Future of mobility

Mobility is an essential human need: without it people struggle to access to the goods, services and social and economic connections needed for a fulfilling life.

A growing global population, increasing affluence and urban sprawl, and declining transport costs are pushing the demand for mobility upwards. For example, the number of vehicles sold worldwide has steadily risen, especially in middle-income countries – a trend that is projected to continue. Air passenger numbers are also rapidly increasing.

This growth comes with environmental, economic and public health challenges. Transport is resource and energy intensive, for instance, and responsible for a sizeable proportion of global greenhouse gas emissions. Congestion holds back economic productivity. And some transport-related emissions are harmful to human health and the environment.

But mobility is an area rich in innovation. Intelligent, integrated citywide systems are in development, and there is an increasing focus on designing walkable or cyclable communities. The rise of electric and self-driving cars, and the rapid advance of online applications designed to remove the need to travel altogether, also show how some mobility needs may be met in future.

Implications

- If new approaches and innovations are not adopted, there is a risk that the negative economic, environmental and health impacts of increased mobility could become a serious constraining factor on its growth. The costs of transport may rise, disproportionately affecting poor communities. This would have a knock-on effect on economic productivity, which could spur governments to introduce new regulations for managing the negative impacts of greater mobility.
- On the other hand, sustainable mobility also offers a wide range of benefits – from better health and less noise and pollution to greater social and economic opportunities.
- Approaches that remove the need to travel altogether may be needed in the long term to balance the risks and opportunities of increased mobility – e.g. goods, services and essential connections that people can access without having to travel far, or even at all.

Current trajectory

- World carbon emissions totalled 9,200 megatons in 2010, [1] with transport responsible for 27% of the overall amount. [2] Of that 27%, 45% came from cars and vans, 25% from freight trucks, 11.6% from aviation, 9.5% from ships, and 6.2% from buses. [3]
- According to the UK’s National Travel Survey, the average distance travelled per person in 2012 was 6,691 miles, which is 49% higher than in 1972/73. [4]
- Globally, scheduled commercial international and domestic flights carried approximately 3.1 billion passengers in 2013, up from 2.9 billion passengers in 2012. [5] By 2017, the International Air Transport Association (IATA) expects total passenger numbers to have risen to 3.91 billion. [6]

- In 2011, China had 70 cars per 1,000 people (up from 47 cars per 1,000 people in 2009), compared to 786 cars per 1,000 people in the US. [7] However, in 2020 China is projected to become the world's largest market for motor vehicle sales, permanently surpassing the US. By 2030, China's annual car sales are expected to reach 39 million, or 28% of global sales.
- In 2010 the number of vehicles worldwide surpassed the 1 billion mark for the first time, [8] and will reach 2 billion by 2035. [9] According to the World Economic Forum, traffic jams worldwide already cost up to US$1.4 trillion annually. [10] And global traffic fatalities are projected to triple to 3.6 million per year by 2030. [11]
- A growing number of US millennials have a different attitude toward cars than previous generations. [12] The share of US metropolitan residents without a car has grown since the mid-1990's: 13% of people in cities of more than 3 million people have no car, while only 6% in rural areas live without one. This echoes similar trends in Britain, France, Spain, Italy, Australia, New Zealand and Belgium. [13]
- The World Economic Forum forecasts that smart transport investment will experience 20% annual growth until 2025. [14]

Footnotes:

1. [1] International Business Times (2014, Sep). Climate Change: Major Global Shift to Public Transport Can Cut Emissions by 40%
2. [2] IPCC Fifth Assessment Working Group III report
3. [3] IPCC Working Group III (2014).
4. [4] UK Department for Transport (2013, July). National Travel Survey 2012, pg 2.
5. [5] International Civil Aviation Organization (2014). Safety Report – 2014 Edition, pg 5.
6. [6] IATA (2013, Dec). Airlines Expect 31% Rise in Passenger Demand by 2017
7. [7] The World Bank, (updated 2014, based on latest data available). World Development Indicators. The data for India was unavailable in 2011.
8. [8] Wards Auto (2011). World Vehicle Population Tops 1 Billion Units
9. [9] Navigant Research (2014). Transportation Forecast: Light Duty Vehicles
10. [10] World Economic Forum (2014, May). Connected World - Hyperconnected Travel and Transportation in Action.
11. [11] Pulitzer Center on Crisis Reporting (2013). Not God's Will: The Fixable Crisis of Traffic Fatalities
12. [12] US PIRG (2014, October). Millennials in Motion Report
13. [13] The Economist (2012). The Future of Driving: Seeing the back of the car
14. [14] World Economic Forum (2014, May). Connected World - Hyperconnected Travel and Transportation in Action.