Online-Appendix

„Rethinking Digital Governance – How Collaborative Innovation Strategies Advance the Development of Digital Innovations in Public Organisations“

Laura John

Westfälische Wilhelms-Universität Münster

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Appendix

A. List of studied documents

In this appendix, all documents that were consulted as a preparation for the interviews are presented. All documents have been accessed between the 19.04.2021 and 03.05.2021.

Project reports Tech4Germany

Editor	Document Title	Web link
Tech4Germany	Fallstudie: Antidiskriminierung	https://tech.4germany.org/wp-content/uploads/2020/10/Fallstudie_Antidiskriminierung_final-1.pdf
Tech4Germany	Projektdokumentation: Antidiskriminierung	https://tech.4germany.org/wp-content/uploads/2020/10/Projektdokumentation_Antidiskriminierung.pdf
Tech4Germany	Fallstudie: Steuerlotse	https://tech.4germany.org/wp-content/uploads/2020/10/Fallstudie_Steuerlotse.pdf
Tech4Germany	Projektdokumentation: Steuerlotse	https://tech.4germany.org/wp-content/uploads/2020/10/Steuerlotse-Doku-Final-212020.pdf
Tech4Germany	Fallstudie: Projekt Chatbot	https://tech.4germany.org/wp-content/uploads/2020/10/20200930_Fallstudie_V2.pdf
Tech4Germany	Projektdokumentation: Chatbot	https://tech.4germany.org/wp-content/uploads/2020/11/BMFSFJ_Dokumentation_V1.pdf
Tech4Germany	Fallstudie: Rechtsinformationsportal	https://tech.4germany.org/wp-content/uploads/2020/10/Tech4Germany_Fallstudie_Rechtsinformationsportal.pdf
Tech4Germany	Fallstudie: Forschungsdatenzentrum	https://tech.4germany.org/wp-content/uploads/2020/10/Fallstudie_FDZ.pdf
Tech4Germany	Fallstudie: Pflanzenschutzmittel	https://tech.4germany.org/wp-content/uploads/2020/10/PSM_Fallstudie.pdf
Tech4Germany	Projektdokumentation: Pflanzenschutzmittel	https://tech.4germany.org/wp-content/uploads/2020/10/PSM_Projektdokumentation_final.pdf
Tech4Germany	Fallstudie: Open Data Portal	https://tech.4germany.org/wp-content/uploads/2020/10/Fallstudie_OpenDataPortal.pdf
Tech4Germany	Projektdokumentation: Open Data Portal	https://tech.4germany.org/wp-content/uploads/2020/10/Projektdokumentation_OpenDataPortal.pdf
Tech4Germany	Fallstudie: Online-Videoberatung	https://tech.4germany.org/wp-content/uploads/2020/10/Fallstudie-Videoberatung.pdf
Tech4Germany	Projektdokumentation: Weiterbildungsportal	https://tech.4germany.org/wp-content/uploads/2020/02/BMAS_Weiterbildung-Projektdokumentation_T4GWebseite.pdf
Tech4Germany	Fallstudie eRechnung: Redesign des eRechnungs-Portals des Bundes	https://medium.com/tech4germany/fallstudie-erechnung-redesign-des-erechnungs-portals-des-bundes-67dd3e089b67
Tech4Germany	Fallstudie Bundespersona: Online-Identifikation für staatliche Leistungen	https://medium.com/tech4germany/fallstudie-bundespersona-online-identifikation-f%C3%BCr-staatliche-leistungen-5ec51d2e7768
Tech4Germany	Fallstudie BuFI: Infoplattform zu Bildung und Forschung	https://medium.com/tech4germany/fallstudie-bufi-infoplattform-zu-bildung-und-forschung-d7e10af51e22

Tech4Germany	Fallstudie Rotationsportal: Planungstool zur Unterstützung der Rotation	https://medium.com/tech4germany/fallstudie-rotationsportal-planungstool-zur-unterst%C3%BCtzung-der-rotation-15d852f494b8
Tech4Germany	Fallstudie E-Learning: E-Learning zur E-Akte Bund	https://medium.com/tech4germany/fallstudie-e-learning-e-learning-zur-e-akte-bund-dad91e49d1dc

Contracts and Guidelines

Editor	Document Title	Web link
DigitalService4 Germany GmbH	Corporate Governance Bericht	https://digitalservice4germany.com/assets/corporategovernance-bericht-2020.pdf
DigitalService4 Germany GmbH	Kooperationsvertrag Tech4Germany	https://tech.4germany.org/wp-content/uploads/2021/03/210309_Transparenz_Richtlinien-4G.pdf
DigitalService4 Germany GmbH	Stipendiumsrichtlinie	https://tech.4germany.org/wp-content/uploads/2021/02/Stipendiumsrichtlinien_Tech4Germany_2021.docx.pdf
DigitalService4 Germany GmbH	Transparenz-Richtlinien	https://tech.4germany.org/wp-content/uploads/2021/03/210309_Transparenz_Richtlinien-4G.pdf
Tech4Germany	Checkliste	https://tech.4germany.org/wp-content/uploads/2020/12/Checkliste-Eignet-sich-mein-Projekt-fu%CC%88r-das-Tech4Germany-Fellowship_-2-2.pdf
Tech4Germany	Kurzinfo	https://tech.4germany.org/wp-content/uploads/2021/02/Tech4Germany-Kurzinfo.pdf

Personal Experience Reports

Author	Date	Title	Medium	Web link
Anton, S.	16.01.2019	Tech4Germany: In 70 Tagen durch die öffentliche Verwaltung	Medium	https://medium.com/tech4germany/tech4germany-10-wochen-9-fellows-2-projekte-erfahrungsbericht-ea1c4406c37a
Detje, S.	21.01.2020	Die digitale Transformation in deutschen Behörden ist kein technologisches Problem…	Medium	https://medium.com/tech4germany/t4gfellow-die-digitale-transformation-in-deutschen-beh%C3%B6rden-ist-kein-technologisches-problem-3b9c1deba3e4
Erhardt, S.	09.04.2020	Tech4Germany - a personal experience report	LinkedIn	https://www.linkedin.com/pulse/tech4germany-personal-experience-report-sebastian-erhardt/
Rodríguez, J. E.	12.02.2021	Mit Tech4Germany Dienstleistungen gestalten, die besser für alle funktionieren	Medium	https://jerdesign.medium.com/mit-tech4germany-dienstleistungen-gestalten-die-besser-f%C3%BCr-alle-funktionieren-26a456a211d6

Press Statements and Newspaper Articles

Author / Editor	Date	Title	Medium	Web link
Bundes-ministerium für Finanzen	16.20.2020	Steuerlotse für Rentnerinnen und Rentner - Kooperationsprojekt mit der Initiative Tech4Germany zur Entwicklung eines Prototypen für eine einfache, zukunftsfähige und digitale Steuererklärung für Rentnerinnen und Rentner	Website BMF	https://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Schlaglichter/Rentenbesteuerung/2020-10-16-steuerlotse.html
ITZ Bund	02.07.2020	TZBund ist wieder Projektpartner im Tech4Germany Fellowship 2020 - Prototypischer Chatbot soll Kommunikation und Interaktionen fördern	Website ITZ Bund	https://www.itzbund.de/SharedDocs/Pressemitteilungen/DE/2020/2020-07-02_T4G_Fellowship_2020.html
ITZ Bund	20.10.2020	Abschlussveranstaltung zum Tech4Germany Fellowship-Programm 2020 - Innerhalb von zwölf Wochen konnte eine prototypische Chatbotlösung entwickelt werden	Website ITZ Bund	https://www.itzbund.de/SharedDocs/Pressemitteilungen/DE/2020/2020-10-20_T4G_Fellowship_Abschluss.html
Tech4Germany	27.07.2021	Pressemitteilung Start Tech4Germany Fellowship - Die Technologie-Taskforce für die Bundesregierung geht in die dritte Runde	Website Tech4Germany	https://docs.google.com/document/d/1G21BPwlMzFqgkemmlKshxVMe-ipBSTipvV8l0px05O0/edit
Rusch, L. & Punz, M.	16.09.2020	Entwickeln für den Staat	Der Tages-spiegel	https://www.tagesspiegel.de/wirtschaft/digitalservice4germany-entwickeln-fuer-den-staat/26192730.html

Podcasts

The relevant parts of the podcasts were transcribed and can be provided upon request.

Podcast & Host	Date	Episode	Web link
Motivation. Du & Ich – ein Podcast mit Philip Bremer	05.04.2021	Episode #7 – Christina Lang	https://open.spotify.com/episode/7i3XDBuZsJI2Rpqmsodmjn?si=AHbqLIKLQzqvY9WQZGvfbQ
Podcast: Plan W – Süddeutsche Zeitung; Susanne Klingner	02.07.2020	Frauen digitalisieren Deutschland	https://open.spotify.com/episode/5N2Wm8Tyfn9CZT7Z3jN8Ii
Podcast: Talking Legal Tech; Felipe Molina	16.03.2020	Episode 11: tech4Germany – wie macht man den staat fit für die digitalisierung, sonja anton & anna hupperth? (Teil 2)	https://open.spotify.com/episode/69SzsRr5rZnPf88toyXJiX
recode.law Podcast; Henrik Volkman	16.03.2020	Episode 9: Tech4Germany – Wie digitalisiert man die öffentliche Verwaltung? (Teil 1)	https://open.spotify.com/episode/5Xs8gMeDUbMuiOLdtDGQQZ

B. Overview of interview partners

Overview of Interviewees

Name	Date of Interview	Project	Year of Participation	Role
Digitallotse 1	10.05.2021	Project 1	2020	Digitallotse (Agency)
Fellow 1	10.05.2021	Project 2	2020	Design Fellow
Fellow 2	11.05.2021	Project 3	2020	Product Fellow
Digitallotse 2	12.05.2021	Project 4	2019	Digitallotse (Ministry)
Fellow 3	17.05.2021	Project 5	2019	Engineering Fellow
Digitallotse 3	21.05.2021	Project 6	2019	Digitallotse (Ministry)

All interviews were recorded, transcribed and anonymised. The paraphrased answers of all interviewees are presented in Appendix E. The full transcripts may be provided upon request.

C. Interview guideline

(1) English translation

Category	Sub-Category	Question(s)
Introduction	/	- Am I allowed to record the interview as discussed in advance and use it anonymously as a source for my bachelor thesis? - Please introduce yourself and your position in 2-3 sentences and name the project of Tech4Germany in which you were involved.
Empowered Actors	Affected Actors	- What **motivated** you to take part in Tech4Germany? - How would you describe your **personal role** in the project? o Affected by problem / innovation o Knowledge of the problem / context o Involvement of significantly affected stakeholders
	Relevant Actors	- To what extent did the Fellows have **relevant skills** *(especially technical or methodological knowledge)* to develop an innovative solution to the problem? o Could you have implemented the project with a comparable result without the Fellows?
	Collaboration	- To what extent did you and the other Digitallotsen **work collaboratively** with the Fellows on the innovative solution? o In which phases of the innovation cycle *(idea development, idea selection, prototyping)* did you actively work together? o How did the collaboration look like?
	Boundary Spanners	- What **role** did the **Tech4Germany** core team play in the course of the project? o How did Tech4Germany facilitate the collaboration?
	Empowerment: Ground-rules / Shared goals	- To what extent were **rules** specified by Tech4Germany? o Clear distribution of tasks and roles - Was there a clear **goal** at the beginning of the project? o Shared understanding of the goal
Mutual and Transformative Learning	Mutual Learning	- Did you **learn new (technical) knowledge or methods** as a result of working with the Fellows? o Re-application of what has been learned after the project o What learning formats did Tech4Grmany offer *(workshops, onboarding, etc.)* and to what extent did these offers support you in the learning process?

	Transformative Learning	- To what extent has your **attitude** towards digital innovations changed as a result of working with the Fellows *(mindset shift)*? o Critical questioning of existing processes and conventions in the ministry o Changes in the approach to digitalisation projects *(agile methods, cross-sectional work)*
Joint Ownership	Shared Responsibility	- Did you feel **responsible** for the success of the project? o Did you feel that you could actively shape the outcome of the project? o How were decisions made in the team? o To what extent did the fellows take responsibility for the project?
	Reduced Implementation Resistance	- To what extent did you **personally advocate** implementation of the developed prototype? - Was the developed innovation prototype **implemented** after the project? o If not, why not? o To what extent have you developed a better understanding of the prototype than if the project had been implemented externally by a private IT company? o To what extent has any existing scepticism on the ministry's side about digital innovations been reduced by the project?
Outcome	Stages of the innovation cycle	- To what extent were **more innovative ideas** developed due to the collaboration of diverse actors than if you had only worked on the innovation project internally in the ministry? - To what extent is this **innovation suitable** for the context of the ministry and leads to an improvement for the ministry / the end-users?
Limitations & Challenges	Conflicts & Misunderstanding	- Were there any **aspects that impaired the collaboration** with the Fellows? o Conflicts or misunderstandings o Manipulations o No open discussions and expressions of opinion
End	Effect	- How would you describe the **overall effect of Tech4Germany** on the development of digital innovations in public organisations?

(2) German original: Digitallotsen

Category	Sub-Category	Question(s)
Introduction	/	- Darf ich das Interview wie vorab besprochen aufzeichnen und in anonymisierter Form im Rahmen meiner Bachelorarbeit verwenden? - Bitte stellen Sie sich und Ihre Position in 2-3 Sätzen vor und nennen Sie das Projekt von Tech4Germany, an dem Sie beteiligt waren.
Empowered Actors	Affected Actors	- Was hat Sie dazu **motiviert**, bei Tech4Germany teilzunehmen? - Wie würden Sie ihre **persönliche Rolle** in dem Projekt beschreiben? o Betroffenheit von Problem / Innovation o Kenntnis von Problem / Kontext o Einbindung wesentlich betroffener Stakeholder
	Relevant Actors	- Inwieweit hatten die **Fellows relevante Fähigkeiten** *(insbesondere technische oder methodische Kenntnisse)*, um eine innovative Lösung für das Problem zu entwickeln? o Hätten Sie das Projekt auch ohne die Fellows mit einem vergleichbaren Ergebnis umsetzen können?
	Collaboration	- Inwieweit haben Sie und die anderen Digitallosten mit den Fellows **gemeinsam** an der innovativen Lösung gearbeitet? o In welchen Phasen des Innovationszyklus (Ideenentwicklung, Ideenauswahl, Prototyping) haben Sie aktiv zusammengearbeitet? o Wie hat die Zusammenarbeit genau ausgesehen?
	Boundary Spanners	- Welche **Rolle** spielte das Core Team von **Tech4Germany** im Projektverlauf? o Wie hat Tech4Germany die Zusammenarbeit erleichtert?
	Empowerment: Ground-rules / Shared goals	- Inwieweit wurden **Regeln** von Tech4Germany vorgegeben? o Klare Aufgaben- und Rollenverteilung - Gab es zu Beginn ein **klares Ziel**? o Einheitliches Verständnis von dem Ziel
Mutual and Transformative Learning	Mutual Learning	- Haben Sie aufgrund der Zusammenarbeit mit den Fellows **neues (technisches) Wissen oder Methoden gelernt?** o Erneute Anwendung des Gelernten nach Projekt o Was für Lernformate gab es von Tech4Grmany *(Workshops, Onboarding etc.)* und inwieweit haben diese Angebote Sie beim Lernen unterstützt?

	Transformative Learning	- Inwieweit hat sich Ihre **Einstellung gegenüber digitalen Innovationen** durch die Zusammenarbeit mit den Fellows verändert *(mindset shift)*? o Kritische Hinterfragung bestehender Prozesse und Konventionen im Ministerium o Veränderung der Herangehensweise an Digitalisierungsprojekte (agile Methoden, bereichsübergreifendes Arbeiten)?
Joint Ownership	Shared Responsibility	- Haben Sie sich für den Erfolg des Projektes **verantwortlich gefühlt**? o Hatten Sie das Gefühl, das Ergebnis des Projekts aktiv mitgestalten zu können? o Wie wurden Entscheidungen in Team getroffen? o Inwieweit haben die Fellows Verantwortung für das Projekt übernommen?
	Reduced Implementation Resistance	- Inwieweit haben Sie **persönlich eine Implementation** des entwickelten Prototypen **befürwortet**? - Wurde das Projekt **umgesetz**t / weiterverfolgt? o Wenn nein, warum nicht? o Inwieweit haben Sie ein besseres Verständnis für den Prototypen entwickelt, als wenn das Projekt extern von einem privaten IT – Unternehmen umgesetzt worden wäre? o Inwieweit wurde eine ggf. vorhandene Skepsis auf Ministeriumsseite gegenüber digitalen Innovationen durch das Projekt verringert?
Outcome	Stages of the innovation cycle	- Inwieweit wurden aufgrund des Zusammentreffens von verschiedenen Sichtweisen *(clash of cultures)* **innovativere Ideen entwickelt**, als wenn Sie nur intern im Ministerium nach Lösungen gesucht hätten? - Inwieweit ist diese Innovation für den Kontext des Ministeriums **geeignet**, um zu einer Verbesserung für das Ministerium / die Nutzer beizutragen?
Limitations & Challenges	Conflicts & Misunderstanding	- Gab es Aspekte, die die **Zusammenarbeit** mit den Fellows **beeinträchtigt** haben? o Konflikte oder Missverständnisse o Manipulationen o Keine offene Diskussionen und Meinungsäußerungen
End	Effect	- Wie bewerten Sie den **gesamtheitlichen Einfluss von Tech4Germany** auf die Entwicklung von digitalen Innovationen in der öffentlichen Verwaltung?

(3) German original: Fellows

Category	Sub-Category	Question(s)
Introduction	/	- Darf ich das Interview wie vorab besprochen aufzeichnen und in anonymisierter Form im Rahmen meiner Bachelorarbeit verwenden? - Bitte stellen Sie sich und Ihren beruflichen Hintergrund in 2-3 Sätzen vor und nennen Sie das Projekt von Tech4Germany, an dem Sie beteiligt waren.
Empowered Actors	Relevant Actors	- Was hat Sie dazu **motiviert**, bei Tech4Germany teilzunehmen? - Wie würden Sie ihre **persönliche Rolle** in dem Projekt beschreiben? - Inwieweit waren Ihr technisches **Wissen und Skills geeignet und notwendig**, um das Problem zu lösen *(bspw. Design Thinking, Programmieren, UX / UI-Design)*?
	Affected Actors	- Inwieweit waren die **Digitallotsen** in ihrem Arbeitsalltag von dem zu lösenden Problem **betroffen** und hatten somit eine detaillierte **Kenntnis** von dem Problem und Kontext? o Einbindung wesentlich betroffener Stakeholder - Inwieweit hätten Sie das Projekt auch ohne die Zusammenarbeit mit den Digitallotsen umsetzen können?
	Collaboration	- Inwieweit haben Sie und die anderen Fellows mit den Digitallotsen **gemeinsam** an der innovativen Lösung gearbeitet? o In welchen Phasen des Innovationszyklus *(Ideenentwicklung, Ideenauswahl, Prototyping)* waren die Digitallotsen aktiv beteiligt? o Wie hat die Zusammenarbeit genau ausgesehen?
	Boundary Spanners	- Welche **Rolle** spielte das Core Team von **Tech4Germany** im Projektverlauf? o Wie hat Tech4Germany die Zusammenarbeit erleichtert?
	Empowerment: Ground-rules / Shared Goal	- Inwieweit wurden **Regeln** von Tech4Germany vorgegeben? o klare Aufgaben- und Rollenverteilung - Gab es zu Beginn ein **klares Ziel**? o Einheitliches Verständnis von dem Ziel
Mutual and Transformative Learning	Mutual Learning	- Haben Sie aufgrund der Zusammenarbeit mit den Digitallotsen **etwas Neues gelernt** *(bspw. über die Prozesse und Anforderungen in öffentlichen Organisationen)*? o Was für Lernformate gab es von Tech4Grmany *(Workshops, Onboarding etc.)* und inwieweit haben diese Angebote Sie beim Lernen unterstützt?

		- Inwieweit haben sich die **Digitallotsen offen dafür gezeigt**, neue Methoden und technisches Wissen zu lernen?
	Transformative Learning	- Hat sich Ihr **Bild von der öffentlichen Verwaltung** (insbesondere im Kontext der digitalen Transformation) durch das Projekt und die Zusammenarbeit mit den Digitallotsen **verändert**? o Kritische Hinterfragung eigener Sichtweisen - Wie hat sich (Ihrer Einschätzung nach) die **Einstellung der Digitallotsen** gegenüber digitalen Innovationen aufgrund des Projektes verändert? o Inwieweit hat ein Mindset-Shift in Bezug auf die Herangehensweise an digitale Innovationen stattgefunden *(bspw. Agilität / bereichs-übergreifendes Arbeiten)*?
Joint Ownership	Shared Responsibility	- Inwieweit haben Sie sich für den Erfolg des Projektes **verantwortlich gefühlt**? o Wie wurden Entscheidungen in Team getroffen? - Inwieweit haben die **Digitallotsen Verantwortung** für das Projekt übernommen und das Ergebnis aktiv mitgestaltet?
	Reduced Implementation Resistance	- Inwieweit hat sich (Ihrer Einschätzung nach) die **Wahrscheinlichkeit einer erfolgreichen Implementation** der entwickelten Innovation durch die aktive Einbindung der Digitallotsen erhöht? o Inwieweit wurde eine ggf. vorhandene Skepsis auf Ministeriumsseite gegenüber digitalen Innovationen durch die aktive Zusammenarbeit verringert?
Outcome	Stages of the innovation cycle	- Inwieweit wurden aufgrund des Zusammentreffens von verschiedenen Sichtweisen *(clash of cultures)* **innovativere Ideen entwickelt**, als wenn Sie nur mit den Fellows nach Lösungen gesucht hätten? - Inwieweit ist diese Innovation für den Kontext des Ministeriums **geeignet**, um zu einer Verbesserung für das Ministerium / die Nutzer beizutragen?
Limitations & Challenges	Conflicts & Misunderstanding	- Gab es Aspekte, die die Zusammenarbeit mit den Digitallotsen **beeinträchtigt** haben? o Konflikte oder Missverständnisse o Manipulationen o Keine offene Diskussionen und Meinungsäußerungen o Widerstände auf Seiten des Ministeriums
End	Effect	- Wie bewerten Sie den **gesamtheitlichen Einfluss** von Tech4Germany auf die Entwicklung von digitalen Innovationen in der öffentlichen Verwaltung?

D. Coding scheme

Code-Group	Code	Explanation	Source	Example
Empowered actors	01 Affected actors: Affectedness / Knowledge of problem	Actors who are impacted by the innovation and have relevant knowledge of the problem and context	Chapter 2.4.1	„die hat davon direkt viele Berührungspunkte gehabt“ (Fellow 1, l.64)
	02 Affected actors: Role	Role and responsibilities of affected actors in the collaborative project	Chapter 2.4.1	“Ich würde sagen meine Rolle war die eines Vermittlers” (Digitallotse 2, l.38)
	03 Relevant actors: Skills	Actors who have essential skills and knowledge to develop the digital innovation	Chapter 2.4.1	„beeindruckend fand ich, dass das Team sehr passgenau zusammengestellt war“ (Digitallotse 2, ll.57-58)
	04 Relevant actors: Role	Role and responsibilities of relevant actors in the collaborative project	Chapter 2.4.1	„geht man methodisch ran und gibt der ganzen Teamarbeit so ein bisschen einen Rahmen“ (Fellow 2, ll.46f.)
	05 Boundary spanners	Actor who is capable of translating and linking the diverse knowledge	Chapter 2.4.1	„das sind erstmal die Enabler ganz am Anfang“ (Fellow 2, l.152)
	06 Initiation of collaboration	Measures to initiate collaboration or motivate relevant and affected actors	Chapter 2.4.1	„die Mission dahinter ist das, was mich dazu motiviert hat“ (Fellow 2, l.34)
	07 Form of collaboration	Intensity and form of collaborative activities	Chapter 2.2	„da haben wir wirklich aktiv zusammen-gearbeitet“ (Fellow 1, ll.93-94)
	08 Shared goal	Shared understanding of the goal of the collaboration	Chapter 2.4.1	„Es gab kein ganz klares Ziel, aber es gab schon Eckpunkte, die definiert wurden“ (Fellow 1, l.156)
	09 Ground-rules	Definition of roles, responsibilities, and procedures	Chapter 2.4.1	„es gab schon konkrete Regeln, ähm zum Beispiel auch was den zeitlichen Aufwand betrifft“ (Fellow 1, ll. 144-145)
	10 Generation of innovative ideas	Innovativeness of the generated ideas during the collaboration	Chapter 2.2	„das wäre auf jeden Fall weniger innovativ gewesen, wenn sie es ohne uns gemacht hätten“ (Fellow 3, ll.237-238)
Mutual & transfor-mative learning	11 Mutual learning: Digitallotsen	Mutual acquisition of new skills, methods, or knowledge by the Digitallotsen	Chapter 2.4.2	„wollten von uns auch sehen, welche Tools wir benutzen und wie man die benutzen kann“ (Fellow 3, l.177)
	12 Mutual learning: Fellows	Mutual acquisition of new skills, methods, or knowledge by the Fellows	Chapter 2.4.2	„Ich habe sehr viel über die Verwaltungsarbeit gelernt“ (Fellow 1, l.165)

	13	Transformative learning: Digitallotsen	New ways of thinking, changed perceptions of digital innovations or new approaches to solve a problem by the Digitallotsen	Chapter 2.4.2	"so weit, dass wir auch bestehende Regeln ähm einfach mal ausgeblendet haben, um weiterzuspinnen, wie könnte das aussehen in einer idealen Welt" (Digitallotse 2, ll.315-316)
	14	Transformative learning: Fellows	New ways of thinking, changed perceptions of digital innovation in public organisations or new approaches to solve a problem by the Fellows	Chapter 2.4.2	"hat's mir vom Mindset glaube ich schon nochmal geholfen, mich da auch ein Stück weit mehr in Richtung Sinn und weiter weg noch von diesem ganzen anderen, irgendwie Karriere und Monetäres" (Fellow 2, ll.171-173)
	15	Development and selection of suitable innovations	Degree of suitability of the selected idea and developed prototype	Chapter 2.2	„wenn wir es ohne die gemacht hätten, dann wäre es wahrscheinlich ein bisschen an dem Problem vorbei gegangen" (Fellow 3, ll.238-239)
Joint ownership	16	Shared responsibility	Shared responsibility for the innovation project among the involved actors	Chapter 2.4.3	„wir waren auch alle verantwortlich ja für den Erfolg" (Fellow 1, l.36)
	17	Decision-making	Shift of the decision-making authority from the public agency to the collective of the involved actors	Chapter 2.4.3	„wir haben die meisten Entscheidungen gemeinsam getroffen" (Fellow1, l.258)
	18	Degree of implementation resistance	Perception of public employees towards the implementation of digital innovations or new working methods	Chapter 2.4.3	„da konnte man dann schon merken, dass die offener wurden. Dass die nicht mehr nur geblockt haben" (Digitallotse 2, ll.113-114)
Challenges, Limitations & Potentials	19	Conflicts & misunderstandings	Conflicts, misunderstandings and manipulations that occurred during the collaboration	Chapter 2.5	„eine Person war demgegenüber gar nicht aufgeschlossen, hat sogar ähm in Workshops die Mitarbeit verweigert" (Fellow 1, ll.183-184)
	20	Limitations of collaboration	Limitations during the collaboration project	Inductive	„die klassische IT-Ausstattung, also es ist natürlich schwierig zusammenzuarbeiten mit jemandem virtuell, der sich erstmal darum bemühen muss ne Webcam zu kriegen" (Fellow 1, ll.407-409)

	21	Barriers to implementation	Organisational or structural barriers to the implementation of the collaboratively developed digital innovations	Inductive	„Das ist nicht jetzt mal eben gemacht, sondern da gibt es wahnsinnig viele Regeln und Vorschriften“ (Digitallotse 1, ll.198-199)
	22	Restrictions due to pandemic	Restrictions of the collaboration due to the contact restrictions during the Covid-19 pandemic	Inductive	„Corona hat die Zusammenarbeit mit den Projektpartner:innen beeinträchtigt“ (Fellow 1, l.283)
	23	Scope / effect of Tech4Germany	Overall scope and effect of Tech4Germany on the development of digital innovations in public organisations	Chapter 2	„Das verändert schon was. Das macht ja was mit Menschen.“ (Digitallotse 2, ll.360-361)

E. Code frequencies and key messages

In this appendix, first an overview of the code frequencies per code group is provided. Subsequently, a table for each code with the code frequency and the paraphrased key message of each interviewee is presented. Additionally, it is indicated whether this key message was classified as being concordant with the theoretical proposition or, for inductive codes, the identified key finding. These tables served as the foundation for the analysis in chapter 4.

Overview

Code Group 01 – Empowered Actors

		Code Frequency per group		
Code		*Digitallotsen*	*Fellows*	**Total**
01	Affected actors: Affectedness	10	12	**22**
02	Affected actors: Role	7	8	**15**
03	Relevant actors: Skills	9	19	**28**
04	Relevant actors: Role	9	6	**15**
05	Boundary spanner	11	15	**26**
06	Initiation of collaboration	9	10	**19**
07	Form of collaboration	16	21	**37**
08	Shared goal	8	10	**18**
09	Ground-rules	6	7	**13**
10	Generation of innovative ideas	2	5	**7**

Code Group 02 – Mutual and Transformative Learning

		Code Frequency per group		
Code		*Digitallotsen*	*Fellows*	**Total**
11	Mutual learning: Digitallotsen	19	6	**25**
12	Mutual learning Fellows	n.a.	11	**11**
13	Transformative learning: Digitallotsen	20	14	**34**
14	Transformative learning: Fellows	n.a.	6	**6**
15	Development of suitable innovation	13	9	**22**

Code Group 03 – Joint Ownership

		Code Frequency per group		
Code		*Digitallotsen*	*Fellows*	**Total**
16	Shared responsibility	9	8	**17**
17	Decision-making	1	5	**6**
18	Degree of implemenation resistance	22	16	**38**

Code Group 04 – Challenges, Limitations & Potential

		Code Frequency per group		
Code		*Digitallotsen*	*Fellows*	**Total**
19	Conflicts & misunderstandings	7	11	**18**
20	Limitations of collaboration	9	13	**22**
21	Barrierrs to implementation	6	3	**9**
22	Restrictions due to pandemic	5	3	**8**
23	Scope / Impact of Tech4Germany	18	9	**27**

Frequencies and key messages per interviewee

Code Group 01 – Empowered Actors

Code 01 – Affected Actors: Affectedness / Knowledge of the problem

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	3	Yes	S/he was directly affected as s/he works in the department responsible for the product and s/he had a detailed knowledge of the problem and context.
Digitallotse 2	3	Yes	S/he was the responsible person for the developed prototype in the department and had a detailed knowledge of the context and requirements.
Digitallotse 3	4	Yes	S/he was directly affected as s/he works in the department responsible for that product and had a detailed knowledge of the product and the requirements.
Fellow 1	7	Yes	The Digitallotsen had many direct points of contact with the problem, were responsible for the innovation and had a lot of expertise. Additional decision-makers (e.g. the minister and department managers) were involved through presentations of the progress.
Fellow 2	3	Yes	There were two groups of Digitallotsen involved: One was responsible for the technical implementation of such a digital innovation and was not affected by the problem to be solved; the other was directly affected by the problem and had a detailed knowledge of the end-users and context.
Fellow 3	2	Yes	The Digitallotsen were responsible for that project in the ministry, had a lot of expertise and a detailed knowledge of the problem.
Total	**22**		

Code 02 – Affected Actors: Role

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	2	Yes	His/her role was mainly to provide all necessary information for the project, connect the Fellows with other relevant stakeholders, and provide feedback and support regarding the prototype.
Digitallotse 2	3	Yes	His/her role was to be a mediator between the Fellows and the department and ministry.
Digitallotse 3	2	Yes	His/her role was to support the Fellows by connecting the technical aspects with the content requirements and particularly putting the information of the interviewed stakeholders into the political context.
Fellow 1	1	Yes	The role of the Digitallotsen was to contribute their expertise and provide access to the end-users of the innovation.
Fellow 2	4	Yes	The role of the Digitallotsen was to contribute their knowledge about the procedures and special requirements (e.g. accessibility) in public organisations and set the frame for possible solutions.
Fellow 3	3	Yes	The role of the Digitallotsen was to ensure the Fellows fully understand the problem and to actively participate in the development of the prototype so they can continue the innovation project afterwards.
Total	**15**		

Code 03 – Relevant actors: skills

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	4	Partly	The Fellow team was very interdisciplinary, their skills comprehended one another well, and particularly the methodological competencies were strong. However, those were not skills the public employees of that (IT) department did not have themselves.
Digitallotse 2	1	Yes	The Fellow team was very interdisciplinary, and their skills comprehended one another well (including user-centric problem-solving, technical and design skills).
Digitallotse 3	4	Yes	The methodological and technical skills of the Fellows were relevant and necessary, particularly their coding and user-research expertise. These skills would have otherwise had to be procured from an external IT-provider.
Fellow 1	6	Yes	The skills of the Fellows comprehended one another well and spanned product management, software engineering, UX-/UI-design and conducting interviews and user tests.
Fellow 2	7	Yes	His/her methodological skills (e.g. design thinking, scrum, technological understanding and teaching experience) were suitable for the role as Product Fellow and included skills that were not available among the public employees.
Fellow 3	6	Yes	His/her skills were very suitable and relevant for the innovation project, particularly design thinking, user-centric problem-solving, product management and software development.
Total	**28**		

Code 04 – Relevant actors: Role

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	4	Yes	The role of the Fellows was to identify the problem with an unprepossessed view, prepare the collaborative workshops, and develop a prototype independently from former conceptions.
Digitallotse 2	4	Yes	The role of the Fellows was to identify the problem with an unprepossessed view, develop a shared vision with all stakeholders, identify solutions from a user-centric perspective, and lastly develop the prototype with their technical and design skills.
Digitallotse 3	1	Yes	The role of the Fellows was to understand the requirement of all stakeholders and co-creatively develop the prototype.
Fellow 1	1	Yes	His/her role included to prepare the collaborative workshops, and present, explain and promote the digital innovation to the relevant stakeholders in the public organisation.
Fellow 2	2	Yes	His/her role included to communicate with relevant stakeholders, develop the methodological structure of the project (e.g. design sprints) and explain technical buzzwords (e.g. artificial intelligence).
Fellow 3	3	Yes	His/her role included to set the organisational and methodological frame of the project and use the technical and design skills to build a user-centric prototype.
Total	**15**		

Code 05 – Boundary Spanner

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	4	Partly	The core team of Tech4Germany was not actively involved in the collaboration but mainly in the preparation and feedback phase. Further, they set the basic structure and time schedule of the project.
Digitallotse 2	5	Yes	The core team of Tech4Germany moderated between the Fellows and Digitallotsen as a conflict occurred and facilitated the collaboration through the onboarding process and workshops.
Digitallotse 3	2	Partly	The core team of Tech4Germany set the time schedule and basic frame for the collaboration and facilitated the collaboration by organising trainings. However, they were not actively involved in the collaboration (since it was not necessary).
Fellow 1	6	Yes	The core team of Tech4Germany explained both groups the vocabulary, working methods and basic procedures of each other and provided support in cases of conflict or problems. However, they did not have a permanent role as mediators during the collaboration.
Fellow 2	5	Yes	The core team of Tech4Germany is the enabler in the beginning and acts as a sparring partner throughout the project by providing the frame for the project and facilitating the collaboration through the onboarding process and workshops.
Fellow 3	4	Yes	The core team of Tech4Germany supported the participants by providing feedback and facilitating the collaboration through the onboarding process and coachings.
Total	**26**		

Code 06 – Initiation of Collaboration

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	1	Yes	S/he participated because Tech4Germany provides an opportunity to receive external input for the innovation and to expand his/her skills.
Digitallotse 2	4	No	S/he did not participate in the application process but was appointed to participate in the programme because no one else from that department wanted to participate. The application was filed by a different department which then requested the support of the department of Digitallotse 2.
Digitallotse 3	4	Yes	S/he initiated the application as the co-founders promoted the programme in the ministry. S/he participated because Tech4Germany offers the opportunity to approach an innovation project with modern working methods and develop a concrete prototype what would have otherwise not be possible.
Fellow 1	4	Yes	Tech4Germany provides a room for professions that do not typically work for public organisations (e.g. designer) and creates an attractive work setting.
Fellow 2	4	Yes	S/he was motivated by the mission of Tech4Germany, and the programme provides a unique opportunity to work with many talented people while doing meaningful work.
Fellow 3	2	Yes	S/he was motivated by the opportunity to contribute to the digitalisation of public services and the attractive work setting.
Total	**19**		

Code 07 – Form of Collaboration

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	5	Yes	The collaboration consisted of weekly workshops whereby the Fellows did the most part of the preparatory work, but s/he felt to be strongly involved in all phases of the innovation cycle.
Digitallotse 2	5	Yes	The collaboration consisted of weekly workshops in a co-working space and, additionally, the Digitallotsen had daily contact with the Fellows to exchange information.
Digitallotse 3	6	Yes	There was an active collaboration throughout all project phases, and s/he felt to be a full member of the team.
Fellow 1	7	Yes	There was an active collaboration throughout all project phases in form of weekly workshops while the Digitallotsen were available the whole time to provide additional help or information.
Fellow 2	7	Yes	The collaboration consisted of weekly workshops whereby the Digitallotsen participated in various working sessions (brainstorming, ideation sessions, etc.) as full members of the team.
Fellow 3	7	Yes	The collaboration consisted of weekly workshops that were prepared by the Fellows while the Digitallotsen actively participated in all workshop sessions (e.g. creating a user journey).
Total	**37**		

Code 08 – Shared goal

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	4	Partly	The project had deliberately not a fixed goal, but the participants developed a shared understanding of the objectives over time.
Digitallotse 2	3	Partly	There was a divergent understanding of the goal in the beginning, so s/he perceived it as a great success that the team was able to develop a goal shared by all stakeholders throughout the project.
Digitallotse 3	1	Partly	There was deliberately not a fixed goal in the beginning, but a shared goal was developed through the user-research.
Fellow 1	2	Partly	The project did not have a clear goal but only guiding principles and while the understanding of the objectives was divergent in the beginning, the participants developed a shared understanding over time.
Fellow 2	3	Partly	Due to the agile approach, the project did not have a fixed goal, but the objective was collaboratively updated during the project.
Fellow 3	5	Partly	Due to the design thinking approach, the project did not have a fixed goal, but the participants developed a shared understanding of the objectives over time.
Total	**18**		

Code 09 – Ground-rules

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	3	Yes	Tech4Germany set the basic rules in regard to the time and meeting schedule, formal requirements, and responsibilities.
Digitallotse 2	2	Yes	Tech4Germany set the basic rules in regard to the time and meeting schedule, but the collaboration with the Fellows was in general very freely organised.
Digitallotse 3	1	Yes	Tech4Germany set the basic rules in regard to the time and meeting schedule and structured the collaboration.
Fellow 1	2	Yes	Tech4Germany set the basic rules in regard to the time and meeting schedule and responsibilities.
Fellow 2	4	Yes	Tech4Germany defined the responsibilities and set the basic frame of the project. There were no fixed rules regarding the collaboration prescribed by Tech4Germany, but they were developed within the project team.
Fellow 3	1	Yes	Tech4Germany set the basic structure and time schedule but the end-result was not prescribed in form of a fixed contract.
Total	**13**		

Code 10 – Generation of innovative ideas

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	0	-	-
Digitallotse 2	1	Yes	The clash of cultures led to more innovative ideas.
Digitallotse 3	1	Yes	If people with diverse backgrounds work together, the developed product is more innovative.
Fellow 1	1	Yes	The developed prototype is an innovation for the ministry.
Fellow 2	2	Yes	The interdisciplinarity allowed to develop an innovative solution.
Fellow 3	2	Yes	Without the collaboration with the Fellows, the solution would have been less innovative.
Total	**7**		

Code Group 02 – Mutual and Transformative Learning

Code 11 – Mutual Learning: Digitallotsen

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	10	Yes	S/he did not learn new technical skills (because she already has advanced IT-skills) but s/he acquired new methodological competencies, workshop formats and digital tools that s/he continued to use afterwards.
Digitallotse 2	6	Yes	S/he did not learn new technical skills (because s/he is not interested in IT) but methodological competencies, particularly user-centric problem-solving and design thinking.
Digitallotse 3	3	Partly	Generally, s/he already knew the methods (user-design etc.) before the project, but s/he expanded the skills as it was the first time s/he applied them in a real project. S/he did not learn new technical skills (because the time was not sufficient).
Fellow 1	3	Partly	The willingness to learn differed among the Digitallotsen: two were eager to learn, one rejected to participate in workshops and use new methods.
Fellow 2	2	Partly	The willingness to learn differed among the Digitallotsen: one group did not learn something as they felt they already know everything, a second group leaned many new but rather basic skills, a third group with former knowledge acquired very concrete new methodological skills.
Fellow 3	1	Yes	The Digitallotsen were eager to learn new methods and tools from the Fellows.
Total	**25**		

Code 12 – Mutual Learning: Fellows

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	n.a.	n.a.	n.a.
Digitallotse 2	n.a.	n.a.	n.a.
Digitallotse 3	n.a.	n.a.	n.a.
Fellow 1	2	Yes	S/he learned a lot about the procedures in public organisations.
Fellow 2	8	Yes	S/he learned a lot about the procedures in public organisations and how the state works. Additionally, s/he learned new skills from the other Fellows.
Fellow 3	1	Yes	S/he learned a lot about the procedures in public organisations. Additionally, s/he learned new skills in the workshops of Tech4Germany, particularly project management and communication.
Total	**11**		

Code 13 – Transformative Learning: Digitallotsen

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	6	Yes	S/he learned how to approach an innovation project as an agile and open-ended project. S/he did not experience a mindset shift since s/he was already open-minded towards digital innovations.
Digitallotse 2	11	Yes	S/he learned to approach an innovation project from a user-centric perspective and the workshops contributed to break with the gridlocked administrative thinking.
Digitallotse 3	3	No	S/he did not experience a mindset shift since s/he was already open-minded towards digital innovations and knew modern innovation approaches before the project.
Fellow 1	1	No	There was no mindset shift as the Digitallotsen were already open-minded towards digital innovations and modern working methods before the project.
Fellow 2	12	Partly	A mindset shift was observable as the Digitallotsen got to know new ways of approaching an innovation project, but it takes more than three months to fully adapt a design thinking mindset.
Fellow 3	1	Partly	A mindset shift was observable as the Digitallotsen got to know new ways of approaching an innovation project, but it takes more than three months to fully adapt a design thinking mindset.
Total	**34**		

Code 14 – Transformative Learning: Fellows

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	n.a.	n.a.	n.a.
Digitallotse 2	n.a.	n.a.	n.a.
Digitallotse 3	n.a.	n.a.	n.a.
Fellow 1	2	No	His/her perception of innovations in public organisations did not change but s/he was positively surprised about the strong motivation for change of the public employees.
Fellow 2	2	Yes	S/he experienced a mindset shift away from career and monetary success towards work that has a purpose so s/he now works for the public sector.
Fellow 3	2	No	His/her perception of innovations in public organisations did not change but s/he was positively surprised about the strong motivation for change of the public employees.
Total	**6**		

Code 15 – Development of suitable innovation

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	6	Yes	From a user-perspective, the developed solution was suitable and (potentially) leads to an improvement for the users and public employees.
Digitallotse 2	3	Yes	Without the collaboration, it would have not been possible to develop the innovation. The developed prototype (potentially) leads to an improvement for the users and public employees.
Digitallotse 3	4	Yes	Without the collaboration, it would have not been possible to develop the innovation.
Fellow 1	1	Yes	The collaboration of actors with expertise in regard to the content on the one hand, and technological and methodological skills on the other hand, was essential to develop a suitable innovation.
Fellow 2	4	Yes	The collaboration was essential to develop a suitable innovation as it allowed for a more realistic solution that meets the specific requirements of the public organisation.
Fellow 3	4	Yes	The collaboration of actors with expertise in regard to the content on the one hand, and technological and methodological skills on the other hand, was essential to develop a suitable innovation.
Total	**22**		

Code Group 03 – Joint Ownership

Code 16 – Shared responsibility

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	3	Yes	S/he and the other Digitallotsen were committed to the success of the project and took action to implement the prototype afterwards.
Digitallotse 2	3	Yes	S/he felt strongly responsible for the project.
Digitallotse 3	3	Yes	S/he felt a lot more responsible for the project than if it was a relationship with an external IT-provider.
Fellow 1	4	Yes	Everybody was responsible for the success of the project and the implementation of the prototype was only possible because the Digitallotsen were strongly dedicated.
Fellow 2	2	Yes	The whole team was responsible for the success of the project.
Fellow 3	2	Yes	The Fellows and Digitallotsen were equally responsible for the success of the project.
Total	**17**		

Code 17 – Decision-making

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	1	Yes	Decisions were mostly made consensual.
Digitallotse 2	0	-	-
Digitallotse 3	0	-	-
Fellow 1	2	Yes	Important decisions were made together with all team members (Fellows and Digitallotsen).
Fellow 2	3	Yes	Decisions were made together in the team (Fellows and Digitallotsen) and mostly consensual.
Fellow 3	0	-	-
Total	**6**		

Code 18 – Degree of implementation resistance

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	3	Yes	S/he personally advocated the implementation of the developed prototype.
Digitallotse 2	14	Yes	S/he personally advocated the implementation of the developed prototype. Concerning the broader stakeholders, the implementation resistance depended on the degree of involvement (the less direct contact points with the project, the higher the implementation resistance).
Digitallotse 3	5	Yes	S/he personally advocated the implementation of the developed prototype. The developed prototype contributed to persuade important decision-makers. Some stakeholders who were not actively involved partly remained sceptic.
Fellow 1	7	Yes	The Digitallotsen advocated the implementation. Further, the collaboration with Tech4Germany directly led to a reduced implementation resistance of the broader stakeholders because the Fellows were able to present a concrete prototype to the relevant decision-makers.
Fellow 2	4	Yes	The Digitallotsen and other involved actors mostly advocated the implementation of the developed prototype.
Fellow 3	5	Yes	The Digitallotsen and other involved actors mostly advocated the implementation of the developed prototype.
Total	**38**		

Code Group 04 – Limitations, challenges and potentials

Code 19 – Conflicts and misunderstandings

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	1	No	There were no conflicts or misunderstandings during the project.
Digitallotse 2	5	Yes	There was a conflict between the Fellows and the Digitallotsen due to divergent opinions about what can be changed. Further, there was disagreement about the communication tools.
Digitallotse 3	1	No	There were no major conflicts or misunderstandings during the project.
Fellow 1	4	Yes	One Digitallotse rejected to participate in the workshops and the divergent vocabulary was a challenge in the beginning. However, both did not fundamentally impair the innovation project.
Fellow 2	5	Yes	There were small conflicts due to the clash of cultures. Further, a conflict occurred because the Fellows decided the aspired solution does not make sense for the specific context which was met with disappointment by some Digitallotsen.
Fellow 3	2	Partly	There were no conflicts with the Digitallotsen but small disagreements with other stakeholders of the ministry about the implementation of the prototype.
Total	**18**		

Code 20 – Limitations of collaboration [inductive code]

Interviewee	Frequency	Concordance with key finding	Key Message
Digitallotse 1	0	-	-
Digitallotse 2	3	Yes	Due to the limited time, the end-product was more a concept than a concrete MVP.
Digitallotse 3	6	Yes	His/her timely capacities were very limited as s/he did the project on top of the daily responsibilities
Fellow 1	3	Yes	The Digitallotsen were very limited in their time as they did the project on top of their daily responsibilities and not all digital tools could be used due to security requirements.
Fellow 2	8	Yes	The Digitallotsen were very limited in their time as they did the project on top of their daily responsibilities and the IT-equipment of the public employees was not sufficient to work together remotely.
Fellow 3	2	Yes	The Digitallotsen were very limited in their time and the end-product was only a prototype but not a fully functioning MVP.
Total	**22**		

Code 21 – Barriers to implementation [inductive code]

Interviewee	Frequency	Concordance with key finding	Key Message
Digitallotse 1	5	Yes	The unique requirements and rules of public organisations cannot be changed by Tech4Germany and remain barriers to the implementation.
Digitallotse 2	1	Yes	The complexity of the IT-system of the public organisation makes the implementation difficult.
Digitallotse 3	0	-	-
Fellow 1	0	-	-
Fellow 2	1	Yes	The unique requirements and rules of public organisations make the implementation difficult.
Fellow 3	2	Yes	Even though the decision-makers generally advocated the developed prototype, no final decision about the implementation was made and the implementation was deferred.
Total	**9**		

Code 22 – Restriction due to pandemic [inductive code]

Interviewee	Frequency	Concordance with key finding	Key Message
Digitallotse 1	5	Yes	The collaboration would have been more fruitful if they took place in real life.
Digitallotse 2	n.a.	n.a.	n.a.
Digitallotse 3	n.a.	n.a.	n.a.
Fellow 1	1	Yes	The collaboration would have been more fruitful if they took place in real life.
Fellow 2	2	Yes	The collaboration would have been more fruitful if they took place in real life.
Fellow 3	n.a.	n.a.	n.a.
Total	**8**		

Code 23 – Impact / Scope of Tech4Germany

Interviewee	Frequency	Concordance with theoretical proposition	Key Message
Digitallotse 1	1	Yes	Tech4Germany is a very important programme to initiate a change of the working methods towards agile innovation projects.
Digitallotse 2	12	Yes	Tech4Germany is a valuable concept that should be continued as it initiates change. However, it was difficult to communicate the new methods to the whole ministry so it will take a long time until real changes are visible.
Digitallotse 3	5	Yes	Tech4Germany is a valuable concept that allows to experiment with new approaches and methods and the co-creative element creates an incentive to participate in innovation projects. Thus, it creates a multiplicator effect.
Fellow 1	4	Yes	It has a stronger impact when young digital experts who have a background in a different branch work on a digital innovation project, than if it would have been implemented internally in the ministry. Further, due to the presentation of the project results, public employees beyond the Digitallotsen became aware of modern working methods.
Fellow 2	2	Yes	The key value of Tech4Germany is that the new approaches and methods are not taught in a training but can be experienced in a real project which is the first important step to initiate change.
Fellow 3	3	Yes	The developed digital innovations themselves will not have a significant impact, but Tech4Germany creates an awareness for digital innovations and modern working methods, also beyond the Digitallotsen (e.g. through the final presentation).
Total	**27**		