The networked mobility of 2040

AlegreDesign

The dynamics that are defining the new emerging mobility ecosystem are changing over time, causing the various actors involved to adopt new business strategies and invest in the most advanced technologies related to the concept of smart mobility.

The global crisis has not interrupted the process of development, innovation and transformation already underway in mobility for some years now. The contingency has in fact certainly triggered a process of propulsion of some of the emerging Macro-Trends, also in anticipation of the macroeconomic growth estimated for 2021.

Specifically, among the main trends we are mapping are:

- **The Electrification**: or the switch to electrical technology. The phenomenon, in strong progress, affects all Mobility, involving the private transport sector (two and four wheels), the commercial transport sector (light and heavy), the public transport sector and finally that of Micromobility.

- **Connected Mobility** (Vehicle to Everything, "V2X"). The development by the main car manufacturers of V2V ("vehicle-to-vehicle") and V2I ("vehicle-to-infrastructure") communication platforms, therefore allows vehicles to communicate with each other, as well as with infrastructures (eg buildings , traffic lights, etc.). The path traced is to search for solutions capable of maximizing the energy efficiency of electrical systems and a strong reduction in greenhouse gas (CO_2) emissions on the planet. From this point of view, the most relevant area of development concerns the lithium battery, and in particular the management of the so-called Second-Life of the battery.

- **Autonomous driving**: the segment of Connected and Autonomous Vehicles (CAVs) is one of the main frontiers of transformation of the way of conceiving the movement of people and things. An autonomous vehicle is in fact a product that combines a system of sensors, cameras, GPS, radar and artificial intelligence (AI) software such as to simplify the driver's interaction with the vehicle and the automation of the driving process, with the futuristic goal of completely replacing the driver of the vehicle. To date, it is still complex to break down the resistance and skepticism of demand in terms of effective security of the solutions offered and implementation times and market presence, at affordable prices.

This smart mobility will be the enabler of the Mobility 2040 vision: it will be the on-demand driverless car that shows up at your door; the buses, trains, and airplanes that communicate in real time for seamless connections; and the city traffic grid that constantly updates as demand changes.

Achieving such connected, flexible, and personalized transportation will require digital platforms with the power to connect people to all transport modes as well as related products and services.

Transport operators, digital giants, and innovative startups already find themselves in a race to establish first-mover advantage in smart mobility. The pressure will intensify as autonomous and artificial intelligence technologies have a more tangible impact on our daily lives.

> **The time to develop smart mobility platforms and services is now. The challenge will be in achieving the breadth of services and depth of customer connection that can lead to sustainable smart mobility business models.**

Since 2000, all major modes of passenger travel have seen steady growth, due to the convergence of better travel infrastructure, broader travel options, and rising incomes, paired with more travel-oriented lifestyles in general. While cars will continue to be the mainstay of passenger travel, **rail and air travel are projected to see faster growth than cars through 2040**.

Traveler preferences are moving toward a greater focus on personalized, flexible, end-to-end solutions. New technologies, including autonomous vehicles, e-mobility, smart city controls, and multimodal hubs will lead to new alternatives for both long-distance and nearby travel. The challenges these changes will entail are giving rise to a host of new mobility providers along the entire end-to-end travel experience.

Examples of how this is already happening include mobile apps for ridesharing, one-click travel book-and- pay, real-time public transport data, and app-based city parking. In the future, smart mobility will enable **seamless integration of transport modes**, including on-demand and autonomous options, as well as ancillary services not traditionally part of the travel experience. **Smart mobility will increasingly factor into the choices consumers make about how they travel.**

According to a survey conducted by a well known trend research agency, the growing importance of smart mobility offerings is expected to radically transform the current modal split among different transportation options.

With increasing age, the influence of smart mobility offerings on individual travel decisions declines, but even so, 84 percent of respondents over 65 identified smart mobility services as important, and three-quarters of seniors would change their preferred travel mode for access to smart mobility. The survey found that a clear majority of participants would consider changing their currently preferred mode of travel if an alternative offered smart mobility services. This is particularly true for young consumers.

Starting from the analysis of the urban micro-mobility, passing through new typologies of on-demand services for city transport up to the advanced and visionary technology of connected and autonomous cars, at Alegre Design we have traced the most significant changes for the definition of the new mobility ecosystem.

Striking changes that will be part of our everyday life and that will shape the interconnected and user-centered city of the future.

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