Smart City

Solutions for a sustainable city

DB

Transforming the urban environment

Cities and conurbations are facing major challenges arising from ongoing urbanisation. Too many people in Germany still own their own car, and spend an average of 118 hours a year looking for a parking space and 30 hours in traffic jams. These figures are actually rising.

Unsurprisingly, 70 towns and cities in Germany exceed the threshold values for nitrogen oxide as the impact of traffic and fuel emissions is constantly on the rise while residents' quality of life decreases. Two-job families and long commutes make it hard to get the balance between work and leisure time right. Every day, 18.4 million working people cover distances over 50 km when travelling to work, more than ever before. Almost 60% of commuters have to travel to another municipality for their job.

Goal 2030	-50 %	70 %
Status 2017	-30 %	44 %

Creating climate-neutral solutions

Deutsche Bahn is already making a key contribution to sustainable urban transport thanks to its train stations, regional rail services, S-Bahn commuter trains, buses, bike-sharing, car-sharing and logistics services. You can also look at different factors in isolation, for example the company's traction current mix: at present, 42% is generated by renewable energy sources. Starting in 2018, all long-distance trains are powered purely by green energy.

With its ambition to cut specific CO_2 emissions by at least 50% worldwide, Deutsche Bahn has set itself a new climate protection target for 2030. Against this backdrop, the company is expanding its efforts to actively address climate change and its impacts.

Source: Deutsche Bahn AG | DB Umwelt

Third Places

Smart Locker

Coworking

Cargo Bikes

eScooter

On-Demand Shuttle Service

Urban Analytics

Mobility, logistics and stations

People want the products and services they use to be more ecologically sound. At the same time, they also want simple, convenient solutions that meet their needs and that can also be incorporated into their daily habits in a flexible, personal manner. Smart City | DB is Deutsche Bahn's portfolio containing all of the services and offerings that are necessary to create a single, intelligent network between transport infrastructures, mobility and logistics. Rising mobility and logistics demands as a result of urbanisation are clearly part of the problem, so they are also made part of the solution. The goal is to use intelligent and environmentally friendly services to make day-to-day living better for city-dwellers.

Railways are of central importance for setting the pace of change. Everything in the Smart City | DB portfolio focuses on stations and on providing people living in urban areas with customised mobility and logistics solutions for the journeys they make every day. The synergies connecting these products ensure they can become practical additions to existing infrastructures, and they have a particularly important role to play in the first and last miles of a journey.

Smart City | DB views CO_2-free alternatives for mobility and logistics as essential for creating cities worth living in. The portfolio places residents firmly at the heart of every activity, while the interplay between its products transforms stations and their surroundings into focal points for urban living.

On-demand shuttle service

Giving everyone flexible access to mobility – the ioki mission.

Building on mobility analytics, ioki knows the right way to deliver successful on-demand mobility, integrated into existing public transport services and always with an eye to the future of autonomous driving. End customers can use an app to order this dynamic shuttle service when they need it, and it operates without a predefined timetable or routes. As an addition to public transport, ioki represents an intelligent solution for providing transport on the first and last miles of a journey.

ioki is a white label solution that provides a total package, consisting of mobility analysis, an operating system for on-demand mobility, and consulting for planning and launching operations. Vehicle concepts are all designed to complement one another and be combined in a flexible manner.

ioki wants to integrate road and rail more closely and transform road transport into something more efficient and sustainable. This will expand the market for bespoke public mobility and create needs-based offerings for customers that are integrated with public transport in a practical, beneficial manner.

ioki's objective is to deliver smart on-demand mobility solutions. It entails the intelligent utilisation of route and vehicle capacities, making it possible to provide a collective but nevertheless personalised transport experience.

Tour the city on an eScooter

One-click mobility

Electric scooters expand the Smart City | DB mobility offering. eScooter sharing creates a multi-modal link with the on-demand service from ioki. Together, they complement local public transport services for first- and last-mile travel. For example, users can book a shuttle to the station, then board a train to their destinations, and then take an eScooter to ride home at the end of their journey.

Everything is managed via an app, and the eScooter offering matches the individual user's mobility needs by combining the speed of a car with a vehicle that has more reach than a bicycle. And there's more: users will never need to hunt for a parking space.

The two-seater eScooters have a range of up to 60 km and are ideal for short journeys within urban areas or for longer excursions into rural areas beyond the city. The service's free-floating concept means that the vehicles are widely distributed throughout the catchment area, and users can simply drop them off wherever it suits them.

By integrating its products with public transport offerings, Smart City | DB makes a contribution to strengthening the rail sector and sustainable mobility.

Stations as „third places"

Stations function as focal point for urban living

Offerings such as ioki and eScooter sharing make railway stations even more important as mobility hubs. Every year, 2.6 billion people use stations, whether they're taking a train journey, travelling to work or stopping at a shop. In our highly mobile and highly interconnected world, being able to get from A to B becomes a key part of our everyday lives, which means that places of transit have to meet a growing range of expectations. They become sites of encounters, experiences and places to simply spend time.

To create appealing locations in the heart of our towns and cities, Smart City | DB aims to enhance the attractiveness of stations further. Safety and cleanliness are essential if a space is to guarantee quality of experience. Smart City | DB's goal is to generate a positive atmosphere. This entails the use of appropriate colour schemes, lighting and furnishings, and it also includes plans for greenery at stations.

Alongside the enhanced appeal of these sites, the project also focuses on developing and implementing new usage concepts such as co-working, smart lockers and multi-use pop-up spaces. Together, these can turn stations into places that are at the heart of our urban lives.

Co-working at stations

Arrive, start working and meet people

Work anytime and any place – our mobile, digital society needs places that deliver real flexibility for our working needs. Responding to the revolution in the world of employment, Smart City | DB's co-working spaces offer a network of attractive, station-based facilities that include everything from full-scale offices to single desks. The comfortable, flexible and inspiring working spaces provide a welcome addition to conventional working environments (be they at the office or at home),

and they establish co-working as another important element in our third place product.

Available at busy main stations across Germany, co-working spaces are designed to provide business travellers with workstations that match their needs. For project teams, start-ups and entire business units alike, these facilities form a permanent office solution at well-connected sites.

As a smart alternative to co-working within a station building, there are also modular container units located in the surrounding neighbourhood. These are designed primarily for commuters who want to spend a number of days or weeks working close to home and so do away with their daily commutes. These sites are concentrated in the vicinity of commuter stations in suburban areas, and the office units are flexible, ready to use at short notice and environmentally friendly as their physical components can be recycled and repurposed.

The co-working and third place product types are closely interlinked as they have a positive impact on how people perceive the time they spend at stations and serve to enliven the surrounding areas.

Smart lockers – central location, large network

Cross-provider, automated handover points for last-mile services

With total consignments reaching 3.16 billion units, the German market for courier, express and package services saw substantial growth in 2017. In the e-commerce sector alone, sales rose by 10.9% last year. As a result of the ever-growing number of packages and parcels, it often takes several attempts to actually deliver them. Drivers either have to make the same journey twice – or the customer has to plan a trip just to collect or drop off an item.

Smart City | DB opens up a convenient, time-saving way for people to pick up goods and orders as they go about their normal day-to-day activities. If a delivery company uses smart lockers, users can collect their items from the centrally located, customer-specified station whenever it suits them. Smart lockers are ideal for commuters, local residents and people visiting stations. They do away with the need to locate the collection point, and waiting times and restrictive opening hours are also a thing of the past.

Providing this amenity also creates benefits for towns and cities as they can upgrade public transport by adding more services at stations. Bringing different delivery companies' activities together at a single site cuts particulate emissions and creates a neat solution for the last mile of a logistics chain.

Cargo bikes for urban freight services

Emissions-free logistics for the last mile

Just as with personal mobility, the last mile represents the most inefficient link in a logistics chain, and it also poses considerable logistical problems for towns and cities.
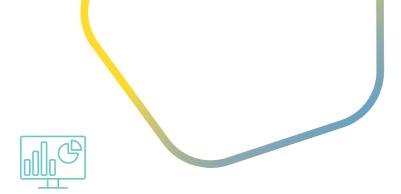
Joining forces with weColli, Smart Cities | DB offers an ecologically sound solution that uses electric-powered cargo bikes to cover the last mile of the distribution process to shops. The digital platform provides customers with a bespoke option for managing deliveries and at the same time eliminate emissions. Capable of transporting as much as 400 kg, the electric vehicles can easily handle large items.

weColli uses the space that already exists at railway stations. Deliveries for locations in the heart of a town or city are channelled to station-based „city hubs" or other city-centre sites, and the cargo bikes then distribute them to the final destinations from there. This makes it possible to design short delivery runs and options for new, customised deliveries.

The weColli platform has an open structure and can integrate local delivery firms. Thanks to this, last-mile delivery services with cargo bikes can be created for multiple logistics companies and dispatchers, even if they are competitors. The efficient pooling of different market participants cuts the use of resources and creates a competitive solution that eases pressure on our city centres.

Urban analytics – the comprehensive data analysis tool

Identifying new potential and promoting continuous improvement

Urban analytics put the finishing touch to the Smart City | DB portfolio. Using a host of datasets (public, mobility, logistics and site-related), it is possible to search for and analyse a range of different locations and service areas to identify optimum features.

These analyses and evaluations use scientifically defined characteristics (e.g. socio-demographic factors) and adjustable parameters (e.g. radius), and their results can be used to generate visuals showing the range of data points. The goal is the advance identification of ecological and economic multipliers and making the synergies between the different types of data visible. The findings can be used to identify improvements and untapped potential that would have remained completely hidden without a visual depiction of the various correlations.

Smart City | DB uses urban analytics to answer a host of questions:

- **Within a radius of 5 km, what is the optimum location for a new cargo bike microdepot?**

- **What stations offer the potential to create a co-working space?**

- **How big can the catchment area be for ioki and eScooter services?**

The analyses and their specific evaluations can be used for in-depth consultancy services for municipalities. At the same time, this approach ensures that products can be integrated with existing structures in a constructive manner that accurately addresses the issue in question.

Imprint

Deutsche Bahn AG
Smart City | PY
Potsdamer Platz 2
10785 Berlin

Status: August 2018

db.de/smartcity

Images: Deutsche Bahn AG

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