FUTR HUB – The center of expertise for urban data

The intelligent digitalization of cities improves the quality of life, saves resources, and makes urban living and management more sustainable. Berlin TXL is assuming a pioneering role for Germany's capital as it moves towards becoming a Smart City. To do this, Berlin TXL's Smart Districts need not only a digital infrastructure, but also places for innovation and a network of partners for the practical and secure use of urban data. The digital infrastructure for Berlin TXL and smart cities worldwide is being developed in the FUTR HUB, the center of expertise for urban data.

Centerpiece of the FUTR HUB: The platform for urban data

The central infrastructure of the FUTR HUB is a data platform that will collect, link, and present urban data. Urban data can be gathered for instance from sensors in building ventilation systems, traffic lights, and charging stations. On the basis of a geodata infrastructure, as is mentioned in the planning documents for Berlin TXL, the system is brought together with an IoT system step by step and then further developed into a comprehensive data platform around issues such as energy, mobility, and smart nature. All urban data are integrated in terms of perspective by Berlin TXL.

Three tasks are paramount for the data platform:

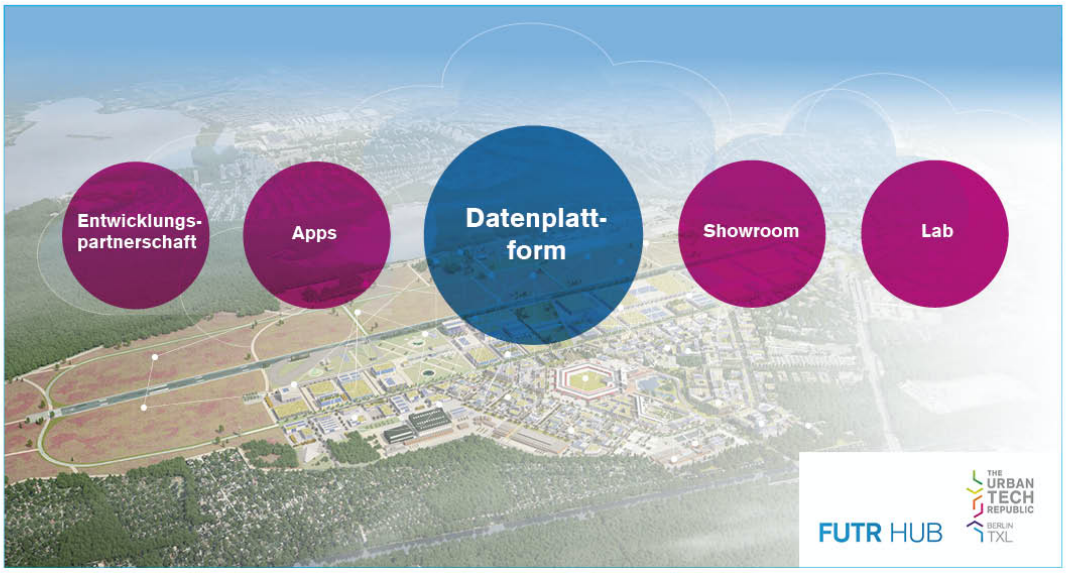
1. As the **digital engine room,** the central data platform of the FUTR HUB is used for the reliable and efficient operation of Berlin TXL. This saves costs and increases user satisfaction – whether those users are tenants in Schumacher Quartier or businesses in the Urban Tech Republic.
2. As an **innovation driver,** the platform promotes the collaborative work by companies on new, data-driven solutions and applications for the Internet of Things (IoT).
3. **Sustainable resource management:** The use of predictive data will support professional users in their decision-making, identify potential savings, and in addition extend the service life of technical facilities, buildings, and infrastructure.

Focal points: Energy, Mobility & Smart Nature

At the beginning of its gradual development, the FUTR HUB will cover three topics essential to Berlin TXL:

- **Energy**: Intelligent networks facilitate the switch to renewable energies. Smart grids coordinate the partly fluctuating production of electricity and heat tailored to consumption needs through data analysis and forecasts.
- **Mobility**: Potential applications are the shared use of mobility services and the needs-based charging of electric vehicles. This is made possible by connecting the data from carsharing and from regular public services to the data platform.
- **Smart Nature**: The TXL Smart Nature pilot project uses the potential of the modern digital age for upkeep, research, and knowledge transfer with regard to green spaces and biodiversity in Tegel's urban heath.

The FUTR HUB as center of expertise



The data platform is Berlin TXL's central technical IT infrastructure. Moreover, it goes without saying that the FUTR HUB will be a comprehensive center of expertise in data solutions. For that reason, it will be absolutely essential to include stakeholders in the FUTR HUB so that entrepreneurs will be able to develop user-oriented value-added services in conjunction with them. With the data platform as the centerpiece, the FUTR HUB comprises five components in all:

Apps: User services for more efficiency, comfort, or even entertainment are the goal of all data applications. Data from Berlin TXL's FUTR HUB make it possible for, say, housing associations, research institutions, and start-ups to develop applications for users or plant management (digital user services). This can be the visualization of energy consumers or the remote maintenance of charging stations, among many other possibilities.

Development partnership: In the digital world innovative business models and applications are mostly developed jointly by several partners. Development partnerships make possible the interoperability of various different technical systems in the district, they ensure synergies and guarantee secure data processing through a coordinated system of data governance for Berlin TXL, as outlined in the guidelines for handling the exchange of data even beyond corporate boundaries. Prototypical development partners are Berlin TXL's suppliers and disposal companies. In addition, a continuous dialog is open for further cooperative endeavors: start-ups, research institutions, and manufacturing.

Showroom: Another participatory feature of the FUTR HUB is a Showroom for members of the public, interested parties, and development partners of the FUTR HUB. It provides information regarding the platform's structure, function, and security, gives demonstrations of user services, and offers development partners the opportunity to exhibit innovative projects.

Lab: The FUTR HUB Lab will become the innovation forge that provides information and communication technologies for the city of the future. The Lab will be composed of two parts: In the Concept Space new ideas and applications will be developed, while the Workshop acts as an environment for the testing of services and technologies that have been created either in the Concept Space or within the framework of the development partnership. The Lab will also serve other participants for exchange purposes: local residents, students, and visitors to Berlin TXL.

Data protection & Participation

Protection of the data and the private sphere of the actors involved is of the highest priority for the FUTR HUB. Data processing and the protection of the digital infrastructure will take place in the FUTR HUB in accordance with high standards. In addition to the encryption of data and of communication channels, sound management of rights and risks is also included.

Residents and companies located in Berlin TXL will have the right to determine the regulation of data collection and use of the data. Easily comprehensible interfaces will be developed to set the various options. Use of the data beyond what is necessary can be opted out with just one click to ensure the best possible user experience and adherence to the data protection principles.

The design of the platform will ensure a high degree of transparency and the general public will be involved. Possible formats for participation include workshops, discussion rounds, hackathons, and lectures in the Lab and in the Showroom of the FUTR HUB. In accordance with the current standards for transparency, the IT infrastructure will be published as open source software – in this way the general public will be able to understand the digital architecture and contribute to shaping it.