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Final Report

Digital upskilling strategies for Bavaria and North Rhine Westphalia

Foreword

Introduction

The project *"Digital upskilling strategies for Bavaria and North Rhine-Westphalia"* was funded by the European Union through the Technical Assistance Instrument (TSI-2021-DIGIUP-IBA). Two project applications (beneficiary) from the state authorities in North Rhine-Westphalia (lead: Ministry of Home Affairs, Municipal Affairs, Building and Digitalisation (MHKBD) of the state of North Rhine-Westphalia with technical participation of the State Chancellery of the state of North Rhine-Westphalia) and in Bavaria (State Ministry for Digital Affairs) were merged into one project during the selection process. The implementation was carried out by the aed - *"Agency for Economic Cooperation and Development"* in Austria (implementing agency) with technical experts and subcontractors, as well as in cooperation with the European Commission (Directorate General for Structural Reform Support/DG REFORM). The project aimed to support North Rhine-Westphalia (NRW) and Bavaria (BAY) in developing a new conceptual approach to digital transformation focusing on the development and promotion of digital competences. The target group in NRW was public administration employees and in BAY the Bavarian citizens. An exchange or knowledge transfer between Bavaria and NRW and other stakeholders in Germany has taken place through transfer workshops.

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Mario Nava
Director General, Structural Reform Support, European Commission

> ❞ *The digital transformation affects citizens who are at the heart of an open and democratic society, as well as a dynamic and sustainable economy. And this includes, in particular, a public administration that is not only digitally efficient, but also user-friendly and accessible.*

Photo: ©Paulina Nowak

Dieter Hampel
aed chairman,

(aed is the federal government's service provider in Austria for the implementation of international reform projects. aed also represents Austria's interests in other projects funded by the EU and other international institutions.)

> ❞ *Important project partners for an effective and sustainable strategy for standardising, assessing and increasing digital literacy in Austria were the initiative fit4internet and the Austrian Institute of Technology.*

Photo: ©Prosoz / Rupp

Christian Rupp
Project Manager / aed

> ❞ *The most important resource of digitalisation is not a single technology, but the human being!*

Results and outlook

project strand Bavaria

Marketing strategy

Target group approach

#6

#5

Engagement mechanisms

Bavarian education providers

Platform

One-Stop-Shop Concept

#4

#3

Stakeholders

Collaboration

Governance model

Stakeholder groups and
network analysis

#2

#1

Concept and recommendations

Competence gaps Bavaria
Good/Best EU Practice

D2.1 Standardise, record and promote digital competences in Bavaria for citizens

Status, concept and recommendations for the implementation of the DigComp framework and appropriate tools and activities

Background information on the concept of digital competences and on corresponding tools (fit4internet) and their measurement in the context of digital humanism was presented. Furthermore, European examples and expert opinions from Europe were presented and studies on digital competences of citizens from Bavaria were evaluated.

The following tools were developed:

▪ **CHECKLIST for the DEVELOPMENT** of an orientation system for digital competences

▪ **CHECKLIST for the DEVELOPMENT** DEVELOPMENT of an assessment / measurement tool for digital competences

▪ **FRAMEWORK** with a catalogue of criteria for the classification of projects/offers.

The following recommendations were made:

1. take the European DigComp framework as a starting point for the understanding of digital competences

2. introduce, offer and use an instrument for valid and reliable measurement of digital competences - also as a white label solution for partners.

3. promote and network bottom-up projects that directly address and promote the competences of citizens, especially in the municipalities, and develop or adopt content/formats that cover the general needs of citizens - possibly in connection with a label of their own.

4. establish a pact for digital competences and give the partners the opportunity to present their offers in a bundled and systematic way and to integrate their learning outcomes/certificates into a Bavarian portfolio verification system.

The aspects of all recommendations were incorporated into the further project results (deliverables). Team BAY decided to implement recommendation #4 in the sense of a *"Pact for Digital Competences with Bavarian Leading Companies"*. The concept of *"digital counters"* in municipalities developed elsewhere was taken into account in the context of public relations work.

Increasing the digital skills of citizens requires innovative concepts, especially in the form of public-private partnerships.

Photo: ©Guido Anne van Groen

Dr. Rolf Bommer
Head of the Digital Society Unit, Bavarian State Ministry for Digital Affairs (StMD)

D2.2

Concept for a governance model

Criteria for stakeholder involvement and defining the scope of activities

In this context, the developed governance model serves to integrate the different stakeholder groups from the digital ecosystem in Bavaria and the steering by the public authorities.

Furthermore, implementation criteria for stakeholder involvement were presented and practical examples from Germany and Austria with a European context were presented.

In addition, various documents (invitation, charter, membership documents) were created as examples for the digital competence building pact with IT and digital companies in Bavaria and different legal forms were explained using examples from Germany for a pact.

Graphic: © fit4internet

Photo: © senivpetro / Freepik

D2.3

Stakeholder engagement process and stakeholder list

An in-depth stakeholder analysis was carried out and included in the list not only the key players in adult education in the Bavarian digital ecosystem, but also deliberately stakeholders from the public sector, companies/businesses, projects, science and research.

In doing so, we also looked beyond Bavarian state borders in order to identify stakeholders that lie within Bavaria's sphere of influence, but are not necessarily located there.

The results were stakeholder factsheets in five clusters

- Fact Sheets - Enterprise Cluster
- Fact Sheets - Public Sector Cluster
- Fact Sheets - Projects Cluster
- Fact Sheets - Adult Education Cluster
- Fact Sheets - Science and Research Cluster

D2.4

Making the Pact visible - web presence:

Requirements analysis, functionalities, technical setup

The web presence of the Pact should primarily "*leanly*" promote and make visible its goals (phase 1) and secondarily strengthen the communication of the participating companies and the StMD. Furthermore (phase 2), it would have to be open and connectable for further developments and scaling measures.

- **Scenario 1:** Character expansion to several companies/industries (in addition to digital and IT companies).

- **Scenario 2:** Expansion of topics (from digital competence towards media competence, digital sovereignty, etc.).

- **Scenario 3:** Interministerial cooperation (e.g. in the form of a national implementation of the DSJC (Digital Skills and Jobs Coalition) installed at European level).

- **Scenario 4:** Regionalisation/differentiation - initiative of further supraregional, regional or local pacts.

The offers of the pact are to target the middle of the (digitally competent) population, for online low- and no-liners another project (help counters in cooperation with municipalities) is under development.

In addition, for design and functionalities, a number of indications on

- target groups,
- Graphical impression,
- information - navigation,
- interaction,

as well as important technical hints:

WCAG conformity, data monitoring, accompanying research, impact evaluation.

D2.5

Making learning opportunities visible

Selection, referencing, quality assurance and marketing

It is recommended to make learning opportunities systematically visible. The following have been developed for this purpose

- Checklist of selection criteria for learning providers,
- Metadata list for learning opportunities,
- Communication guidelines for Pact partners,
- Handout for description and DigComp mapping of learning opportunities.

In phase 1, about 50 learning opportunities were to be made visible.

Recommended were: Selection (criteria), referencing (DigComp mapping process), quality assurance and metadata.

With regard to marketing and communication, future activities were elaborated:

- Objectives and benefits
- Web presence and visibility
- Marketing and communication activities
- Public relations
- Media cooperation
- Own events
- Participation in external events
- Marketing and communication plan
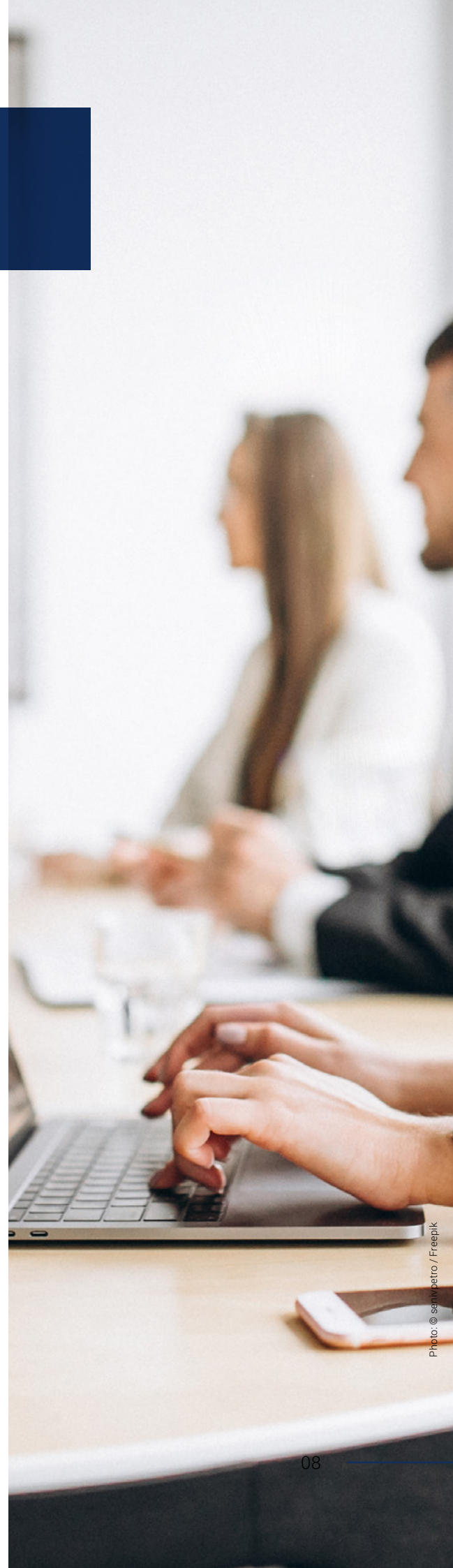
D2.6

Marketing and communication

Proposals for further initiatives and projects of the Bavarian State Ministry for Digital Affairs

The primary goal is to enable citizens in Bavaria to participate in digitalisation in a self-determined, secure and competent manner and to promote the digital inclusion of society by building up a corresponding digital skillset. At the same time, it is essential to involve the different stakeholders in this project and to strengthen the digital sovereignty of the Bavarian society - enlightened, mature, socially and socially responsible handling and demand-oriented use of digital technologies.

Key messages in awareness raising were developed:

- Digital competences are an essential basic competence of citizens.

- Digital competences require lifelong learning.

- The competence model DigComp as a European standard is the core for a common understanding of digital competences.

- 90% of all professions today already require digital competences.

- Digital competences are an essential resilience factor for Bavaria and Europe as a location for business and life.

The following was recommended for online no-liners, online low-liners and digital followers and natives:

1. positioning of the project brand

2. the importance of the DigComp framework

3. the central web presence: information, activities and pact platform

4. communication strategy and main communication goals in general ...

5. ... and for the Pact in Phase 1 in particular

6. help counters and best practice example "*Café Digital*"

Results and outlook

**project strand
North-Rhine Westphalia**

PUBLIC ADMINISTRATION

INCREASING

EVALUATION

STANDARDIZATION

DEVELOPMENT

STRATEGY

Digital skills

#6 **Outreach strategy**
Analysis & Awareness
raising proposal

#5 **Certification**
Analysis & concept

#4 **Upskilling**
Concept, guidelines
& piloting

#3 **Stakeholders**
Network analysis
& governance model

#2 **Target group analysis**
Survey & personas

#1 **#DigitalCheckNRW & MeKo**
SWOT & recommendation for
further development

D3.1

Media Competence Framework MeKo NRW and #DigitalCheckNRW:

A comparison with the DigComp framework and a review of the tool

Austria's experiences, especially in the last three years, with regard to the standardisation of digital competences (DigiComp 2.2 AT) as well as further analyses of studies and focus interviews with European experts and stakeholders in NRW served as a basis for a comparative analysis (SWOT) of the Media Competence Framework NRW (MeKo NRW) to the EU Framework (DigComp). In this context, the discourse between the terms media competence and digital competence or their different justification and background was also deepened. It became clear that it is a valuable approach of the NRW path that the #DigitalCheckNRW is based on the Media Competence Framework NRW and thus structurally links the requirements of adult education with the school context. At the same time, it is expedient that the MeKo NRW is further developed or referenced in some points in order to promote connectivity to other areas. Other logics of digital competence, e.g. the model of Qualifica Digitalis recommended for public administration, should also be included here.

The teaching of digital skills at all levels will be a key factor in the success of digitalisation. Without digital skills, we will not be able to achieve what we need in this administration in the future.

"

Prof. Dr. Andreas Mayer-Falcke
Commissioner of the State Government
of NRW for Information Technology
(CIO)

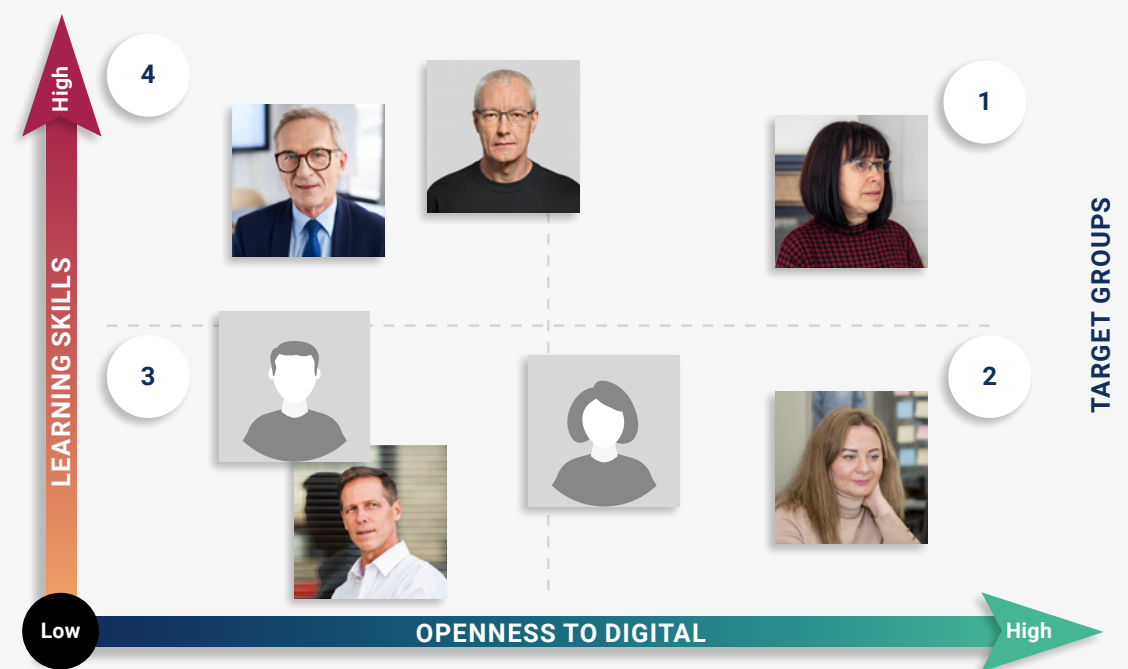## The findings and recommendations include that ...

...to bring the MeKo NRW closer to the KMK model (Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany) with regard to the competence areas, to take into account the aspects of further learning and inclusion, to explicitly include the competence area of safety and to integrate competence levels with NQF or DQF compatibility (qualification framework). The EU DigComp framework is recommended as a common "*meta-reference framework*" for all competence models, which has also been demonstrated in the project.

Furthermore, the #DigitalCheckNRW was compared internationally in a SWOT analysis. Potential for optimisation of this lively, committedly communicated and continuously expanded offer was identified in the items with regard to content validity as well as in the method of awarding points; concrete proposals for solutions were outlined for all identified fields of action, optimisation and development, for example the development of a systematic procedure for item development and validation as well as essential aspects of the further development of the media literacy framework. In this way, the potential of the Media Competence Framework NRW and the #DigitalCheckNRW could be further utilised for Germany-wide or international applications.

D3.2

Target group analysis

For the target group of public administration, the first question is which competence model would be adequate here. The frameworks considered included: EU DigComp - The Digital Competence Framework for Citizens, the Media Competence Framework NRW and the meta-study Qualifica Digitalis, for which a reference matrix was also developed, which clarifies the basic compatibility, but also the respective focal points. In view of the target group and the purpose, the category system of the Qualifica Digitalis study with its nine competence categories seems to be best suited as a reference basis for the purposes of the given question; however, its supplementation by an EQF/DQF-compatible level system is recommended.

For the target group differentiation itself, a two-dimensional segmentation approach was chosen, which takes into account "*learning competence*" on the one hand and "*openness to digital*" on the other. The resulting qualitative four-quadrant matrix produced a concrete structure for the differentiated development, mediation and implementation of further education offers for public administration. This matrix was further differentiated through the develop-ment and discussion of seven ad hoc personas.

With an online survey, a supporting quantitative survey tool was also developed to derive the concrete need for digital upskilling measures, which can be used by NRW at any time in the future.

Within the framework of group interviews with experts, including from the fields of e-government, further education, human resources development and science, an inventory was taken of existing educational offers, awareness-raising measures or perceived barriers or drivers in the context of digital skills enhancement. For example, it became clear that in the context of the divided, differentiated and federal structure of public administration in NRW, it could make sense to develop a common framework as a bracket for a common understanding of digitalisation and thus as a basis and starting point for subsidiary decentralised strategy formation.

Segmentation for measure recommendation and persona development

In two focus group discussions with the experts, the results of the target group analysis were evaluated, experiences were exchanged, common points of view such as the relevance of mindset transformation were identified and impulses for further development were given. Furthermore, the relevance of networks as a complementary addition to line organisations became clear; this is entirely in line with the current state of research and relevant experiences of successful (digital) transformation processes and projects worldwide.

In summary, the following recommendations result from the target group analysis:

#1

Work on a common strategic understanding of all stakeholders, combine a subsidiary-differentiated approach to the respective target group with a focus on a new mindset, responsibility, leadership and the courage to take the initiative in the network. At the same time, it is important to preserve the autonomy and responsibility of the respective administrative institutions. The initiative for this approach would have to be determined in NRW in an appropriate manner and could lie with the MHKBD.

#2

Promote learning opportunities and readiness by facilitating access to training, while providing time resources, incentives and the necessary hardware and software.

#3

Establish the Qualifica Digitalis category system as a comprehensive basis for a common competence framework in public administration.

#4

Supplement the #Digital-CheckNRW with an *"Edition öffentliche Verwaltung"* and establish its use not only in general further education, but in the further education of administrative employees.

#5

Actively promote the networking of training providers through community management resources.

D3.3

Network analysis, governance model, practical examples of stakeholder engagement

Within the framework of a network analysis in the digital ecosystem of public administration in NRW, which also inquired about scientific actors, more than 200 different stakeholders were identified in the context of digital upskilling in public administration.
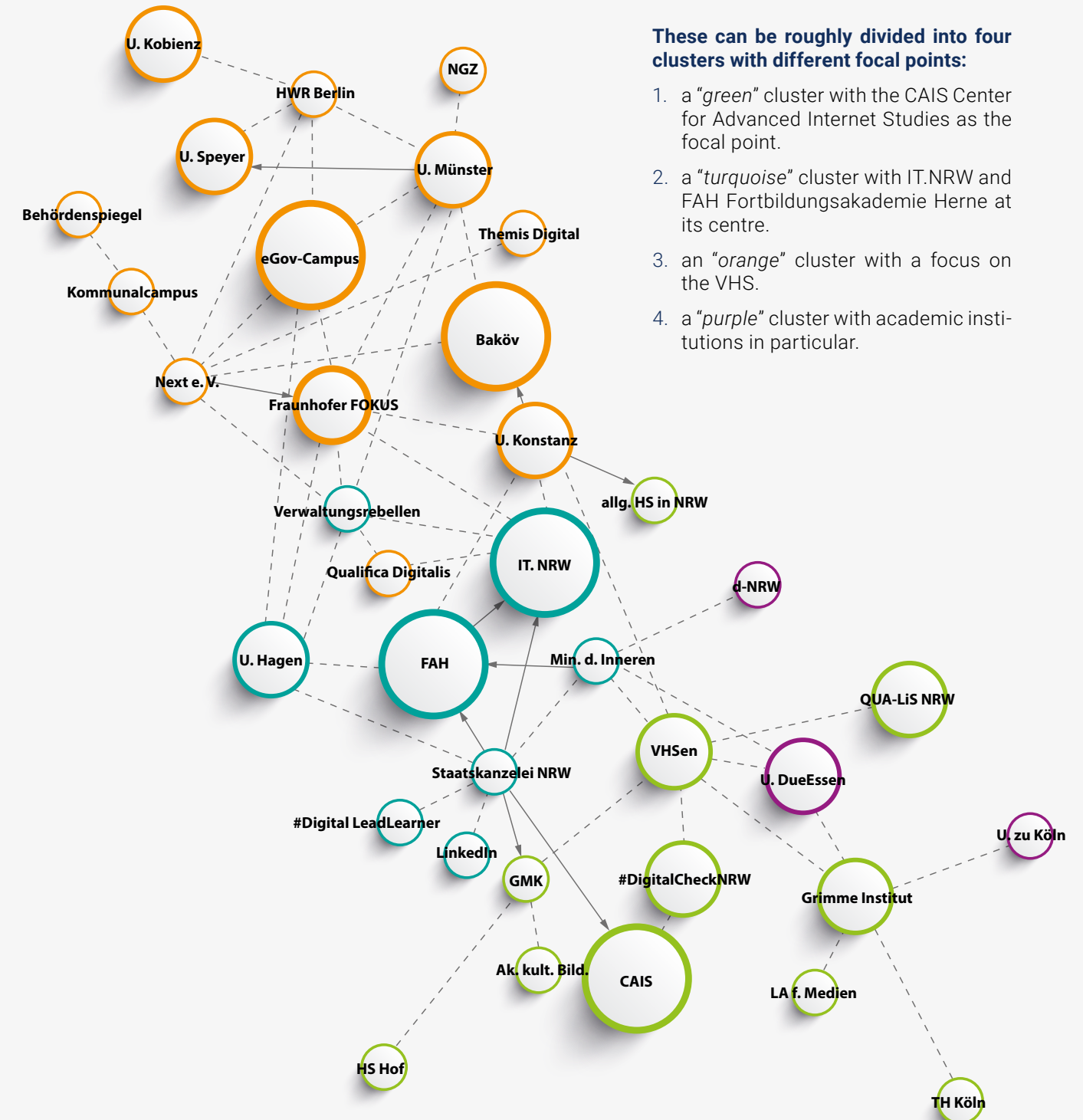
These can be roughly divided into four clusters with different focal points:

1. a *"green"* cluster with the CAIS Center for Advanced Internet Studies as the focal point.
2. a *"turquoise"* cluster with IT.NRW and FAH Fortbildungsakademie Herne at its centre.
3. an *"orange"* cluster with a focus on the VHS.
4. a *"purple"* cluster with academic institutions in particular.

Network rough structure

#1

The data of this network analysis with its clusters as well as connecting nodes with their partly expected, partly surprising results, are suitable as a basis for future in-depth investigations.

#2

Furthermore, a governance model for steering different stakeholders was proposed and numerous examples and information for possible stakeholder engagement were given. In addition to the tactical element of a common competence framework (here the EU DigComp is recommended as a *"meta"* framework of the competence frameworks used in NRW), strategic considerations for the development and review of upskilling measures in public administration are essential for the governance of a collaborative network.

#3

It is also recommended that a taskforce on Digital Upskilling Public Administration NRW be established following the EU TSI project, which will continue the work with the stakeholders of the project and at the same time expand the circle of those involved.

Photo: © pressfoto / Freepik

D3.4 Digital Upskilling in Public Administration

Status in NRW and draft of a strategic framework

An analysis, inventory and critical appraisal of the existing digital upskilling offers for public administration employees in NRW was carried out. Furthermore, best practice examples from Austria were listed, whose experiences could be valuable for the expansion of the offers in NRW. The analysis showed that the training academies - especially IT.NRW and the FAH - have already developed an extensive range of training and further education offers in recent years. In addition, special training courses were designed in the "*Digital Administration NRW*" (DVN) programme to train the state's employees in the use of the basic components of e-administration work (e-file and e-folder). Furthermore, digital upskilling offers have been created - initiated by the IT Planning Council - with the eGov Campus and Municipal Campus, which can be used by employees of the state and municipal administration.

This deliverable concludes by placing the formats and tools developed within the framework of the TSI project and those already available in NRW in a strategic framework and makes them available for curation or further development in NRW following the project.

Photo: © senivpetro / Freepik

D3.5

Guideline with suggestions for supplementing and enriching digital qualification in a way that is appropriate for the target group

Based on the results of the analyses presented, two concrete measures were proposed in this deliverable to complement existing digital upskilling measures in NRW.

"*Digitallotsen*" (digital pilots) are administrative employees who deal with digital topics on their own initiative, out of their own commitment and enthusiasm. They do not have to be digital experts from the outset, but should be motivated to take up the opportunities of digitalisation and make them available to all employees. It is not enough to appoint "*Digitallotsen*" and then hope for success. They must be accompanied, empowered and coordinated. In the TSI project, various best practices and ideas for NRW were discussed and elaborated in two workshops.

Leadership training: Digital talent and skills are fundamental for an effective and sustainable digital transformation of the public sector. The leadership training developed in the TSI project aimed to increase the development and implementation of digital skills within the public administration.

In an impulse and practical training "*Digital Transformation for Managers*" consisting of six learning modules, twenty managers from different administrative areas were given the opportunity to build up key future skills in a compact format. Special attention was paid to the practical applicability of the training in the everyday life of the managers as well as to exchange, networking and the promotion of a digital mindset.

The idea of inviting training providers to networked cooperation or to establish network structures was also considered.

Picture: Participants of the trainings

Photo © aed / Rupp

Recommendations:

#1

It is recommended that this "*Digitallotsen*" principle be implemented in NRW.

#2

The pilot training programme "*Digital Transformation for Managers*" should be continued. The modular structure has proven its worth.

#3

The collection of existing or useful online tools associated with the training should be published as a toolkit for managers.

During the evaluation of the pilot training, the participants also expressed the wish to maintain contact within the framework of a network or a community of practice (CoP).

D3.6 Guidelines for quality management procedures for the certification of digital competences

This deliverable addresses the possibilities of certification as an element of quality assurance. This basically includes (1) the certification of organisations, (2) the certification of persons and (3) the interaction of policy principles & (inter-) national standards.

Within the framework of the stakeholder analysis, NRW clearly expressed the preference to focus on the quality assurance of educational offers. This was also met by the consolidated elaboration of corresponding basics and in particular by the analysis and demonstration of corresponding examples of certification of education providers from Austria and Germany.

For administrative staff interested in education, it is important to recognise at first glance who is a quality provider. Certificates fulfil exactly this purpose. Education providers themselves should make this quality transparency visible.

In order for certificates to actually be used in public administration and fulfil their quality purpose, they must be valued by the institutions and the management levels themselves; in addition, they must create added value for administrative employees - for example, the consideration of certificates on career paths, etc. The certificates should be made visible to the administrative academies or providers themselves.

It is recommended that the administrative academies or providers of certificates in NRW reflect on their own strategy and practice in the light of the findings and information in this deliverable and possibly develop them further.

In order to create transparency and administrative simplification in certification procedures, a high level of participation in QA procedures is desirable. In the Austrian wien-cert, for example, the participation of providers is close to 100%. This is partly due to the fact that the payment of a subsidy is compulsorily linked to this certification. Accordingly, it is recommended that quality assurance measures for training offers for administrative staff are also linked to funding or inclusion in recommendation catalogues; this way, for example, the organisations that make use of training offers also have design options and quality levers in their hands.

During the reflection on these results, the idea of developing and testing a maturity model for digital transformation came up. This could be the basis, for example, for public administration organisations themselves to make their digital quality visible.

D3.7 Outreach Strategy - Awareness raising campaign for public administration in NR

In order to increase acceptance of the introduction of new technologies and change processes, awareness-raising measures should be taken in any case: both to avoid emerging scepticism and possible resistance. These measures consist, on the one hand, of activities for comprehensive information and communication of the goals and implementation, such as information events, conferences, newsletters, as well as high-profile external communication measures, and, on the other hand, activities for the active involvement of stakeholders, such as workshops, surveys and training. Especially in the introduction of new IT systems and technologies, targeted user training is essential.

An inventory of existing awareness-raising measures in NRW shows the breadth and depth of work that has already been done in this area.

For further development of paths taken so far or as support for the development of new campaigns, it is demonstrated how the personnel concept can support the differentiated addressing of different target groups and thus be followed target-oriented, customised and as cost-effective as possible implementation paths.

The deliverable concludes with exemplary recommendations for action for a campaign created in the focus groups entitled "*NRW goes Fit 4 Digital*". The following aspects should be taken into account:

- Ensure leadership and commitment under the leadership of the MHKBD as the driver and impetus for the campaign.
- Develop an own brand for digital (up)skilling in public administration.
- Set up and use targeted information channels: Own landing page "*Digital Upskilling*"; newsletter/intranet; social media communication.
- Increase intrinsic motivation: Build up or create interest in continuing education; reduce digitalisation scepticism.

- Provide orientation with the help of evaluation tools of digital competences for individual location determination.
- Integrate ongoing educational activities into the work process: in the context of events, training courses and workshops with a special focus.
- Facilitate access to learning opportunities, create incentives to learn.

D4.10

Transfer workshops

#1

The first transfer workshop led by Team NRW took place on 16 December 2021 in Düsseldorf. At the request of Team BAY, the workshop focused on background and relevant details of existing NRW tools and competence offers, here in particular on the anchor project of the NRW state government to promote media competence, the #DigitalCheckNRW.

#2

The second transfer workshop led by Team BAY took place on 16 March 2022 in Munich. At the request of Team NRW, the event focused on background information and relevant details on Bavaria's activities around digital qualification of public administration, including the platform Digital.Campus Bayern.

#3

The third transfer workshop to exchange the results in NRW and Bavaria with other federal states took place on 13 December 2022 in Düsseldorf. 40 participants from 8 different federal states exchanged their experiences and best practices or cooperation possibilities. The NRW state government's Commissioner for Information Technology (CIO), Prof. Dr. Andreas Meyer-Falcke, was personally present and thanked the participants for the project activities.

The general tenor was that such meetings should also take place regularly in the future for the exchange of experiences; there would already be so much in all places, only the all-round knowledge about it was missing. In particular, the basis for networks that enable this exchange was created with these transfer workshops.

Acknowledgement

More than 90% of the entire TSI project was carried out remotely. This was a burden for both the experts and the beneficiaries; all those involved deserve special thanks for their excellent cooperation, flexibility and agility under these difficult conditions. The aed project management Christian Rupp, Dieter Hampel and Verena Braunstorfer would like to thank:

- **Team BAY:** Rolf Bommer and Maria Heibel (StMD).

- **Team NRW:** Sandra Schlesiger (MHKBD), KordulaAttermeyer and André Spang (State Chancellery NRW), Larissa Fangmeyer (IT.NRW), Cathrin Vogel (FernUni Hagen).

- **Team EU:** Thomas Pritzkow, Mirela Music, Helmut Keller (DG REFORM).

- **Team AT:** Ulrike Domany-Funtan and Valerie Michaelis and their fit4internet team, Thomas Nárosy, Dominik Fröhlich as well as the teams from AIT, the ÖIBF and cip.

The project was implemented to the complete satisfaction of the beneficiaries:

Team BAY

"We would like to thank Team AT for their intensive work and detailed research, which provided us with a good basis for stakeholder management. The lot of best practices gave us a deeper insight into the projects in Austria, but Team AT also provided us with a detailed and comprehensive analysis of the education providers in the field of digital skills in Bavaria. This gave us concrete support for the implementation of the Pact in Bavaria, and the recommendations for the Pact components were particularly helpful. The elaboration of the advantages for the StMD, the participating companies and the citizens will particularly support our communication on the Pact - as will the presentation of the various marketing and communication measures, especially the communication guide, as well as the exemplary marketing plan. We will be able to refer to these deliverables again and again in future projects."

European Commission (DG REFORM)

"We thank the experts of aed and fit4internet for the implementation of the project and the rich first-hand experience. We would also like to thank the governments of NRW and Bavaria for their excellent cooperation and commitment to this project."

Team NRW

"Getting to know each other and starting to work together was challenging at first in COVID times - but we managed well to implement the project remotely. We got a lot of input and recommendations for future work through the analyses. The deliverables are a valuable and lasting treasure. The stakeholder and network analysis, the comparative analysis of general continuing education with internal administrative education, the leadership training, the transfer workshops and the coming together of so many experts were simply super and profitable. The complexity of the topic and the different perspectives of the project partners were a journey with many valuable impulses. Many contacts were made that will be very useful for our future work."

Some statistical data

Programme duration 18 months (06.09.2021-05.03.2023), 34 deliverables (over 2,500 pages), 12 Steering Committee Meetings, 14-day Stand Up Calls, 5 Joint Steering Committee Meetings, three large hybrid transfer workshops and numerous online workshops as well as many online sub-working group meetings.

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