Danube Strategy: Digitalisation of the Public Employment Service and the Labour Market Administration

27.06.2024

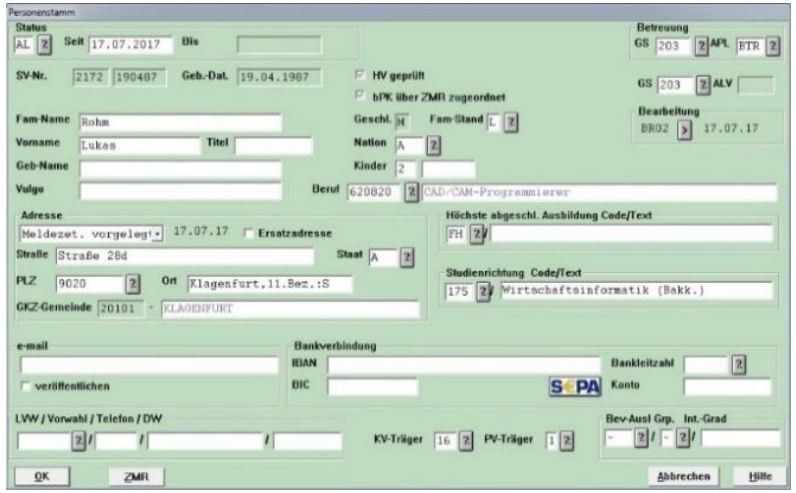
Initial setup & situation

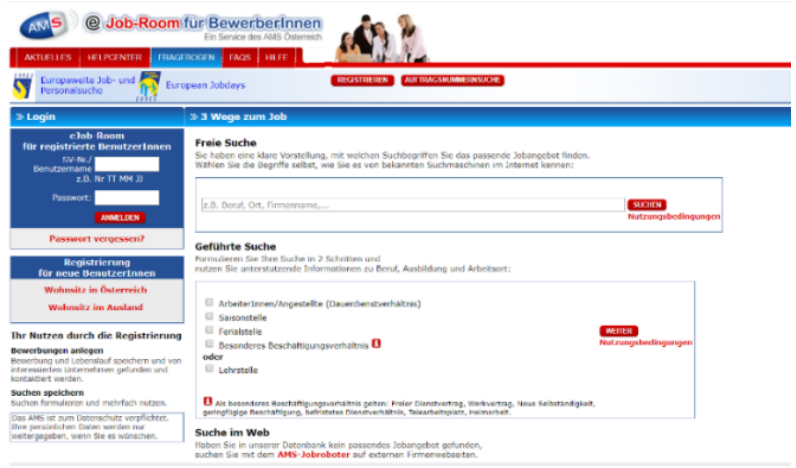
44 applications from the end user's point of view
17 Java applications

2 types of architecture

- CA GEN | „green applications": CA GEN with Windows client, and a client-/server-architecture with a WIN32 based fat-client
- CA GEN with JAVA | e-services and a standard-web-browser as client for internet-applications (e.g. eAMS, eJob-Room)

- 24,425 software modules in GEN (transactions, actions blocks, external action blocks); additionally the application components implemented in Java
- 3,832 graphical user interfaces (primary Windows und dialog boxes)
- 16,000 UC4 objects, 60,000 - 70,000 jobs started daily
- 1,679 Oracle tables





Current IT LANDSCAPE AMS (Baseline)

Channels

- Personal
- Web
- E-Mail/ SMS
- App
- AMS Serviceline
- IT-Helpline
- Samsomat
- Social Media
- InfoScreen
- IPC

Applications

Business Applications

Core applications

- Job placement
- Livelihood security
- Master data
- Funding for persons
- Funding for companies
- Employment of foreigners

Cross section applications

- Administration of user rights
- Shipping service
- e-files

Customer Applications

- MyAMS
- eServices
- Application management
- All jobs
- Job App
- AMS Websites

Support functions

- Finance
- HR systems
- Project management tool
- collaboration
- eCampus
- communication /social media

Analysis/Reporting

- Labor market Cockpit
- SLA-/KPI Dashboard
- AMS DWH / BI
- Web analysis access statistics
- Subject control

Infrastructure

DWH

Components

- Matching (ELISE)
- Forms m/text
- Filenet
- SAP
- Magnolia (CMS)
- Identity Management
- Adobe Experience Manager (CMS)
- ID Austria/ Login-Server
- Cognos…
- UC4 / Batch
- Enterprise Social Networking
- Confluence
- KSS
- Matomo
- Test automation (Tosca)
- Sharepoint
- Printing
- Scanning
- Opendata
- Offices

External Systems

- BMI
- Traffic information austria
- Statistics Austria
- HVB
- ÖIF
- EURES
- BMF
- BA
- ÖGK
- Partner systems

…and many other interfaces to authorities

History IT service provider: IBM as general outsourced partner

- The transition from ATOS/amsbg to IBM in the first part of decade 2010 resulted in an extensive modernisation backlog.
- The first years of IBM were characterised to establish operational stability, parallel projects were started to transform our current application landscape.
- We have chosen an approach of analysing the most holistic solutions possible, such as the job placement portal. After years of detailed analysis phase and subsequent implementation it had to be determined, that the solution did not meet the challenges and therefore could not go into production

Transition IBM → BRZ - key facts

- From 09/2019 to 12/2021
- 1:1 transition of applications
- Renewal of technical environment
- Review and improvement of IT processes
- IT Security improvement
- Use of shared services provided by BRZ

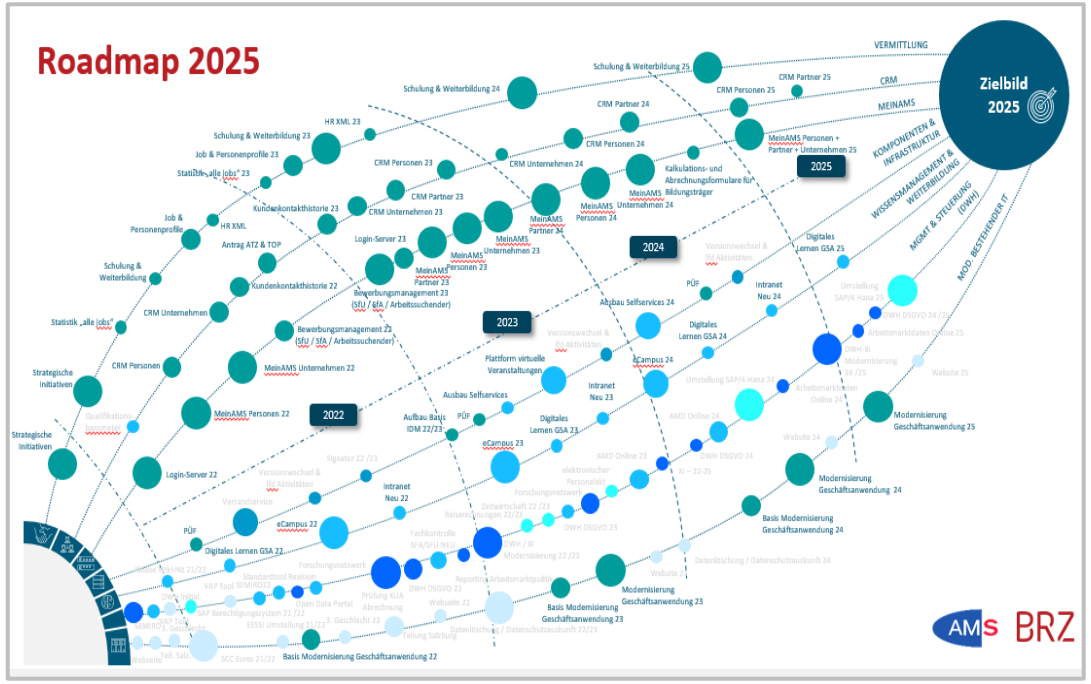
Transition was managed in time/budget/quality

Learnings

- Stable IT operation is an essential prerequisite for IT modernization.
- Years of stagnancy cannot be compensated by "big bang" solutions.
- Applications & system components should be implemented step by step to allow an operable solution at any time.
- The current application landscape is characterised by complex dependencies. To enable step-by-step modernisation a precise analysis of possible tranches covering these dependencies is necessary.
- We should not produce more from what already exists.

IT modernisation

- **Basis:**
  IT Roadmap 2025, presented to the Administrative Council in December 2021 and to Minister in January 2022
- **Start:**
  February 2022
- **Budget**: approx. 20 million € per year
- **Realisation**:
  in 8 streams and approx. 20 projects per year
- **Renewal** of over 100 applications in total



Strategy modernisation

STRATEGY

After successfully accomplishing the IT transition to BRZ, an **initiative to modernise and digitalise employment services** was launched, focusing on new developments of customer-centric digital services.

The initiative is assessing potentials for optimisation of proccesses within the AMS for a more efficient handling, transaction and execution of the key subjects of AMS.

The main concept includes the redesign of the core IT-Services to a forward-thinking and future-oriented IT-architecture, ensuring stability and security as well as enabling fexibility to develop new applications.

KEY SUBJECTS

Skill Matching
Accelerate job / candidate searching and matching by delivering highly relevant matches based on skills.

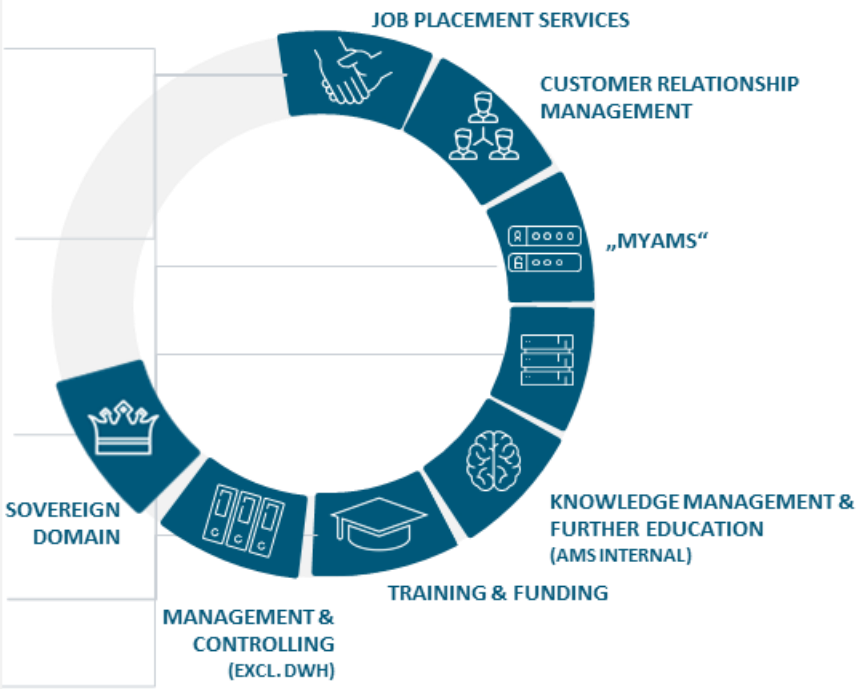
Jobseeker / Job offer profile
Increase data quality on jobseekers / joboffers and provide case workers an opportunity to easily gather relevant key metrics such as experience, education, work time, skills, etc. This includes use of AI-components such as text-parsing to improve data collection.

AMS HR-XML
Implementation of an API to enable the direct exchange of joboffer and jobseeker data with application management systems of AMS company customers.

MyAMS
MeinAMS as a new main entry point to access all digital services by using an identification and authentication service based on ID austria and mobile phone signature services.

„Alle Kurse“
Comprehensive platform of all courses, education, training offers for AMS customers

VALUE STREAMS



Procedure for IT modernisation

- The main priority of the **modernisation and digitalisation initiative** planned **by AMS IT** following the successful transition is the redevelopment of customer-oriented IT services.
- In addition, the potential of **IT support** for optimising processes **within the AMS** is to be exploited in order to enable the AMS to perform its current and future tasks even more efficiently.
- Through a **simultaneous technical re-design** of the IT systems, a future-proof technical target architecture concept is being developed and implemented in order to meet the growing technical demands on modern IT, such as **stability**, **flexibility** and **security**.

Strategy for IT modernisation

Our strategy and approach are characterised by three approaches:

1. We think **new**. Not a classic approach, in the sense of "we are improving an existing IT application, but "we are doing something new".
2. We think **functionally**. Evaluation and planning are carried out using specialised focal points.
3. We think **step by step**. The implementation will be gradual and not a "big bang" (all points at once).

Modernisation principles 1/2

Organisational design

- Continuous development requires appropriate organisational **resources and roles within the AMS / BRZ**
- Applications & system components should be **implemented step by step** to allow an operable solution at any time
- Realisation takes place in **6-9 month projects** - the time between requirements definition and implementation should be kept as short as possible
- Coordinated and short development cycles allow **early testing by TIM & specialist departments** (ideally within the sprints) and thus ongoing feedback, quick reactions to changes and a reduction in the acceptance phase

Integration of specialist departments & end users

- **Direct** and **early** involvement (e.g. usability tests) of the specialist departments and end users for professional exchange with the developers and analysts already during the development phase
- Provision of departmental resources for direct collaboration in projects, including a central specialist contact for prioritisation/decisions (=PO)

Direct communication & quick decisions

- **Expert working committee** with representatives from the departments, TIM and BRZ, which defines the projects to be implemented on the modernisation roadmap
- Planning on the basis of an approved **modernisation roadmap**
- Coordination and planning between the modernisation projects and regular operations/further developments takes place via **higher-level integrating elements** (committee/roles; e.g: An overarching role in the modernisation programme that brings about a decision within the AMS in the event of differing objectives between projects/departments)

Transparency & acceptance

- **Ongoing communication measures, demos and marketing** for the people involved in the modernisation and the relevant environments
- Presentation and evaluation of **project progress in defined cycles** in order to be able to react and decide on necessary adjustments at an early stage.
- Where appropriate, **short release cycles** for rapid implementation of customer requirements or legal requirements

Modernisation principles 2/2

Creation of new and modern AMS applications and processes

- Orientation towards **state-of-the-art** applications and processes
- Use of **modern technologies** and approaches to ensure a **flexible IT architecture** (e.g. micro services, APIs, containerisation, cloud solutions/components)
- **Security by design** - security and data protection as an integral part of the solution design
- Use and establish **new, meaningful terms** and avoid old technical terms and abbreviations (e.g. ADG / PST)
- **No 1:1 replacement** of old applications and processes
- **Interfaces to new systems** serve as a basis; synchronisation with old applications only takes place when explicitly necessary.
- Modernisation releases are **more important** than standard releases (with the exception of legal changes and justified requirements).

Reusability & standardisation

- Orientation of the architecture and application components to **state-of-the-art industry standards**
- Focus on **flexibility, simple customisability and cost-efficient further development of** components in order to be able to react quickly to changes in requirements.
- **Reusability** of software, hardware and services to reduce costs, risks and project lead times
- Ongoing review of the use of **BRZ Shared Services** (what the taxpayer has paid once ....)
- **Standard software** is preferred if the majority of the requirements can be covered. Customised development only if functionally / economically necessary

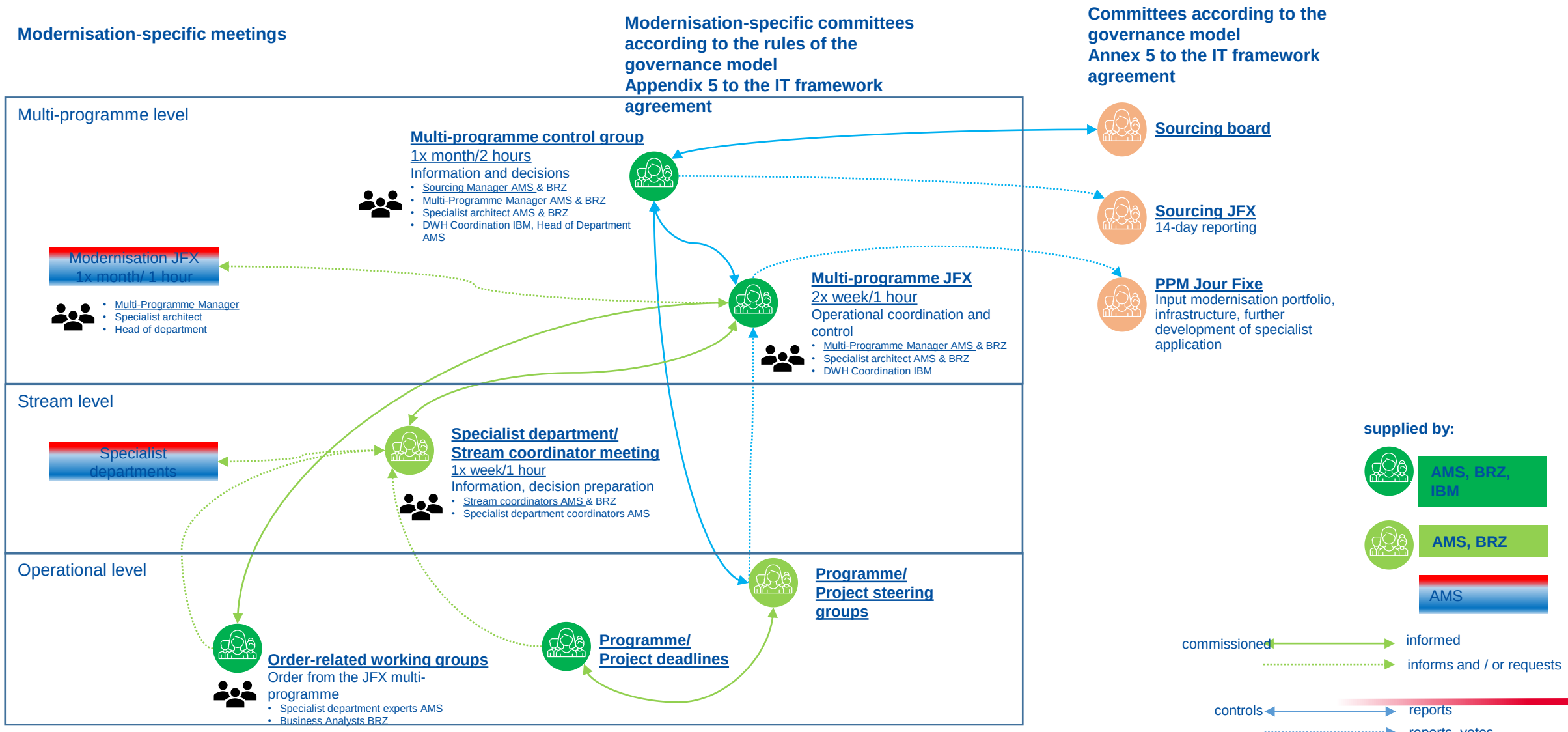
A central "interface"/data source

- **Standardised (application) system** for AMS consultants and customers - Control of functionality/views through corresponding authorisation system
- Expansion of **self-service options**
- Reduction of additional work for input, data maintenance and inconsistencies through **centralised and shared data storage**

User friendliness

- Simplicity, business value & practicability as pillars of **user-centred application development**
- **Focus on end users and specific user groups** and involve them in the development process
- **Simplification** of business processes and **innovative** interface **design**
- **Barrier-free** development of new surfaces
- Compliance with the **app strategy** for the new/further development of apps

IT MODERNISATION - Committees and meetings



Overview Streams 1/2

Stream	Vision
Mediation	Matching demand and supply of people and jobs in a skills-oriented manner, including self-service for AMS customers.
Customer relationship management	CRM as support for core processes for simpler, customer-orientated service provision for professional customer care.
MyAMS	Central personalised access on the AMS website and central overview of all eServices (across all streams, e.g. placement, all courses) for • Customers, • Company and • Partner institutes regardless of the access device used (e.g. PC, smartphone, tablet) to systematically expand and promote self-service in all three core processes.
Cross-programme components	Creation of a central, state-of-the-art architectural framework as a basis for modernisation to support the "new" world with components that are used across all streams.

Overview Streams 2/2

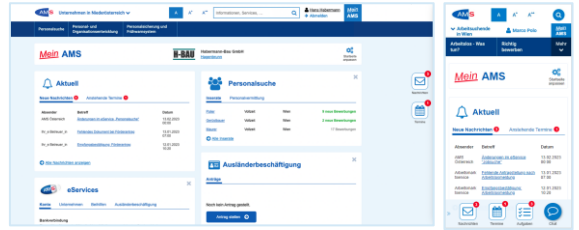
Stream	Vision
Courses & subsidies	Introduction of a comprehensive and holistic tool/portal for AMS funding programmes, vocational training and further education in the independent education market and the underlying workflows.
Knowledge management & further training	The Knowledge Management & Training stream enables comprehensive digitalisation of existing knowledge, communication and learning processes and creates a clear and modern AMS platform landscape for all AMS employees.
Management and control (excl. DWH)	Modernisation of internal control systems to support the support and management processes.
Sovereign area	Forcing automation, simplifying access (no separation, automating interfaces, notifications) as part of a new way of thinking for the topics ALV, ALV2i, ABV with ABA and ABB.

The process model

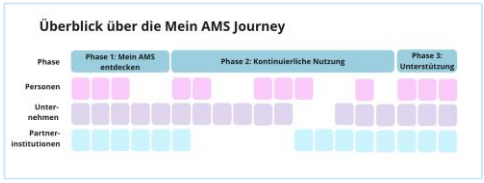
1 | Start **workshop**
to clarify the project objectives, governance, framework conditions and stakeholders

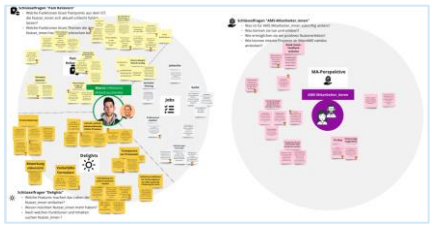
2 | Persona & Design Studio workshops
for specification and scoping of requirements and target groups with project management and stakeholders

3 | Creation of prototype
Creation of the prototype from the three target group perspectives as well as feedback and presentation dates



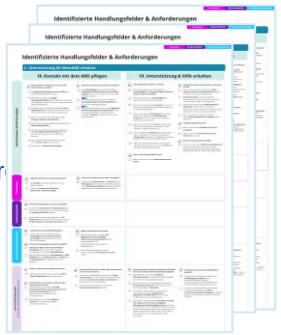
4 | Qualitative interviews
with target group representatives





5 | Customer journey requirements workshops
Merging the learnings from the customer perspective with the internal process view of the AMS and deriving fields of action and requirements

6 | Shoulder view workshops
to the consolidated requir



Next step:
7 | Prioritisation **workshops**
the requirements from Target group & department view

Interfaces legacy & new applications highlevel overview

Transformation to new data modell

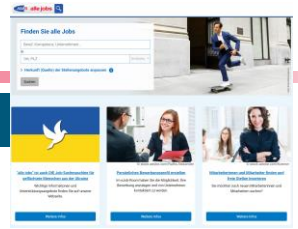
New Database

PostgreSQL

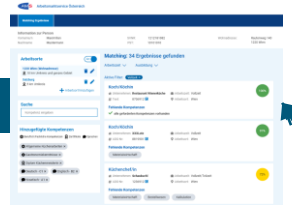
Current application (legacy system)

Loginserver (work in progress) for central Authentication

„alle jobs“ & Job App



skill-Matching



MyAMS (work in progress)

Application mgmt (planned)

CV tool (planned)

Job offer / tool for job posters (planned)

„Alle Kurse“ (work in progress)

App PushNotification Service

JobCrawler (Jobnet)

Geo & Routingservice (Traffic information austria)

career information system (FWD / 3s)

ELISE Match-Engine (WCC)

WSIWYG Editor (planned)

Text-Parsing (work in progress)

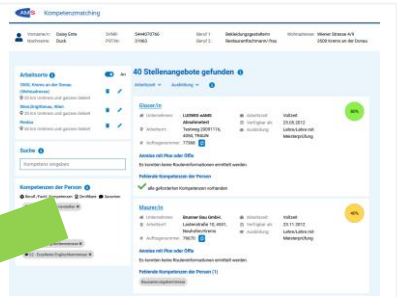
HR-API

Development of new applications (extract) functionalities & features

Skill Matching

Application for AMS clerks to find matchings for job seekers with job offers based on assigned skills.

Elise (WCC) is used as Match Engine.



finalised

Login-Server

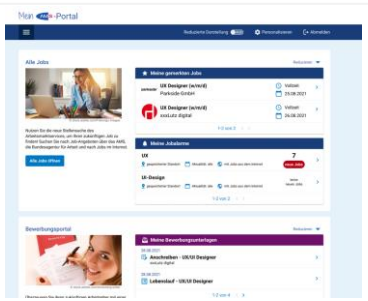
Authentication Service

finalised

MyAMS

Central platform to access e-services as an authenticated user.

Authentication via national electronic identity.

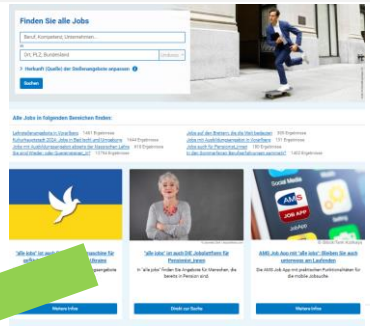


implementation started

Alle jobs

External job platform as a service for jobseekers to search for available jobs in Austria.

Jobcrawler provides job offers from Austrian job portals / companies. (including automatic mapping to AMS taxonomy & handling of duplicates)



finalised

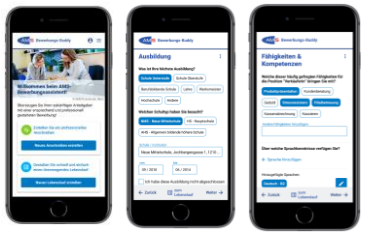
Text-Parsing

Implementation and usage of text-parsing to automatically enhance jobseeker and joboffer profiles with skills as well as map data to existing taxonomies

implementation started

“Alle Kurse”

Service for jobseekers and AMS clerks to get an overview of all course, education and training offers



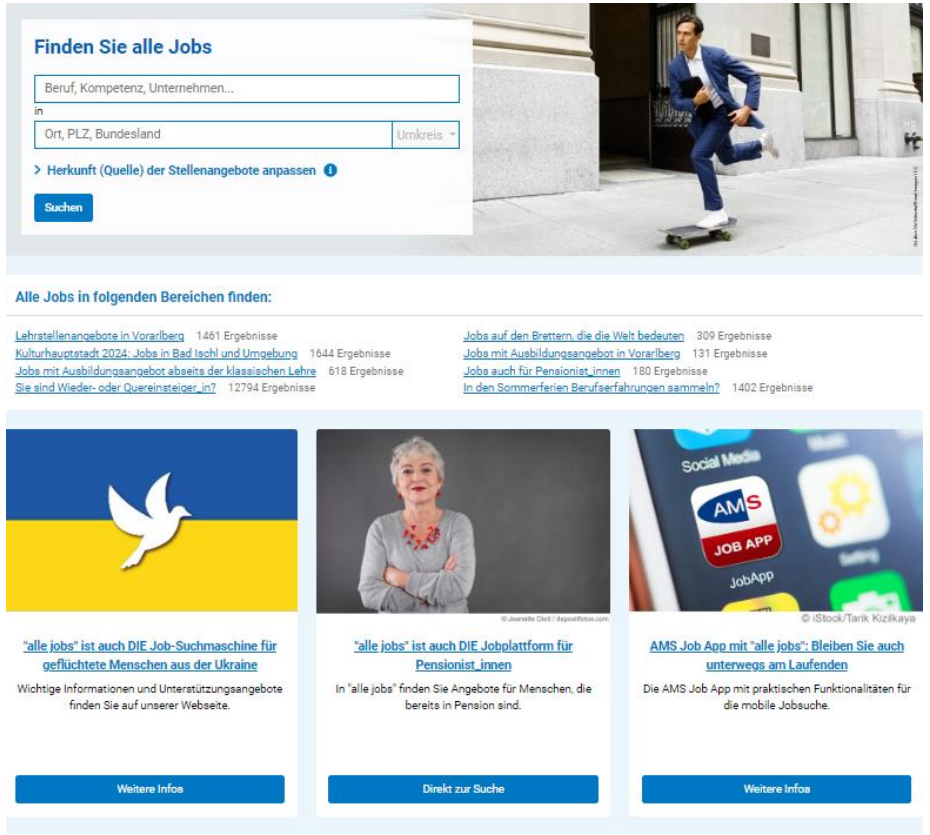
analysis started

„Alle jobs“ | ams job search

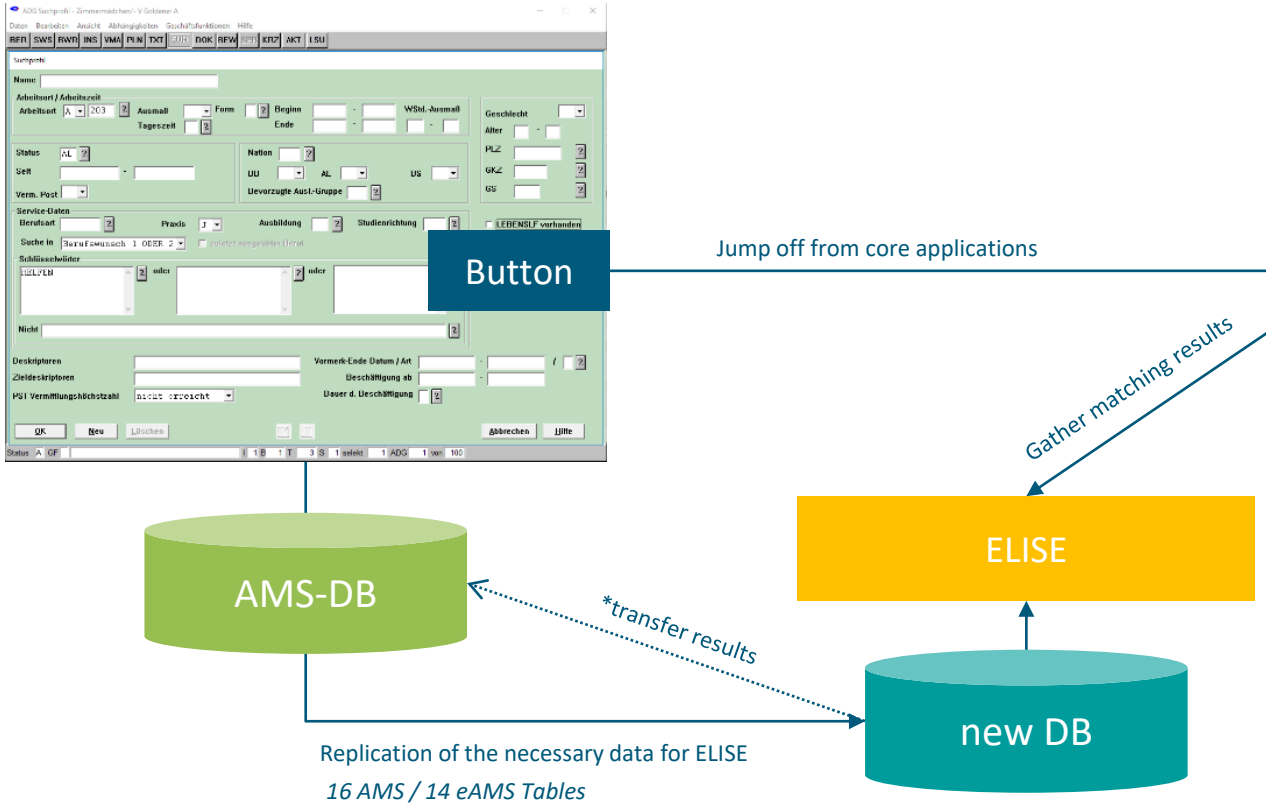
PRODUCT OVERVIEW
“alle jobs” posts listings for job seekers (including AMS job offers and job offers crawled from various Austrian websites)
Modern responsive and accessible design (conformance to WCAG)
Free service without user registration necessary

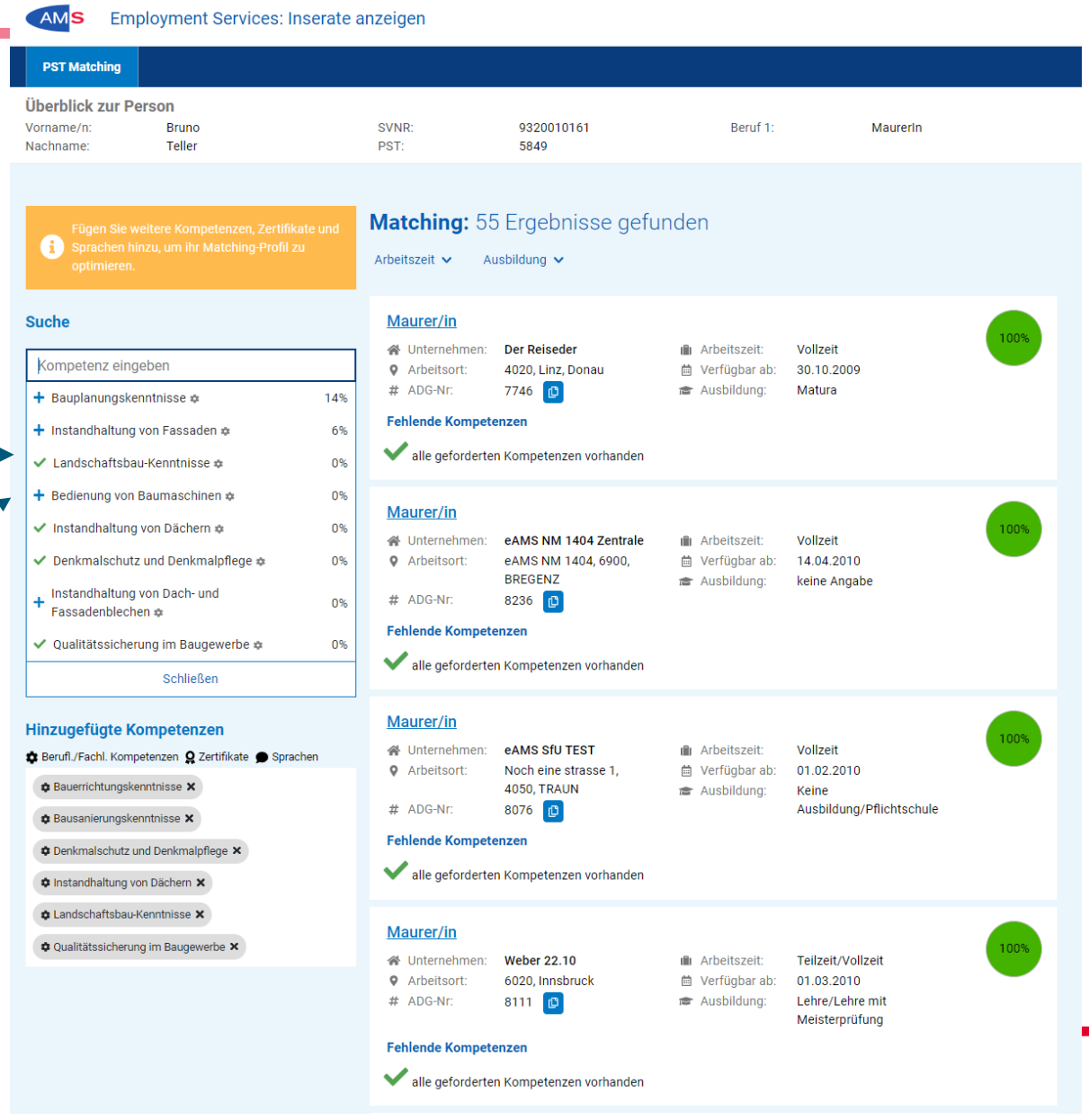
SOPHISTICATED SEARCH LOGIC
Calibrated / custom designed search relevance with weights and boosts to fine-tune results for jobseekers (including typo-tolerance, stemming, bigrams, and more)
Supporting geo queries to find relevant results based on locations

GOALS
Provide a transparent overview on the Austrian labour market
Easy way to understand and use the “alle jobs” platform to access job offers



Skill MATCHING - Interfaces





Vision

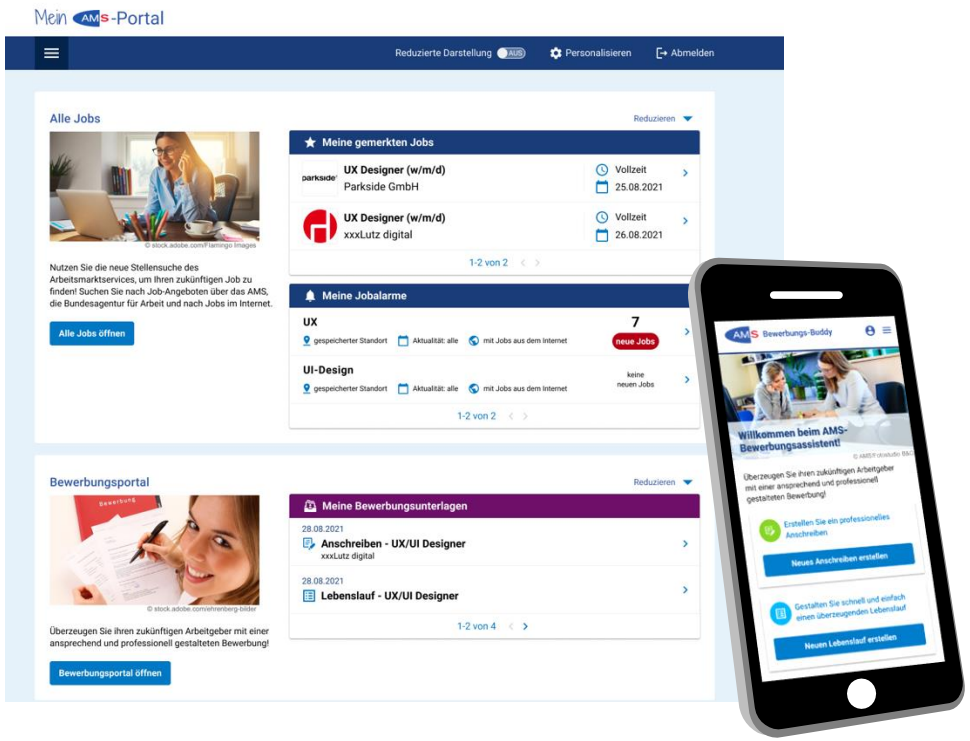
My AMS is **the central, personalised access point for all eServices** on the AMS website for **individuals**, **companies** and **partner institutes**,

Independent of the access device used (PC or smartphone) the systematic expansion of self-service in all areas.

„MyAMS“

MyAMS

MyAMS as a new main entry point to access all digital services by using an identification and authentication service based on ID Austria



Single point entry to access all digital services to increase self service

Secure access by using an identification and authentication service based on ID Austria.

Providing access to various digital services for all AMS Customers, for example:

- Create jobseeker / joboffer profiles including individual skill profiles
- Additional Job search features for authenticated user (notifications, save search, etc.)
- Supported CV & cover letter generation using customised templates

AMAS - Idea and Development

- **AMAS* assists**, the counsellors decide.
- This **Statistical based tool** gives additional information of the labour market opportunities of jobseekers using data of past AMS customers (labour market relevant characteristics of customers, the observation of their (un-) employment episode (the last 4 years), regional conditions of the labour market). Based on these values, customers are being divided into 3 categories. Special Rules for youth < 25
- **For the first time**: with AMAS we had a standardised basis for assessing labour market opportunities for customers all over Austria
- **Developed** from 2015 – 2018. Test period: 2019-1.7.2020
- **Stopped** by Austrian Data Protection Authority in August 2020

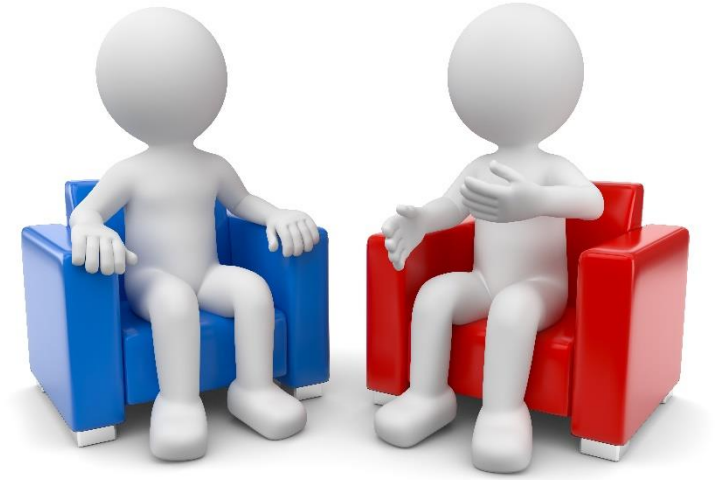
* AMAS_Arbeitsmarktchancen Assistenz-System: Supporting system to assess Labour Market Opportunities

AMAS - Status Quo and Challenges

- Dec. 2020: Federal Administrative Court (FaC) overruled the decision of the Data Protection Authority.
- Dec. 2023: The Supreme Administrative Court has referred the case back to the FaC and cites an CJEU* **case from 7. Dec. 2023** in its decision.

>>> We **lost 3 years** and the judicial procedure continues.

European Challenges:

- legal certainty for public organisations to use big data and AI
- US companies and China know more about our citizens than we
- Public debate: dominated by fake news, fears and inability to distinguish: discrimination in the labour market is to blame, not the tool, that reports it.

Thank you for the interesting exchange!