COLOGNE VISIONS

WINDOWS
TO THE
FUTURE

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Duration:

4 month

Status:

Delivered to the innovation department of Cologne and examined for a potential pilot implem

As part of the Master research, this work lay the groundwork for the subsequent thesis proecess. Based on a generalized trendresearch, and varying expert interviews. four scenarios were created for the future of Cologne based on

PROCESS

Trendscouting within the
STEEP framework

Local Documents + EU material & expert interviews

SOCIAL
TECHNOLOGICAL
ECOLOGICAL
ECONOMIC
POLITICAL

Deciding on costant and
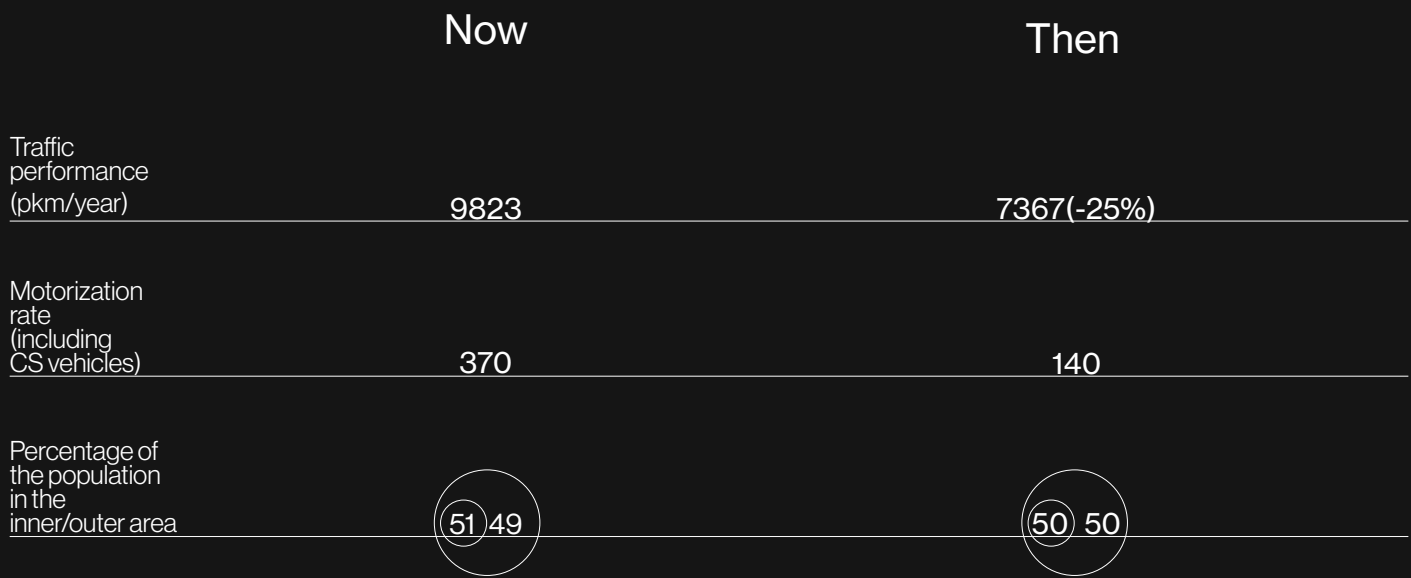variable descriptors, that
scenarios will
be based on

Using A four quadrant
matrix to determine
differnent scopes of
 the scenarios

Iterating on preliminary
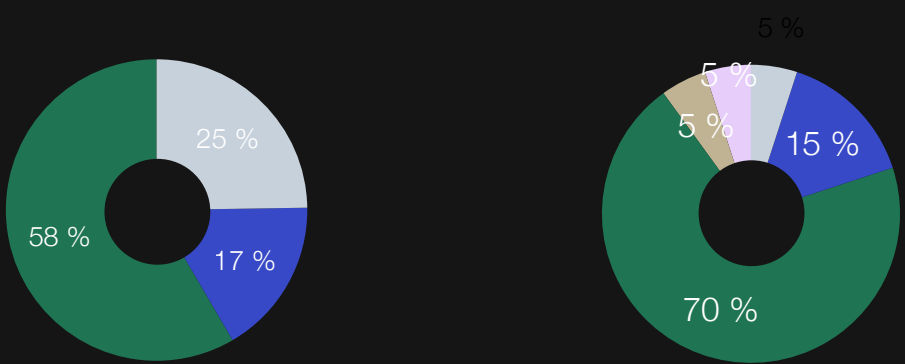scenraioswith experts to
veryfy consistency of
variables
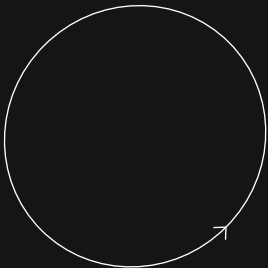
Quantfification of the
scenarios together with
stakeholders of the city.

SOFT COLOGNE

In response to the overconsumption of previous generations, and the consequences of climate change that become increasingly tangible, people opt for a quieter life.
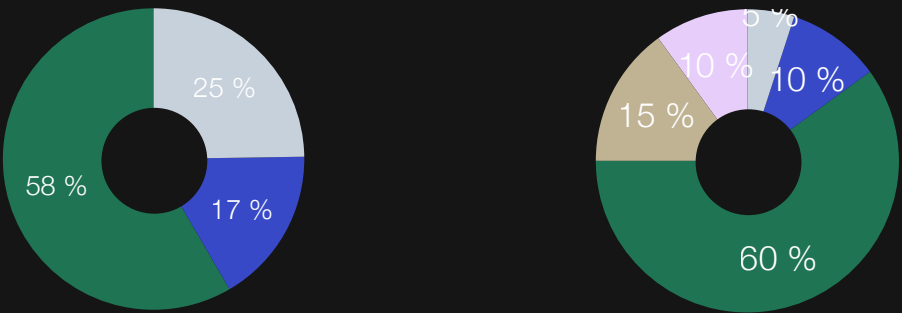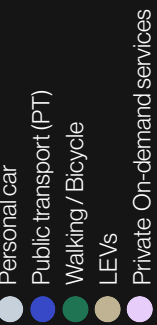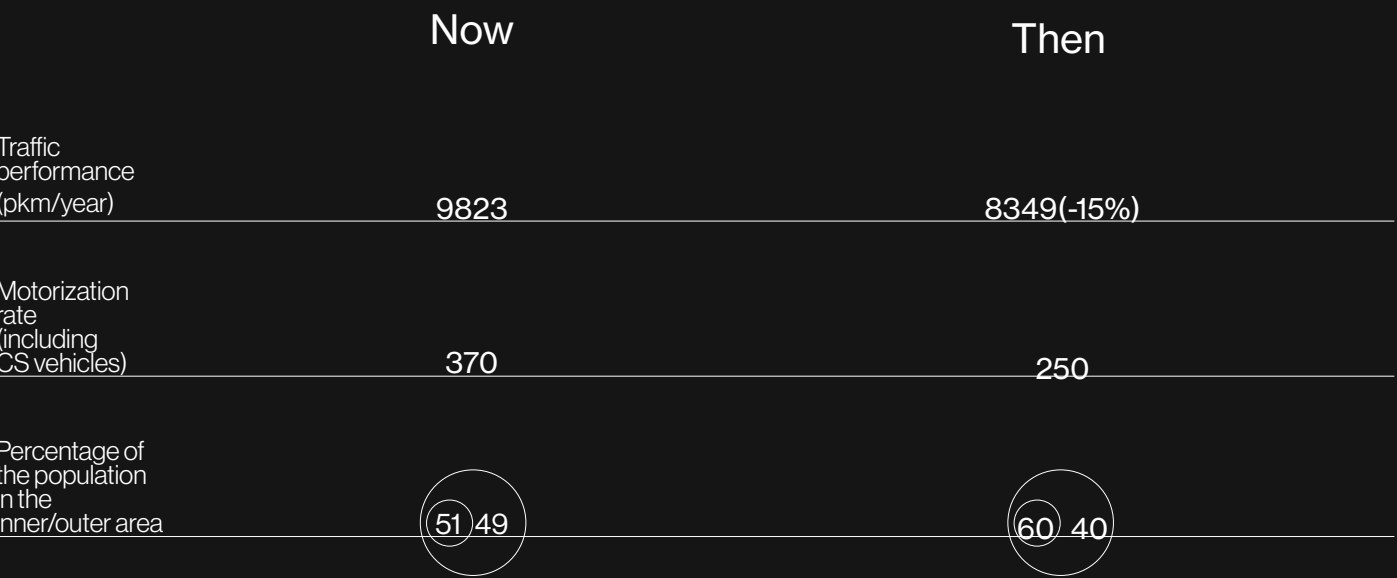
With the desire for more participation and as a counter-movement to the slow, often fragmented administrative processes, people are increasingly organizing themselves in bottom-up initiatives within their neighborhoods. In the spirit of "guerrilla urbanism", changes in public space are implemented quickly and pragmatically, tested in everyday life and evaluated by the community for their benefits.

Communities rent vacant ground floor spaces and transform them into flexible sites with fluid usage options. They combine work, leisure and knowledge exchange and are accessible as public spaces. As a result, very heterogeneous and mixed-use quarters are emerging, which offer most citizens care, work and leisure in their vicinity. With greater health awareness, active forms of mobility are more important than ever; also to fill the gaps of the neglected PT system.

Many neighborhoods have decided to be entirely car-free and share a small fleet of various LEVs, cargo bikes and vans. This change has enabled the large-scale transformation of traffic areas into green and recreational spaces through neighborhood engagement.

Life takes place in public spaces much more than in the past, not least because people are working less and with greater flexibility. Citizens of Cologne have developed more conscious consumption habits. The focus on longevity, repair and, in some cases, local production is leading to a sharp decline in e-commerce and deliveries. Logistic hubs are used for the remaining deliveries, where parcels are picked up independently. In some cases, deliveries are made directly to end customers by cargo bikes. Elderly and physically impaired people are supported in the neighborhoods. Transport is hardly centralized and optimized; digital tools are used primarily for social networking and to organize the various peer-to-peer services.

	Now	Then
Traffic performance (pkm/year)	9823	7367 (-25%)
Motorization rate (including CS vehicles)	370	140
Percentage of the population in the inner/outer area	51 / 49	50 / 50

Now:
- Personal car: 58 %
- Public transport (PT): 17 %
- Walking / Bicycle: 25 %

Then:
- Personal car: 70 %
- Public transport (PT): 15 %
- Walking / Bicycle: 5 %
- LEVs: 5 %
- Private On-demand services: 5 %

Personal car
Public transport (PT)
Walking / Bicycle
LEVs
Private On-demand services
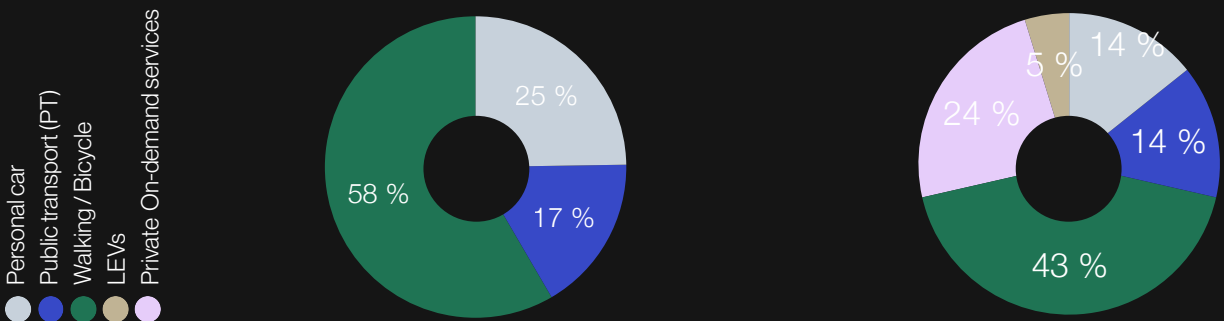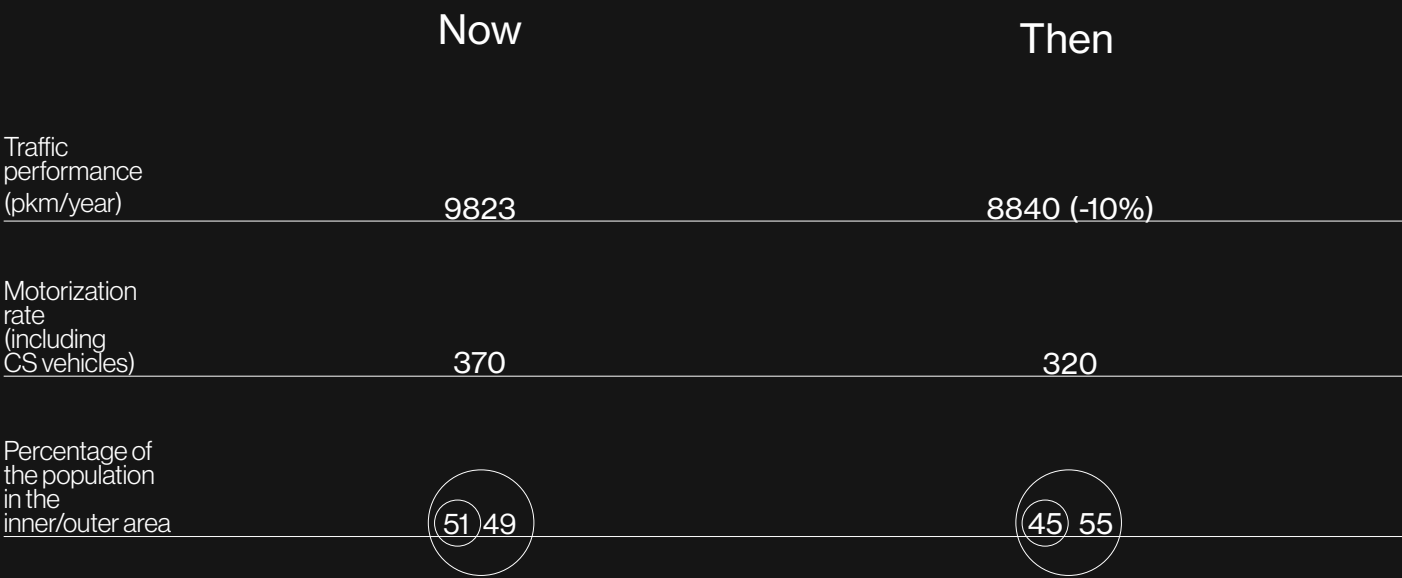
ECO-LIBERAL COLOGNE

Cologne missed its PT expansion and improvement targets, causing a drop in PT journeys. Private providers are taking over a growing share of the modal split. In a "trip economy" users compare price, duration and comfort of a journey among different providers and means of transport. Individual preferences of the citizens determine companies' market position. Sustainability and social responsibility are essential to consumers and are increasingly used for brand positioning.

Alongside large global players, young start-ups in the mobility sector are creating innovative offers that cater to different target groups, their lifestyles and needs. The personal responsibility to maintain one's health continues to increase, and providers are succeeding in marketing active forms of mobility as healthy lifestyle services. Initially, this price war leads to a strong fragmentation of services: Customers often have several subscriptions and apps from different providers. Some providers are expanding too quickly without considering urban space, which burdens the traffic system heavily. In the long term, the market consolidates to a handful of providers that offer the best user experience, "feel" and price. Most companies offer their employees a mobility budget provided in partnership with private mobility companies. These operators use their market power to provide their MaaS platforms and use their own mobility hubs for intermodal connections. Thanks to contracts with the city, users can access the former public transport within the private platforms. The international players offer a mix of shared bikes, LEVs, on-demand and ridepooling services and larger, freely navigating people movers. The services work particularly well in the core city. Market-driven dynamics often result in poor service quality in the outer areas. People sometimes remain dependent on their cars. There is a strong trend toward conscious consumption, digital detox, and a calmer lifestyle in a "revived minimalism". Small stores that sell selected lifestyle products are more frequented, while online shopping is declining due to growing sustainability concerns.

	Now	Then
Traffic performance (pkm/year)	9823	8349(-15%)
Motorization rate (including CS vehicles)	370	250
Percentage of the population in the inner/outer area	51 49	60 40

Now:
- Personal car: 58 %
- Public transport (PT): 17 %
- Walking / Bicycle: 25 %

Then:
- Personal car: 60 %
- Public transport (PT): 10 %
- Walking / Bicycle: 15 %
- LEVs: 10 %
- Private On-demand services: 5 %

Legend:
- Personal car
- Public transport (PT)
- Walking / Bicycle
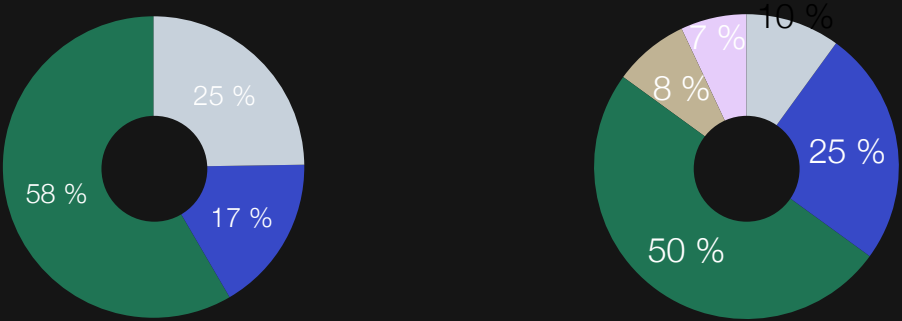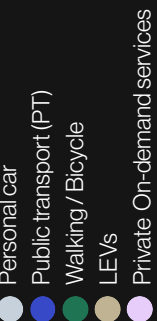- LEVs
- Private On-demand services

TECHNO COLOGNE

New technologies, with ever-improving home office and entertainment options and on-demand services, delivering goods within hours, allow people to spend more time at home. Especially for Cologne's growing aging population, some of whom are immobile, the variety of offers makes life easier but leads to isolation in some cases. Many decide against having children and live alone or with their partner in larger apartments. The planned redensification in Cologne is progressing slowly and is not meeting the growing demand: the pressure on the housing market in the core city continues to increase and many people move to the outer area for cheaper rents.

New development areas outside the city center, such as Kreuzfeld, are connected to the center by fast public transport: Here, homogeneous groups find everything they need and stay in their value and income bubbles. Other areas of the outskirts are still underdeveloped and in some cases poorly connected - individual car ownership remains high. On the other hand, growing digitalization and individualization are taking pressure off the mobility system. Traffic is spread throughout the day and rush hour-like utilization does not occur anymore. Public transport networks are increasingly being replaced by private on-demand services in various comfort classes, ranging from adaptive bus lines and autonomous ride-pooling, to individual shuttles and eVTOL services. International mobility players provide a seamless user experience: The vehicles are taken or boarded, and trips are debited directly from the account through facial recognition. Trips are cheap as data is being sold on a large scale.

The declining population density in the center of Cologne and the omnipresence of online shopping are leading to a rapid decline in retail and high vacancy rates in the city center. As many people order even everyday products to their homes, online retailers are expanding their fleets: autonomous and predictive delivery systems supply "micro fulfillment centers". Small autonomous delivery vans and delivery robots are deployed for the last mile of delivery.

	Now	Then
Traffic performance (pkm/year)	9823	8840 (-10%)
Motorization rate (including CS vehicles)	370	320
Percentage of the population in the inner/outer area	51 / 49	45 / 55

Now
- 25 %
- 17 %
- 58 %

Then
- 14 %
- 14 %
- 43 %
- 24 %
- 5 %

Legend:
- Personal car
- Public transport (PT)
- Walking / Bicycle
- LEVs
- Private On-demand services

GREEN GLORY

Now

Then

Traffic performance (pkm/year) — 9823 — 7858 (-15%)

Motorization rate (including CS vehicles) — 370 — 250

Percentage of the population in the inner/outer area — (51) 49 — (55) 45

Now: 58 % · 25 % · 17 %

Then: 50 % · 25 % · 10 % · 7 % · 8 %

Personal car
Public transport (PT)
Walking / Bicycle
LEVs
Private On-demand services

With strong restrictive measures and significant PT and cycling infrastructure investments, Cologne aims to position itself as a green metropolis. In addition to conventional PT, the KVB are implementing autonomous "People Mover" and ride-pooling networks. These vehicles continuously adapt their routes based on mobility demand, connecting key nodes within the city.

The hot summers and prolonged rainy seasons caused by climate change and an aging population have led to a slight decline in purely active mobility forms. Cycling infrastructure is increasingly being used by hybrid LEVs or "Velomobiles". Compared to traditional bicycles, these vehicles offer a stable ride and weather protection. At the same time, they generate less rolling noise, require less space than older electric cars, and can be operated autonomously.

Among the middle and upper classes, these vehicles are still often privately owned, but in collaboration with partner companies, the KVB is increasingly offering them as shared mobility solutions. Like shared-bikes, LEVs can be rented via the citywide MaaS app and be integrated into intermodal trips. A dense network of mobility hubs facilitates charging. Due to the rise of "New Work" and the widespread availability of co-working spaces, commuting to and from Cologne has slightly declined. Rail travel remains the most comfortable and cost-effective option on major domestic routes within Germany. Commuters and visitors traveling with their private cars are encouraged to park in outer areas where they can switch to S-Bahn, city rail, or shared mobility services at transit hubs. The core city features high parking fees and car-free districts.

Although the large-scale expansion of charging infrastructure for LEVs occupies urban space, overall traffic areas can be significantly reduced through smaller vehicles and shared mobility solutions. In addition to re-purposed roadways, previously unattractive mobility spaces are being revitalized due to reduced noise pollution and lower emissions. Examples include key junctions like the "Barbarossaplatz" and major corridors like the "Nord-Süd-Fahrt" and the "Zoo and Deutz" bridges.

This transformation opens up ground floors for gastronomy and retail. Large areas are being converted into green open spaces, serving as retention zones in response to increasing flood risks. Urban densification is addressed through vertical expansions in designated areas.

Traditional retail is giving way to experience-oriented stores focusing on consultation and services. Storage spaces in these shops function as interim hubs for inner-city goods distribution. Residents pick up packages at expanded mobility hubs, which also serve as "third places." Alternatively, autonomous micro-delivery vehicles handle the last mile of delivery.