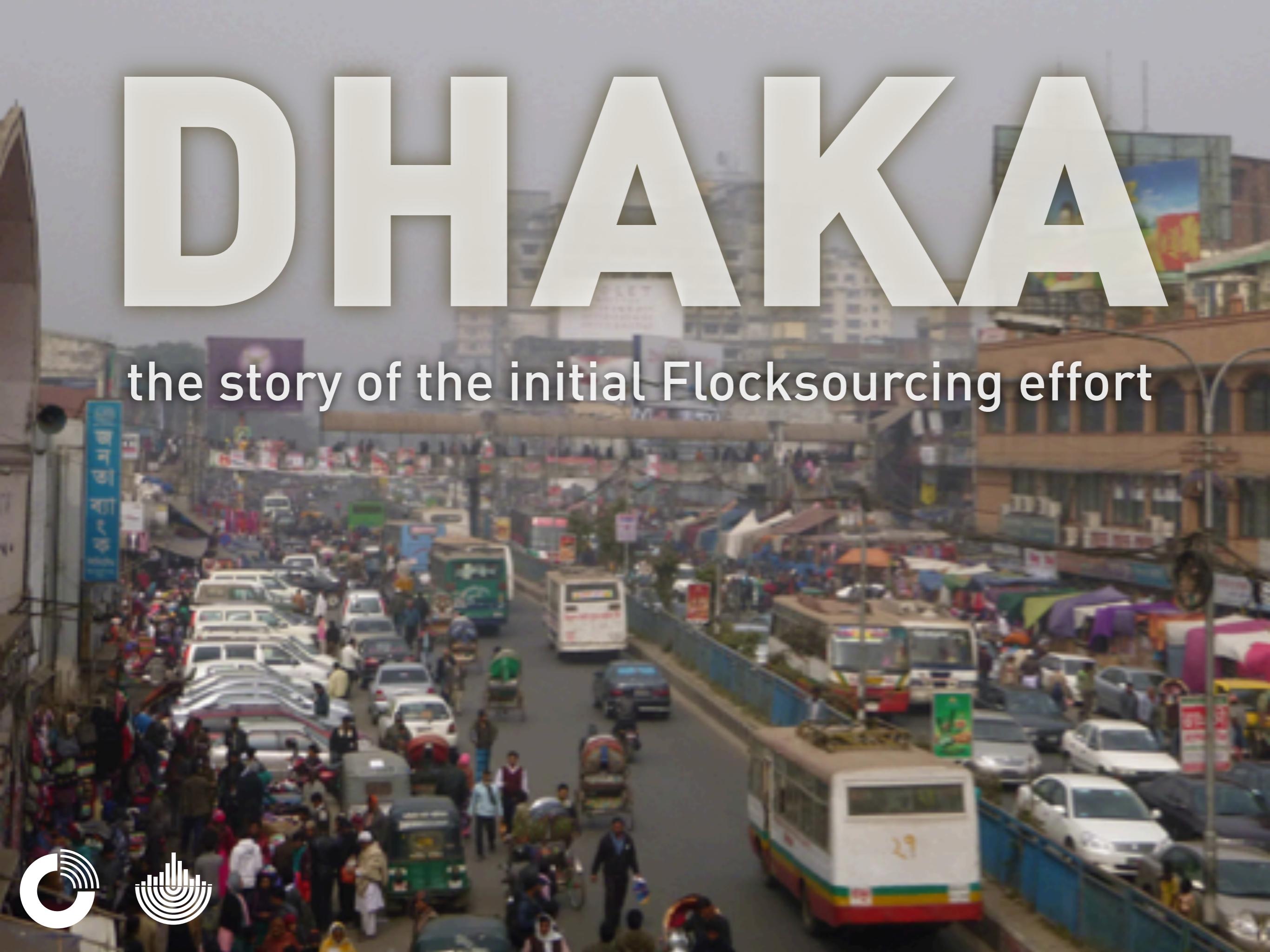


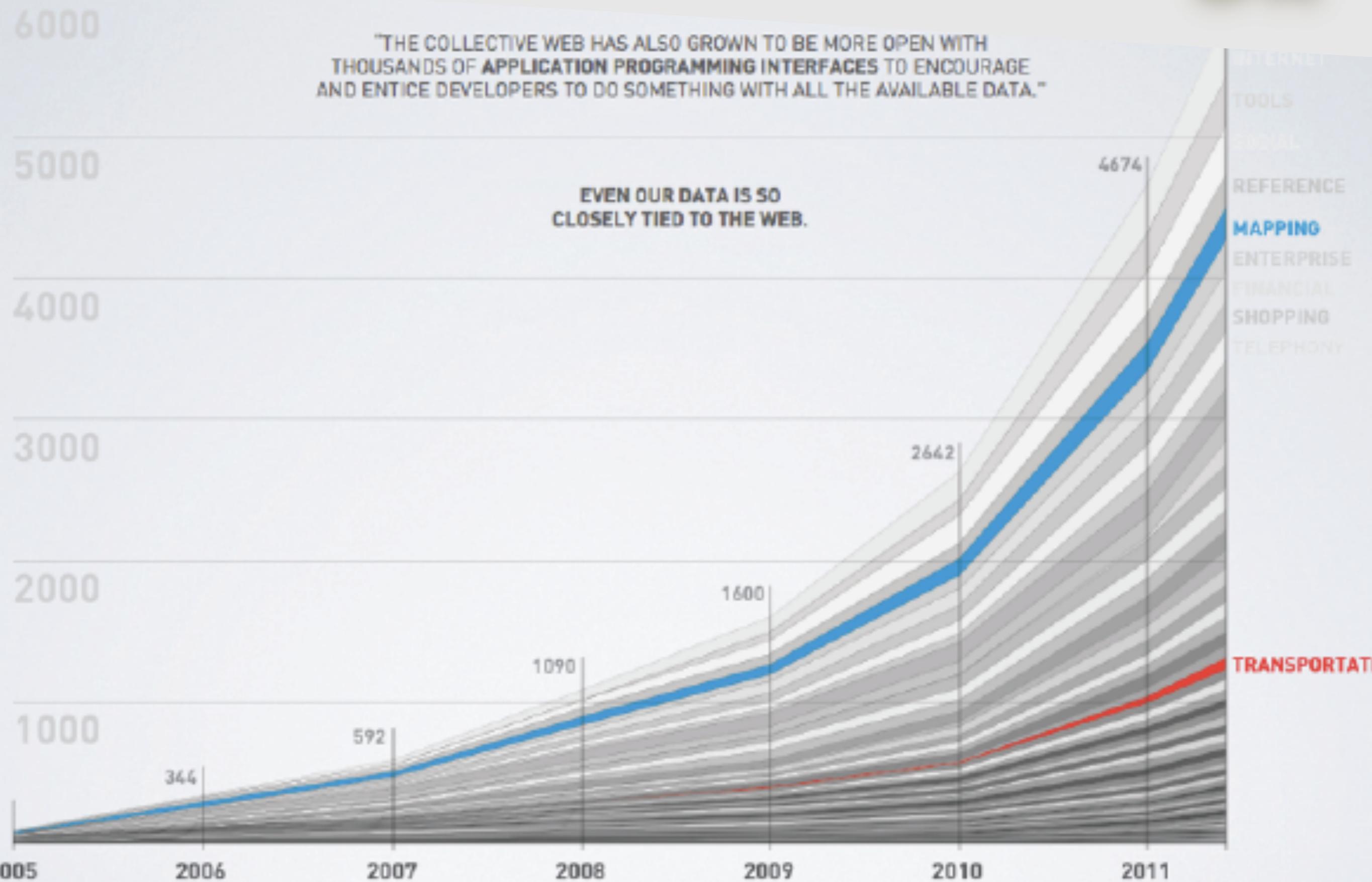
DHAKA

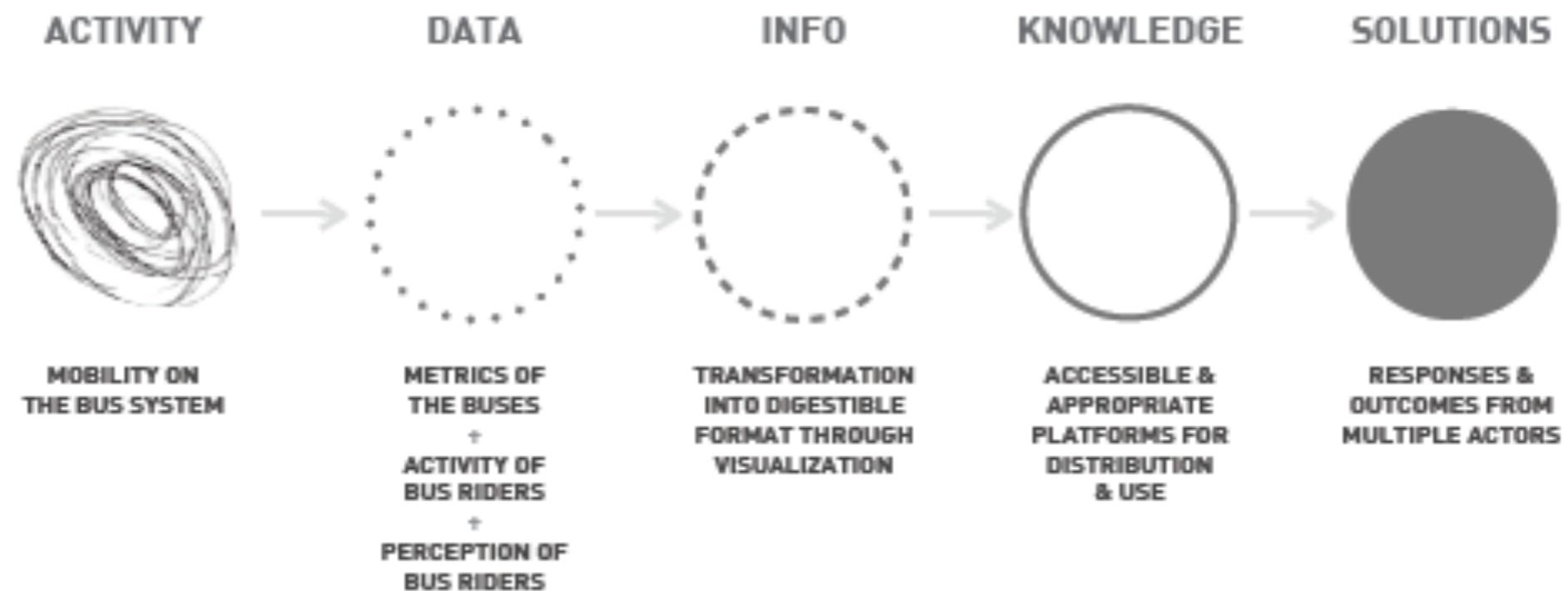
the story of the initial Flocksourcing effort

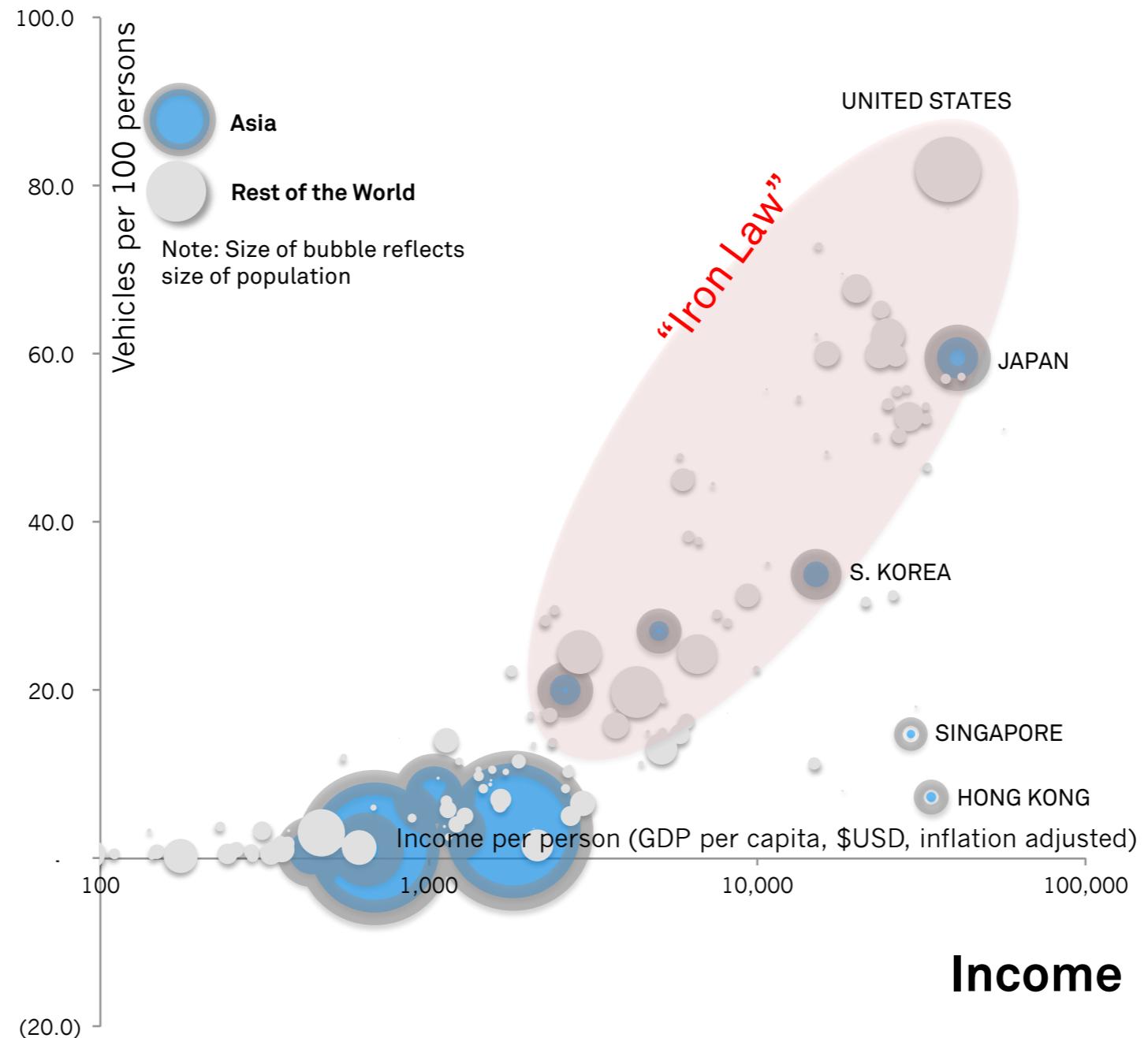


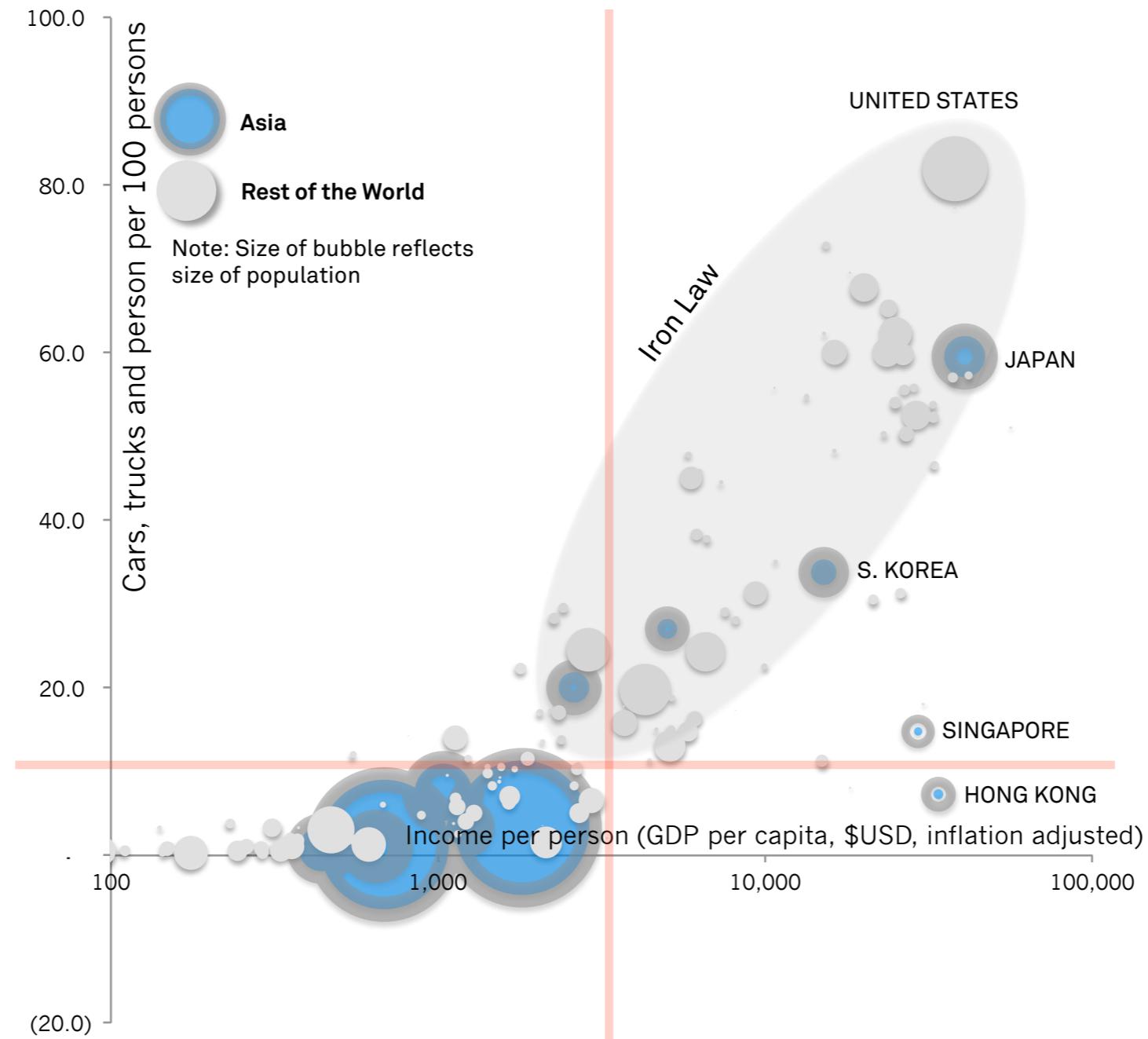
Initial Interest

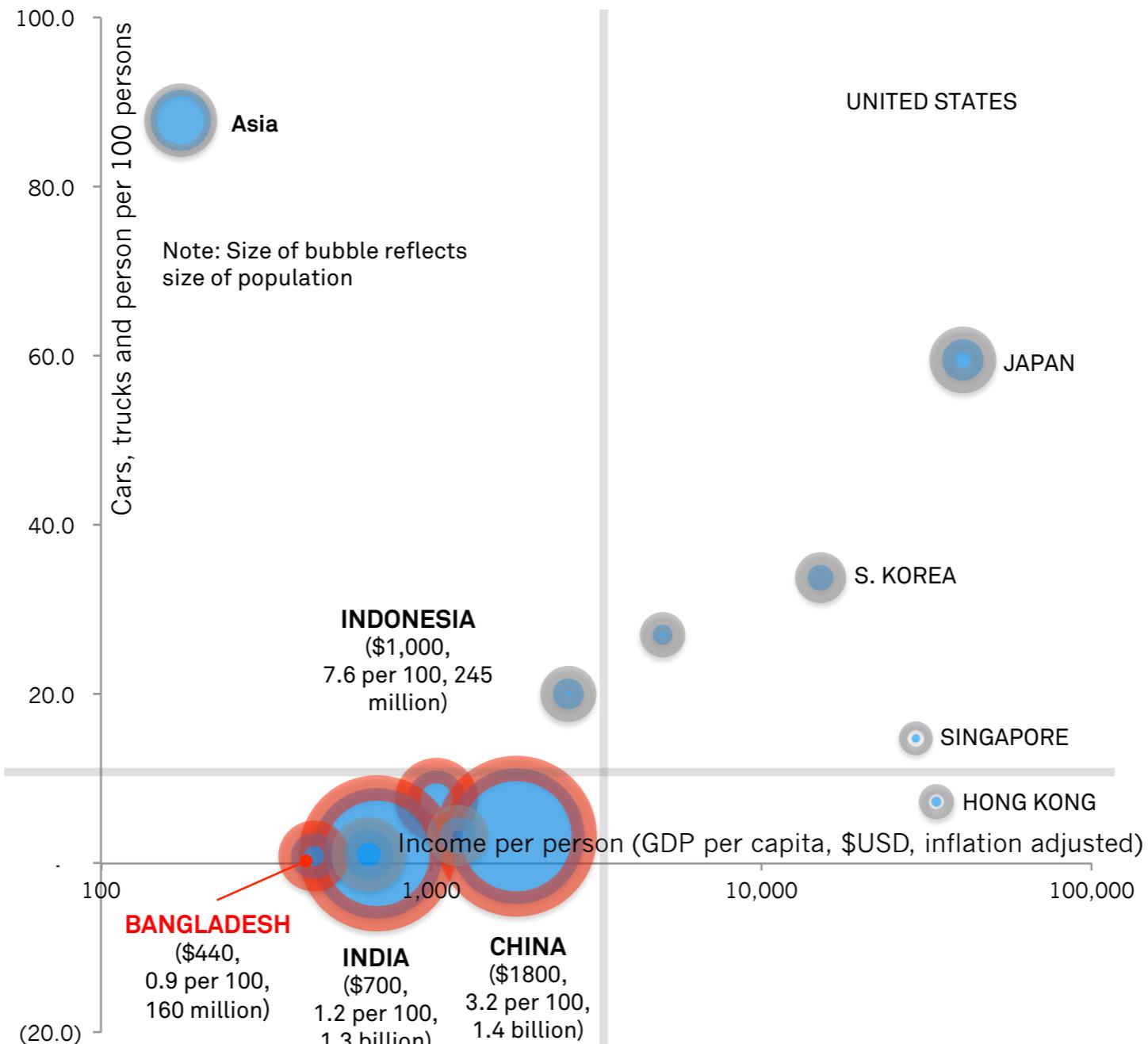
DK













Dhaka Mega City

15-20+ million pop.
45,000 people/km²*
6,500 buses
750 bus companies
59 bus routes

*Demographia, Demographia World Urban Areas, March 2013,

<http://www.demographia.com/db-worldua.pdf>



Challenges

Extreme density
(reported highest)
Vehicle congestion
Complex and poorly-mapped road system



Mode Share

“Slowest city in world.”
~40% Rickshaw
~30% Bus
~30% Walking
~01% Private Vehicle

Bangladesh Ministry of Environments and Forests and Bangladesh Ministry of Communication, “Developments in EST in Bangladesh” (presented at the Fifth Regional Environmentally Sustainable Transport (EST) Forum in Asia, Bangkok, Thailand, August 23, 2010), http://www.uncrd.or.jp/env/5th-regional-est-forum/doc/04_Breakout%20Session%201%20%28Country%29/BG2/BS1-2-1_Bangladesh.pdf.

Public transit services in Dhaka, Bangladesh

Service type	Regulatory Agency	Structure	Passengers/day	Fare (BDT)
Rickshaw	Individual operators	450,000 vehicles	7.5 million	~10 Tk per km
Bus	Bangladesh Road Transport Corporation, 750 private companies, individual operators	78 routes, 6,500 buses	1.9 million	~Tk 30
Suburban rail	Bangladesh Railways	1 route, 20 trains, 6 daily trips ¹⁰²	1,800 expected	No data

Bangladesh Railways launched this service very recently in 2013.



Enthusiasm

Local population has demonstrated a particular openness to supporting and assisting efforts.



Opportunity

Unusual mode share
Enthusiasm and interest
in universities
Unique partnership with
Kewkradong

Invaluable Local Partner

DK



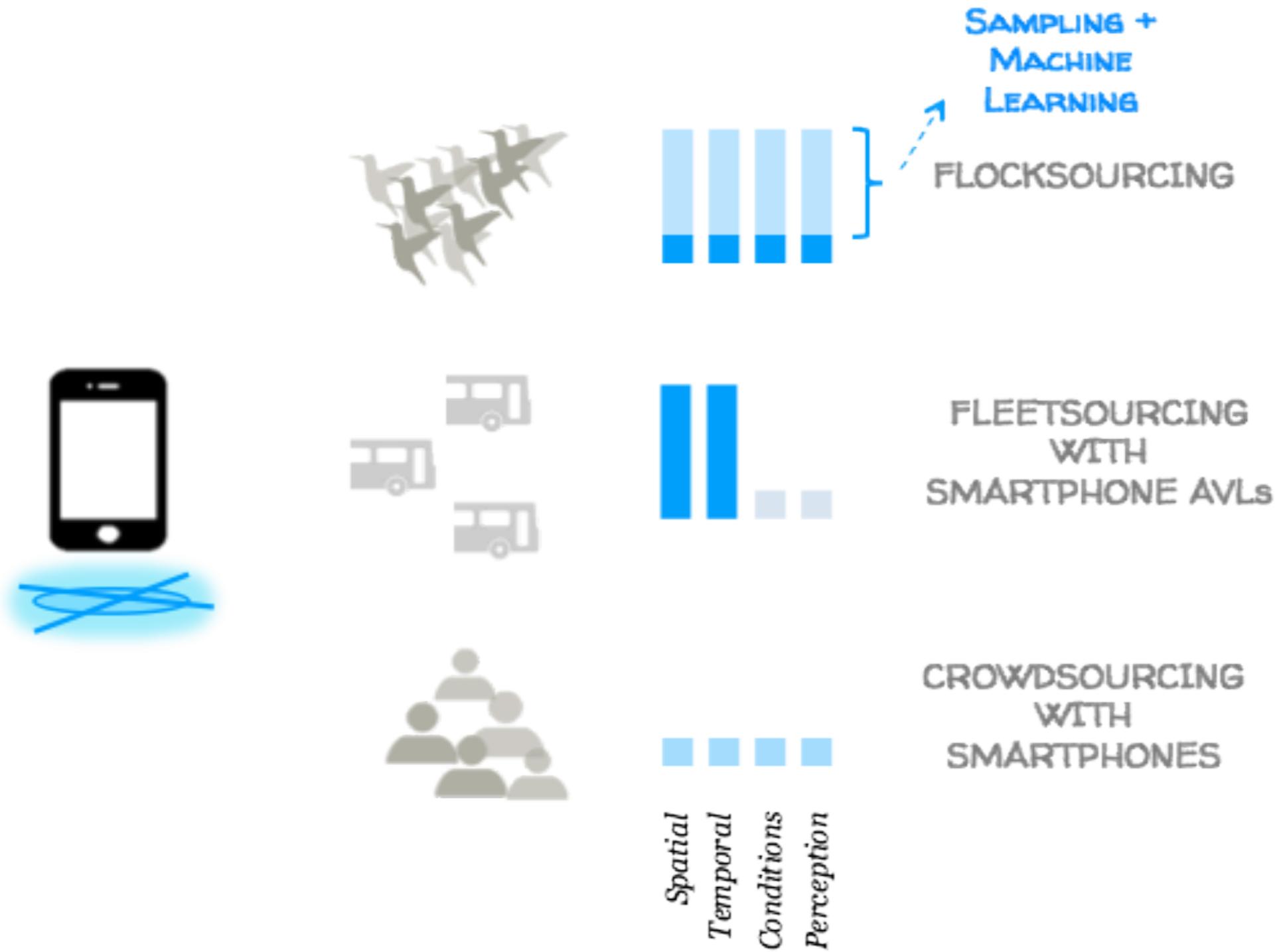
The Concept of Flocksourcing

DK



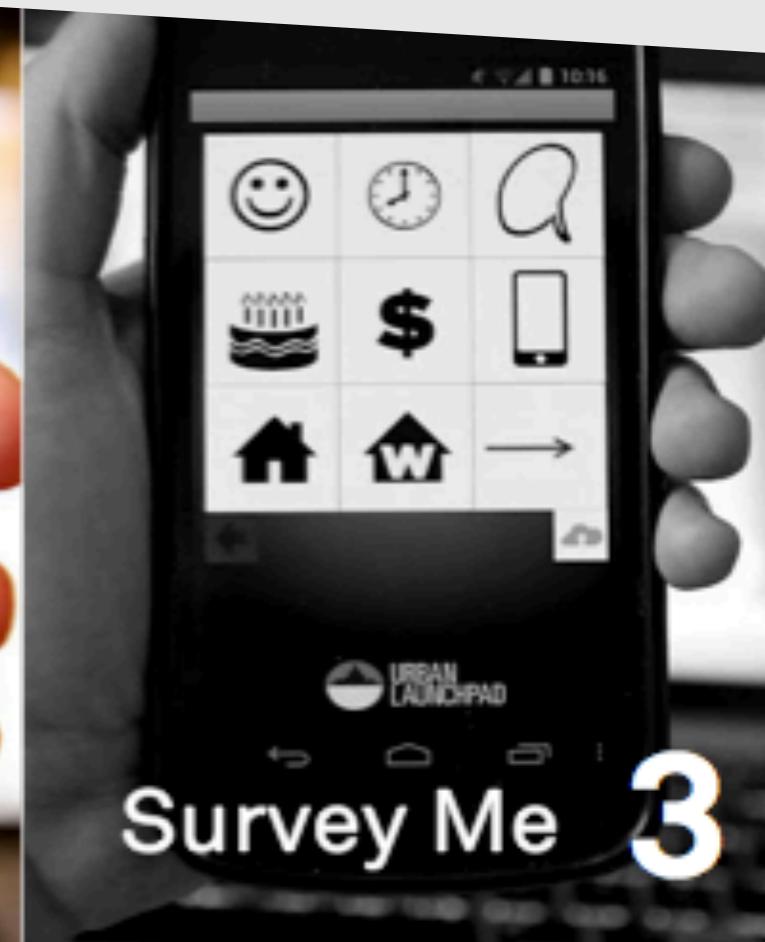
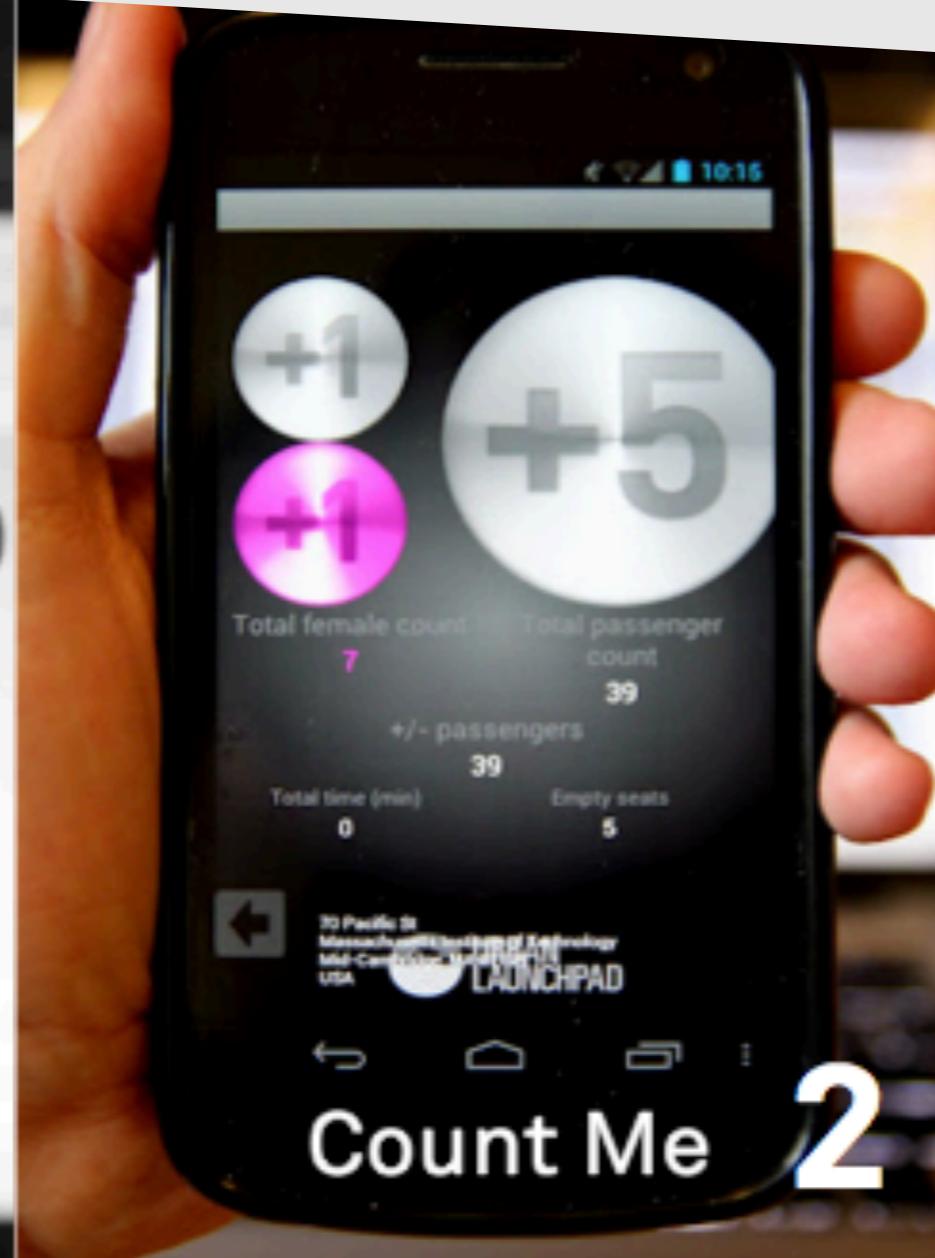
The Concept of Flocksourcing

DK



Developing a Tool

DK





Initial Results

DK

3-18-2012
Sunday

3-19-2012
Monday

3-20-2012
Tuesday

3-21-2012
Wednesday

3-22-2012
Thursday

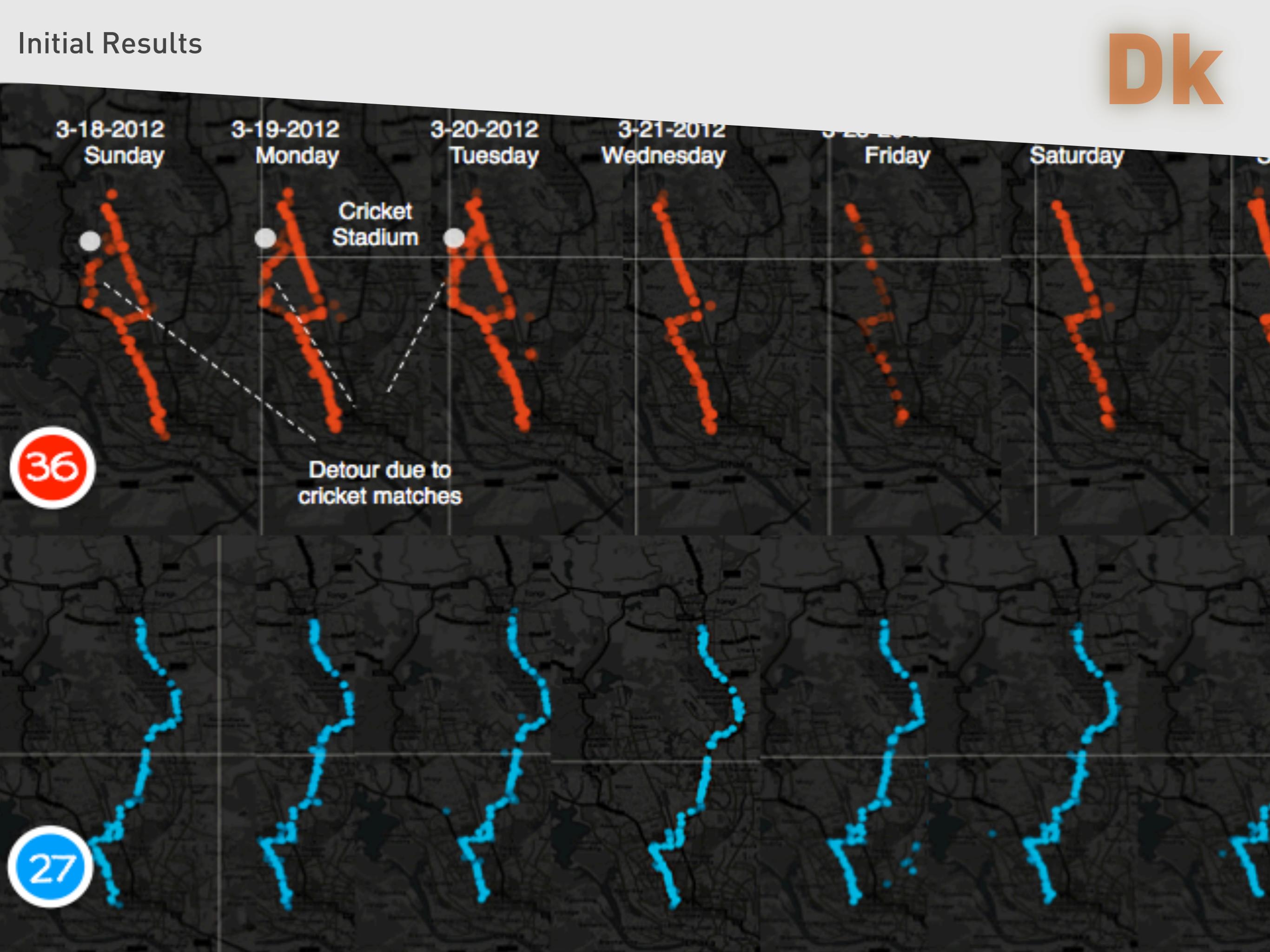
Saturday

Cricket
Stadium

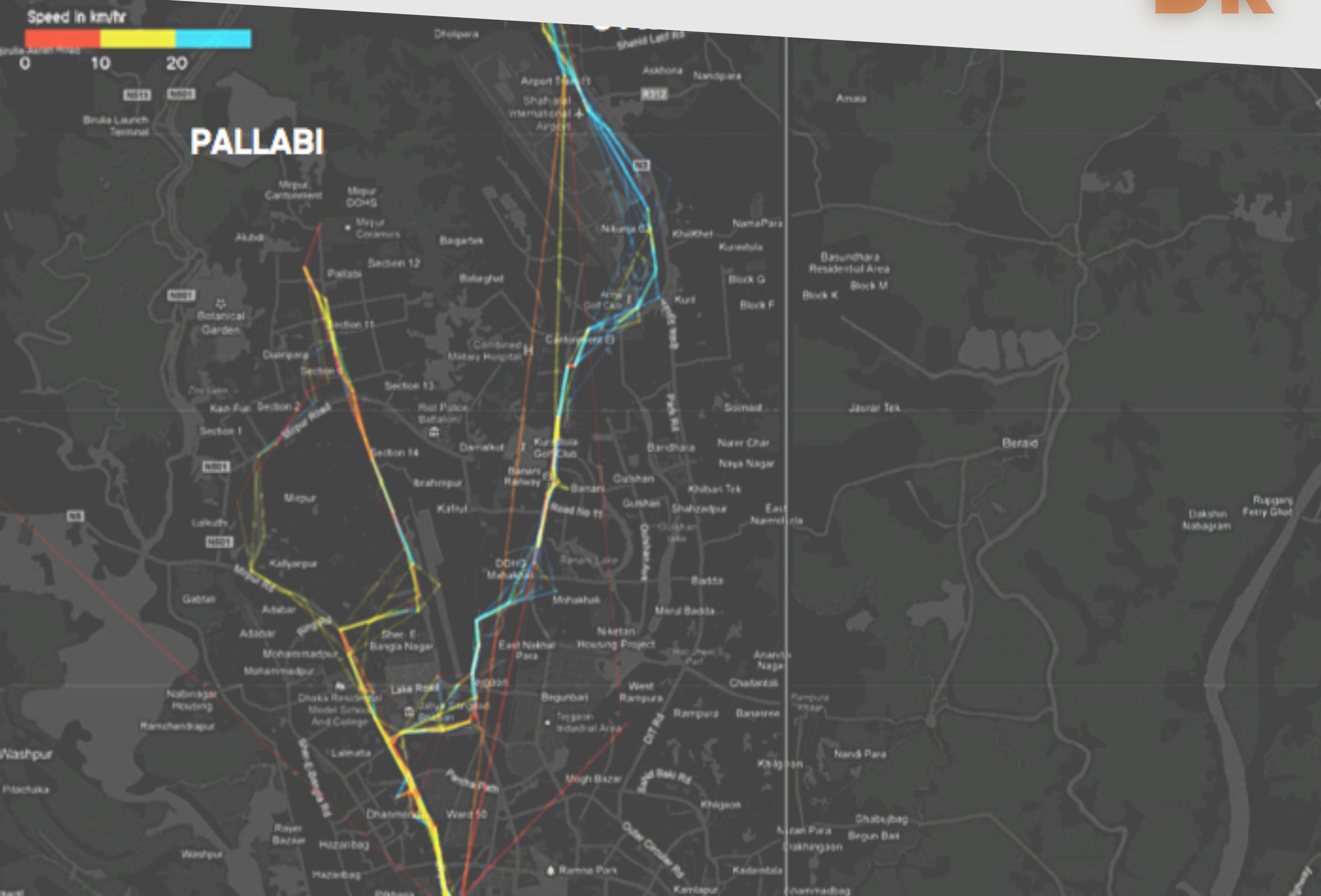
36

Detour due to
cricket matches

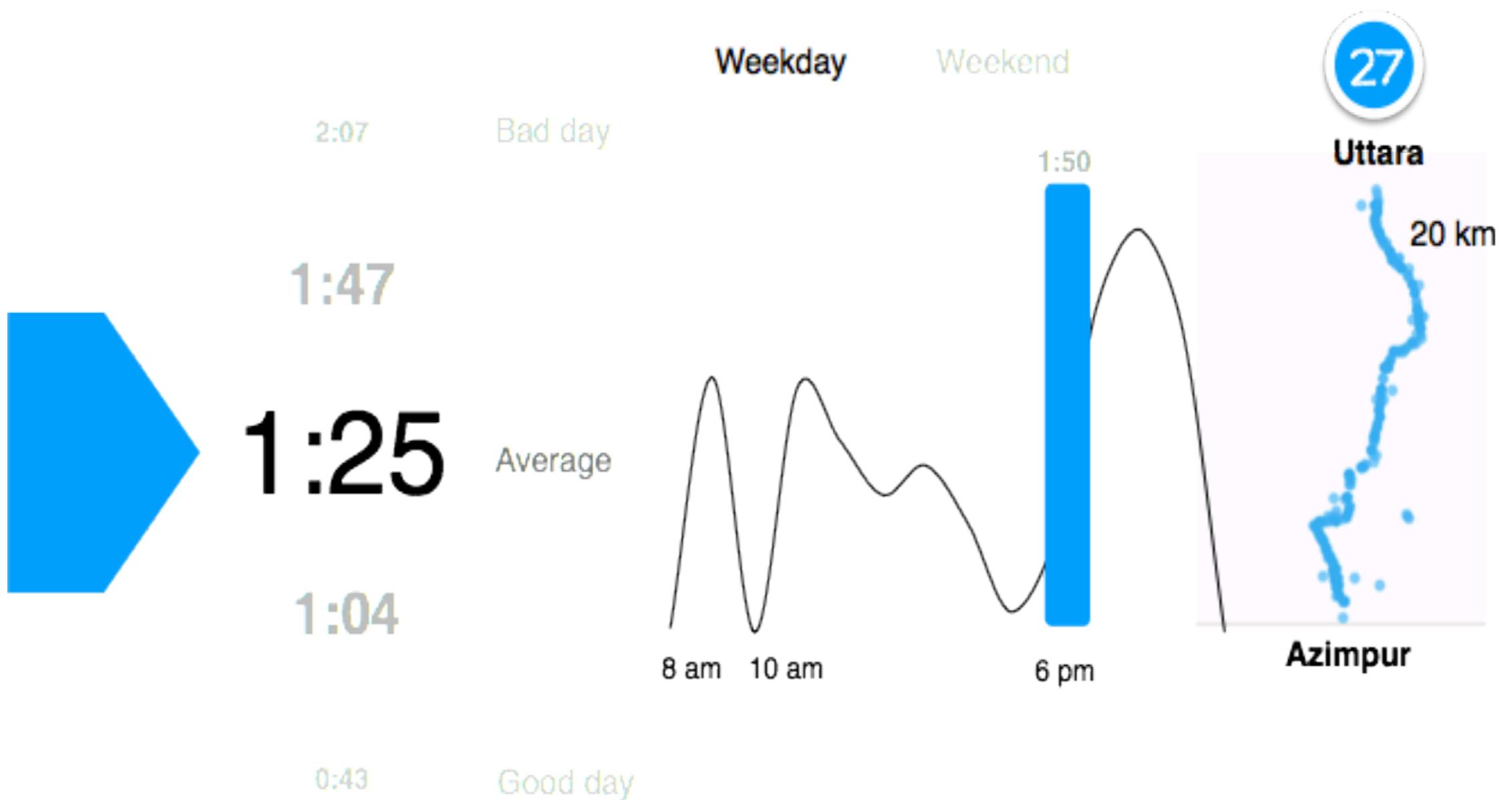
27



Speed Tests



Understanding Route Dynamics



*Data based on 42 Rides in March 2012

Perception Mapping Potential

DK

bus size



52 seats per bus

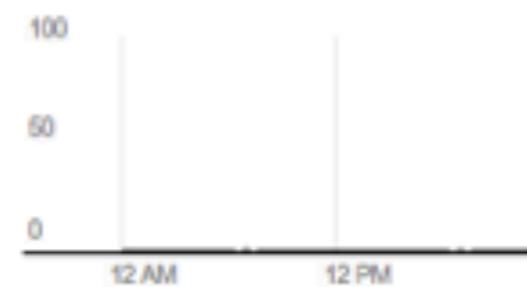
*rider
happiness*

3.6



*bus
crowding*

Average People Standing



*female
passengers*

Average Female Counts



VIP

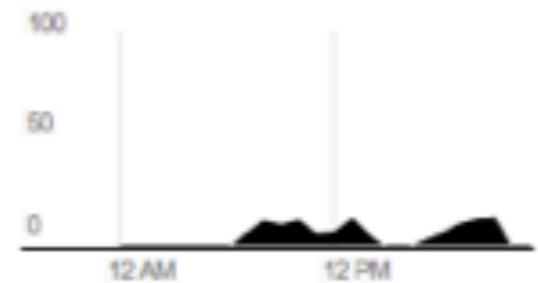


39 seats per bus

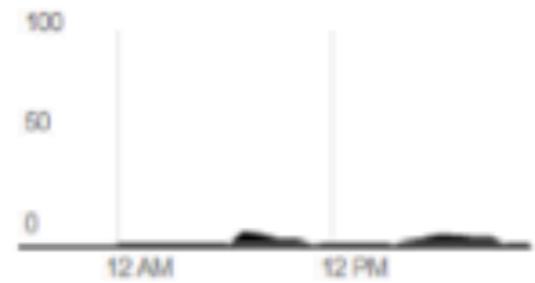
2.3



Average People Standing



Average Female Counts



2013

DK



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Search projects

First Bus Map of Dhaka

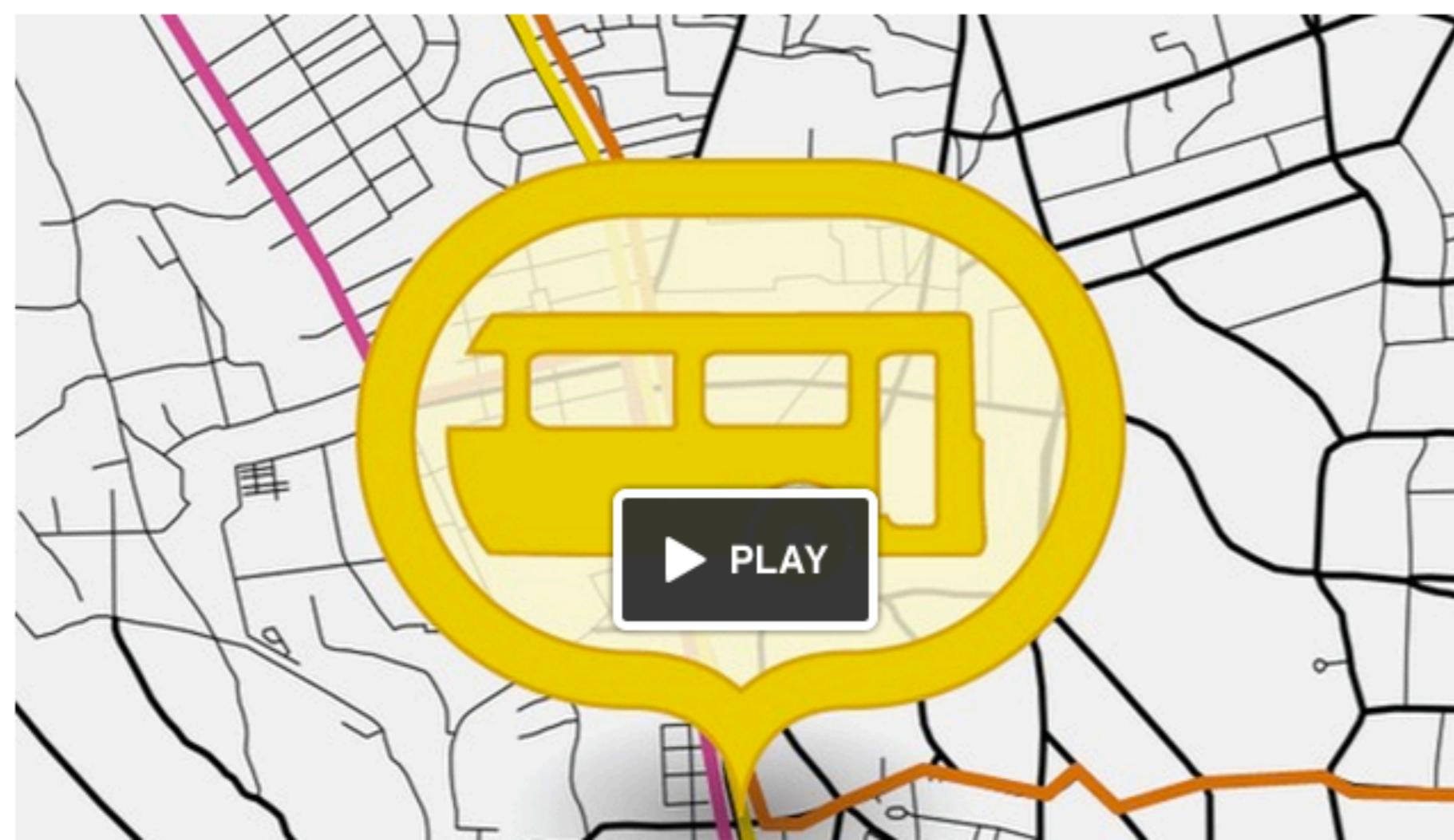
by Urban Launchpad · You're a backer 

Home Updates 3 Backers 506 Comments 10

Dhaka, Bangladesh

Graphic Design

Funded! This project successfully raised its funding goal on January 11.



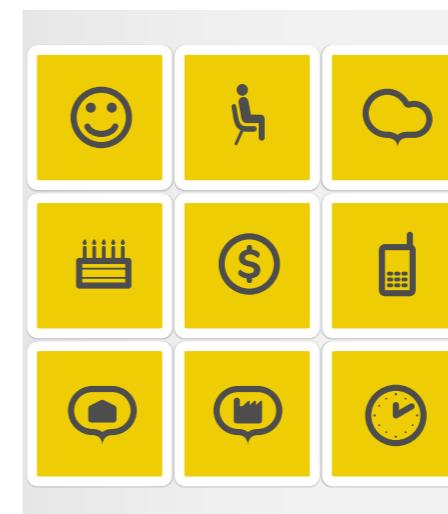
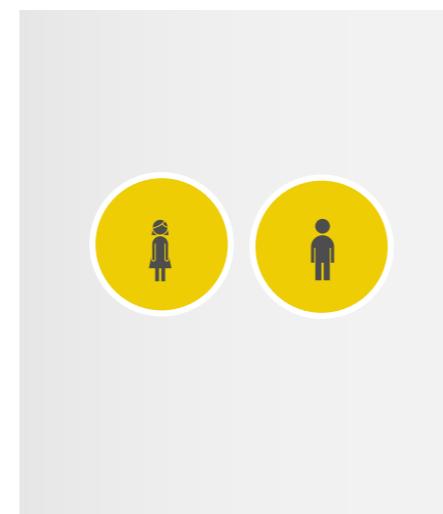
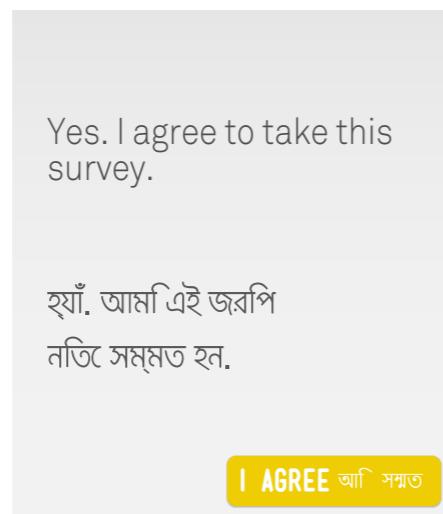
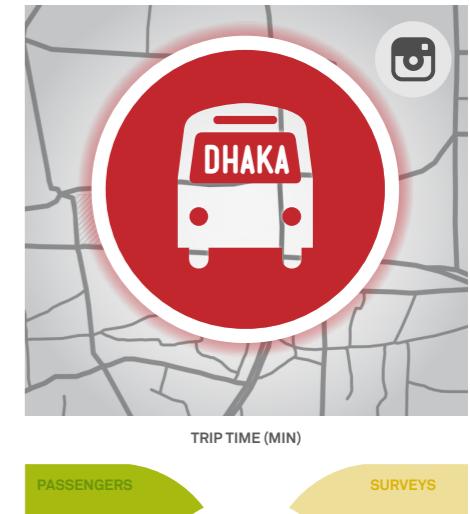
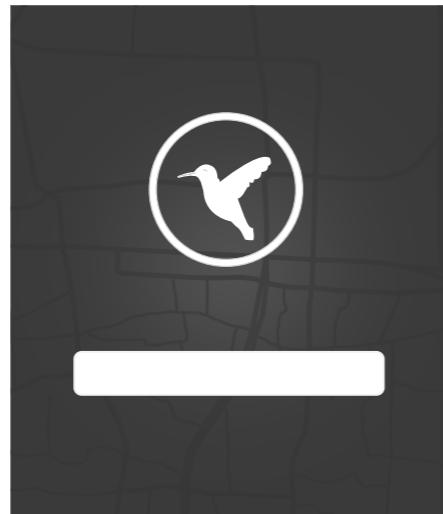
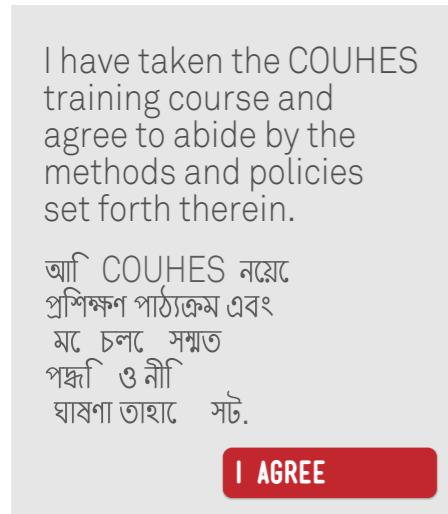
506
backers
\$15,000
pledged of \$10,000 goal
0
seconds to go



Project by
Urban
Launchpad
Cambridge, MA

Redevelopment of the Application

Dk

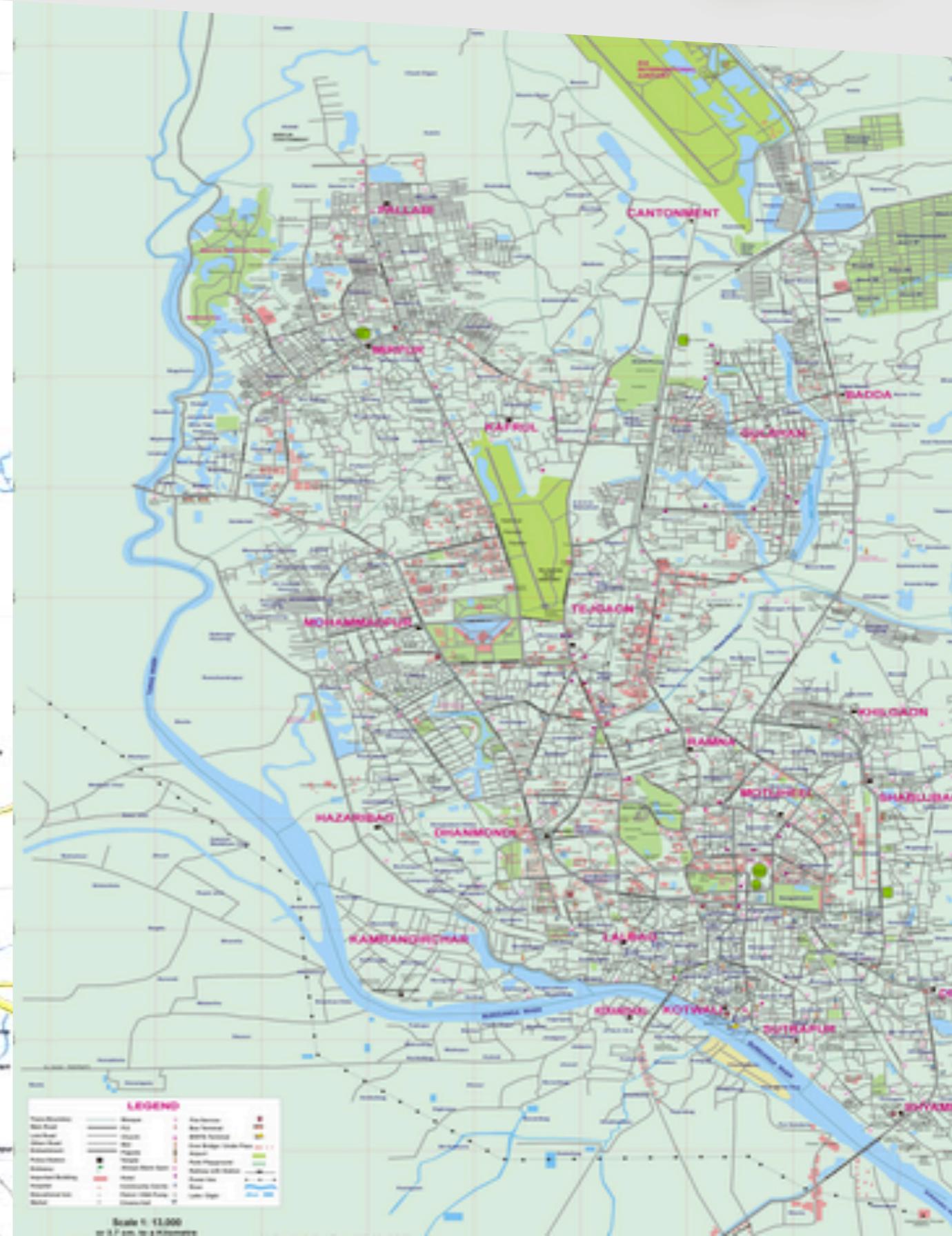


Arrival in Dhaka

DK

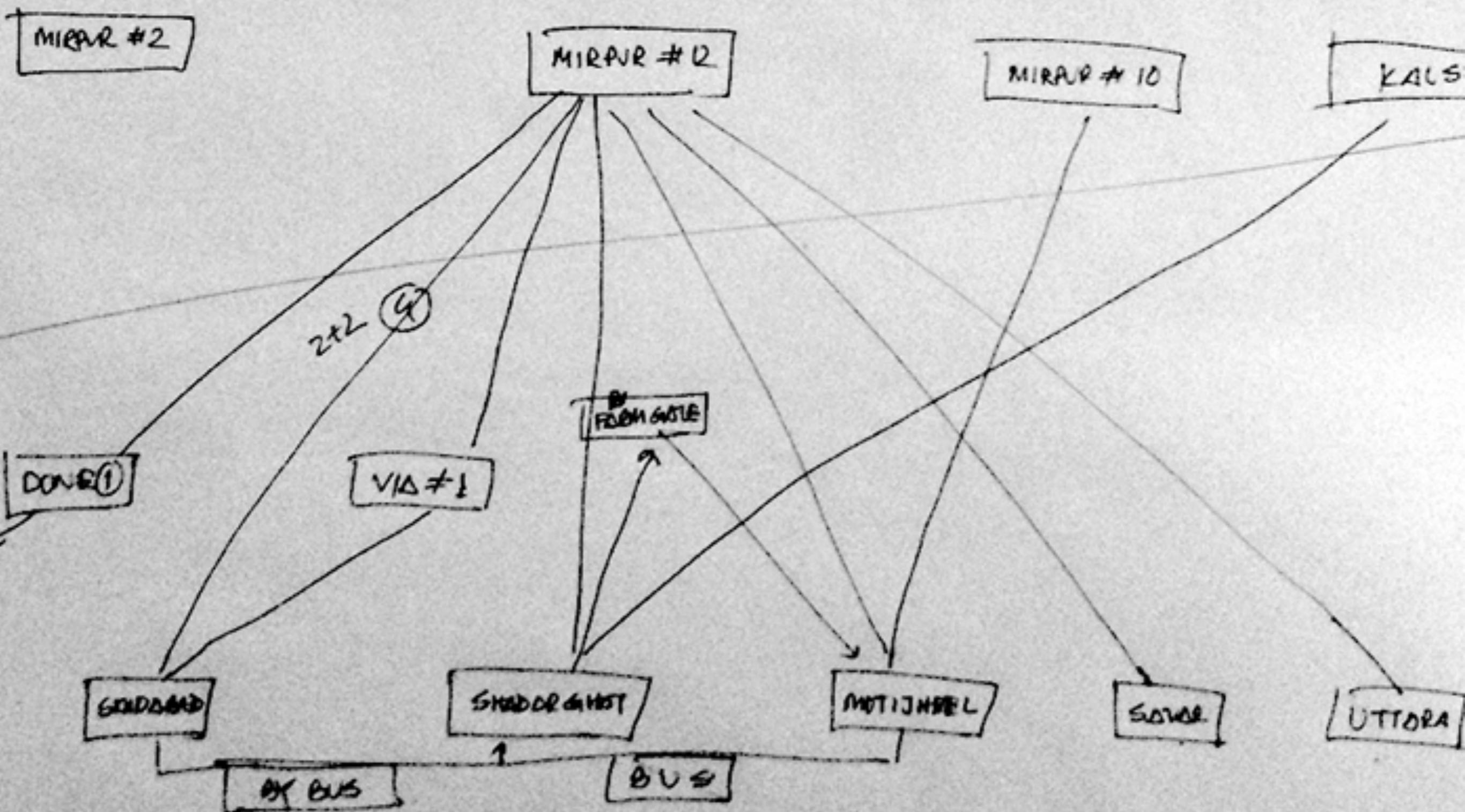


Failure of Maps as a Resource



Utilizing a Soft/Hard Strategy

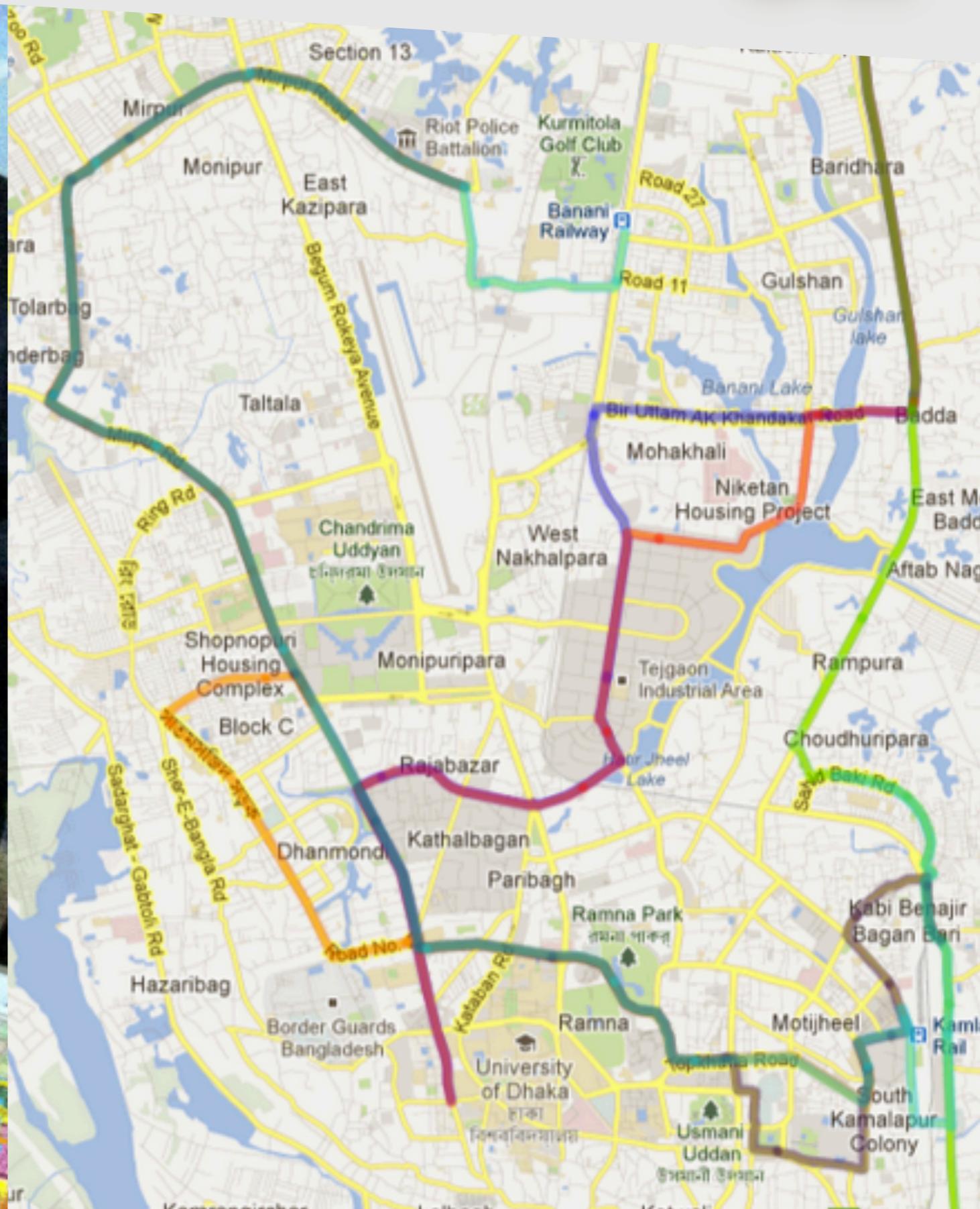
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Not A "Silver Bullet"

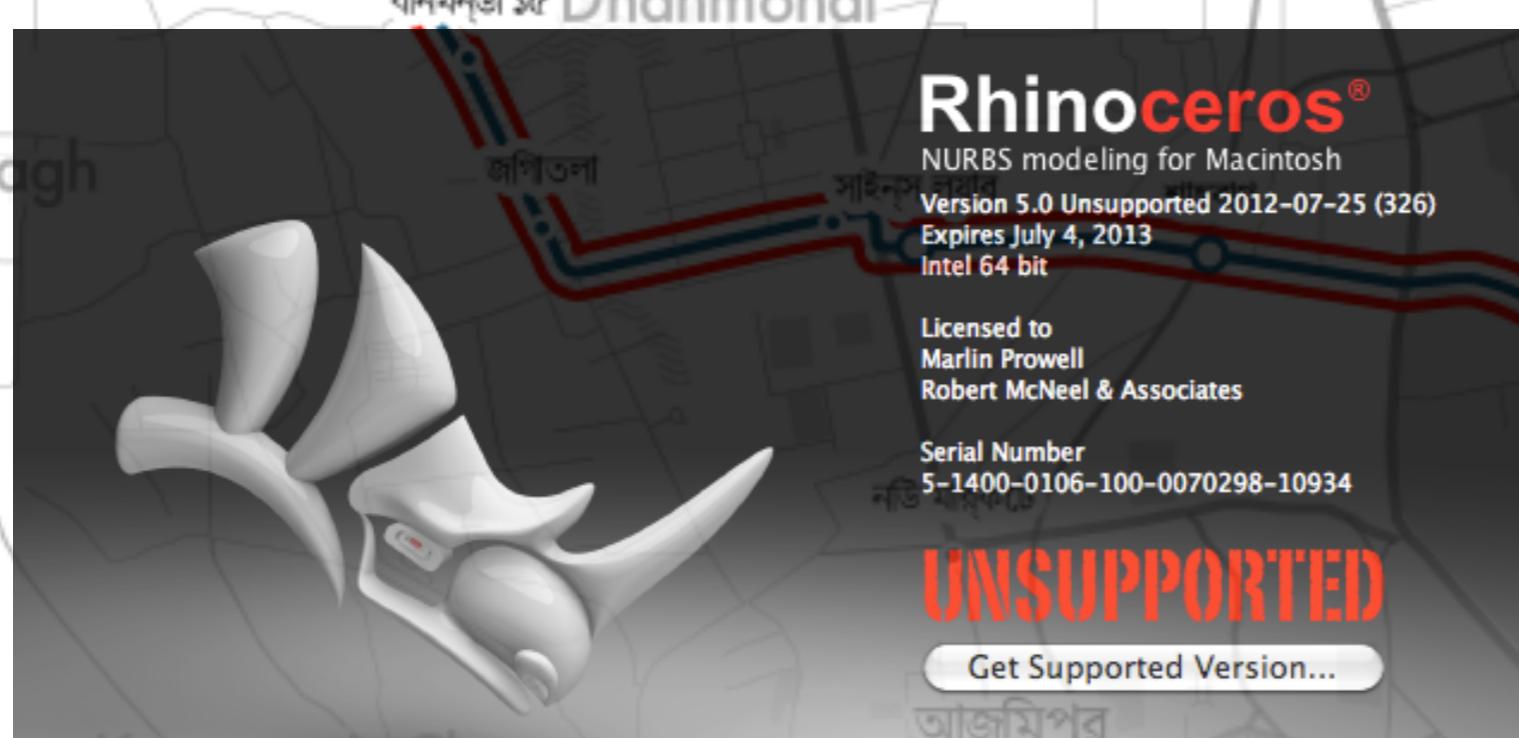
Utilizing a Soft/Hard Strategy

DK



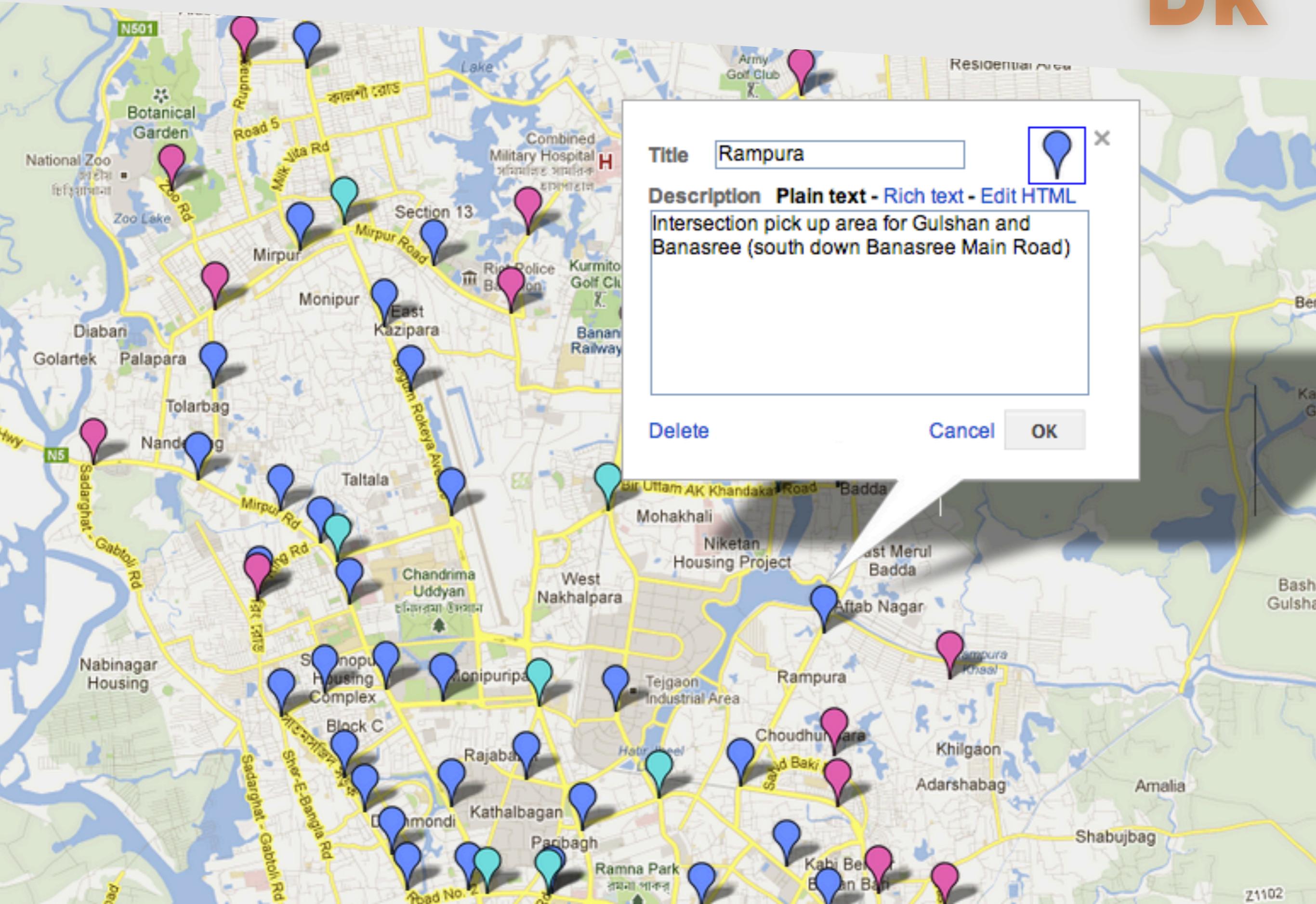
Massaging Route Data from Google Fusion Tables

DK



Identifying Central Hinge Points

DK



Teams on Motorcycle to Capture Bus Imagery

DK



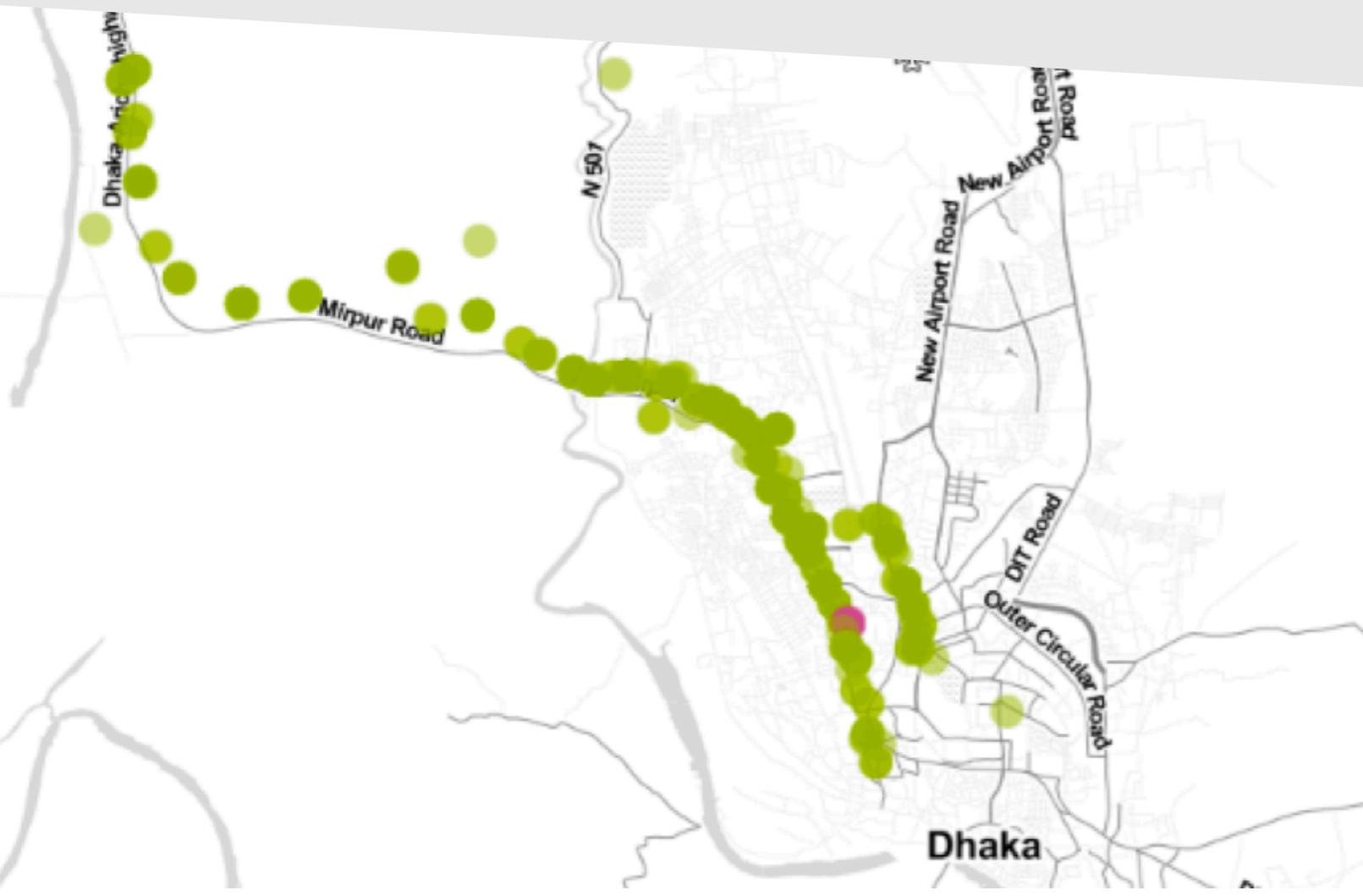
Data Shown in Fusion Tables

DK

Bus Route Details											
Route ID	Route Name	Line Number	Starting Point	Ending Point	Bus Company	Image	Route Map	Route Description	Start Station	End Station	Distance (Km)
SAD-ZOO	2/E	২/ই	Tangil Paribahan Limited		KML...	টাঙ্গাইল পরিবহন লিমিটেড	Sadarghat	Zoo		30	
SAD-SHA	27 (A/206)	২৭ (এ/২০৬)	Skyline		KML...	স্কাইলাইন	Sadarghat	Shafipur		30	Nestor
SAD-MIR12	1/A	১/এ	Mirpur United Service Limited		KML...	মিরপুর ইউনাইটড সার্ভিস লিমিটেড	Sadarghat	Mirpur 12		30	Nestor
SAD-GAZ	32	৩২	Balaka Special Limited		KML...	বলাকা স্পেশাল লিমিটেড	Sadarghat	Gazipur	Sadarghat, Gazipur	30	15.1
SAD-GAZ	4/A	৪/এ	Suprohat		KML...	সুপ্রভাত	Sadarghat	Gazipur	Sadarghat, Paltan, Kakrail, Malibagh, Rampura, Bad...	30	38.1 80
SAD-GAB	7	৭	Number 7 Local Service		KML...	৭ নং লোকাল সার্ভিস	Sadarghat	Gabtoli	Gabtoli, Kalyanpur, Asad Gate, Science Lab, Shahba...	30	13.1 38
SAD-ABD	4/A	৪/এ	Victor		KML...	ভিক্টর	Sadarghat	Abdullahpur	Sadarghat, Paltan, Kakrail, Malibagh, Rampura, Bad...	30	
MOTP-GUL1-2	6/B	৬/বি	Motijheel Transport Company Limited		KML...	মতিঝিল ট্রান্সপর্ট কম্পানী লিমিটেড	Motijheel Pir Jongimazar	Gulshan 1		30	
MOTP-GUL1-1	6/A	৬/এ	Number 6 Motijheel to Banani Transport Company		KML...	৬ নং মতিঝিল টু বনানী ট্রান্সপর্ট কম্পানী লিমিটেড	Motijheel Pir Jongimazar	Gulshan 1		10	

Live Tracking via Dashboard

DK



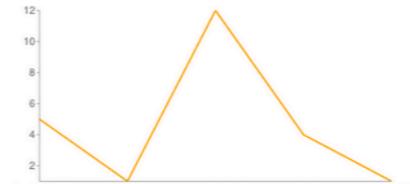
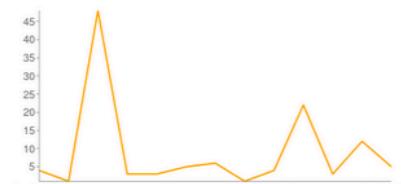
KEY STATS

BUS TRIPS
TOTAL

BUS TRIPS
BY DAY

SURVEYS
TOTAL

SURVEYS
BY DAY

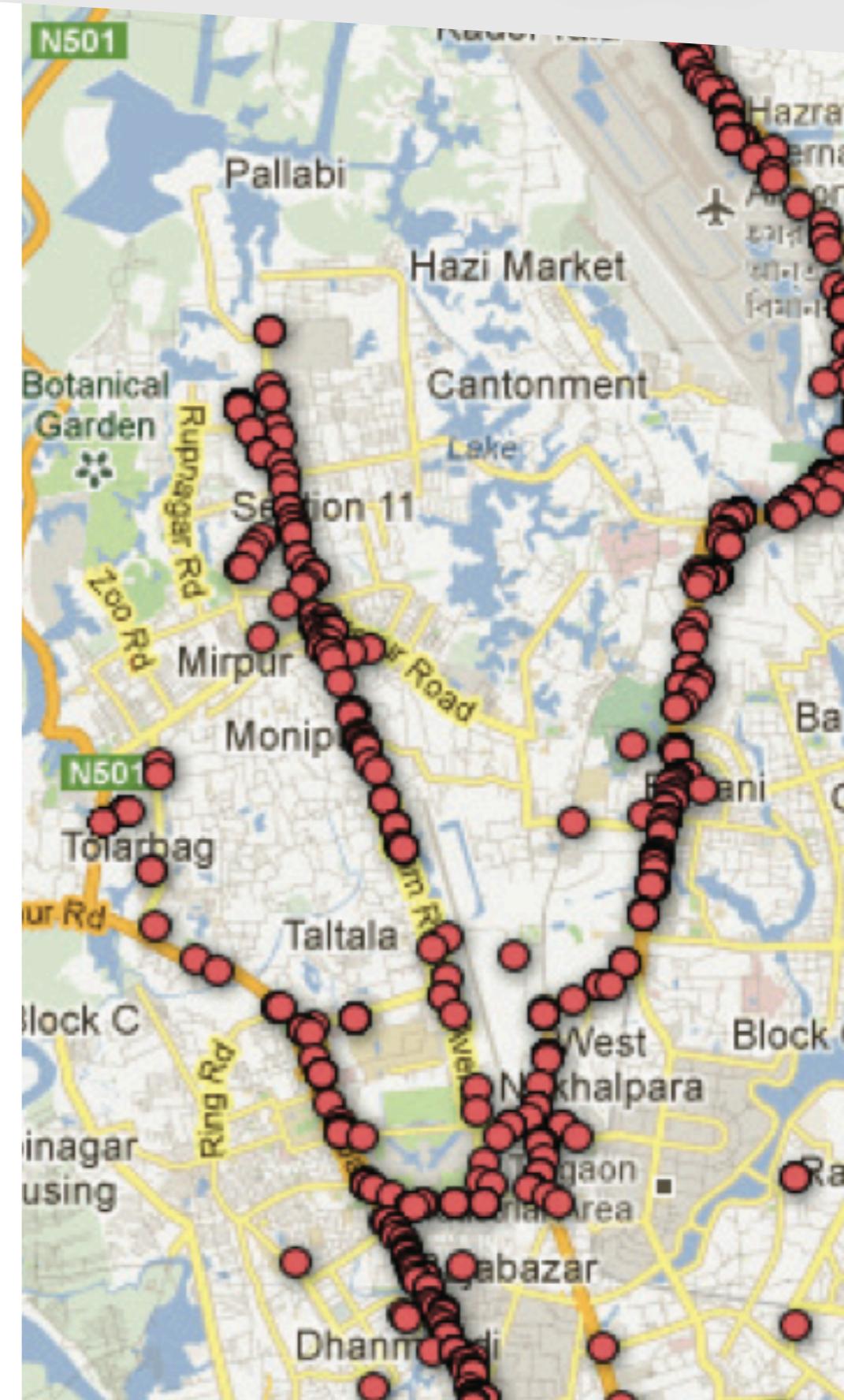
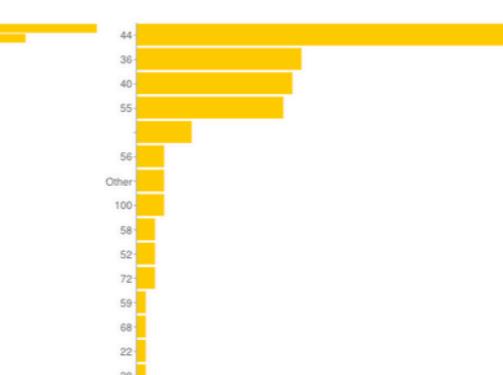
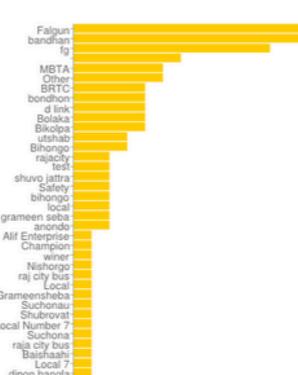
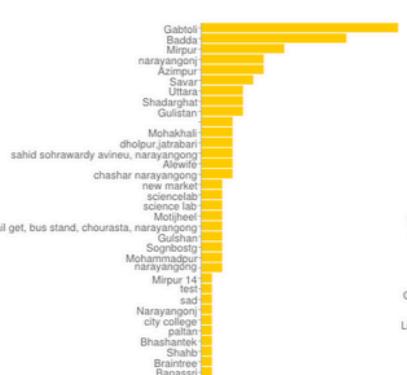
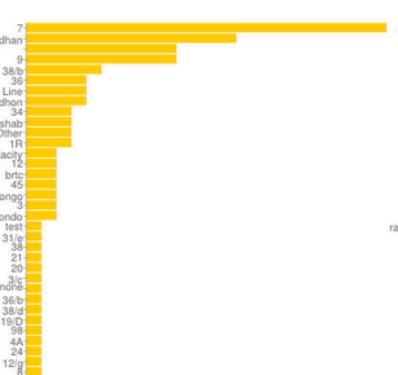


BUS TRIPS
BY NUMBER

BUS TRIPS
BY DESTINATION

BUS TRIPS
BY COMPANY

BUS TRIPS
BY NUMBER OF SEATS



Overwhelming Initial Data

DK







DHAKA BUS MAP ঢাকা বাস ম্যাপ



JOIN OUR FLOCK TO HELP IMPROVE THIS
MAP & RECEIVE THE LATEST UPDATES
যোগ করুন আমরা বিনামূল করে আপনার মানচিত্র
(এ ক্ষেত্র এবং অন্যান্য মানচিত্র ক্ষেত্রে আপনার মানচিত্র করুন)

URBANLAUNCHPAD.ORG/ALPHA



The Daily Star

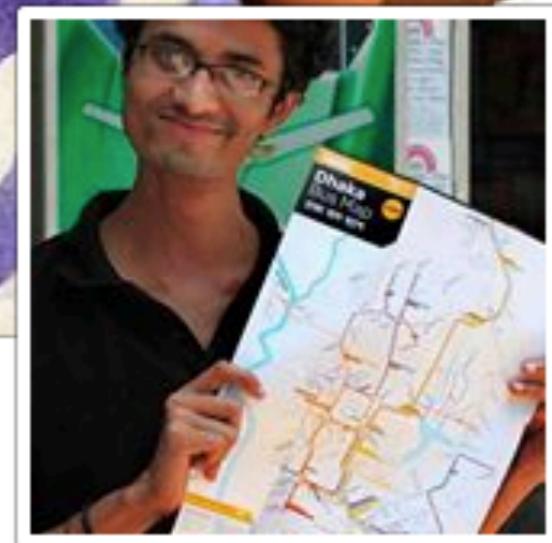
Sunday, January 13, 2013 Metropolitan

Dhaka's first bus map in the making



Positive Initial Reaction

DK



First Bus Map of Dhaka

4,745 likes · 23 talking about this



Community

Bringing the first map of Dhaka's bus network to life for its millions of daily riders.



About

Photos

4,745



Likes

Forum

Highlights ▾



First Bus Map of Dhaka shared a link.

6 hours ago

Here We. It finally become available a effort! and how it all began The Story of making #First_Bus_Map_of_Dhaka

<http://www.youtube.com/watch?v=97rNLDh9czg&feature=youtu.be>

Recent Posts by Others on First Bus Map of Dhaka

See All



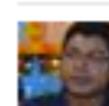
Muntasir Mamun

Success is a journey. No matter who gets the juice ...
 9 2 2 · about an hour ago



Abdullah Al Kaisar

Dhaka people, download First Bus Map of Dhaka! fr...
 2 · Yesterday at 5:35am



Abdullah Ibn Mahmud

where is the map? :O Download link?



Faisal Mahmud
is a staff reporter at
Weekend Tribune who
specialises in writing
IT and telecom stories
with depth and
analysis.

Destination known

Dhaka buses seem to run on a schedule of their own. *Faisal Mahmud* writes about a venture that might make it easy for all commuters to take the next bus

With informal networks and unplanned stoppages, Dhaka's bus service is a hodgepodge. It is difficult for a life-long local to figure out which buses go where, never mind a visitor. Indeed, an attempt to map the city's myriad bus routes would be a job better suited to a labyrinth puzzle designer rather than a cartographer.

Two groups, however, thought differently. The US-based social venture organisation Urban Launchpad and Bangladeshi advocacy firm Kewkrabong have jointly done the 'impossible' job, and created Dhaka's first bus map.

"We have already printed the first 5,000 alpha paper versions of the map and handed those out for free to the city locals on June 5, 2013," says Muntasir Marmam, coordinator of Dhaka bus mapping project and co-founder of "Urban Launchpad" in Cambridge, Massachusetts.

Marmam, a qualified engineer by profession and a change-maker by passion, told Weekend Tribune that, "only a regular bus rider in Dhaka would understand the peril of it." He explained, "I ride buses and I have faced it, so I thought of doing something to lessen the danger. That's where the thought of creating a map for Dhaka's bus routes came from."

The first map has been prepared after a year's worth of research, field work and data collection. "This map can assist even an uninitiated Dhaka commuter in finding the right bus services for him/her," says Marmam.

Despite low car ownership, Dhaka has been referred to as one of the slowest cities in the world and the buses are getting even slower: an average journey speed of 5km an hour has been forecast for 2014.





Fact Box

As per the data of Bangladesh Road Transport Authority (BRTA), there are 1,400 registered bus in certain routes, all privately operated on different routes running in the capital.

BRTA data says, there are 5,425 buses and minibuses running in Dhaka-city.

There are 11,000 total bus stoppers across the capital.

As per the data of Dhaka Transport Corporation Board (DTC), Buses taken up only 10 percent of the total road space in Dhaka even though transport uses 40 percent of the city's commuters.

Usually, to assess road use, the large number of Dhaka commuters, the capital should provide at least 10 percent road space for the bus services, said a DTC study.

The slow get slower

For many public transit systems around the world, getting out and the relatively compact, 8.5-million-person mega capital of Bangladesh, which despite low or moderate income, has been referred to as one of the poorest cities in the world.

Because of traffic congestion and urban management, buses are becoming slower in most of the busy city streets, causing a major loss of time, energy and money if it's conducted in poor order. Strategic Transport Planning (STP), a 10-year project on the city's transportation options, revealed that each of the examined routes became slower between 2000 and 2010, with average rates of progress dipping from

around 3 km per hour to under 2 km per hour inside the years. The study also predicted that it was likely to become worse in the future.

Experts believe the bus speed is gradually decreasing due to the absence of proper initiatives on city traffic management. "It doesn't take an expert to understand that Dhaka's traffic is a mess. The chief officers are the regular ordinary people who don't have other options but to take public transport for moving around inside the capital," says Munir.

The irony, however, is that though a city with one of the highest population densities in the world, has almost no

public transport infrastructure. "We don't have any metro, subway or even dedicated bus rapid transit (BRT) system to move around in," Munir says, adding that in the absence of such infrastructure, Dhaka has a long list plus (terrible) bus spaces. "But this system is like an urban jungle spider web. Stringing it under a systematic road with which a commuter can easily find bus service for his/her desired route was not an easy task," he says.

The irony, however, is that though a city with one of the highest population densities in the world, has almost no

good to get a first glimpse of not just routes, but their times, crowding levels, who ride each route and what made the bus riders happy.

Munir says the plan greatly exceeded their expectations and revealed some interesting insights. The survey group found that bus rider happiness was more dependent on the number of passengers, rather than bus speed. Bus crowding was due to large stand issues, and while there were more women, the less crowded the buses tended to be. In big cities,

in a place where less than 10% of riders were female, it could mean that information may still originate from developing bus rapid transit (which is underway in Dhaka) to big cities.

After the field work, the data collected was sent to the technical team in San Francisco led by Albert Ching, a former researcher in sustainable transportation at the renowned Massachusetts Institute of Technology (MIT) and a co-founder and chief designer of UrbanSaurus.

Road rush

The traffic growth rate has been at least 10% each of the past 10 years.

The total number of vehicles on the city roads is 75 lakh, at least five times more than what it was in 1990.

The weight of freight moved over the city roads in recent times has jumped at least 10 times in last 20 years.

The number of passenger busses/hopped up to 10 times in the mentioned period.

Diagrammatic approach

"Taking time to translate all the data that we collected into something complete to understand and especially useful for bus riders in Dhaka", says Munir. "We started with the fairly complicated map of the bus lines already plotted on the paper lines based on their general direction e.g. north-south, east-west, and related topologically to the exact geographic coordinates of buses."

Ching says that the team launched website on its own research resources and a diagrammatic rendition of the bus network that would primarily display the entirety of the system.

Ching says they would have preferred to use the official route

numbers of the bus services in Bangladesh, but they found out every route had a number and those that did not display them on the buses such that the riders themselves were not aware of route numbers.

"Instead, we used colors instead to remember and remember the system", says Ching, adding that the members of the project took the suggestion, but that they are hoping to make it easier for someone to quickly understand the many lines and labels for readability.

Ching says, they would have preferred to use the official route

Although over 47% of Dhaka commuters use public bus services, only a mere 5% of the total vehicles are buses. More than half of those buses are in bad shape and run by greenhorn drivers. To make the city sustainable in terms of transport infrastructure, there is no option but to improve its bus service.

Dr Suman Munir, professor of Urban and Regional Planning Department at BUET

What Next?

Munir says they have designed and printed a plan map - a little larger than a standard sheet - and made it available for a pocket. After the initial distribution of 5000 plots to Dhaka commuters, Munir is hoping to raise funds to distribute more free of charge. While paper maps are the final output of the project, Munir

says the data collection effort that underpins this big legitimate effort is much larger than the map itself. After the initial distribution of 5000 plots to Dhaka commuters, Munir believes this model could be adopted and deployed in other cities that rely on informal urban transport. "It fits with the mission





Dipanayga BN বি. আর. টি. সি
 BRTC BN বি. আর. টি. সি
 Ena Paribahan BN এনা পরিবহন
 BRTC BN বি. আর. টি. সি
 Best Transport BN বেস্ট ট্রান্সপোর্ট
 Choice Transport BN চয়েজ ট্রান্সপোর্ট
 Shikor Paribahan BN শিকড় পরিবহন
 ETC BN ই. টি. সি
 Mirpur United Service Limited BN মিরপুর ইউনাইটেড সার্ভিস লিমিটেড
 New Vision Paribahan BN নিউ ভিজন পরিবহন
 Tangil Paribahan Limited BN টঙ্গাইল পরিবহন লিমিটেড
 Shotabdi Paribahan BN শতাব্দী পরিবহন
 My Line BN মাই লাইন
 Bikolpa BN বিকল্প
 Bahon Paribahan BN বাহন পরিবহন
 BRTC BN বি. আর. টি. সি
 Gazipur Paribahan BN গাজীপুর পরিবহন
 BRTC BN বি. আর. টি. সি
 Number 3 Local Service BN ৩ নং লোকাল সার্ভিস
 Skyline BN স্কাইলাইন
 Balaka Special Limited BN বলাকা স্পেশাল লিমিটেড
 Suprobhat BN সুপ্রভাত
 Victor BN ডিস্ট্রি
 Bondhu Paribahan BN বন্ধু পরিবহন
 Jatrabari Paribahan Limited BN যাত্রাবাড়ি পরিবহন লিমিটেড
 Provati Banasree Paribahan Limited BN
 Metro Link BN মেট্রো লিংক
 Provati Banasree Paribahan Limited BN
 BRTC BN বি. আর. টি. সি
 Number 8 Local BN
 BRTC BN বি. আর. টি. সি
 BRTC BN বি. আর. টি. সি
 Hanif Metro Service BN
 Super Bus BN সুপার বাস
 Number 7 Local Service BN
 Labbayak BN লাব্বাইক
 Duldul BN দুলদুল
 Ekush Paribahan BN একুশ পরিবহন
 Rupkothal BN রূপকথা
 First Ten BN ফার্স্ট টেন
 Bihongo BN বিহঙ্গ
 Champion BN চ্যাম্পিয়ন
 ATCL BN এ.টি.সি.এল
 Dipon Transport BN দীপন পরিবহন
 Raja City Bus BN রাজা সিটি বাস
 RTCL Paribahan BN
 Midway Link Private Limited BN মিডওয়ে লিংক প্রাইভেট লিমিটেড

7 AZI-ABD-1-12,700,,Azimpur -- Abdullaipur ,,,,-
 8 AZI-ABD-1-53,700,,Azimpur -- Abdullahpur ,6,0,,10007,0,0,TR100701
 9 AZI-TON-3,700,,Azimpur -- Tongi ,7,0,,10008,0,0,TR100801
 10 AZI-GAZ-58,700,,Azimpur -- Gazipur ,8,0,,10009,0,0,TR100901
 11 AZI-ABD-2-24,700,,Azimpur -- Abdullahpur ,9,0,,10010,0,0,TR101001
 12 AZI-KUR-1-60,700,,Azimpur -- Kuril ,10,0,,10011,0,0,TR101101
 13 AZI-KUR-2-17,700,,Azimpur -- Kuril ,10,0,,10012,0,0,TR101201
 14 MOT-MIR12-12,700,,Motijheel -- Mirpur 12 ,11,0,,10013,0,0,TR101301
 15 MOT-MIR12-22,700,,Motijheel -- Mirpur 12 ,11,0,,10014,0,0,TR101401
 16 MOT-RUP-12,700,,Motijheel -- Rupnagar ,12,0,,10015,0,0,TR101501
 17 JAT-MIR12-7,700,,Jatrabari -- Mirpur 12 ,13,0,,10016,0,0,TR101601
 18 JAT-MIR12-15,700,,Jatrabari -- Mirpur 12 ,13,0,,10017,0,0,TR101701
 19 JAT-MIR12-50,700,,Jatrabari -- Mirpur 12 ,13,0,,10018,0,0,TR101801
 20 GUL-MIR12-23,700,,Gulistan -- Mirpur 12 ,14,0,,10019,0,0,TR101901
 21 SAD-MIR12-33,700,,Sadarghat -- Mirpur 12 ,15,0,,10020,0,0,TR102001
 22 MOT-ZOO-36,700,,Motijheel -- Zoo ,16,0,,10021,0,0,TR102101
 23 SAD-ZOO-56,700,,Sadarghat -- Zoo ,17,0,,10022,0,0,TR102201
 24 MOT-MIR14-51,700,,Motijheel -- Mirpur 14 ,18,0,,10023,0,0,TR102301
 25 MIR14-BAS-35,700,,Mirpur 14 -- Basabo ,19,0,,10024,0,0,TR102401
 26 MIR14-TAL-5,700,,Mirpur 14 -- Taltola ,20,0,,10025,0,0,TR102501
 27 FUL-GAZ-12,700,,Fulbaria -- Gazipur ,21,0,,10026,0,0,TR102601
 28 FUL-GAZ-26,700,,Fulbaria -- Gazipur ,21,0,,10027,0,0,TR102701
 29 MOT-ABD-12,700,,Motijheel -- Abdullahpur ,22,0,,10028,0,0,TR102801
 30 GUL-AZA-38,700,,Gulistan -- Azampar ,23,0,,10029,0,0,TR102901
 31 SAD-SHA-52,700,,Sadarghat -- Shafipur ,24,0,,10030,0,0,TR103001
 32 SAD-GAZ-6,700,,Sadarghat -- Gazipur ,25,0,,10031,0,0,TR103101
 33 SAD-GAZ-55,700,,Sadarghat -- Gazipur ,25,0,,10032,0,0,TR103201
 34 SAD-ABD-59,700,,Sadarghat -- Abdullahpur ,26,0,,10033,0,0,TR103301
 35 GUL-BAD-11,700,,Gulistan, GPO -- Badda, Natun Bazar ",27,0,,10034,0,
 36 DEM-TON-29,700,,Demra -- Tongi ,28,0,,10035,0,0,TR103501
 37 FUL-SRE-42,700,,Fulbaria -- Sreepur ,29,0,,10036,0,0,TR103601
 38 GUL-KALK-42,700,,Gulistan -- Kaliakair ,30,0,,10037,0,0,TR103701
 39 FUL-GAB-12,700,,Fulbaria -- Gabtoli ,31,0,,10038,0,0,TR103801
 40 JAT-GAB-41,700,,Jatrabari -- Gabtoli ,32,0,,10039,0,0,TR103901
 41 DEM-SAV-12,700,,Demra -- Savar ,33,0,,10040,0,0,TR104001
 42 FUL-NOB-1-12,700,,Fulbaria -- Nobinagar ,34,0,,10041,0,0,TR104101
 43 MOT-NAN-28,700,,Motijheel Shapla Chottor -- Nandan Park ,35,0,,10042,
 44 MOT-NAN-54,700,,Motijheel Shapla Chottor -- Nandan Park ,35,0,,10043,
 45 SAD-GAB-40,700,,Sadarghat -- Gabtoli ,36,0,,10044,0,0,TR104401
 46 JAT-SAV-30,700,,Jatrabari -- Savar ,37,0,,10045,0,0,TR104501
 47 GAB-ABD-1-20,700,,Gabtoli -- Abdullahpur ,38,0,,10046,0,0,TR104601
 48 GAB-ABD-2-21,700,,Gabtoli -- Abdullahpur ,38,0,,10047,0,0,TR104701
 49 GAB-ABD-1-45,700,,Gabtoli -- Abdullahpur ,38,0,,10048,0,0,TR104801
 50 GAB-MIR14-25,700,,Gabtoli -- Mirpur 14 ,39,0,,10049,0,0,TR104901
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