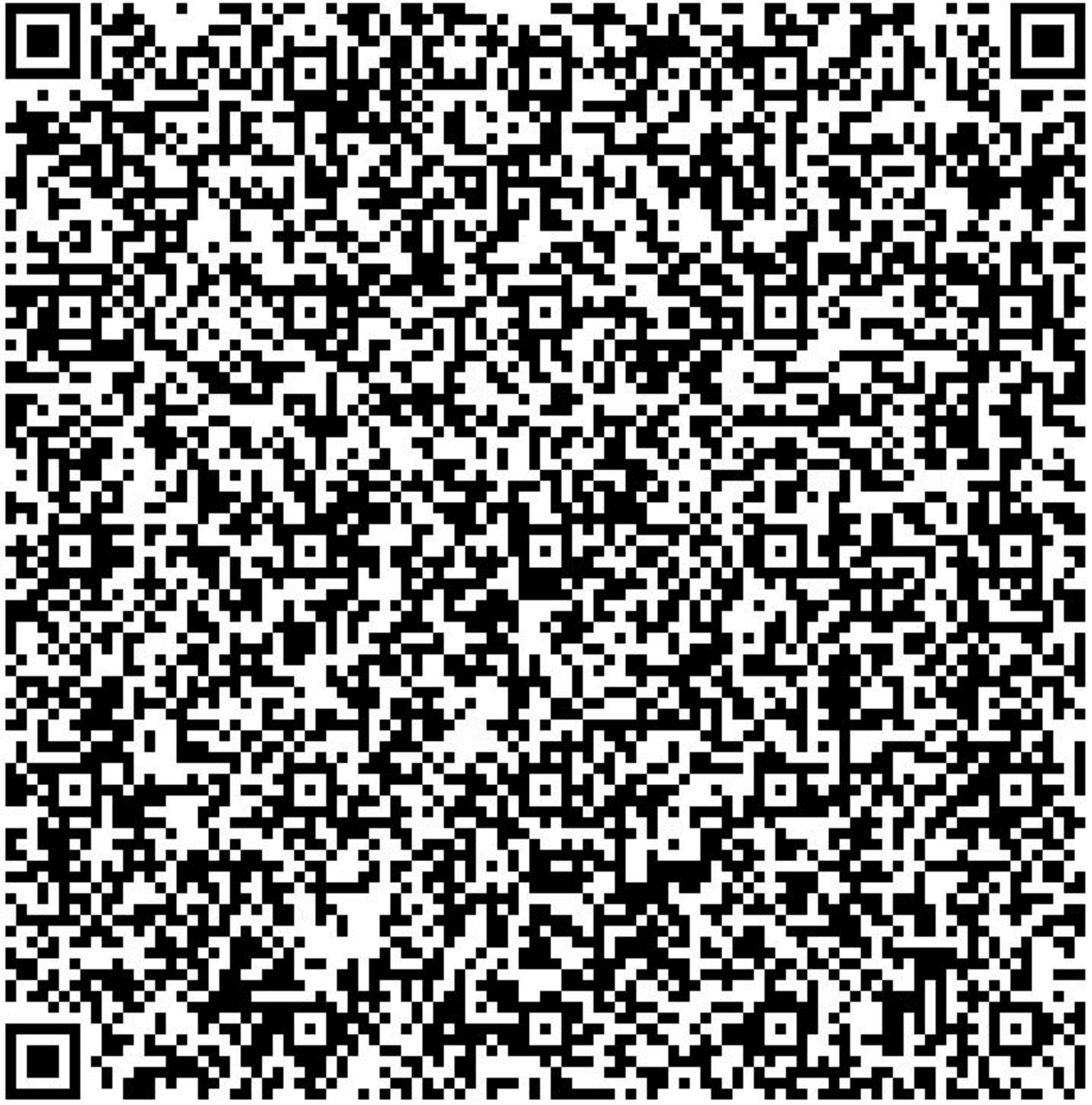

Links

About: https://www.hrworks.de/en/

For international Smalltalkers: https://www.hrworks.de/en/international-applicants/

All Jobs: https://jobs.hrworks.de/

Thanks for your attention!

Image Sources

Bakeware (slide 17): wir-backen.de

Handshake (s. 27): https://www.flaticon.com/free-icon/hand-shake_493808#term=handshake&page=1&position=1

Icon Area51 (s. 10): https://www.teepublic.com/sticker/2406367-area-51-sign

Icon Demo (s. 10): https://www.colourbox.com/image/demo-computer-key-to-download-a-version-of-software-image-4681868

Icon Developer (s. 10): http://envri.eu/2016/08/30/open-position-at-icos-carbon-portal-for-a-software-developer/

Monster (s. 23): https://www.kisspng.com/png-monster-clip-art-monsters-1353447/

People at traffic lights (ss. 20-23):

https://m.thueringer-allgemeine.de/startseite/detail/-/specific/Gehen-oder-stehen-Rote-Ampel-sorgt-fuer-Aufregung-634349653

Plane (s. 17): http://adele/o_collection/search.html

Superman flying (ss. 21; 23): superman.wikia.com/wiki/Superman

Superman standing (ss. 20; 22): en.wikipedia.org/wiki/Superman

Rest: HRworks or Smalltalk