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Title of the presentation

The challenges of urban intelligent mobility systems driving towards policentricity: an exploration of megatrends in urban transport innovative solutions in Europe

Abstract (400-500 words)

This work introduces an empirical analysis for identification of urban transport solution megatrends and impacts on polycentricism development.

The concept of policentricity of settlement structures originated in the early 30's as an empirical concept, contrasting the central-place theory. Megacities such as London and Berlin developed decentralized Central Business Districts far from their City centres. Making the urban transport network more efficient and reliable was instrumental for the integration of these CBDs.

Two main results emerge from the literature on the past and current evolution of urban transport and sustainable mobility:

- Cities and urban areas have been shaped, in part, by transportation technologies, with urban rail playing a major role in conurbation.
- Multiple effects are taking place in the area surrounding the network nodes, be them stations and terminals, with specific impacts on commuting times, local energy consumption and economic activities.
- Innovative mobility solutions are taking place in Europe for solving congestion at nodes-connection level in urban environment.

As a matter of fact in the last two centuries cities experienced the passage from the concept of walking cities built to the 19th century metropolis, with the omnibus and later the streetcar opening the cities up. Merchants needed to be close to their much swifter goods, travelling by boat and train. Long, parallel streets replaced winding cow paths as wealthy people moved to newer and less dense neighbourhoods. The subway and commuter rail moved people still further away from the downtown, furthermore implementing the distances and shaping the metropolitan concept therefore answering the needs of seamless integrated transport.

The article starts with a literature overview of the period 1995-2014 and a qualitative analyses on the available data for pivotal Cities such as London, Berlin and Milan, with the objective of identifying the megatrends in urban public transportation and its driving force, as a result of integration, for the cities' development and sprawl path, becoming an asset towards conurbation and creation of metropolitan polycentric areas.

Urban rail networks' nodes in particular, be them stations and terminals, feature the connections in metropolitan environment for reaching intelligent, integrated, seamless, sustainable and reliable transport. They are complementary to, thus necessarily integrated with, road public transport and play a strategic role in the whole urban, metropolitan and regional planning policy. Several positions emerge in the literature, taking into consideration railways undertaking, infrastructure managers, urban planners and mobility experts. It is therefore necessary to assess both an update on the latest positions and coordinate the different perspectives in the current literature on urban rail, metropolitan agglomeration and socio – economic effects induced by urban transport networks.

