

The internationalisation of infrastructures in history

For a long period of time, mostly roads and canals were covering large geopolitical ensembles by being interconnected. From the nineteenth century onwards, a set of new infrastructures appeared, and, during their phase of expansion, they have started to cross over empires, nation states and colonies. Whether these were optic and telegraphic systems, railway, canal, motorway and airway, telephone, radio and television, each of these large socio-technical systems have become interconnected at the international level. Several institutional arrangements were set up to facilitate the proper technological functioning of the infrastructures and their governance in relation to social, economic and political objectives.

This session will address, from the mid-eighteenth century up until the present time, the interconnection of infrastructures across the borders of political ensembles and the corresponding organisational and institutional arrangements. Interconnection in infrastructures corresponds to physical links in any given technological system that allows the continuous performance of a service over a geographical space. The organisational arrangement refers to how a corporate structure or a government administration control and command an infrastructure. And institutional arrangement corresponds to coordination mechanisms such as service contracts, concessions for the operation of an infrastructure, bilateral and multilateral agreements and regulatory international bodies.

The first problem consists of understanding the process innovation and varieties in organisations and institutions. Which new organisations and institutions were created to handle the growing internationalisation of infrastructures? We know that several international bodies, such as the International Telecommunication Union, have been established to coordinate infrastructures. International conferences were also regularly held to set up specific issues on an ad hoc basis. Treatises and conventions were signed between states to regulate the right of way of infrastructures on water, air and ground. At the level of the organisation, multinational firms were creating several national subsidiaries to extend their operations.

The second problem concerns the relation of infrastructures interconnection with respect to the power function of political ensembles. How empires, nation states and colonies were using interconnected infrastructures as a mean for the deployment of their power? During the course of the nineteenth century several empires and new nation-state were building railway, road and canals to enforce the power over newly assembled territories. Great Britain and France, for example, laid down telegraphic and railway networks through colonial territories. Some countries designed the configuration of transportation and energy infrastructures in consideration of military and diplomatic strategic interests. Finally the increased

interconnection of transport infrastructures raised the problem of the enforcement of custom and taxes over passenger and freight.

The third problem that the internationalisation of infrastructures raises has to do with international trade. How was the interconnection of infrastructures shaped and contributed to trade between political ensembles? With the advent of the energy industry, pipelines have been laid down across borders to transport gas and oil. Commercial and financial information was sent through telegraph and telex. Electricity power started to be sold abroad after the installation of high voltage transmission lines. These new infrastructure services required institutional arrangements for the payments and currency exchanges. And the intensity of demand for certain infrastructure services leads to the development of particular infrastructure patterns.

The last problem to consider relates to sectoral specificities in the internationalisation of infrastructures. Were there differences between infrastructures sectors, particularly in relation to technical interconnection and institutional arrangements? Underground infrastructures, such as drinking water and sewer systems, do not raise much questions pertaining to internationalisation. Alternatively transportation and communication infrastructures were rapidly requesting international institutional arrangement for their proper cross-border deployment. In addition, the configuration of certain infrastructures networks follows a logic constrained by geographical limits and obstacles.

While dealing with these problems, a first difficulty is the changing patterns in the governance of infrastructure through time, from private company, to municipality to nation-state. A second difficulty relates to, not only of the changes in the borders of political ensembles following war and colonial conquest, but also changes in the function of political ensembles as empires, nation-states, federation or central-state. Despite these difficulties, this session will brought forward interesting analytical observations pertaining to phenomena over the *longue durée* in a comparative manner about the internationalisation of infrastructures in history.