Map Design: Netzplan Wien

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***Abstract*—Since there was a need for schematic public transport information on all transport modes in Vienna, I created the "Netzplan Wien" to be an overarching medium. Its goal was to archive legibility on paper format A3 and still showing urban trains, underground, tram and later on bus service within the city's borders.**

Keywords—schematic, network, public transport, Vienna, urban trains, underground, tram, bus

I. Introduction

When I moved from Berlin to Vienna in 2009, I soon noted the lack of a compact schematic network map of Vienna tram and bus service. Previously working at BVG, the municipal transit company of Berlin, I was used to at least a schematic map showing the tram network. In Vienna, there was only a schematic map of urban trains and underground and a folded city map showing urban trains, underground, tram and bus service available.

So my goal was to fill the gap and develop a schematic mapping design, that would allow to represent the whole network of urban trains, underground and tram within of Vienna's city borders and fit the A3 paper format, which I considered a suitable size for web and print.

II. Methods

A. General Requirements (Editions 2009 – 2010)

To fulfill the need of an easy-to-use schematic map, I decided to adopt a common size of paper format A3. Transport companies like Berliner Verkehrsbetriebe (BVG), Münchner Verkehrsgesellschaft (MVG) or Régie Autonome des Transports Parisiens (RATP) distribute maps like I intended to create for Vienna.

My approach to the nearly fundamental question of angles in schematic mapping consisted of the strict limitation of 0°, 45° and 90° angles to keep a clean shape of the content. Station and stop names should be horizontal and only exceptionally at 45°.

Considering of the three transit systems to display on the map, I decided in favor to an all-or-nothing-strategy for lines and stations, combined with a clear hierarchy of all transports modes, starting with regional and urban trains, underground, tram and (later) bus service.

I also discarded the idea of codifying service times or timetables into the width of the lines, like Leipziger Verkehrsbetriebe (LVB) did. Although one could argue that service times, timetables and service patterns, especially concerning Vienna urban trains, were quite heterogenous.

B. Vienna Specialties

The general requirements could have also suited for a schematic map in any other city in Europe. So I chose to include geographically relevant points of reference, e.g. the River Danube and its channel and also world-wide well-known Ringstraße (boulevard around the inner city). The Vienna Ringstraße was also the central starting point of nearly every tram line.

The colors of urban trains and underground lines were adopted from existing maps to create a relevant recognition value for my map.

Since there was no officially communicated transport mode color for the tram, I chose black to ensure a high contrast to urban and underground lines.

Terminus stations were highlighted by a bold font and the corresponding line signature in the transport mode's color. Urban trains and underground line signatures are represented in rectangles, which is held with the line's color, while the tram signature consists of a black circle and it's number in white in it. This resembles to the way tram line numbers are shown at stops and on the older cars.

C. Additional Requirements (Editions 2011 – now)

As already mentioned, bus services were also to be integrated into the map, holding to the specified design criteria.

Furthermore, the design was adopted to rounded corners rather than sharp ones. All stop signatures then consisted of a white circle or ellipse with a black border. Previously, all stops that are not interchanges are shown in a rectangle in the line's color.

In 2012, I derived a tram-oriented version from the original schematic map. The tram network was prominently shown, while urban trains and underground were kept as background in traffic mode colors. Tram lines were grouped by colors which often resembled their corresponding underground line.

In 2013, I derived a nightline version which aimed to combine Vienna's two different nighttime networks. On nights before a working day, there's only a bus network in service, while on nights before Saturdays, Sundays and public Holidays, all five underground lines and a reduced bus service form the night network.

Both, tram and night network, maps kept the same geometry and appearence to – once again – raise the recognition value between the three maps.

III. Results & Conclusion

The network maps were released for free on the internet page www.netzplanwien.at, since – as a student – I had no funding for print and further dissemination. Several social media interactions raised the prominence of all three schematic maps, including a Christmas edition. The maps are also avaiable via Android Öffi App. To sum up, a schematic map of Vienna's public transport network, which is based on certain design principles, can be legible and easily recognized and fits in A3 paper format.

Netzplan Wien

S-Bahn
U-Bahn
Straßenbahn
Bus

Legende

- S45 — S-Bahn-Linie
- U4 — U-Bahn-Linie
- 62 — Straßenbahn-Linie
- 11A — Bus-Linie
- ◂ / ▸ — Bedienung nur in Pfeilrichtung

Alle Haltestellen liegen in der Kernzone Wien.

U-Bahn
U1 Reumannpl. ◂▸ Leopoldau
U2 Karlsplatz ◂▸ Seestadt
U3 Ottakring ◂▸ Simmering
U4 Hütteldorf ◂▸ Heiligenstadt
U6 Siebenhirten ◂▸ Floridsdorf

D Nußdorf, Beethovengang ◂▸ Hauptbahnhof Ost S
O Praterstern S+U ◂▸ Raxstraße/Rudolfshügel. (via Hbf.)
1 Stefan-Fadinger-Platz ◂▸ Prater, Hauptallee (via Schottentor U)
2 Dornbach ◂▸ Friedrich-Engels-Platz
5 Westbahnhof S+U ◂▸ Praterstern S+U (via Franz-Josefs-Bhf.)
6 Burggasse-Stadthalle U ◂▸ Kaiserebersdorf, Zinnergasse
9 Westbahnhof S+U ◂▸ Gersthof, Wallrißstraße
10 Unter St. Veit, Hummelgasse ◂▸ Dornbach
18 Burggasse-Stadthalle U ◂▸ Schlachthausgasse U (via Hbf.)
25 Floridsdorf S+U ◂▸ Aspern, Oberdorfstraße
26 Strebersdorf, E.-Hawranek-Platz ◂▸ Kagran U (via Kagraner Pl. U)
30 Floridsdorf S+U ◂▸ Stammersdorf (nur werktags)
31 Schottenring U ◂▸ Stammersdorf
33 Fr.-Engels-Platz ◂▸ Augasse bzw. Josefstädter Str. U
37 Schottentor U ◂▸ Hohe Warte
38 Schottentor U ◂▸ Grinzing
40 Schottentor U ◂▸ Gersthof, Herbeckstraße
41 Schottentor U ◂▸ Pötzleinsdorf
42 Schottentor U ◂▸ Gersthof, Antonigasse
43 Schottentor U ◂▸ Neuwaldegg
44 Schottentor U ◂▸ Ottakring, Maroltingergasse
46 Ring/Volkstheater U ◂▸ Joachimsthalerplatz
49 Ring/Volkstheater U ◂▸ Hütteldorf, Bujattigasse
52 Westbahnhof S+U ◂▸ Baumgarten
60 Westbahnhof S+U ◂▸ Rodaun
62 Oper/Karlsplatz U ◂▸ Lainz, Wolkersbergenstraße
67 Otto-Probst-Platz ◂▸ Reumannplatz U
71 Börse ◂▸ Zentralfriedhof, 3. Tor
WLB Wien, Oper/Karlsplatz U ◂▸ Baden, Josefsplatz