# Comparing Cultures of Expert Regulation: Governing Cross-Border Infrastructures

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*Infrastructures in the transport and communication sectors were high on the agenda of supranational European integration after 1945. Nevertheless, European cooperation continued on well-trodden paths. New European organisations were established with an institutional design that built on established governance structures from the interwar period or even earlier. This article seeks to explore continuities in the governance of cross-border infrastructures from the interwar to the post-war period. It argues that transnational expert communities and cultures of standardisation emerged, which the infrastructure experts were keen to protect and persist. The article compares transport and communication to isolate common patterns and differences.*

In the shadow of the likes of Robert Schuman and Jean Monnet, Edouard Bonnefous was one of the most prominent protagonists of European cooperation and integration after the Second World War. Bonnefous played an important role as president of the Foreign Affairs Committee of the French National Assembly and as a member of the Consultative Assembly of the Council of Europe. If Jean Monnet represents the discussion about integration in coal and steel, Rene Pleven in defence and Sicco Mansholt in agriculture, then Bonnefous symbolises the discussion about integration in infrastructure sectors. He was convinced that infrastructures lend themselves to being integrated in a supranational way. For him they were of great symbolic value for a politically united Europe. With their long tradition of European cooperation they could be an important factor in the 'the rationalisation of the European economy'. According to Bonnefous, these were perfect starting conditions for supranational integration. In the Council of Europe's Consultative Assembly he promised in 1950 that it was 'easiest to advance rapidly and obtain tangible results'.[1]

A decade later, however, the results were not nearly as tangible as Bonnefous would have liked. Infrastructure experts like the Germans Helmut Bornemann and Walter Schulte-Meermann, the Italian Guiseppe Gneme, the Swiss Hans Keller, the Dutch

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[1] Consultative Assembly, Second Ordinary Session, Motion recommending the creation of a European Transport Organisation, Doc. 63, 16 Aug. 1950, 1, Archives of the Council of Europe, Strasbourg.

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Johannes van de Toorn and numerous others successfully prevented the establishment of supranational European organisations for infrastructures similar to the one created with the European Coal and Steel Community (ECSC) in 1951–2. They continued their opposition to supranational infrastructure policy making from the early 1950s through to the creation of the European Economic Community (EEC) in 1957–8 and up until the 1980s. For this reason, European cooperation continued on well-trodden paths. New European organisations regulating cross-border flows of people, goods and information were established, with an institutional design that built on established governance structures from the interwar period or even earlier. Thus, the early 1950s saw the founding of the intergovernmental European Conference of Ministers of Transport (ECMT), the inter-administrative Conference of European Postal and Telecommunications Administrations (CEPT) and a variety of other governmental or nongovernmental unions. They all continued a kind of expert governance which was directly opposed both to supranationalism and intergovernmental policy making under the supervision of generalists from foreign or economic ministries. It is for this reason that Bonnefous is largely forgotten today, in contrast to men such as Monnet and Mansholt.

On closer inspection the individual infrastructures (including railways, navigation, telecommunications and electricity) varied in their development within a common pattern. For this article the cases of transport and telecommunications were chosen as they diverged the most. Transport at least featured in the EEC Treaty and a common transport policy was vigorously discussed in the 1960s. In contrast, telecommunications was hardly considered for incorporation into the EEC. Arguably, the most striking technical difference between the two sectors consists in the physical crossing of political borders. Transnational telecommunications can be realised by connecting national networks. All that is needed for the electromagnetic signal to cross the border is a gateway technology. Therefore, until the 1980s much of the standardisation of telecommunications was about lines, cables or operators and not about terminal equipment. In transport, however, a railway waggon, a car, a plane or a ship physically has to enter a foreign network. As a result, transport networks require a minimum level of interoperability and consequently a higher level of standardisation than telecommunications.

This striking difference between the two sectors invites a comparative analysis and explanation. This article seeks to explore continuities in the governance of infrastructure sectors from the interwar to the post-war period. Why was transport included in the EEC but not telecommunications? Comparing the two sectors brings out general patterns of infrastructure cooperation and integration as well as the particularities of the two sectors and the reasons for their different development from the 1950s onwards.[2] It has to be emphasised that infrastructures are of major

[2] See, for example, Kiran Patel and Johan Schot, 'Twisted Paths to European Integration: Comparing Agriculture and Transport in a Transnational Perspective', *Contemporary European History*, 20, 4 (2011), 383–403.

importance for all forms of economic integration and therefore also for European (economic) integration after 1945.

This article argues that a number of interdependent factors account for the governance continuities. The failure of supranational integration after 1945 is rooted in continuities that extend back as far as the nineteenth century. In interwar Europe organisations like the International Railways Union (IRU), the Consultative Committees for Telegraphy, Telephony and Radio (CCIT, CCIF or CCIR), the International Telecommunication Union (ITU) and the League of Nations Committee on Communications and Transit (CCT) brought together experts from national infrastructure companies, administrations and ministries in order to discuss the regulation and standardisation of cross-border infrastructure networks. In these organisations transnational expert communities and cultures of standardisation emerged, which the infrastructure experts wanted to persist after 1945 – a preference that is reflected in multiple sources from the archives of the aforementioned international organisations, as well as from national ministries of transport, telecommunications, foreign ministries and governments in Belgium, Germany, the Netherlands, Sweden and the United Kingdom utilised for this article.

In recent years the standard narrative that European integration has a 'zero hour' in 1945 has been contested and supplemented by a long-term perspective that underlines continuities exceeding 1945. Some have shown the long-term driving processes of European integration since the nineteenth century regarding the style of governance and path dependencies of standards;[3] others emphasised the role of experts and cartels in the interwar for the post-war period.[4] Starting from these studies' findings this paper will deepen the argumentation by a systematic comparison of two highly important infrastructure sectors. It will add two important aspects: the importance of wartime cooperation as a catalyst of continuity and the obstructive role of continuing expert governance for supranational integration in Europe.

In the following sections I will first discuss the roots of infrastructure regimes in the nineteenth century and interwar Europe. In a second section, I will explore continuities and discontinuities during the war. Subsequently, I will pay special attention to the years between 1944 and 1950 as the decisive period for re-establishing the interwar infrastructure regimes. The reminder of the article will then be devoted to attempts to integrate infrastructures supranationally during the 1950s. Finally, the conclusion will bring out general patterns of continuities and discontinuities across the two sectors. Of course, within the frame of this article only the general lines will be drawn and the most important factors illuminated. It is impossible to discuss all details.

[3] Gerold Ambrosius and Christian Henrich-Franke, *Integration of Infrastructures in Europe in Comparison* (Berlin: Springer, 2015); Wolfram Kaiser and Johan Schot, *Writing the Rules for Europe: Experts, Cartels, and International Organisations* (Basingstoke: Palgrave, 2014).

[4] Martin Kohlrausch and Helmut Trischler, *Building Europe on Expertise. Innovators, Organizers, Networkers* (Basingstoke: Palgrave, 2014); Eric Bussière nd Francoise Berger, 'La France, la Belgique, l'Allemenge et les cartels de l'entre-deux-guerres', in Michel Dumoulin, ed., *Ces chers voisins : l'Allemagne, la Belgique et la France en Europe du XIXe au XXIe siècles* (Stuttgart: Steiner 2010), 221–42.

## Roots of Infrastructure Regimes

Postal, Telegraph and Telephone (PTT) experts negotiated international telecommunications standards quite independently in the International Telecommunication Union (ITU). Created in 1875 the ITU introduced a governance structure that separated politics and expert governance.[5] Political issues like the organisational structure or fundamental rules were discussed at the ITU's plenipotentiary conference, whereas technical experts negotiated technical and operational regulations and standards like telegraph forms, telegraph tariffs, capacities of cables and propagation characteristics of radio waves at administrative conferences for telegraph, telephone and radio. This division initiated an enduring process of turning international telecommunications governance into a technocratic affair. Administrative conferences were called in more and more frequently in order to adjust international regulations to a fast changing technology. Technocrats increasingly governed international infrastructure links autonomously.

As a result, a culture of interconnectivity emerged that shaped the standardisation and regulation of telecommunications infrastructures. It was based on two elements. First, expert committees focused on technical standardisation. Market standardisation hardly played a role for the standardisation of telecommunications equipment and rules. Second, international interconnectivity became the major guideline for standardisation. The experts did not envisage interoperable networks and high-level integrated networks. The national sovereign right to shield terminal equipment through incompatible national standards was not disputed as long as these standards allowed international connections.

The interwar years consolidated the ITU's governance trajectory. Soon after the First World War experts discussed the need to define standards for an emerging telephone network in Europe. They had to decide on amplifications, the protection of telephone lines against corrosion, preventive maintenance, the coordination of telegraph and telephone traffic and a number of other aspects of long distance telephony. In 1924 ITU engineers set up a Consultative Committee for International Telephony (CCIF)[6] as a non-governmental organisation in order to reflect on technical and operational standards from a purely scientific perspective. The CCIF was charged with preparing recommendations that did not violate national sovereignty. Already at the first meeting the experts agreed on minimum standards for telephone lines and operators and for the operation of the lines. They also drew up a first plan for a scientifically efficient network. The CCIF was even equipped with a laboratory for collaborative research which was placed in Paris. In the following years similar consultative committees were created for telegraphy (CCIT) and radio (CCIR).[7] The

[5] See Simone Fari, Gabriele Balbi and Guiseppe Richeri, 'The Bureaucratisation of the Telegraph Union', *Storia Economica*, 61, 2 (2013), 377–94.

[6] Robert Chapuis, 'The CCIF and the development of international telephony (1923–1956)', *Telecommunications Journal*, 43, 3 (1976), 184–97.

[7] Leonard Laborie, *L'Europe mise en réseaux. La France et la coopération internationale dans les postes et les télécommunications (années 1850–années 1950)* (Brussels: Peter Lang, 2010).

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creation of the three consultative committees reinforced the institutional environment of the ITU and strengthened the interconnectivity culture as the prevailing method of cooperation and integration.

Thus, the PTT administrations maintained their influence on technical standards and consequently extended their autonomy in the international arena. Engineers like the French George Valensi, the German Helmut Bornemann and others autonomously negotiated network characteristics, connections between countries, the design of telephones, tariff structures and the protection of telephone lines from electro-technical disturbance caused by non-telephone equipment. The emerging European telephone network was shaped by the very same interconnectivity culture: the technologically compatible coexistence of national networks. National equipment industries were protected from international competition. Within the European network it was possible to connect a German telephone with all French telephones; however, a German telephone could not be used within France. With their shared belief in, and practices of, fostering this interconnectivity culture the experts got to know each other very well and created close networks. They formed a small group of experts who met periodically at the often lengthy conferences and meetings. They developed trust and friendships and socialised younger technical experts into their causal beliefs and notions of valid solutions to telecommunications problems.[8]

In contrast, in transport different institutional designs for the different aspects of international standardisation and regulation emerged in the nineteenth century. A complex mix of governmental and non-governmental multilateral organisations and associations shaped the trajectory of the railway sector. Non-governmental associations of railway companies such as the European Passenger Train Timetable Conferences (1872) and intergovernmental associations such as the Technical Unit (1882) and the International Convention concerning Railway Freight Transport (1890) existed side by side. Despite their different institutional set-up, they often developed similar working practices. These associations lacked permanent international bodies and negotiated and renegotiated conventions periodically at their conferences. Regardless of their juridical status, the experts from national railway administrations dominated these conferences, seeking to stay outside the governmental influence as far as possible.[9]

In the interwar period the transport regime changed to a more permanent form of cooperation. In the railway sector European railways founded the non-governmental International Railway Union (IRU) as a kind of pan-European umbrella organisation integrating the previously separated expert conferences into a more coherent organisation. During the negotiations on the institutional design of the IRU a conflict arose between national railway administrations and national foreign ministries over the IRU's legal foundations and the role of governments. In

[8] Correspondance and reports on the ITU conferences in the 1930s, R 116990, Politisches Archiv des Auswärtigen Amts (hereafter PA-AA).

[9] See Kaiser and Schot, *Writing the Rules for Europe*, chapters 4–5.

the end the railway experts succeeded in their aim to establish a non-governmental organisation in which, according to the Vice-President of the German Reichsbahn, Karl von Stieler, 'the most important questions of international transport could be negotiated among administrations' experts'[10] without participation by government officials. Against this backdrop contacts among experts from the various European railway administrations grew enormously. A number of actors like Louis Armand and Maurice Lemaire, who were to have significant influence during the 1950s, were socialised in the IRU in the interwar period. Expert networks that built on the interconnectivity culture already established prior to the First World War took shape. As railways needed some degree of interoperability, however, this culture aspired to as much interconnectivity as possible and as much interoperability as necessary. In 1921, for example, experts adopted the International Wagon Regulations (RIV) that coordinated the mutual use of goods wagons. These were limited to a one-directional use committing the members to directly return the wagons to their home administrations regardless of the high costs involved in the numerous empty trips. The IRU was not able at this point to negotiate technical standards that exceeded the level of compatible coexistence and made railway wagons usable across Europe.[11] Compatibility defined by national experts remained more important than an efficient cross-border use of wagons.

The League of Nations set up a Committee for Communications and Transit (CCT), which was designed to coordinate cross-border transport issues either within one mode of transport like railways, inland navigation and roads or transmodal ones that cut across and linked different modes of transportation. It negotiated mixed issues, aspects of the coordination of roads, inland navigation and railways, juridical aspects of cross-border transportation and concluded a considerable number of conventions concerning the freedom of passages, assurances and the non-discrimination in cross-border transportation. The standardisation of pallets and transport boxes to facilitate the reloading of goods between railways, ships and lorries was another major topic. Internally the CCT was subdivided into a transmodal committee for all modes of transport and separate commissions responsible for the railways, navigation, road and electricity.

The CCT had a lasting effect on the intra-European cooperation in the transport sector. It brought together the national ministries' representatives at its regular meetings. Although these actors were united in the belief of the superiority of governance by experts, with an eye on all railways, inland navigation and roads simultaneously, and shared the interconnectivity culture, they were often divided regarding their opinion on the most suitable design of particular policies. While some experts, especially those from the Netherlands and Britain, preferred a liberal approach to transport policy with competition among the different modes of transport, others,

[10] Karl von Stieler, *Der Internationale Eisenbahnverband und die Entwicklung älterer internationaler Eisenbahnorganisationen seit Kriegsende* (Berlin: Dümmler, 1926).

[11] Irene Anastasiadou, *Constructing Iron Europe: Transnationalism and Railways in the Interbellum* (Amsterdam: Aksant, 2012).

like those from Germany and France, preferred coordination by administrative decisions.[12] While Germany and France, which traditionally focused on the railways to serve their extensive countries, wanted to keep a fairly close control over the relationships between railways, inland navigation and road transportation, the Dutch government believed in much greater operating freedom. Nonetheless, the CCT had the lasting impact of creating a community of transmodal experts who integrated different transport modes, besides the established expert communities within the different modes of transport. The groups did not meet each other often, and they eyed each other more and more suspiciously and had increasingly different perspectives on transport policies. In particular, the road experts wanted to abolish quota limitations for road hauliers in cross-border transportation whereas many transmodal experts rejected such ideas because they had to balance the different modes of transport and feared negative repercussions for railways.

All in all, infrastructure governance was shaped by three characteristics until the start of the Second World War: the geographical scope of cooperation was pan-European, the sector was governed by experts and there was a push for a culture of interconnectivity. Their working habits can be regarded as a variant of 'technocratic internationalism',[13] but with one important particularity. The experts shared key assumptions about how to tackle transnational issues, especially regarding scientifically informed policy making, depolitisation in committees and limiting the influence of foreign ministries. Nevertheless, engineers within transport and telecommunications were less internationalist and clearly delineated international and national cooperation and integration.[14]

## Wartime Cooperation

The Second World War interrupted the activities of the international infrastructure organisations. The ITU, for example, officially stopped its work in June 1940 and postponed the Administrative Conference for Telegraph, Telephone and Radio, scheduled to take place in Rome in 1942. This did not stop international telecommunications cooperation in Europe completely, however. In fact, infrastructure networks needed to function especially well during the war as societies and the military in particular depended on transport and telecommunications services.[15] National and transnational European networks operated at least until 1944. Most tasks like the fixing of tariffs or

[12] Frank Schipper, *Driving Europe: Building Europe on Roads in the 20th Century* (Amsterdam: Aksant, 2008).

[13] Vincent Lagendijk and Johan Schot, 'Technocratic Internationalism in the Interwar Years: Building Europe on Motorways and Electricity Networks', *Journal of Modern European History*, 6, 2 (2008), 196–217.

[14] Christian Henrich-Franke, *Gescheiterte Integration im Vergleich: Der Verkehr – ein Problemsektor gemeinsamer Rechtsetzung im Deutschen Reich (1871–1879) und der Europäischen Wirtschaftsgemeinschaft (1958–1972)* (Stuttgart: Steiner, 2012).

[15] See for the French case and the negotiations with the Vichy-Regime: R4701/11618, Bundesarchiv Berlin.

rules for cross-border operations remained largely the same as in peacetime and new technologies needed to be incorporated. Semi-automatic international operation in the European telephone network was among the most urgent problems at that time. Close cooperation was necessary to keep the networks across Europe functioning. The same people took care of these matters as during the interwar period, although as a result of the war they no longer did so at the same pan-European level.

Even in the occupied territories cooperation continued. The National Socialist dictatorship needed the knowledge and work experience of infrastructure experts. A French telephone engineer could not simply be replaced by a German one. Telephone systems were not equal as a consequence of the interconnectivity culture. At the same time, and largely irrespective of their own political convictions, German infrastructure experts and those from their allies and occupied countries cooperated for a variety of reasons including securing benefits for their respective peoples who were suffering from the war. Thus, German and non-German infrastructure experts from allied and occupied countries worked together, despite diverging interests and intentions. Many even looked favourably upon this functional cooperation after 1945.[16]

In the case of telecommunications, the German and Italian PTT administration were already actively trying to continue international cooperation during the war in 1940. They proposed to set up informal working groups to continue the work done by the ITU's consultative committees. The governments in Germany and Italy, however, still aimed at demonstrating their apparently peaceful internationalism in late 1940 and early 1941 as they also did in other cases like the founding of the International Chamber of law in 1941. Therefore, they required the founding of a formal international organisation: The European Postal and Telecommunication Union (EPTU).[17] Adolf Hitler himself strongly supported the idea. From 1941 onwards the German PTT concluded bilateral agreements and in 1942 it convened a European postal congress in Vienna which brought together experts from the Axis Powers, occupied countries and neutral states to pursue the work done by the ITU.[18] In 1942 the experts were given considerable freedom to shape the internal working procedures and the statute of the EPTU according to their own needs. This was for two reasons. First, they pragmatically consented to the founding of a formal organisation as it was required by the governments. Second, the course of the war detracted governments' attention from the EPTU. Therefore, experts were able to demonstrate continuity in international cooperation and the equality of members. They founded the EPTU in accordance with the provisions laid down in the ITU convention from 1932 and the Telegraph Regulations from 1938 which allowed for regional unions such as the Pan American Postal Union. This organisation's founding documents repeatedly stressed the intention to serve the people. The wording was free from National Socialist ideology and language, was mainly technocratic and

[16] Kaiser and Schot, *Writing the Rules for Europe*, 135–8.
[17] Correspondence between the foreign office and the Reichspost, R901/116969, Bundesarchiv Berlin.
[18] For the postal aspects of this organisation see the article by Leonard Laborie in this special issue.

was openly connected with the interwar developments in the ITU which had become increasingly less Eurocentric in its orientation and activities.[19] Nevertheless, the foreign office for symbolic reasons made German the conference language instead of French and changed the accounting unit from the Gold Franc to the German Mark.

The EPTU in fact marked a first attempt at transferring intra-European affairs away from the ITU, especially regarding technical standardisation, in order to limit the influence of the US telecommunication industry which gained a strong position on international markets. On other issues strong continuities to ITU's work characterised the EPTU's committees and sub-committees. The staff involved, committee structures, negotiation routines and topics were similar to those in the ITU. The committee, for example, continued a study by the CCIF on the most suitable technical characteristics of earpieces and handset sizes. A large number of delegates in Vienna had already participated in the ITU's and the CCI's work during the 1930s. Guiseppe Gneme, for instance, the head of the EPTU's study group for telecommunications, had already attended the International Radio Conference in 1927 and later became a member of the ITU's Administrative Council in 1953. Helmut Bornemann, who was responsible for the German participation in all telecommunications matters within the framework of the EPTU, continued to represent (Western) Germany in all international committees up to 1961. Neither Bornemann or Gneme lost their reputation among experts even though they had formally acted in the name of the Italian Fascists and German National Socialists.

Up to 1944 EPTU also continued the research on the standardisation of telephone lines and radio equipment that had stopped in the ITU in 1939–40. During the war the EPTU experts even discussed a European telephone network for the post-war period which was to include wartime enemies like Britain in the planning on an equal basis.[20] Even engineers from countries which were not represented at the 1942 Vienna congress, such as the Swiss Hans Keller, were informed about the conference's results and ongoing work.[21]

All in all, cooperation among infrastructure experts in continental Europe was not fully interrupted by the Second World War. Experts continued to work transnationally on the daily operation of the networks and in the EPTU. This cooperation mostly followed the same technocratic negotiation routines, was done by the same experts and was based on the same norms and values regarding their technical objectives. The war years thus actually strengthened the experts' conviction that infrastructure governance should be left to them. Politically motivated symbolical changes of conference languages or accounting units, which might impact technical negotiations negatively, would then be avoided.

[19] Protocols and reports from the Vienna conference, R4701/11631, Bundesarchiv Berlin.
[20] Report of the working group for the European telephone network, R4701/12285, Bundesarchiv Berlin.
[21] Correspondance between Bornemann and Keller, R4701/12286, Bundesarchiv Berlin.

## The Reconstruction of Traditional Governance Regimes

Soon after the end of the war the infrastructure organisations restarted their work since the smooth operation of transnational networks in Europe was a prerequisite for European recovery. Destroyed infrastructure networks needed to be rebuilt and coordinated in order to restructure the European continent. Initially, in 1945, the pan-European cooperation from the interwar period was re-established, with the exception of defeated Germany. These early post-war years, when the Cold War had not yet begun to significantly impact international cooperation, turned out to be crucial for continuities in infrastructure governance.

In the transport sector the intergovernmental European Central Inland Transport Organisation (ECITO) was set up as early as September 1945 to coordinate the exchange of rolling stock. Just two years later the ECITO was absorbed in the inland transport committee of the United Nations Economic Commission for Europe (UNECE), which can be seen as the successor of the League of Nations' CCT regarding its location, staff, topics covered and its focus on Europe. Remarkably, UNECE implemented many suggestions from internal CCT reform debates of the 1930s.[22] Those organisations that focused on individual transport modes also restarted their work immediately after war. The IRU was now headed by a generation of experts like Lemaire and Armand who had been socialised into expert cooperation in interwar Europe. Their intention was to regain the railways' competitiveness by pooling national resources at the European level. With railways facing increased competition, especially from road transport, Armand adopted a more internationalist design of the interconnectivity culture in the search for European answers to the railways' economic problems. Outdated rolling stock, non-operating obligations like the employment of former soldiers and a number of other factors often turned railways into loss-making companies. Armand, who strongly supported the new integration projects – especially Euratom for nuclear energy cooperation – in the French parliament in 1956–7, was convinced that 'the new spirit of cooperation' would have to develop 'within the neutral domain of science and technology'.[23] To Armand, experts, who were not bound by government preferences and national loyalties, could best work towards common transnational objectives. Expert committees at the European level, which fulfilled their duties for the public benefit, thus appeared as the sole institutional solution for the socio-economic and political organisation of European societies in the 'technical era'.

Armand, from his engineer's point of view, often felt bemused by the 'slightly superficial side' of generalists such as Monnet.[24] For him their approach was not technical enough and left too much space for political influence on technical

[22] Frank Schipper and Johan Schot, 'Experts and European Transport Integration', *Journal of European Public Policy*, 18, 2 (2011), 274–93.

[23] Louis Armand and Michel Drancourt, *Le pari Européen* (Paris: Fayard, 1968), 21.

[24] Francois Duchêne, *Jean Monnet: The First Statesman of Interdependence* (New York: Norton, 1994), 352.

issues.[25] Armand's technocratic internationalism reinforced the prevailing culture within the IRU, enabling the organisation to become the driving force behind a series of non-governmental operating agreements and the creation of specialist railway organisations in the 1950s such as the European Railways Wagon Pool (EUROP) which improved the interwar regulations. The EUROP, for example, enhanced the RIV and allowed a flexible cross-border use of railway rolling stock across Europe. The coexistence of compatible national systems was transformed into a coordinated interconnectedness but without relinquishing the protection of national markets and industries. In 1950 the IRU even set up a joint research office. In spatial terms, the IRU was among those organisations that split into Eastern and Western European branches as a consequence of the Cold War, but nevertheless it retained its pan-European scope within non-socialist countries.

In telecommunications the CCIs (CCIF, CCIT and CCIR) reassembled as early as 1945 to continue the work that had been postponed in 1940. When the CCIF continued its discussion of the European telephone network it became clear that it was influenced by the EPTU's activities during the war, although for political reasons nobody referred to them explicitly. The German Bornemann, who was not yet officially represented, was informally asked by other European engineers in 1948 to give his views on the issue of a high velocity transmission network for Europe.[26] In January 1950 the CCIF published its *Instructions for Operators of the European International Telephone Service* as a result of the work carried out immediately after the war.

The revision of the ITU convention in Atlantic City in 1947 in turn marks a strong continuity with interwar developments. The ITU bodies largely maintained their traditional technocratic governance procedures for the operational work, which corresponded with similar governance forms in many UN specialised agencies.[27] At the same time, however, the incorporation of the ITU into the UN family in 1947 finally ended its Eurocentrism.[28] Having proclaimed its universality until the First World War, when it became Eurocentric, it was now transformed into a truly global organisation. Its global scope was strengthened still further when the former colonies turned into independent states and acceded to the ITU between the 1950s and the 1970s.[29]

Thus, the interwar infrastructure regimes were largely re-established after the Second World War. In the infrastructure sectors, therefore, a complex set of governance structures operated when in 1950 Monnet, Bonnefous and others put their plans for supranational European integration on the table.

[25] Christian Henrich-Franke, 'Louis Armand: From United Atoms to Common Railways', in Alexander Badenoch and Andreas Fickers, eds., *Materializing Europe: Toward a Transnational History of European Infrastructures* (New York: Palgrave Macmillan, 2010), 44–8.

[26] Correspondence on international issues by Helmut Bornemann, B257/20556, Bundesarchiv Koblenz.

[27] Leonard Laborie, 'Fragile Links. Frozen Identities. The Governance of Telecommunications Networks in Europe (1944–1953)', *History and Technology*, 27, 3 (2011), 353–72.

[28] George Codding, *The International Telecommunication Union: An Experiment in International Cooperation* (Leiden: Brill, 1952).

[29] Christian Henrich-Franke, *Globale Regulierungsproblematiken in historischer Perspektive: Der Fall des Funkfrequenzspektrums 1945–1988* (Baden-Baden: Nomos, 2006).

## Infrastructures and the Concept of Supranational European Integration

On 16 August 1950 Bonnefous proposed his plan for a supranational European Transport Authority in the Consultative Assembly of the Council of Europe. In fact, his plan sought to break up the interconnectivity culture, nationally focused transport policies and the purely technocratic forms of governance. For the first time traditional forms of independent expert governance were called into question. In his memorandum Bonnefous argued that the existing forms of cooperation would not cope with the problems raised by an ever growing demand for cross-border transportation and communication. The memorandum suggested large investment programmes in pan-European railway and road networks and more supranational planning for the coordination of the different transport modes not least to break up rigid national infrastructure systems. Otherwise Europe would suffer from 'uneconomic competition between the various means of transport or the same means of transport using different (national) routes'.[30] Having been trained at the Institut des Hautes Études Internationales Bonnefous was an expert in international relations, not an engineer. He had no relevant technical knowledge nor was he socialised in the expert networks that had shaped the infrastructure sectors until then. In his thinking Bonnefous was more inspired by political science literature and the ideas of a federal Europe.[31]

Bonnefous' proposals met with opposition in the telecommunications and transport sectors. The arguments differed significantly between the two sectors, however. In the telecommunications sector the proposals were never seriously considered. Experts like Bornemann and Keller rejected the idea as incompatible with the ITU's global institutional structure and the prevailing interconnectivity culture.[32] The strongest opposition came from the radio sector as radio engineers had to coordinate radio frequencies on a global level and therefore feared a duplication of work. Europe – and especially a divided Europe – simply was not the suitable geographical frame for regulation and standardisation. Their experiences at the ITU conferences in the late 1940s and early 1950s had strengthened this conviction. There, Cold War political tensions had influenced the meetings of diplomats who fought over membership and voting procedures. In contrast, telecommunications engineers from East and West continued to cooperate closely in negotiating standards. Indeed, Robert Craige, head of the British delegation at the ITU administrative radio conference in 1951 noted 'the spirit of cooperation and mutual help prevailing among the great majority of administrations . . . [that] rekindled the hope in the future of ITU'.[33]

[30] Consultative Assembly, Second Ordinary Session, Motion recommending the creation of a European Transport Organisation, Doc. 11, 16 Aug. 1950, 214, Archives of the Council of Europe, Strasbourg.

[31] Christian Franke, 'Das Post- und Fernmeldewesen im europäischen Integrationsprozess der 1950/60er Jahre', *Journal of European Integration History*, 10, 2 (2004), 95–117.

[32] Internal German discussion on the foundation of a PTT union, B257/5517, Bundesarchiv Koblenz.

[33] Report on the Extraordinary Administrative Radio Conference in 1951, MT 9/5830, Public Record Office (PRO), National Archives United Kingdom.

In a coordinated effort telecommunications experts across Western Europe signalled their countries' governments and foreign ministries that in their view the ITU remained the most suitable forum for the standardisation and regulation of cross-border infrastructure networks. At the European level they had already agreed to reject the proposal before discussing it with their national governments.

Their concerted action made sure that the topic vanished from the agenda as fast as it had come onto it. The experts' opinion was not least backed by the Nordic countries and the British government openly declared that 'from a purely Post Office point of view the European Telecommunications Union has nothing to recommend it. The ITU provides all that is necessary in the way of international machinery in the telecommunications field, and at a modest cost.'[34] When more supranational integration in the PTT sector was put on the table again it was solely for postal services as discussed by Léonard Laborie in his article in this special issue.[35] As the director general of the Austrian PTT administration put it in a nutshell, however: 'the coming into being of a postal union does not necessarily entail the coming into being of a telecommunications union'.[36]

In the transport sector, by contrast, closer integration among the six ECSC member states was discussed intensely and controversially for a number of reasons. First, policy makers could underpin their plans for transport integration with a functional logic and thus give the topic a more political weight. The secretary general of the Council of Europe's Special Committee on the European Transport Authority noted, for example, that 'the creation of a common European Coal and Steel organisation makes the creation of a common European Transport organisation imperative . . . it is both logical and indispensable to make the second step towards European integration the creation of a European transport authority'.[37] Transport tariffs could easily undercut tariff reductions within the customs union.

Secondly, the larger Western Europe beyond the ECSC states could be a suitable geographical space for facing the Cold War's impact on transport. In 1950 the work of the UNECE's transport committee had become overshadowed by Cold War political tensions and could no longer serve as a forum to discuss investment programmes or policies for transmodal transportation. Third, as a compromise to satisfy the protagonists of closer integration, the experts on transmodal transport from the transport ministries accepted the idea of the creation of a new organisation as long as it was intergovernmental but autonomous from national ministries of foreign and economic affairs in its working procedures. Such an organisation could also form an alternative to the UNECE's transport committee. Put differently, the new organisation

[34] Report of General Postal Office headquarters to the foreign office, 11 Jan. 1952, PRO, FO371/99759, National Archives United Kingdom.

[35] Correspondence of the German PTT administration, B257/25190, Bundesarchiv Koblenz.

[36] Statement by the Austrian director general for PTT to the German foreign office, 16 Jan. 1952, B 81-64, PA-AA.

[37] Note by the Secretary General of the Council of Europe's Special Committee on the European Transport Authority, 12 Dec, 1950, AS/ST (2), 1, Archives of the Council of Europe, Strasbourg.

had to mark a continuation and enlargement of the CCT, although limited to the non-socialist Europe.

All experts for railways, inland navigation and road transportation aimed at continuing the traditional form of expert governance but they had different views on the desirability of a European transport policy. The railway experts in particular rejected the idea completely. With support from all its member administrations the IRU's chairman, Maurice Lemaire, opposed any attempt to increase the influence of governments in railway matters. In the Council of Europe's Consultative Assembly he asked 'politicians' to carefully reflect on the experts' rejection of the Bonnefous proposal. He recommended 'ask[ing] the technicians of our countries to get together' in order to find solutions for all European transport issues. 'We may rest assured . . . they will certainly find answers!'[38]

Following an acrimonious three-year debate the intergovernmental European Conference of Ministers of Transport (ECMT) was eventually founded in October 1953.[39] Like the interwar CCT the ECMT was composed of a committee for transmodal transport issues and sub-committees for rail, inland navigation and roads. The experts for transmodal transport issues decisively shaped this outcome. Across Western Europe they agreed on the need for an organisation to discuss transport policies, to coordinate different transport modes and to decide on infrastructure investments. The coordination between the different modes of transport was a particularly urgent matter as a consequence of an expanding share of road transport.

As the foreign ministries from the ECSC countries and especially René Mayer, the French prime minister, were pushing for some form of supranational integration among the Six, the experts even agreed to disregard their differences of opinion on transport policy more generally. The transport ministers in France and Germany, André Morice and Hans-Christoph Seebohm, gave them plenty of rope.[40] The experts shared stable preferences for the intergovernmental and expert-dominated institutional design. They also agreed that the transport sector should not be subordinated to the economy more generally or used instrumentally as a vehicle for an 'ever closer union' in Europe, the phrase later used in the EEC Treaty. The experts, together with the transport ministers, also shared the same preference for pan-Western European networks.[41] A clear majority of them were keen to keep the transport systems and the international cooperation in their existing form. The ECMT was a compromise between the different opinions and objectives across Europe to continue expert governance and the interconnectivity culture.

Thus, the first attempts at integrating the infrastructure sectors largely resulted in the persistence of the interwar governance pattern. When the ECSC foreign

[38] Consultative Assembly, Fourth Ordinary Session, Official Report of Debates, 15–30 Sept. 1952, 561, Archives of the Council of Europe, Strasbourg.

[39] Christian Henrich-Franke, 'Mobility and European Integration. Politicians, Professionals and the Founding of ECMT', *Journal of Transport History*, 29, 1 (2008), 69–92.

[40] Notes of the German transport ministry's secretary of state, Bergemann, undated, B108/6153, Bundesarchiv Koblenz.

[41] Report by the German ministry of transport to the foreign office, Jan. 1953, B10-786, PA-AA.

ministers considered further steps towards European integration among themselves at the Messina Conference in summer 1955, Monnet and Bonnefous – at that time French PTT minister – put infrastructures on the agenda again. They wanted the Spaak Committee to consider a new policy approach to infrastructures, one which would replace the interconnectivity culture and autonomous expert governance with European organisations to formulate common policies, to regulate transport tariffs and to decide on investment programmes.[42] Monnet and Bonnefous were aware of the limited support among ECSC governments for incorporating infrastructures into further integration projects. Therefore, they sought influential partners. For transport they addressed the Dutch government, which was the only one to openly favour a common (liberal) European transport policy for liberalising national transport markets.[43] For telecommunications they approached the Belgian government. Besides being generally in favour of sectoral integration it hoped to become the host country for a new supranational organisation. For tactical reasons Bonnefous simultaneously forwarded a memorandum to the Council of Europe recommending the founding of a 'European Conference of Postal and Telecommunications Ministers' along the lines of the ECMT. He hoped to create a competitive environment which would stimulate the debate in both organisations and finally result in tangible outcomes.

Although the ECSC governments and foreign ministries agreed to put the integration of both the transport and telecommunications sectors on the agenda of the Spaak Committee, which deliberated until November 1955, they left the discussions in the sub-committees for transport and PTT to experts. In fact, only the Dutch delegation was represented with diplomats as well as experts in both sub-committees. The experts were asked to consider the consequences of a subordination of a European transport policy to the needs of the envisaged common market. Which technical norms needed to be standardised? To what extent was a further harmonisation of national traffic regulations necessary? To what degree could non-operating obligations of the public service railway companies affect fair competition within the Common Market? Not surprisingly, the discussions between August and September 1955 showed the same patterns as some years earlier.

In telecommunications it was again engineers like the German Bornemann who debated the issues. Advancing the same arguments as before, the experts unanimously rejected the idea of supranational integration among the ECSC countries.[44] Bypassing the hierarchies in their national ministries, they informally coordinated their reactions beyond the ECSC prior to consulting with the national

[42] Cornelius Neutsch, 'Integration in den Bereichen Post und Telekommunikation nach dem Zweiten Weltkrieg bis zur EWG-Erweiterung 1973', in Christian Henrich-Franke, Cornelius Neutsch and Guido Thiemeyer, eds., *Internationalismus und Europäische Integration im Vergleich. Fallstudien zu Währungen, Landwirtschaft, Verkehrs- und Nachrichtenwesen* (Baden-Baden: Nomos, 2007), 113–32.

[43] Correspondence of the Dutch foreign minister, Beyen, MBZ (55-64)-9-6280, Archief van Ministerie van Buitenlandse Zaken, Den Haag; see also Anjo Harryvan, *In Pursuit of Influence. The Netherlands' European Policy during the Formative Years of the European Union, 1952–1973* (Brussels: Lang, 2009).

[44] Report by the German delegation on the sub-committee for PTT, B 257/25190, Bundesarchiv Koblenz.

foreign ministries that officially coordinated the Spaak Committee deliberations. For engineers like Bornemann it was self-evident to consult with experts from non-ECSC states like Britain, the Scandinavian countries and Switzerland. After all, he himself had profited from being informally informed when the Germans were not yet allowed to participate in ITU meetings after the war. The experts' unanimity ultimately convinced the members of the Spaak Committee. In the so-called Spaak Report drafted by the French and German officials Pierre Uri and Hans von der Groeben and submitted to the ECSC governments in April 1956, the Belgian foreign minister adopted the experts' arguments, although the report did support the idea of a limited postal union.[45]

For many telecommunications experts the Spaak Committee deliberations threatened the disintegration of Europe instead of its deepened integration. Negotiations on the standardisation of telecommunications networks in Europe only made sense for them if as many European countries as possible participated. They had a preference for the ITU which included all European countries, even the socialist ones. In 1956, for example, they met within the ITU's CCIR in Warsaw to negotiate telecommunications standards. At this meeting, experts from East and West hardly experienced any conflicts which arose from divergent political ideologies. They were still able to discuss standards in a cooperative atmosphere and based on their shared interconnectivity culture.[46]

In spite of the continuing functional expert cooperation, Bonnefous sought to create a supranational PTT organisation. He invited the PTT ministers from the six ECSC states to a conference in Paris in January 1956. This conference was supposed to prepare, or so he hoped, the founding of a supranational European Postal and Telecommunications Community even before the Spaak Report was published. As a compromise, Bonnefous proposed to make this community institutionally independent from the future EEC. He hoped that his fellow PTT ministers would agree to the plan if they were not subordinated to foreign or economics ministers and affairs.

The Paris conference induced the opponents of such an organisation – the telecommunications experts, the PTT ministers from Germany, the Netherlands and Luxemburg and the British and Scandinavian governments – to negotiate an institutional alternative.[47] Soon it became clear that a majority of the opponents of supranational integration in this field among the ECSC states could agree on founding an autonomous non-governmental European organisation among administrations which was compatible with the interconnectivity culture. Such an organisation could serve to strengthen European influence in the global arena and negotiate intra-European matters independently. For technical and functional reasons engineers again preferred to discuss issues such as the automation of European telephone networks

[45] Regierungsausschuss eingesetzt von der Konferenz von Messina, Bericht der Delegationsleiter an die Außenminister, Brussels 1956, 134–5.

[46] Report by the German delegation on the CCIR conference in Warsaw, 20 Sept. 1956, B 257/25565, Bundesarchiv Koblenz.

[47] Protokoll of the Paris conference, Jan. 1956, B 257/25190, Bundesarchiv Koblenz.

on a broad geographical basis. By 1958, however, a pan-European solution was no longer politically viable, especially after the founding of a PTT organisation among socialist states in December 1957.

The parallel discussions among the proponents and opponents of a supranational solution spurred both sides to come up with concrete results. In September 1958 the six PTT ministers even agreed provisionally on the founding of a supranational European Postal and Telecommunications Community as suggested by the 1956 Paris conference. Such an organisation was never actually created, however. The German and other governments rejected the idea as long as such an organisation had no connection to the newly created EEC. At the same time, after Charles de Gaulle's return to power in France in May 1958, the French government no longer supported supranational integration and shelved the project.[48] This then cleared the way for the institutional alternative. In order to prevent a new attempt at supranational integration in the near future the broad coalition of experts and PTT ministers across Europe felt compelled to act. Finally, in June 1959, the inter-administrative European Conference of Postal and Telecommunication Administrations (CEPT) was founded by twenty-four PTT administrations from twenty Western European countries as a non-governmental organisation solely composed of PTT administrations. This new institution made no reference to the EEC but rather formed a regional sub-organisation of the ITU similar to the Inter-American Telecommunication Commission which was founded in 1925. As an inter-administrative organisation the CEPT could not negotiate policies and investment programmes as demanded by Bonnefous. The founding ceremony already revealed the uncontested nature of the interconnectivity culture. Many delegates praised the results of the traditional cooperation among independent national experts and raised the hope that the CEPT would in the future remain a technical community without a hidden political agenda. An older generation of telecommunications experts hoped that the CEPT could help them re-establish European dominance in the ITU. According to the Dutch representative, Johannes van de Toorn, the CEPT promised to 'restore the traditional global leadership of the Europeans'.[49]

In the transport sector the decision-making process and its outcome differed from telecommunications. With the exception of the Netherlands, however, most governments showed limited interest in transport integration.[50] The experts in the Spaak Committee rejected the proposal for a supranational approach towards the sector. In a confidential memorandum the head of division in the German Ministry of Transport, Walter Schulte-Meermann, even commented (referring to the ECSC structure) that 'all these things are much better . . . without any High Authority'.

[48] Correspondence between the German and the French PTT administrations, B 257/25190, Bundesarchiv Koblenz.

[49] Speech of the Dutch representative, van de Toorn, at a meeting at St. Moritz in Jan. 1959, B 257/25189, Bundesarchiv Koblenz.

[50] Anjo Harryvan, *In Pursuit of Influence. The Netherlands' European Policy during the Formative Years of the European Union, 1952–1973* (Brussels: Lang 2009).

Snootily he announced that 'all this is a waste of time'.[51] Given this prevailing critical attitude of experts on transmodal transport issues it is not surprising that the transport sub-committee's final report to the Spaak Committee in October 1955 summarised the traditional approach to the cross-border regulation of transport infrastructures. It proposed a step-by-step approach to the inclusion of transport in the common market guided by the ECMT.[52] This organisation had only just been set up and still needed to demonstrate its capacity to deal with a common policy or large-scale investment programmes. Frustrated with the prevalent ECMT approach, at the first session of the transport sub-committee the Dutch delegation immediately criticised the 'unwillingness of the sub-committee's members' to 'raise the actual problems of European transport'.[53]

It was clear, however, that the transport sector was more heterogeneous than the PTT sector. The experts on transmodal issues and different modal issues held different opinions, for example on the most suitable approach to transport policies. Should these policies be liberal or not? Should the modes of transport be coordinated by administrative decisions or by market forces? This disagreement, which was visible in many details of transport policy like tariff arrangements, transport quotas or the permission of transport cartels, offered Spaak and the two officials who drafted his report an opportunity that they grasped eagerly. Spaak had the impression that the experts entrenched themselves in complex technical details in order to prevent a discussion on a new supranational approach. In a letter to the ECMT the Belgian foreign minister demanded 'a great political impulse'[54] which could not come from an expert group or an intergovernmental pan-European organisation like the ECMT, where a consensus between seventeen European governments was required.

The Spaak Report thus returned to the initial idea of integrating the transport sector into the EEC. It recommended a common transport policy encompassing tariffs and comprehensive regulations regarding the rules of competition. The acceptance of this report as a basis for the negotiations about the founding of the EEC by the six ECSC governments marked a break in the formal institutional organisation of European transport governance. This shift was facilitated by the fact that the Dutch government turned it into a political priority. Moreover, functionally transport services were much more closely connected to the creation of a common market for goods, services and people than telecommunications.

Spaak's course of action provoked great resistance among the transport experts, however. They felt antagonised by his apparent disregard of the 'technical and semi-technical level'.[55] When they needed to be consulted again to negotiate the details

[51] Confidential memorandum by the head of the department for international affairs at the German ministry of transport, Schulte-Meermann, 21 May 1955, B 108/10150, Bundesarchiv Koblenz.

[52] Report by the committee for transport to the steering committee, Doc. 336, B 20-74, 15, PA-AA.

[53] Confidential memorandum by the director general Schaepman of the Dutch ministry of transport to the foreign office, 13 Aug. 1955, MBZ(55-64)-9-6312, Archief van Ministerie van Buitenlandse Zaken.

[54] Letter by Paul-Henri Spaak to the ECMT's Council of Ministers, B 13-18, PA-AA.

[55] Statement by the ECMT's committee of deputies to the transport ministers, 24 Feb. 1956, B 108/6173, Bundesarchiv Koblenz.

of the transport articles in the EEC treaty they once more found it difficult to agree on important aspects of a European transport policy. In the end the political leaders had to compromise on so many details that the articles for transport within the EEC Treaty were formulated in a general manner and open to different interpretations. The treaty was an obligation to formulate a transport policy but contained no clear guidelines for the content of this policy. Walter Hallstein, German chief negotiator and subsequently first president of the European Commission, later wrote about the role of the experts: 'I got the impression of rather being at a pseudo-ecclesiastical synod than at negotiations on economic policy'.[56]

In fact, the experts in the German Ministry of Transport proudly emphasised that they had succeeded in 'neutralising the [future EEC's] transport policy',[57] an assessment corroborated by future developments. Thus, when the European Commission began to formulate a Common Transport Policy in the early 1960s the continuing dissent on its content and economic orientation, the expert communities' marginalisation of the Commission and a combination of other factors made any progress impossible for nearly three decades.[58] While marking a formal institutional shift, the EEC Treaty changed neither the experts' attitudes nor their governance practices. As a result, from Hallstein's perspective, transport was 'the saddest chapter in the history of European integration within the Commission'.[59]

## Conclusion

The governance of transnational infrastructure networks in Europe after the Second World War was characterised by a remarkable continuity in traditional forms of governance. Demands for more supranational forms of European integration along the lines of the ECSC had ambivalent effects. On the one hand, no significantly supranational approach to infrastructure governance among the six ECSC states developed. On the other hand, the discussion about supranational integration constituted an important catalyst for the existing forms of infrastructure governance to adapt to a changing international system.

Comparing transport and telecommunications, it is possible to identify a number of interdependent carriers of continuity. First, established organisations were important as they provided a forum for cooperation with a high reputation. Socialisation within the interwar organisations shaped the experts' behaviour, which was strikingly different to other sectors like agriculture. The experts strove to protect their internalised norms of how to regulate and standardise cross-border issues which

[56] Walter Hallstein, *Die Europäische Gemeinschaft* (Düsseldorf: Econ, 1973), 225.
[57] Confidential internal report by the department for international affairs at the German ministry of transport, 28 Mar. 1957, B 108/13101, Bundesarchiv Koblenz.
[58] Volker Ebert, *Korporatismus zwischen Brüssel und Bonn. Die Beteiligung deutscher Unternehmensverbände an der Güterverkehrspolitik (1957–1972)* (Stuttgart: Steiner 2010).
[59] Hallstein, *Die Europäische Gemeinschaft*, 226.

were cognitively embedded in organisational structures. The experts placed their trust in established rules.

Second, within these existing organisations expert communities and individual experts played an important role, too. Their professional background, shared norms, values and beliefs – especially regarding the interconnectivity culture – united the infrastructure experts. Engineers like Bornemann, Gneme, Keller, Lemaire, Schulte-Meermann and many others knew each other very well from numerous conferences and meetings, which resulted in the formation of a close-knit expert network that in many ways even survived wartime experiences like in the EPTU. Moreover, the EPTU can be seen as a catalyst for continuities and an obstacle for post-war supranational integration. Engineers from the national administrations had more trust in their foreign counterparts across Europe than in their own national foreign ministries. They continued cooperation regardless of the political circumstances or tensions. In this sense they developed even further the notion of 'technocratic internationalism' and decoupled it from the nationalistic impact of the interwar period. Indeed, the Second World War was a key period, which requires further research.

Third, the functional geographical argument demanded the widest possible participation in the regulation and standardisation of infrastructures. In the interwar period, the infrastructure of Europe was pan-European. This pan-European notion of 'Europe' was re-established immediately after the Second World War. In both sectors the infrastructure experts argued that pan-European networks were more suitable for realising economies of scale. In the telecommunications sector, East and West even cooperated in the mid-1950s without Cold War political tensions affecting the experts' work. Each attempt at founding an organisation on a smaller geographical scale threatened an inefficient downscaling of Europe. Facing the political realities of the Cold War, infrastructure experts subsequently accepted non-socialist Europe as a scope of cooperation. The ECSC Europe, however, was simply too small for large technical systems like transport or telecommunications.

Comparing telecommunications and transport has also revealed differences between the sectors with regard to the general pattern of infrastructure continuities. First, government attitudes to particular infrastructures made an important difference. In general, governments had refrained from political supervision or interventions into infrastructure governance since the nineteenth century. As long as infrastructure networks functioned and infrastructure services improved, governments did not have any reason to question the prevailing forms of expert governance. Infrastructure policies qualified as 'low politics' that were not a high priority for governments. It is remarkable that the only case in which a government strongly supported a supranational project led to a formal institutional change. The Dutch government's advocacy of the incorporation of transport into the EEC made an important difference. Telecommunications, on the contrary, was on no one's priority list. Nevertheless, despite the formal institutional change, technocratic working practices actually continued to dominate transnational policy making so that to all intents and purposes, a common EEC transport policy did not materialise for a long time.

Second, the greater heterogeneity among transport expert groups also helps to account for the differences across the two sectors. The experts for modal and transmodal transport did not speak with one voice. They had different views on transport policy, for example how liberal and market driven it should be. The only shared objective of transport experts was their aim to defend their autonomy in international matters. The negotiations within the Spaak Committee showed that continuities in telecommunications were much more pronounced. United in a dense and stable network the experts were more strictly opposed to the European Communities' supranational approach.

Third, there were also technical reasons for variations in the patterns of continuity in infrastructure governance. Transport networks required a minimum level of interoperability and consequently a higher level of standardisation. Transport was also more obviously linked to broader economic integration in the common market. The exchange of goods, services and people strongly depended on cheap and efficient transnational transport networks.

Last but not least, in both sectors the chronologies of cooperation reinforced the continuities.

As cooperation among national experts did not stop completely during the war, the interwar regimes for infrastructure governance were soon re-established after 1945. They were already operating and expanding before the idea of a more integrated 'core Europe' gained salience. Engineers like Bornemann had already reconnected Europe on the infrastructural level when Bonnefous submitted his proposal to the Council of Europe's Consultative Assembly in August 1950. Politicians like Bonnefous, as well as much of the historical research on European integration since then, has thus underestimated the importance of largely unknown experts like Bornemann in European reconstruction and cooperation across the Second World War.