

Karlsruhe.App

Your city. Always with you.

The digital and mobile platform
for life in the city



Imprint

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City of Karlsruhe

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Foreword

City apps are nothing new in Germany. However, they are usually limited to specific services (e.g. local public transport) or closely based on a municipal website.

The Karlsruhe.App is different. It combines many of the city's own digital services with a whole range of city-related services from third-party providers on a central platform. This makes it the first of its kind in Germany.

But why create a municipal citizen app at all? How does one launch such a project? How can citizens' wishes be taken into account? What specific obstacles does a city have to overcome to operate such an app? How can citizens' data be handled responsibly? What role does communication play in all of this? And what are the (preliminary) results?

A good two years after the launch of the Karlsruhe.App, it is time to take stock. Based on questions like those listed above, we want to invite our colleagues on an exciting journey, share our experiences and offer suggestions for a dialogue on the challenges of public digitization projects.

Media representatives and interested members of the public are also cordially invited to take an in-depth look behind the scenes of a pioneering project for our city.

"The Karlsruhe.App is the ideal platform to get an overview of all the city's mobile services. The app also acts as a direct line to users. In this way, we can make citizens' digitization requirements visible to the city administration and strategically drive the transformation towards more mobile services."

Nora Kaiber, Head of Strategy and Smart City
City of Karlsruhe | Office for Information Technology and Digitization

"I use the Karlsruhe.App so I always know what's going on in the city! Especially when it comes to events and news. I even knew that I couldn't walk through the Palace Gardens for the KSC match because of the toad migration."

A user of the Karlsruhe.App
(who wished to remain anonymous)



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1. Background

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1.1 Why a municipal citizen app?

Local self-government law in the Federal Republic of Germany stipulates that a municipality has the duty to look after the welfare of its citizens. In Baden-Württemberg, this obligation is defined in the municipal code, for example:

“The municipality shall create the public facilities necessary for the economic, social and cultural well-being of its residents within the limits of its capacity. According to the same principles, residents are entitled to use the municipality’s communal facilities in line with applicable law. (...)”¹

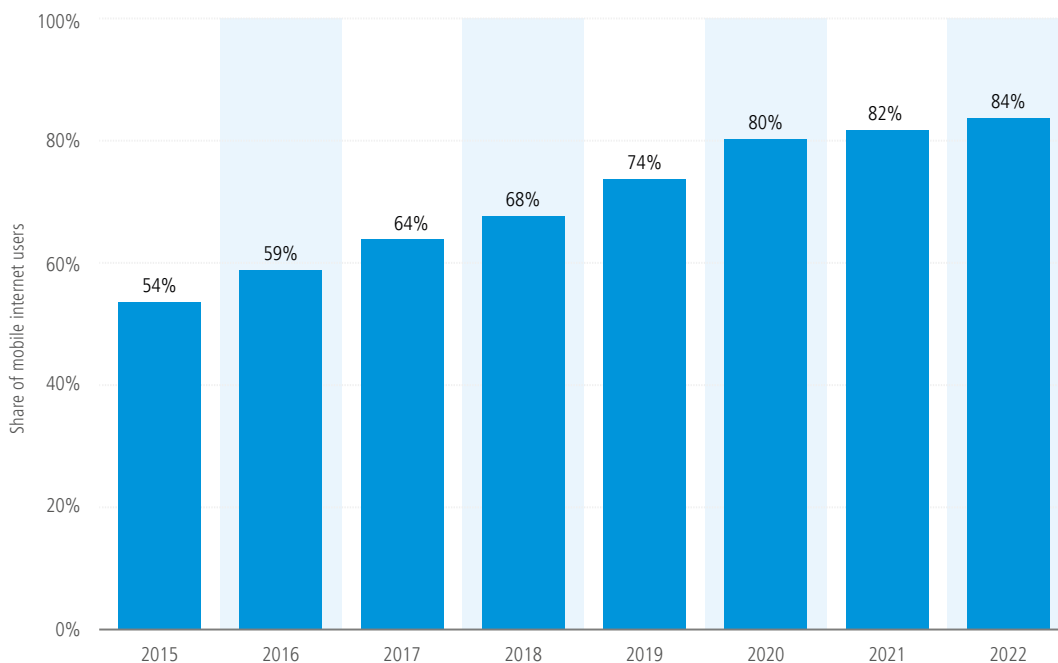
However, there is no long-term definition of the specific scope of these tasks. For example, changing expectations of government, technological developments and many other factors may affect the nature and scope of these obligations.²

Citizen needs evolve

Indeed, people's information behaviour and media use, and therefore their expectations related to information and service provision, have been undergoing profound changes for decades.

The digital transformation has led to city administrations having an online presence offering information, contact options and (to a limited extent so far) digital services. Many of these services have been offered on websites designed to be viewed primarily on desktop computers or laptops.

But the smartphone revolution has radically changed people's browsing habits. While in 2015 the proportion of mobile internet users in Germany was still at 54 per cent, by 2022 it had reached 84 per cent.³



Share of mobile internet users in Germany.

Source: Statista 2023⁴

The introduction of a municipal citizen app can therefore be seen as a contemporary measure taken by a municipality to fulfil its tasks in the face of changing needs and behaviours on the part of its citizens. Projects in this area are closely linked to the concept of a "smart city".

1.2 Karlsruhe and the smart city concept

There is as yet no single definition of a smart city. However, in very simple terms, it can be understood to refer to urban development strategies that aim to leverage connectivity to improve people's quality of life and ensure more efficient use of resources.⁵

As a strong digital location, the City of Karlsruhe committed itself very early on to driving development in this area.

Office for Information Technology and Digitization

In a key step, the City of Karlsruhe established an Office for Information Technology and Digitization in 2017. At the time, it was one of the first of its kind in Germany. Its main task is to combine previously centralized and decentralized IT functions and responsibilities and to make better use of the opportunities offered by digitization. The office is responsible for the following areas:

- Strategy and smart city
- Centralized system and network operation
- E-Government
- Open Government/Open Data
- IT organization
- Centralized IT project management
- Centralized IT purchasing
- IT compliance and information security
- Service and support



Digital strategy of the City of Karlsruhe

In order to provide a structured framework for the digitalization of the city administration and to continuously support the transformation with specific measures and goals, the city also developed a digital strategy for its administration.⁶

Its key points are summarized in a 10-point plan to ensure the most specific and practical approach possible:

1. Support for modern and mobile IT-based work
2. Expansion of the municipal fibre optic network including WLAN
3. Creation of administrative processes with maximum IT integration
4. Introduction of electronic filing and associated workflows
5. Modern, multi-channel citizen services (Online Access Act)
6. Development of an Open Government culture with optimized data management
7. Creation of the Karlsruhe.App
8. Optimization of the IT organization
9. Structured monitoring of the transformation processes in the administration
10. Collaborations at city, state, federal government and international level⁷



Local and international networking

Networking is an important factor in actively shaping digitization. This goes beyond mere technology aspects: at the local level, for example, the karlsruhe.digital initiative brings together IT expertise from science, business, culture and administration in order to jointly set the course for the future. The City of Karlsruhe actively supports the network as a central and collaborative partner.

On an international level, Karlsruhe has since 2020 been the only German city among the “Pioneer Cities” of the World Economic Forum’s G20 Smart City Alliance. Together with other Pioneer Cities, the Office for Information Technology and Digitization is working to establish guidelines for the smart cities of the future.

Institutional anchoring, strategic orientation, networked expertise: this framework provides the prerequisites for launching and successfully implementing digital projects such as a municipal citizen app.



2. From vision to reality: the development phase

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2.1 Status quo before the introduction of the Karlsruhe.App

Prior to December 2020, anyone in Karlsruhe who wanted to use their smartphone to find out about city matters or take advantage of municipal services was confronted with a confusing patchwork of different offerings.

These included the city services available via the mobile internet, such as the website of the City of Karlsruhe, but also a whole range of specific apps and web services – for example, the daycare centre portal, the “Karlsruhe barrierefrei” app, KA-Feedback, KVV.regiomove, the Käppsele app from Stadtwerke Karlsruhe and many more. In addition, a large number of individual city-related services were available from non-city providers.

However, citizens had to specifically search for these offerings in the app stores. Communication measures to promote these at times isolated individual services would have had to be taken for each one separately – and might have been ineffective due to the small budgets involved.

In addition, the city’s “classic” digital services (such as the www.karlsruhe.de website) were primarily designed for use on desktop or laptop computers.

2.2 Tel Aviv and the birth of an idea

Tel Aviv-Jaffa is internationally recognized as a pioneer in terms of municipal digitalization.⁸ In 2017, a delegation from the City of Karlsruhe visited the metropolis to get a first-hand impression of this development.

Among other things, the delegation learned about the city's Digi-Tel Resident's Card programme and the associated digital services. As part of this development, the Tel Aviv city administration had established a wide-ranging digital information channel for citizens, enabling it to deliver personalized content.

The vision behind this digital service inspired the delegates: a municipality that provides continuous digital and mobile support to its citizens. This gave rise to the idea of a municipal citizen app for the city of Karlsruhe.

2.3 The digital@KA project

The basic concept for the future citizen app was developed in 2017/2018 under the working title "digital@KA". The guiding principle at that time was: "Our digital Karlsruhe: the platform that connects the analogue and digital worlds in our city".⁹

The general goal of the project was to establish the app as a permanent interface between the analogue and digital worlds for people, companies and the public administration in Karlsruhe.



Other related objectives were:

- Linkage to “Service-BW” (the digital service portal of the state of Baden-Württemberg) for seamless integration into the overarching e-government processes in Baden-Württemberg
- The formulation of fair and transparent terms of use in the light of the then new General Data Protection Regulation and ensuring the highest IT standards in terms of data security and data ownership are met
- Further intensification of cooperation between IT players in Karlsruhe
- Integration of Karlsruhe’s IT strengths into the state’s digital@bw digitalization strategy
- The subsequent transfer of the knowledge gained during the project to the Karlsruhe technology region and other municipalities in Baden-Württemberg

Protecting the city’s investment was also important – if the city spent money developing apps and other services that no one would know about or use, the investment would be wasted.

Another key factor for the future app was its conception as a platform: its purpose was to provide innovative concepts and methods of digitalization to enable better communication and interaction between the people of Karlsruhe, local businesses and the city – digitalization in the service of the people of Karlsruhe.

E-government technologies, only used in rather rudimentary form to date, were to be complemented by new types of digital services in all areas of life (e.g. mobility, energy supply, trade, education, participation, culture, etc.) in order to achieve greater utilization and clear added value.





Here is an overview of the added value envisaged for citizens at the time¹⁰:

- Overview of all mobile services related to the city
- Centralized access with single sign-on (SSO) via an app¹¹
- Easy-to-use, customizable app
- GDPR-compliant and with the highest IT security standards
- Potential additional use of the services of the state of Baden-Württemberg's Service-BW
- Support for the local economy, e.g. by informing specific target groups of specific offers (based on users' personal preferences)
- Supporting IT start-ups by enabling them to register newly developed apps on the platform and have them tested by "real" users for a limited period of time (use of the platform as an app incubator)

The digital@KA project was recognized as eligible for funding by the Ministry of the Interior, Digitalisation and Migration of the state of Baden-Württemberg as part of the "Digitale Zukunftskommune@bw" grant programme and was supported with 880,000 euros. The application was submitted on 21 December 2017, and the grant notification was received on 3 May 2018.

The project was developed by a consortium including representatives from Karlsruhe's science and business communities as well as the city administration:

Project partner	Role/function
City of Karlsruhe Office for Information Technology and Digitization	Project planning, project coordination, communication, requirements analysis, development of the overall strategy and implementation concept, organizing app tests with end users, development of the operator concept, development of the marketing concept
FZI Research Centre for Information Technology	Conception of infrastructure and interfaces, integration of selected external data sources and third-party systems, implementation of data protection requirements, data protection impact assessment
CyberForum e. V.	Development of the business model
CAS Software AG	Conception and implementation of technical app development, realization and integration of in-app services
YellowMap AG	Conception and implementation of technical app development, integration of map solutions
We Local World AG	Conception and implementation of technical app development, realization and integration of in-app services
ISB AG	Development of the data hub

In 2019, digital@KA was awarded first place in the "Best digitization project in cities and regions" category of the e-government competition.

2.4 Public participation during development

A key requirement of the project was that the future app should be based on people's actual needs and wishes. In the spirit of an "open innovation" approach, end users were actively involved both at the start of the project when the requirements were being determined, and later on during functional and usability testing of the app. The feedback received was used to adapt and optimize the relevant interim results so as to better match citizens' needs.

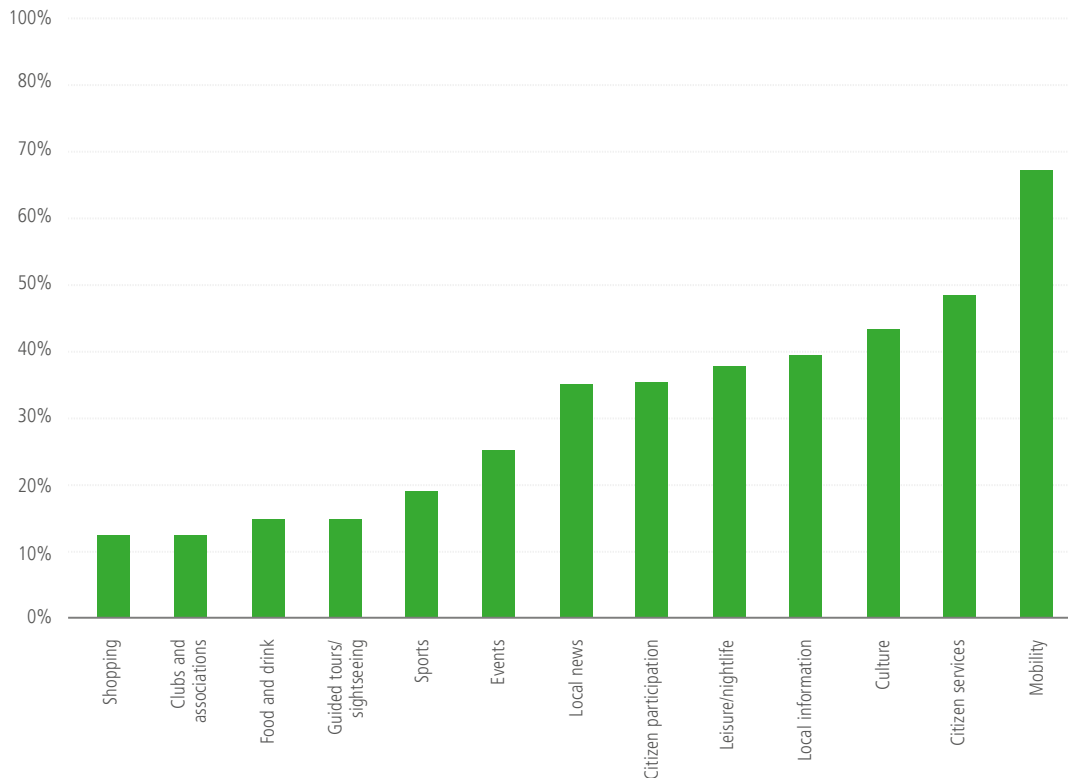
Citizen survey to determine requirements

The City of Karlsruhe conducted its first citizen survey for this project at an early stage. This survey took place from 11 October to 31 November 2019, via an online questionnaire. It was designed to identify citizens' needs, suggestions and ideas for the future citizen app.¹²

The analysis of 762 questionnaires in January 2020 showed, among other things:

- Mobility and citizen services were considered "very important" areas by most respondents
- Security, data protection and single sign-on (SSO) were also important to respondents
- Respondents also wanted the app to provide more local connections and sufficient information on citizen participation processes
- On the other hand, complex decision-making processes via the app were not relevant to respondents

Another insight gained was that existing city apps that covered some of these needs were not very well known.



Sample evaluation of the 2019 citizens' survey:
 "Which of the following topic areas are 'very important' to you?"
 Source: City of Karlsruhe

Proof of technical feasibility

Version 0.1 of the app was used to demonstrate technical feasibility and was therefore only tested by project staff. The focus of the project at this stage was on the software development kit (SDK) created in order to integrate other apps as in-app features, an interface for integrating external services, and communication between different in-app features as part of a use case. Both the technical feasibility and the usability of the SDK and the interface were demonstrated in this context.

First usability test by municipal staff

The usability test of version 0.2 was conducted in March 2020 by employees of the city administration. At this point, it became clear that the administration did not have sufficient expertise to carry out such tests. It was therefore decided to outsource the further development and implementation of the test concept.

Qualitative usability test by citizens

When completing the questionnaire for the 2019 citizen survey, interested citizens also had the opportunity to volunteer as testers. From a total of 160 interested citizens, 10 were selected as intensive testers.

The corresponding test of version 0.3 took place in October 2020. The testers worked intensively with the app for 60 minutes. They were then asked about their impressions in a qualitative interview. The remaining 150 people were able to provide feedback by completing a detailed questionnaire.

The results of the usability test included the following:

- The app was particularly praised for its clear structure and design, as well as its search and filter options.
- The respondents saw potential for improvement in terms of the general concept of the app, the information on the embedded apps and the limited range of digital city services.

Top Strengths	Top Weaknesses	Top Requests
All city services in a single app	Concept of umbrella app not self-explanatory	Integration in existing ecosystem (calendar entry, ...)
City services create the greatest added value for testers	Language (icons, terms) not self-explanatory	SSO: Transfer of profile data in apps (dates, tickets, ...)
Clear structure and design	App concept not optimized for real user journeys (travel planning, user redirection, ...)	Contextual search with autocomplete
Search and filter functions	(Dis)satisfaction with external services impacts app (especially for city services)	Personalization both automatic, based on use, and manual
Personalization functions	Missing communication on user journey (redirection to website)	Information on city topics outside of the relevant apps (e.g. ZKM overview page without app)

Example of the results of the 2020 usability test.

Source: Kira Tschierschke¹³

The abbreviation SSO stands for "single sign-on" – i.e. the ability to use all services within the app by registering once.

The results of the test and further feedback from users were analysed for feasibility and integrated into subsequent versions of the app.

However, citizen involvement was not limited to the development phase: since the app's launch, users have been invited to submit their requests, criticisms and ideas via the app's feedback function and the landing page at www.karlsruhe.app. Many people have taken advantage of this – and the feedback from citizens is an important driver for the ongoing development of the app. (More on this in chapter 3.3)

3. Launch and ongoing development

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3.1 Finding a name: the basis for citizen-centred communication

The project leaders soon realized that the working title “digital@KA” was too technical, too complex and not self-explanatory enough for a citizen-oriented app. It was often confused with the local karlsruhe.digital initiative. Before the official launch of the app, it was therefore necessary to find a simple and easy-to-understand name for it.

In the end, the city chose the clearest, most concrete and most accessible option: **Karlsruhe.App**.

This name was supplemented by the claim „**Deine Stadt. Immer dabei**“. “Your city. Always with you.”) This laid the foundation for simple and low-key communication of the app. (More on the communication of the Karlsruhe.App in chapter 4.5).

3.2 Launch as a minimum viable product

In December 2021, the time had finally come: the Karlsruhe.App was released and immediately available for download in app stores.

The app was deliberately launched as a minimum viable product. The purpose of this basic version was to get feedback from users as quickly as possible, to ensure that further development was closely and consistently aligned with citizens' actual needs.

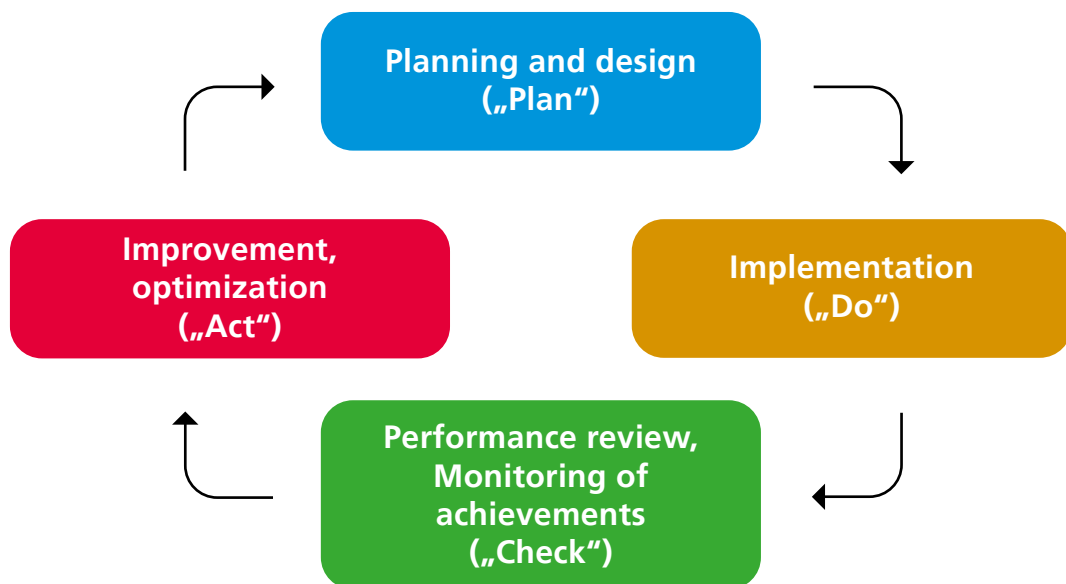
The launch version of the app contained an initial selection of applications with digital services from the city and a series of information channels. These channels were designed to showcase the app's capabilities, whet people's appetite for more and, most importantly, invite citizens to get involved. After all, the idea was that the app should be developed not just **for** people, but in consultation **with** them.

However, launching the app as a minimum viable product also created misunderstandings among some users and the media who saw it not as a starting point for further development, but as a finished product. However, PR statements and rapid, tangible improvements in the app's performance ensured that this perception changed during the early stages.



3.3 Further development based on citizen feedback

Product management was guided by Agile principles in the continuous improvement of the app. The key was (and is) the use of an iterative approach: instead of defining all aspects of a product at an early stage of the project and completing it accordingly, people start with a preliminary result (such as a minimum viable product). By involving users, obtaining their feedback and analysing user acceptance, it is then possible to specify the product step by step in iterative cycles to ensure that it meets people's real needs.



Agile project management: the Plan-Do-Check-Act (PDCA) cycle for continuous improvement.
Source: Federal Office for Security and Information Technology¹⁵

To this end, a feedback function was prominently placed on the home page of the app. This was (and still is) used a lot. In the first year alone, 16 new apps (“add-ins”), 21 new channels and numerous new features were added. Many of these were the result of user suggestions. Perhaps the most important innovation was the introduction of a completely new section: the digital events calendar (“Events”), which went live in April 2022. This was something that citizens had asked for.

Because of the shared digital platform and its capabilities, the app project also provided (and continues to provide) an impetus for cross-departmental collaboration within the city government. Examples of this include the creation of a closed channel as part of the City of Karlsruhe’s “Hausmesse” in-house exhibition or the “Sportkompass” developed jointly with the Office for Real Estate. The latter enables interested residents to use an interactive map to discover all the sports facilities, sports clubs and types of sport that are available in their neighbourhood.

The momentum of the first year continued unabated in 2023. Among new developments that deserve special mention are the neighbourhood associations, which are increasingly represented in the app with their own channels, and the presence of citizens’ initiatives such as the “Klimabündnis Karlsruhe” climate initiative. With 36 channels, 34 add-ins (as of the end of 2023) and a continuously growing calendar of events, the Karlsruhe.App increasingly reflects the diversity of the city and its residents.

For future developments see Outlook (chapter 5).

3.4 Special challenges in the realization of a city app

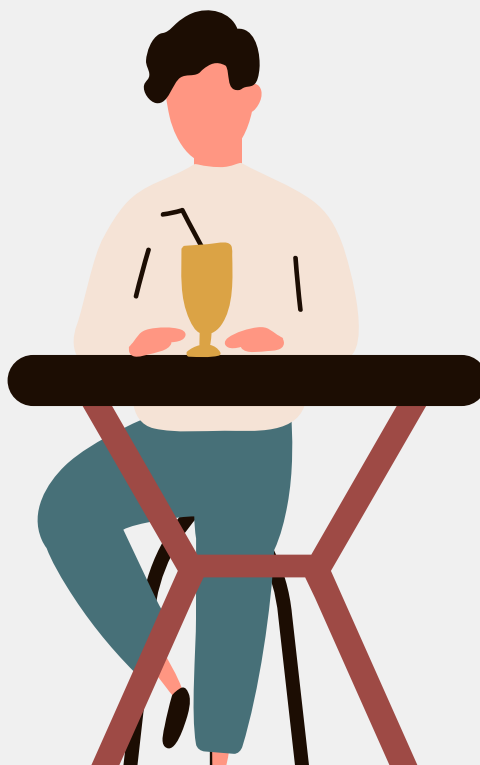
When a company develops an app, it can basically do what it wants, as long as its plans comply with the law (and are technically feasible). A local authority, on the other hand, also has to comply with constraints imposed by administrative law, administrative procedures and the political environment – things that are completely irrelevant to businesses. Here are a few examples of the special challenges that those responsible faced (and still face) during the development, operation and continuous improvement of the Karlsruhe.App:

Integration of third-party providers: the app as a “virtual public institution”

One of the aims of the Karlsruhe.App project was to provide a digital platform for third-party providers such as clubs, associations, companies and IT start-ups. However, during the project planning phase, there was still no basis in administrative law for concluding contracts or regulating fees, for example.

Administrative experts and lawyers from the City of Karlsruhe did pioneering work in this area. They took their cue from analogue models such as the city's Christmas Market. The solution: as a “digital public institution” in the sense of the Baden-Württemberg Municipal Code (Section 10 (2)), the app now creates a virtual space for information offerings and digital services provided by the City of Karlsruhe and companies associated with it, as well as state and private organizations and companies.

The principle: the City of Karlsruhe defines access criteria, terms of service and fees, provides a virtual space and creates visibility. And in accordance with the conditions defined in the terms of service (and the technical possibilities), third-party providers can now use and design this virtual space in a personalized way.



Legal limits: the single sign-on example

However, for some of the app's key requirements no solution has been found to date. For example, a single sign-on (SSO) function was originally planned as an important added value for the Karlsruhe.App. All services on the platform were to be available to users after a one-time registration. However, the state of Baden-Württemberg had concerns about this in terms of data protection and information security. An SSO function can now only be introduced once the data protection situation has been clarified at state level.

Dependence on higher authorities

The SSO example shows that, despite the principle of subsidiarity, a municipality is dependent on higher authorities. For issues that need to be regulated at state or federal level, or for digital government services that fall within the purview of the state or federal government, the local authority has to wait until political decisions and legislation at the relevant level have been finalized.

Even for services that are actually the responsibility of the local authority, it may make sense to keep an eye on the legislative situation at state or federal level: if solutions to certain problems are currently being worked on there, it is not advisable to go it alone – and risk being forced to make costly adjustments later on.

Decision-making within the municipal framework

The operator of the Karlsruhe.App is the City of Karlsruhe, which has a duty to serve its citizens. This means that certain decisions – e.g. on provider contracts – cannot simply be taken unilaterally. They must be democratically legitimized and have a majority in the city council.

Special duties of a municipality

Local authorities work in the public interest and are obliged to act in accordance with the law (e.g. with regard to data protection). Unlike other platforms, the Karlsruhe.App cannot finance itself through advertising, for example. This also has an impact on the reach of the digital services. It means that the focus cannot be on reaching all Karlsruhe residents with all of the app's offerings. Rather, it is about digitizing processes – and addressing the most relevant target groups for each offer.

Limited budgetary room for manoeuvre

Local authorities are legally obliged to manage their budgets economically and efficiently.¹⁶ Of course, this also applies to the Karlsruhe.App. While the development of the app was subsidized by a project of the state of Baden-Württemberg, since its launch it has had to make do with a very limited budget. Among other things, this means that all management, organizational, communication, coordination and approval tasks are in the hands of a single full-time employee.

Compared to conventional apps, the development and operation of a municipal citizen app is therefore subject to very special conditions. But what are the (preliminary) results?



4. The Karlsruhe.App in detail

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4.1 Basic concept and features

The basic concept of the Karlsruhe.App rests on four pillars:

1. Its conception as a platform and digital “umbrella” for services of urban and peri-urban providers
2. The central requirement to create benefits for as many citizens as possible
3. The ability to select content according to individual preferences
4. Its contribution to democratic participation

Platform principle

Urban and city-related topics, offers and services are so diverse and require such specific expertise that it would be difficult for a single content provider to cover them all in one app. However, at the time the Karlsruhe.App was launched, a wide range of municipal apps and city-related apps were already in existence. These did not need to be “reinvented” at great expense for a new, comprehensive app. In addition, a city is not a monolith but characterized above all by its diversity ...

These insights led to the early decision that the Karlsruhe.App should be developed according to the platform concept. Hence it now bundles and channels numerous city-related services, offers, information channels and event data.

As the app's operator, the City of Karlsruhe curates the providers with a focus on the public good, provides the technical framework and a standardized user interface, coordinates the relevant projects and uses communication measures to give the app the necessary reach. The technical implementation is in the hands of the city's technology partner, CAS Software AG.





Inclusivity

A city exists for all its citizens. The same naturally applies to a city app. This means first of all that it must be accessible to as many smartphone owners as possible. The app is designed for both the Android and iOS operating systems and is available for download in the App Store and on Google Play. It also runs on older versions of these operating systems (Android 6.0 or higher, iOS 12.4 or higher).

The structure, design and usability of the app are correspondingly simple, clear and user-friendly. Above all, the content is designed to provide added value in everyday life for people with a wide range of needs and interests. Finally, the app is a way for the city administration to connect with citizens who do not primarily get their information from traditional media.

For those for whom this is still too high a hurdle, the city of course continues to offer analogue or PC-based information and dialogue opportunities, for example in the form of the regularly published city newspaper "StadtZeitung" and the city website www.karlsruhe.de.

Individualization

An app for everyone – without having to register. But not everyone is interested in everything! The wide range of content available means that users need to be able to define personal preferences. This is why they can use filter functions to customize the content of all sections of the app according to their personal interests. As a result, no two Karlsruhe.Apps installed on smartphones are exactly the same.

Digital democracy in practice

Another key aim of the app is to leverage content to promote democratic participation: in the city channels and add-ins as well as in the channels of the individual city districts, citizens can quickly find transparent and up-to-date information on decision-making processes and municipal activities. Numerous associations and initiatives also find a platform here to present their positions.

The presence of independent media such as the Badische Neueste Nachrichten or the city magazine INKA also enables people to form their own opinions on the issues of the day. It goes without saying that the app is open to critical or controversial views.

Digital public services

With the Karlsruhe.App, the city administration extends its public-service commitment to the digital sphere. The app's services represent a trustworthy, secure and fully data-protection-compliant (see section 4.4) alternative to commercially operated platforms – without any obligation to register.

4.2 Structure and contents

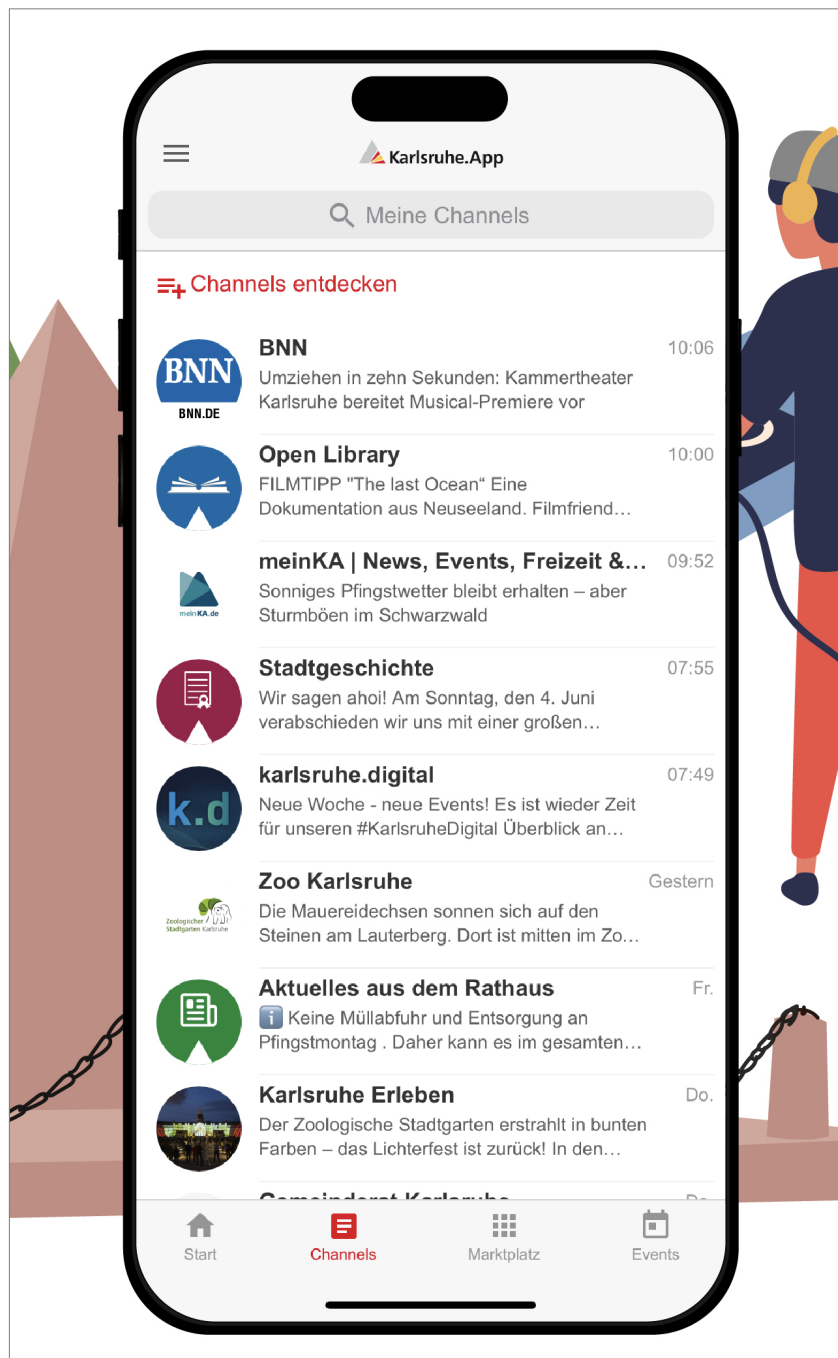
For maximum ease of use, the Karlsruhe.App is divided into just three sections: Channels, Marketplace and Events. Within these sections, users have the option of viewing the individual offers in their entirety or filtered according to topic categories (e.g. Culture and Leisure or Mobility and Maps). As described in section 4.1, they can then compile their preferred content and update their selection criteria at any time.



Home page of the app with the three main sections Channels, Marketplace and Events

Channels

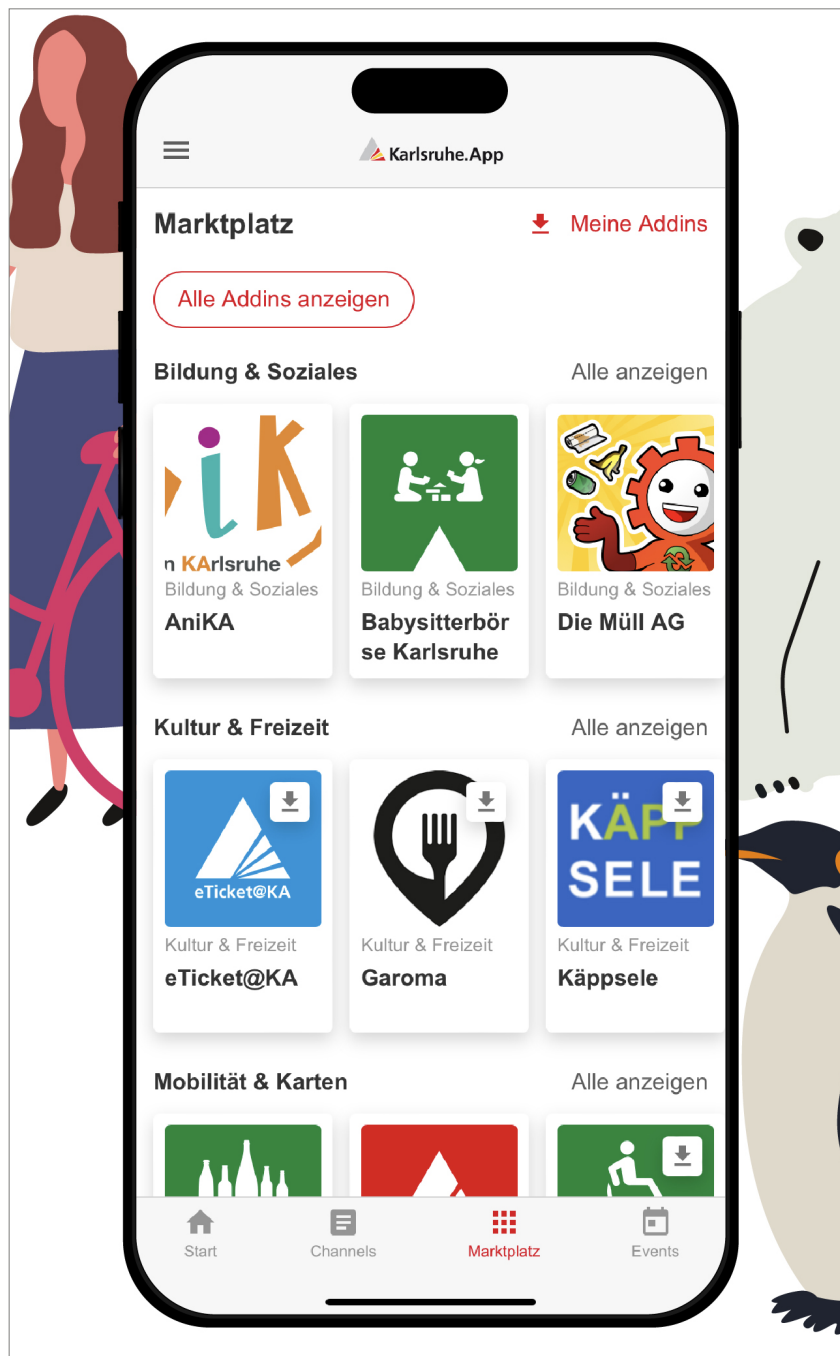
The Channels section offers a wide range of information channels with Karlsruhe news from many different subject areas. For better orientation, the channels are divided into the following segments: Education and Social Affairs, Culture and Leisure, News, City and Town Hall, Environment and Climate, Business and Science. Users can combine their favourite channels to create their personal news feed. They can also choose to receive news from selected channels as push notifications.



Example of an individual channel selection

Marketplace

The Marketplace section contains numerous city-related apps and services (“add-ins”). These include municipal services for citizens as well as many other services from the areas of Education and Social Affairs, Culture and Leisure, Mobility and Maps, City and Town Hall, City Library, Start-ups, Business and Science. The add-ins can also be filtered according to individual interests.



Example of the Marketplace in the Karlsruhe.App

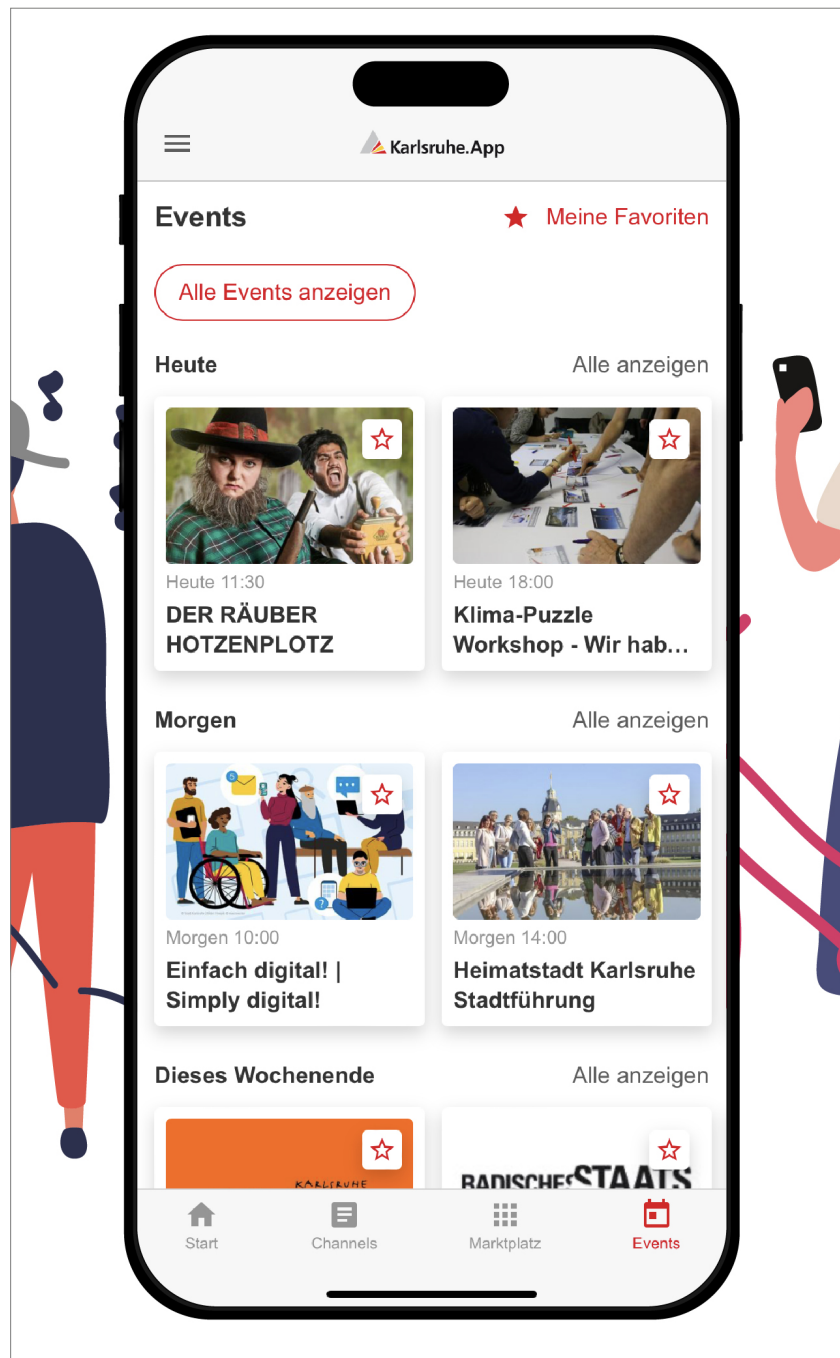
Events

Events is the city's digital calendar of events. Here, citizens can find information on current events from all areas of city life, compiled according to their preferences:

- Architecture and Construction
- Food and Drink
- Art and Exhibitions
- Literature and Talks
- Trade Fairs and Congresses
- Music
- Sport
- City Life
- Theatre and Dance
- Business and Science

A random sample taken on 30 January 2024 showed a total of 46 events for a single "normal" weekday.





Example of event selection

Offers from third-party providers

All sections of the app are open to municipal organizations and other providers. Third parties (e.g. non-profit organizations, institutions, associations, educational establishments, companies or start-ups) can also have their content represented in the app.

The City of Karlsruhe reserves the right to decide on the access of providers to the Karlsruhe.App (see also section 3.4). In addition to local relevance and the basic requirement that the content comply with the law, the City requires that the presence in the app represents a specific application and offers added value for users.

Direct advertising, on the other hand, is not possible. Only start-ups receive special support within the app: they are given an opportunity to place content that is not directly related to a specific offer – such as a company profile, website or similar – within the app.





The offers and services of the Karlsruhe.App at a glance

The following overview is a snapshot of all the services included in the Karlsruhe.App (as of February 2024). New offers and services are constantly being added.

Channels

City administration		Private sector	
News from the town hall	Karlsruhe municipal council	Badische Neueste Nachrichten	ka-news
Construction in Karlsruhe	KA.sustainable	Badische Neueste Nachrichten KSC	ka-news KSC
Community Channel	Culture in Karlsruhe	Durlacher.de	ka-news Culture
The situation in Karlsruhe	My green city	GAROMA	myKA
Durlach News	City history	INKA City Magazine	

Associations and initiatives	
Badischer Sportbund	Weierfeld-Dammerstock Citizens' Association
Südstadt Citizens' Society	Weststadt Citizens' Association
Bulach Citizens' Association	karlsruhe.digital
Daxlanden Citizens' Association	Climate Alliance Karlsruhe
Grünwinkel Citizens' Association	Nehemiah Initiative Karlsruhe
Rintheim Citizens' Association	technika Karlsruhe Technology Initiative

Municipal facilities		Educational institutions	
Experience Karlsruhe	Karlsruhe Zoo	FZI News	Experience science
Karlsruhe City Library			

Marketplace

City administration

Covid-19 News	Daycare centre portal
Glass recycling	MitMach-Zentrale Karlsruhe
AniKA	Mobility portal
App feedback	Bulky waste
Babysitter exchange Karlsruhe	Sportkompass Karlsruhe
Citizen participation	City map for hot days
CO2 down app	StadtZeitung city newspaper
eService	Transparency portal
eTicket@KA	Wedding calendar City of Karlsruhe
KA feedback	Virtual lost property office
KA GeoApp	Being prepared for power and gas outages
karlsruhe.barrierefrei	

Municipal facilities

Die Müll AG	KVV.regiomove
Käppsele	Musikalische Bildung
Karlsruhe City Library – Brockhaus	Karlsruhe City Library – Online catalogue
Karlsruhe City Library - statista	Karlsruhe City Library - Duden

Private sector

GAROMA	Startups Karlsruhe
--------	--------------------

Educational institutions

We-Research Digital

Events

Kategorien	
Architecture and Construction	Music
Food and Drink	Sport
Art and Exhibitions	City Life
Literature and Talks	Theatre and Dance
Trade Fairs and Congresses	Business and Science

In the „Events“ section, both municipal and non-municipal providers can place their current event announcements. An overview of the event categories can be found on p. 44.

4.3 Technical background

The app is based on the We.Network app framework of City of Karlsruhe technology partner CAS Software AG.¹⁷ This is a modular approach that keeps maintenance and support lean and is able to integrate a lot of external content. The underlying technologies are all licence-free open-source components.

The umbrella app is hosted by the Karlsruhe data centre TelemaxX using a Kubernetes cluster. By way of background, modern digital applications consist of a large number of individual microservices that are organized in so-called “containers”. The open-source platform Kubernetes (“k8s”) ensures the automated management, coordination and monitoring of these containers. This solution is considered to be particularly scalable, efficient and reliable.¹⁸

4.4 Karlsruhe.App data protection aspects

As a municipality, the City of Karlsruhe has a special responsibility for information security and the protection of its citizens' personal data. The following rules and precautions ensure that data management in connection with the Karlsruhe.App is secure and fair.

Data protection: City of Karlsruhe

When using the Karlsruhe.App, personal data is processed exclusively in accordance with statutory provisions (EU General Data Protection Regulation (GDPR), Telemedia Act (TMG), Federal Data Protection Act (BDSG), Baden-Württemberg State Data Protection Act (LDSG), Interstate Broadcasting Treaty (RStV)).

The specific rights of users with regard to data ownership and informational self-determination are also defined by the data protection regulations of the City of Karlsruhe.¹⁹

In order to grant citizens a particularly high degree of informational self-determination, the Karlsruhe.App can be used in two ways:

- All read privileges related to the services of the Karlsruhe.App can be used completely anonymously and without registration.
- However, in order to use write privileges and actively participate in the Karlsruhe.App (e.g. in surveys), registration is required. Users are verified via a code sent by SMS.

The data collected during the registration process comprises:

- Last name
- First name
- Mobile phone number
- Optional: e-mail address

This personal data is stored on the basis of the user contract, in order to enable the performance of the contract (Article 6(1)(b) EU GDPR). The IP addresses that are processed when the app is accessed are not stored.

Once a person has deleted their account, the data entered for registration will also be deleted after a maximum of six months. Session data is only collected in anonymous form and to improve the app.

Data protection: technology partners

Both the Karlsruhe.App framework and the data centre responsible for hosting are certified in accordance with the **fair.digital** standard.²⁰ This regional initiative defines itself as a counter-movement to “surveillance capitalism”.

Three principles take centre stage:

Data protection: Certified products and services fully and consistently implement the European General Data Protection Regulation (EU GDPR).

Transparency: Data settings and contact options are transparent to users. Terms of service are easy to understand and publicly available.

Fairness: Users’ ownership of their personal data is respected. As little user data as possible is collected (data minimization) and no data is shared without consent.

The Karlsruhe.App is hosted in the TelemaxX data centre based in Karlsruhe. This ensures that the data remains in Germany and that no one who is not subject to the provisions of European or German law has potential access to the data. The data centre’s information security management system also meets the requirements of the ISO/IEC 27001:2017 standard.²¹

Data in the context of future government services

One goal of the Karlsruhe.App is to add government services (e.g. passport and resident registration) to its portfolio in the future. The fact that the app is operated by the City of Karlsruhe (and not a separate company founded for this purpose) is an important prerequisite for this. It ensures that highly sensitive data remains exclusively with the city administration. The city’s technology partners do not have access to this data and will not have access to it in the future.



4.5 Communication as a key factor

An app is nothing without its users. However, potential users first need to know that the app exists. In the case of municipal apps, hardly anyone actively searches for them. And they don't have high visibility in app stores or social media communities either. In fact, many municipal apps suffer from the problem that few people know about them and usage remains low.

This is why the City of Karlsruhe decided early on that the launch plan for the Karlsruhe.App also needed to include a communications strategy – and allocated a limited budget for this.

Even during the development phase of the app, continuous PR work and a presence at events ensured that the topic was picked up by the local media. When the app went live, the city launched specific promotional activities.

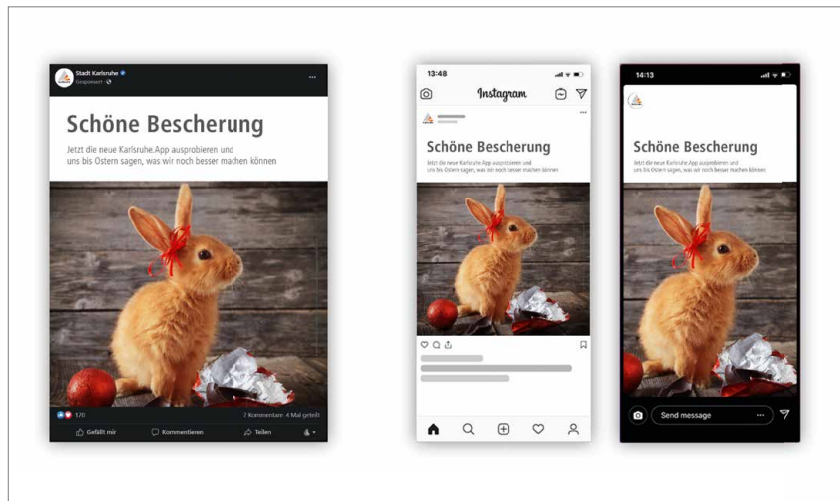
The communications strategy is designed for maximum efficiency: instead of generic advertising, it is based on a target-group-specific selection of messages, media, channels and communication times.

The resulting communications mix involves a consistent background presence in everyday city life and specific highlights in the form of (mainly digital) campaigns and promotional activities in the context of high-profile city events.

Here is an overview of the main campaigns so far:

December 2021: Kick-off campaign for the soft launch

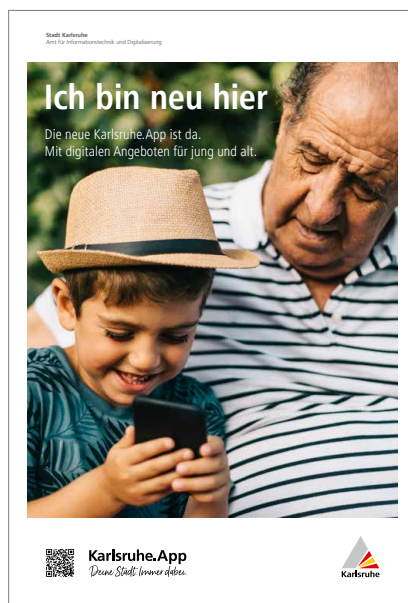
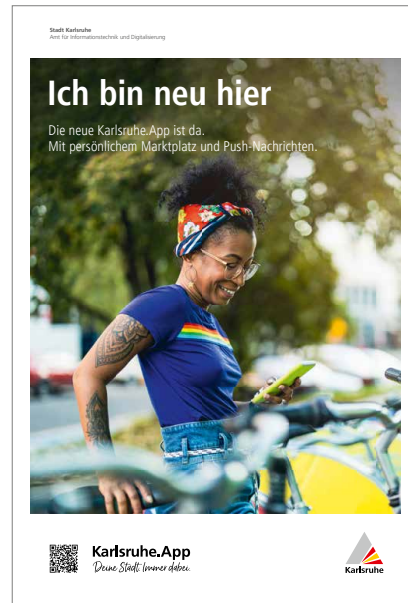
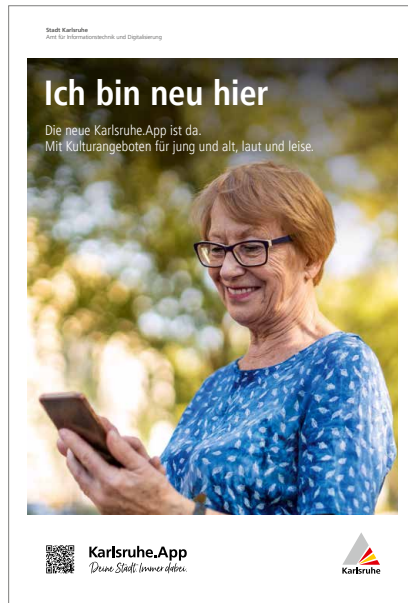
When the app was launched as a minimum viable product (MVP), the launch campaign was deliberately low-key. It invited citizens to familiarize themselves with the app and contribute their ideas.



Motif example: Campaign for the soft launch 2021

Spring 2022: "I'm new here" campaign

A wide range of people motifs were used in a targeted manner online to connect with specific demographics.



Motif examples: Campaign in spring 2022



Examples of small promotional measures in everyday city life: popsockets, bags, smartphone screen cleaners

January 2023: Decals on a Karlsruhe tram

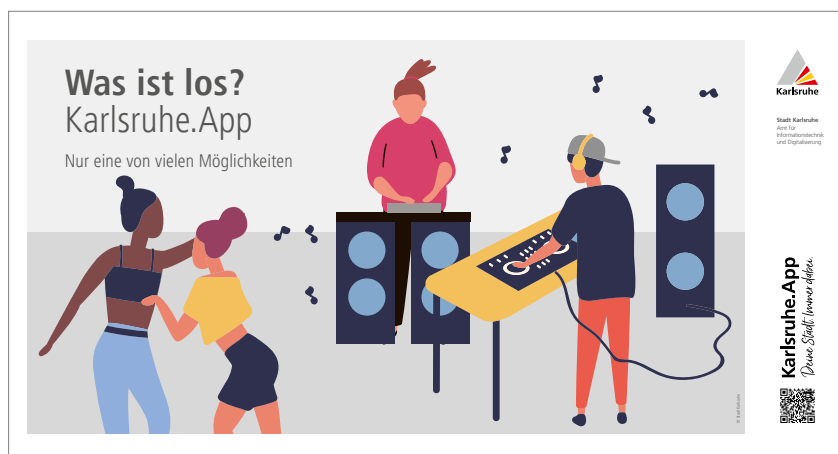
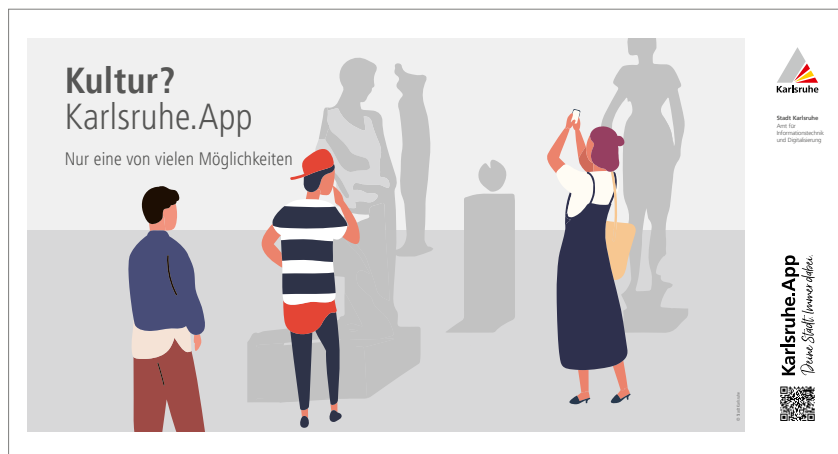
This campaign has made the Karlsruhe.App an everyday sight in the Karlsruhe cityscape.



The Karlsruhe.app as a „companion“ in everyday city life

Sommer 2023

In addition to a digital campaign, the Karlsruhe.App was also present with a video ad and a large-scale construction fence advertisement at DAS FEST, a major Karlsruhe festival.



Motif example: Construction fence wrapping in summer 2023

Winter 2023: Karlsruhe Christmas Market

Visitors were invited to download the app as part of a gingerbread distribution campaign.



Motif example: Gingerbread and flag in winter 2023

Other events

In addition to the promotional activities at DAS FEST and the Karlsruhe Christmas Market, the city also used other events to promote the app. These included the city's "Bunte Nacht der Digitalisierung" festival, the 2022 Indoor Meeting Karlsruhe, the Karlsruhe InnovationFestival and the City of Karlsruhe's in-house exhibition.

The app was also presented to an international expert audience at events like the Smart Country Convention 2023 in Berlin and the Smart City Expo World Congress 2023 in Barcelona.



Motif example: Animation for the Indoor Meeting 2022

Basic measures

- Ongoing maintenance of the landing page at www.karlsruhe.de
- Blog posts (e.g. on the karlsruhe.digital portal)
- PR work and content packages
- General and target-group-specific flyers
- Advertisements in city media
- City Cards (available in Karlsruhe restaurants)
- Competitions (e.g. in cooperation with the Karlsruhe Zoo)
- ...

Stadt Karlsruhe
Amt für Informationstechnik und Digitalisierung

Karlsruhe.App

Deine Stadt. Immer dabei.



Karlsruhe.App
Deine Stadt. Immer dabei.



Motif example: Advertisement in city media

Stadt Karlsruhe
Amt für Informationstechnik und Digitalisierung

eTickets? Karlsruhe.App

Nur eine von vielen Möglichkeiten



© Stadt Karlsruhe | Layout und Bilder: Vögenwagner



Karlsruhe.App
Deine Stadt. Immer dabei.



Stadt Karlsruhe
Amt für Informationstechnik und Digitalisierung

Tierisch gut informiert? Karlsruhe.App

Nur eine von vielen Möglichkeiten



Karlsruhe.App
Deine Stadt. Immer dabei.



Motif example: Facebook ad

Stadtbibliothek? Karlsruhe.App

Nur eine von vielen Möglichkeiten



Altglascontainer? Karlsruhe.App

Nur eine von vielen Möglichkeiten



Babysitterbörse? Karlsruhe.App

Nur eine von vielen Möglichkeiten



eServices? Karlsruhe.App

Nur eine von vielen Möglichkeiten



eTickets? Karlsruhe.App

Nur eine von vielen Möglichkeiten



Events? Karlsruhe.App

Nur eine von vielen Möglichkeiten



KA-Feedback? Karlsruhe.App

Nur eine von vielen Möglichkeiten

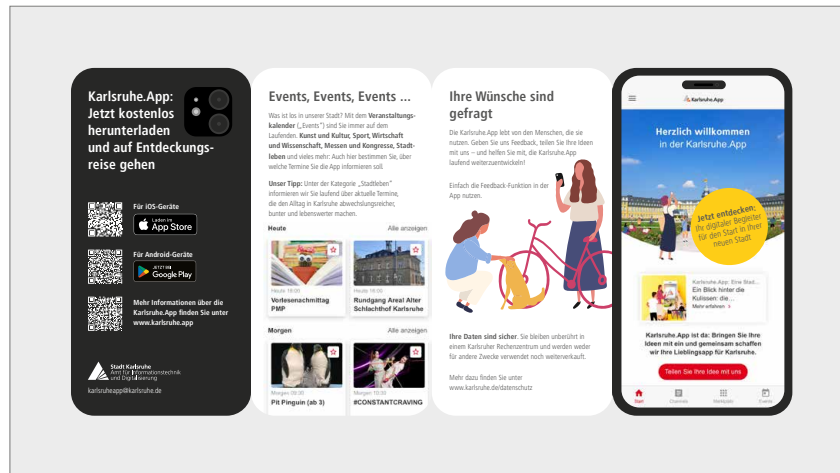


Kultur? Karlsruhe.App

Nur eine von vielen Möglichkeiten



Motif examples: Social media posts



Example: Flyer in smartphone format



„Just the way you like it: the Karlsruhe.app“:
City Cards to take away in Karlsruhe's gastronomy

Marketing workshops

An annual autumn workshop is used to review the achievement of communications objectives, refine the communications strategy and plan campaigns for the coming year.

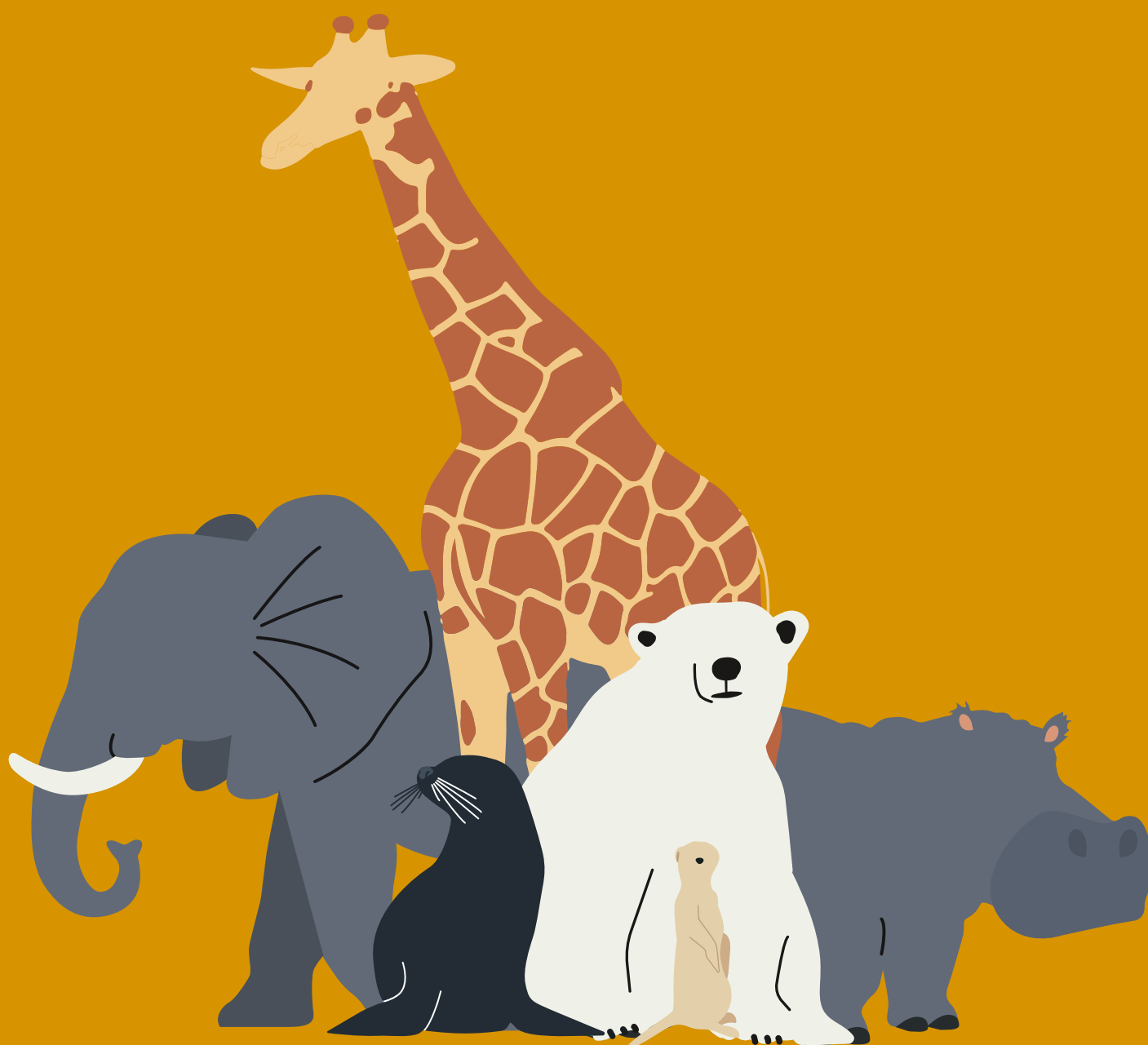
Impact and evaluation of communications measures

The launch of the Karlsruhe.App as a minimum viable product (see section 3.2) ensured that the initial media response was rather muted. As communications measures were deployed in 2022, responses became increasingly positive.

Special PR actions (campaigns, event promotions, tram advertising) regularly lead to a demonstrable increase in downloads. While the number of downloads was still around 3,000 after the launch phase in spring 2022, it had risen to over 15,000 by the end of 2023.



5. Interim conclusion and outlook



The experience gained in the first two years of the Karlsruhe.App has shown that communication and information are fundamental keys to ensuring that a municipal citizen app receives the attention it needs to be able to develop further on the basis of user feedback.

An important lesson learned was the need to communicate the new product in a way people could easily understand. Communicating the app's platform concept helped both users and third-party providers to understand the principle of the Karlsruhe.App.

Since the launch, it has also become clear that fee-based services provided by non-profit third parties can be used to offset costs, enabling non-profit organizations and associations to place their content on the Karlsruhe.App free of charge. This creates additional scope for designing the charitable aspects of the app.

Another lesson learned is that a project designed for continuous growth and improvement needs a certain incubation period in order to develop its own momentum. 2023 was the year when the app really started to pick up speed. The number of downloads rose significantly – and content providers are increasingly approaching the City of Karlsruhe of their own accord.



New target groups – new services

As early as 2023, a number of measures were taken to reach younger audiences in addition to seniors and users with families. This approach will be continued in the future: campaigns to attract students and trainees will e.g. include video content tailored to this target group to promote the app. Moreover, the city is increasingly using partnerships (e.g. with the Karlsruhe Zoo) to reach out to specific demographics.

There will also be measures aimed at new residents. The app offers them an ideal introduction to finding their way around their new home and discovering the many opportunities that city life in Karlsruhe has to offer.

Municipal employees have been identified as another important target group. On the one hand, they can act as persuasive multipliers in their personal environment. On the other hand, they stand to derive specific benefits from certain app features that are yet to be introduced.

These include closed channels with a chat function currently being set up for certain city departments. The aim is to provide employees with a protected and secure communication alternative to commercial chat services such as WhatsApp or Telegram.

In addition to these specific target segments, the team is also working to continually listen to citizens, make improvements, launch new services and attract new providers to support the app's continued growth.

One area is particularly suited to exploiting the strengths of a digital and mobile medium. A number of cases have demonstrated that the app is ideally suited to providing fast and – in contrast to many social media channels – reliable information in the event of a crisis.

Ultimately, an important future goal is to offer the city's official government services through the app. As soon as data protection issues have been fully resolved and the relevant processes are in place, the Karlsruhe.App will add government services to its portfolio.

One of the campaign motifs for the launch of the Karlsruhe.App was a freshly hatched chick. This chick has now "fledged". Having grown up quite a bit, the app is continuing on its way to its ultimate goal: to support the citizens of Karlsruhe as a new, digital embodiment of public welfare.



6. Endnotes

- ¹ Section 10 (2) of the Municipal Code for Baden-Württemberg (GemO).
- ² Cf. <https://www.landeskunde-baden-wuerttemberg.de/aufgaben-kommunen>
- ³ <https://de.statista.com/statistik/daten/studie/633698/umfrage/anteil-der-mobilen-internetnutzer-in-deutschland>
- ⁴ Ibid.
- ⁵ Cf. for example: Landeszentrale für politische Bildung Baden-Württemberg: Smart City - die Stadt der Zukunft. Technologie in der nachhaltigen Stadtentwicklung. In: <https://www.lpb-bw.de/smart-city#c56712> (last update: 2022).
- ⁶ City of Karlsruhe. Office for Information Technology and Digitization: Digitalstrategie der Stadt Karlsruhe. Das Update für die moderne Stadtverwaltung. Karlsruhe 2021.
- ⁷ Ibid, p. 6.
- ⁸ See the strategy paper "Tel Aviv – The Smart City" (n.p., n.d.), p. 16. Download via <https://politicsfortomorrow.notion.site/Tel-Aviv-Smart-City-cece3c6334e44a6dace56eedea8cfb7c>
- ⁹ Markus Losert: Digitale Stadtverwaltung Karlsruhe. Karlsruhe 2019 (presentation). Download via <https://www.zu.de/institute/togi/assets/pdf/Digitales-Karlsruhe-2019.pdf>
- ¹⁰ See Ralf Trunko: digital@KA – Mein einfacher Zugang zu den digitalen Diensten in unserer Stadt. (n.p., n.d.) <https://www.de.digital/DIGITAL/Redaktion/DE/Stadt.Land.Digital/Beitraege/WettbewerbStadtLandDigital/digital-at-ka-mein-einfacher-zugang-zu-den-digitalen-diensten-in-unserer-stadt.html>
- ¹¹ The single sign-on feature has not yet been implemented due to concerns expressed by the state of Baden-Württemberg. For further information, see section 3.4.
- ¹² Cf. <https://beteiligung.karlsruhe.de/content/bbv/details/68/phase/>
- ¹³ Kira Tschierschke, Freelance UX Strategy and User Research.
- ¹⁴ Cf. e.g. <https://agilemanifesto.org/iso/de/manifesto.html>
- ¹⁵ Federal Office for Information Security: BSI Standard 100-1: Bonn 2008. p. 17.
- ¹⁶ Section 77 (2) of the Municipal Code for Baden-Württemberg (GemO).
- ¹⁷ <https://www.we.network/>
- ¹⁸ Find out more at: <https://www.cncf.io/projects/kubernetes/>
- ¹⁹ <https://www.karlsruhe.de/datenschutz>
- ²⁰ Cf.: <https://fair.digital/siegel>; <https://www.we.network>; <https://www.telemaxx.de/ueber-telemaxx/partner/fairdigital>
- ²¹ Cf.: <https://www.telemaxx.de/rechenzentrum/sicherheit/zertifizierungen>. The scope of the certification covers "Housing services" in the TelemaxX data centres IPC 1, IPC 3, IPC 4 and IPC 5.

