Market Sizing Methods for Urban Tech Bets
Introduction to Market Sizing

We chose our urban tech opportunities because they are socially impactful as well as good business for tech companies. We believe that there is big potential for scale in emerging and developing economies worldwide for each of them.

For each bet, we have analysed the potential addressable market and the number of people impacted, in cities in emerging and developing economies. We provide a conservative market size for each bet and an ambitious extended market size, in which tech players and other actors have been able to reach further into the base of the user pyramid (for example, by reducing costs to users).

We took a bespoke market sizing approach to each opportunity, guided by insights of experts and entrepreneurs in our focus countries (Kenya, Indonesia, and Mexico). We extrapolated from our focus countries to other similar emerging and developing markets, adjusting for differences in key characteristic (for example, GDP per capita). Further detail on the approach for each bet, and the extrapolation to the global market size, is outlined in the following slides.
We came up with directional estimates of the potential addressable market for each of these use cases. The estimates are focused on 70 emerging and developing economies where we thought the solutions could be relevant.

We looked at countries that had the following characteristics:

- GDP of less than 20,000 USD pc.
- More than 15% internet use
- Have more than 1M urban population
- Are not fragile states
Market Sizing

GLOBAL LEVEL

We used the following methodology to move from city-level markets to global emerging market size:

1. Extrapolate market size to all countries based on population.

2. Apply screening criteria to leave countries with:
   - <20K USD GDP per capita
   - >15% internet use

3. Adjust each country market size based on internet usage relative to base city.

4. Adjust each country market size based on GDP per capita (PPP) relative to base city.

Variations in methodology:
- For Digital Learning, we also factored in the split of public and private students in each country.
- For Water Metering, we factored in access to water in urban areas.
- For the “5 years time” scenario, we extrapolate forward based on the trends from the last 5 years.
Digital Learning Sizing
COUNTRY LEVEL

We used the following methodology to construct the urban digital learning market size at a country level:

<table>
<thead>
<tr>
<th>Students attending urban public schools</th>
<th>Access to internet in public schools</th>
<th>Willingness to pay in public schools</th>
<th>Cost of subscription in public schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>n of students</td>
<td>% of students</td>
<td>% of students</td>
<td>USD per capita</td>
</tr>
</tbody>
</table>

\[ \text{Students attending urban public schools} \times \text{Access to internet in public schools} \times \text{Willingness to pay in public schools} \times \text{Cost of subscription in public schools} \]

PLUS

<table>
<thead>
<tr>
<th>Students attending urban public schools</th>
<th>Willingness to pay in private schools</th>
<th>Cost of subscription in private schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>n of students</td>
<td>% of students</td>
<td>USD per capita</td>
</tr>
</tbody>
</table>

\[ \text{Students attending urban public schools} \times \text{Willingness to pay in private schools} \times \text{Cost of subscription in private schools} \]

\[ \text{PLUS} \]

\[ \text{Mexico Digital Learning Urban Market Size} \]
Digital Learning Sizing
COUNTRY LEVEL (EXTENDED)

We used the following methodology to construct the urban digital learning market size at a country level assuming a government commitment to procurement leading to similar willingness to pay in public schools as in private schools.

\[
\text{Students attending urban public schools} \times \text{Willingness to pay in all schools} \times \text{Cost of subscription in public schools} \times \text{USD per capita}
\]

\[
\text{Students attending urban private schools} \times \text{Willingness to pay in all schools} \times \text{Cost of subscription in private schools} \times \text{USD per capita}
\]

= Mexico Digital Learning Urban Market Size (extended)
Multi-Modal Skilling Sizing:
COUNTRY LEVEL

We used the following methodology to construct the urban MMS market size at a country level.

\[
\text{Jabodetabek* Workforce} \times \ \text{Degree or HS diploma holders % of workforce (wf)} \times \ \text{Income more than 5 times tuition % of wf with degree} \times \ \text{Want to continue education** % of wf with degree and ability to pay} \\
\text{Tuition fee USD per year} \times \ \text{Indonesia urban workforce adjustment urban workforce as a % of Jabodetabek workforce} \times \ \text{Capital city consumption adjustment consumption of all urban areas as a % of Jabodetabek consumption}
\]

= Indonesia Multi-Modal Skilling Urban Market Size

Notes:
*Jabodetabek refers to Jakarta and satellite cities
**Reduced to account for typical positive bias in surveyed WTP and spread over 6 years to account for catch-up in cohort who did not have access to offering in the past (this would in theory reduce the modeled market size in year 7, but in reality would be spread much more evenly)
Multi-Modal Skilling Sizing:
COUNTRY LEVEL (EXTENDED)

We used the following methodology to construct the urban MMS market size at a country level assuming a reduced tuition fee and therefore increased ability to pay.

\[
\text{Jabodetabek* Workforce} \times \text{Degree or HS diploma holders % of workforce (wf)} \times \text{Income more than 5 times tuition % of wf with degree} \times \text{Want to continue education** % of wf with degree and ability to pay} \times \text{Reduced tuition fee USD per year} \times \text{Indonesia urban workforce adjustment urban workforce as a % of Jabodetabek workforce} \times \text{Capital city consumption adjustment consumption of all urban areas as a % of Jabodetabek consumption} = \text{Indonesia Multi-Modal Skilling Urban Market Size (extended)}
\]

Notes:
*Jabodetabek refers to Jakarta and satellite cities
**Reduced to account for typical positive bias in surveyed WTP and spread over 6 years to account for catch-up in cohort who did not have access to offering in the past (this would in theory reduce the modeled market size in year 7, but in reality would be spread much more evenly)
**Smart Recruiting for the Informal Economy**

**COUNTRY LEVEL**

We used the following methodology to construct the urban smart recruiting for the informal economy market size at a country level.

<table>
<thead>
<tr>
<th>Jakarta Workforce n</th>
<th>Addressable through use case % of workforce (wf)</th>
<th>Working hours Hours per year</th>
<th>Utilization %</th>
<th>Capital city consumption adjustment consumption of all urban areas as a % of Jakarta consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker earnings USD per hour</td>
<td>Matching fee % of earnings</td>
<td>Indonesia urban workforce adjustment urban workforce as a % of Jakarta workforce</td>
<td>= Indonesia <strong>Smart Recruiting Urban Market Size</strong></td>
<td></td>
</tr>
</tbody>
</table>
Water Metering Sizing: COUNTRY LEVEL

We used the following methodology to construct the urban smart water meter market size at a country level:

\[
\text{Number of active piped water connections} \times \text{Meter Cost USD} \times \text{Overheads for placement, maintenance, and management} \% \text{ of cost} \div \text{Meter lifetime years} \times \text{Indonesia urban population adjustment} \times \text{Capital city consumption adjustment} \text{ consumption of all urban areas as a } \% \text{ of Nairobi consumption} = \text{Kenya Water Metering Urban Market Size}
\]
Water Metering Sizing:
COUNTRY LEVEL (EXTENDED)

We used the following methodology to construct the urban smart water meter market size at a country level assuming increased investment in water mains (resulting in a greater number of connections).

\[
\text{Number of households and non-residential properties} \times \text{Properties best served through main connections} \times \text{Meter cost (reduced)} \times \text{Overheads for placement, maintenance, and management} \div \text{Meter lifetime years} = \text{Kenya Water Metering Urban Market Size (extended)}
\]

Indonesia urban population adjustment urban population as a % of Nairobi population

Capital city consumption adjustment consumption of all urban areas as a % of Nairobi consumption
Emergency Response Sizing: COUNTRY LEVEL

We used the following methodology to construct the urban emergency services economy market size at a country level:

\[
\text{Nairobi Population} \times \text{Ability to pay \% of population} \times \text{Membership cost USD per year} \times \text{Indonesia urban workforce adjustment} \times \text{Capital city consumption adjustment consumption of all urban areas as a \% of Jabodetabek consumption} = \text{Kenya Emergency Services Urban Market Size}
\]
Emergency Response Sizing:
COUNTRY LEVEL (EXTENDED)

We used the following methodology to construct the urban emergency services economy market size at a country level assuming that Governments purchase coverage for their citizens:

\[
\text{Nairobi Population} \times \text{Ability to pay} \% \text{ of population} \times \text{Public sector membership cost USD per year} \times \text{Indonesia urban workforce adjustment urban workforce as a} \% \text{ of Jabodetabek workforce} \times \text{Capital city consumption adjustment consumption of all urban areas as a} \% \text{ of Jabodetabek consumption} = \text{Kenya Emergency Services Urban Market Size (extended)}
\]
## Commuter Ride-Sharing Sizing: COUNTRY LEVEL

We used the following methodology to construct the urban commuter ride sharing meter market size at a country level:

<table>
<thead>
<tr>
<th></th>
<th>Number of large enterprises in Mexico City</th>
<th>Rate of enterprise uptake % of enterprises</th>
<th>Number of employees at large enterprises employees per enterprise</th>
<th>Rate of employee uptake % of employees</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Distance of commute kilometers per year</th>
<th>Price of Journey USD per km</th>
<th>Indonesia urban population adjustment urban population as a % of Mexico City population</th>
<th>Capital city consumption adjustment consumption of all urban areas as a % of Mexico City consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

= Mexico **Commuter Ride-Sharing Urban Market Size**
Commuter Ride-Sharing Sizing:
COUNTRY LEVEL (EXTENDED)

We used the following methodology to construct the urban commuter ride sharing meter market size at a country level assuming extended coverage for medium size enterprises.

\[
\text{Mexico Commuter Ride-Sharing Urban Market Size (extended)} = \text{Number of large and medium enterprises in Mexico City} \times \text{Rate of enterprise uptake} \times \% \text{ of enterprises} \times \text{Number of employees at large enterprises} \times \text{employees per enterprise} \times \text{Rate of employee uptake} \times \% \text{ of employees} \times \text{Distance of commute} \times \text{Price of Journey USD per km} \times \text{Indonesia urban population} \times \text{urban population as a \% of Mexico City population} \times \text{Capital city consumption adjustment} \times \text{consumption of all urban areas as a \% of Mexico City consumption}
\]