

4. Reorganisation of the Infrastructure Sector and New Forms of Financing

Remo Dalla Longa

Until a decade ago, the term “infrastructure” clearly referred to roads, highways, airports, ports, power stations, gas networks, water supplies, sewers and waste disposal systems. Going back only a few decades, there was a widespread conviction that state intervention in the financing of infrastructure was unsustainable: growing needs could simply not be met due to limited public investment resources and the necessity to contain the role of the state in national economies.

Since then, the very concept of infrastructure has undergone a “multifaceted” evolution. Typologies have grown in number and new means of financing them have also appeared. As the state has reduced its role as financier, new forms of infrastructure have appeared along with new actors, financiers and procedures in which the state is no longer the sole protagonist. The Public-Private Partnership (PPP) has emerged and developed. For investments in infrastructure, we have moved from public procurement to concession contract and more generally to PPP. Direct intervention by the private sector has also increased. The nature of the infrastructure has changed.

What Is PPP and How To Interpret It?

PPP differs from corporate finance as it finances one specific project. Debt remains “potentially” borne by the economic operator through a project company or a Special Purpose Vehicle (SPV). There is also a different approach to assessing risk compared to traditional interventions. PPP is the traditional evolution of public-private and state and market models: it passes from traditional public procurement to Long-Term Contracts (LTCs). The LTC there is only when financing for a project comes from banks, funds and economic operators and in ways other than public procurement.

PPP initially focused on production, and only secondarily on infrastructure, though more than 20,000 kilometres of railways were built with project finance techniques in England, France, Germany, Belgium and Italy over a century and a half ago. It is really at the end of the last century that we see the emergence of modern PPP, with the embryonic Private Finance Initiative (PFI) introduced by the government of John Major and later developed by Tony Blair’s New Labour. Today, PPP occupies a broad perimeter and encompasses not only economic infrastructures (those that first gave rise to PPPs), but also social infrastructures, complex urban interventions¹ and many other forms of infrastructure.

The Criticalities and Potential of PPPs Compared to Traditional Public Procurement

The problems and potentials of PPPs are almost never absolute, and need to be assessed in context.

It can be a problem when:

- The cost of PPP infrastructure is very higher than that financed by traditional public procurement.

¹ R. Dalla Longa (ed.), *Urban Models and Public-Private Partnership*, London, Springer, 2011.

- There is possible cultural asymmetry between the Procuring Authority and the Project Company.
- Risk management extends over a Long-Term contract (LTC). It is already complicated to manage a risk in public procurement; it is exponentially with LTCs.
- New forms of social exclusion appear, even if mitigated by currently little-known interventions.

PPP represents a potential when:

- It can improve operability and integrate different parts of an infrastructure.
- It allows the circulation of citizens' savings in a virtuous circle for collective benefits. However this is not always within the same country, to make this happen several virtuous circles must be activated simultaneously (e.g. attractiveness of investment, large amounts of national savings).
- The private sector proves more efficient at infrastructure management than fragmented state actions.
- It can encourage improvements in tariffs and standard forms of them, fees, (or public rate), output, quality and satisfiability.
- It permits radical modernisation and innovation in services and infrastructures.

Regardless of problems and potential, PPP needs absolute interdisciplinarity and new organisational forms, both for the state and the market. The boundary between criticality and potentiality remains weak and not entirely resolved.

PPP Around the World

Following the advent of modern PPP and recent developments, PPP is now distinguished by different components. If we consider the more traditional and consolidated application of

PPP, that of economic infrastructure,² many representations can be identified around the world.

Both developed countries (13.4%) and emerging countries (12.8%) declare 15% of PPP infrastructures on average. China draws its own trajectory.³

The following groups of countries can be identified: a) Anglo-Saxon nations with PPP figures above 15% compared to other forms of infrastructure investment;⁴ b) follow the historical European Community countries;⁵ c) South American and African nations with a below-average uptake of PPP.

Other important variables that must be taken into account are:

- The uncertainty of data on infrastructures and even more so on PPPs: this is a serious problem that will remain untouched for some time⁶. If we analyse different sources of data, it also seems that there is a general underestimation of the volume of PPP.
- Differences in infrastructures, such as classifications into greenfield (new infrastructures) or brownfield (consolidated infrastructures): these can be very marked in relation to countries' economic context and geo-political location.
- The different economic and geo-political weight of nations and geographic areas that use PPP in one way

² The economic infrastructures referred to here and in the next two paragraphs are: energy, telecommunications, airport, ports, rail, road, water, the source is mainly GIH / Oxford Economics (several years). See Oxford Economics, *Global Infrastructure Outlook, Infrastructure investment needs: 50 countries, 7 sectors to 2040*, Global Infrastructure Hub, 2017.

³ It is the financing of the State that is used and the PPP appears, in absolute terms, marginal.

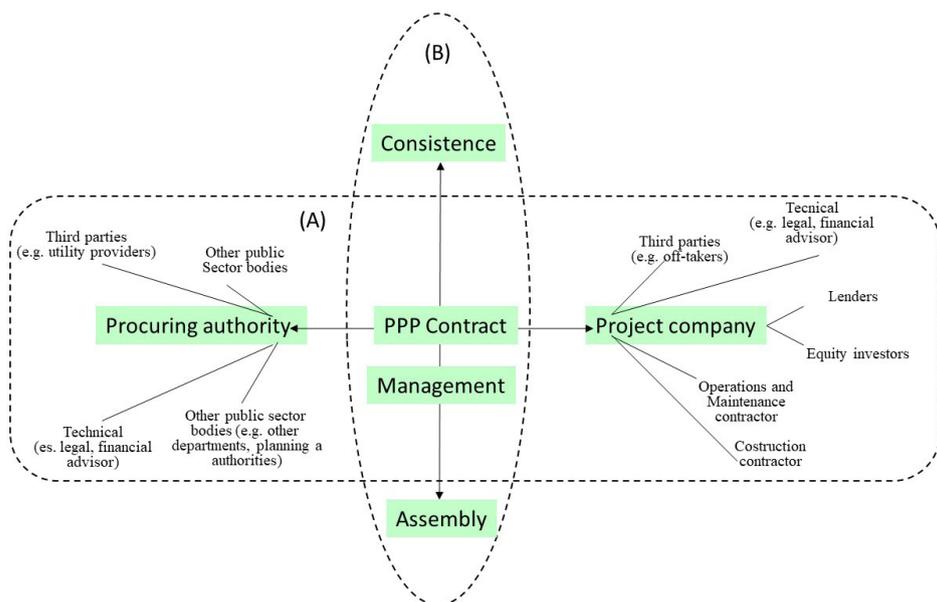
⁴ The USA is below average (13.3%), while Australia 37.4%, Soud Africa 27.6%, the United Kingdom 26.6% and Canada 17.7%.

⁵ Germany is below average (9.5%), while France 15.4%, Spain 14.5%, Italy 11.7%.

⁶ The reference is to data from GIH, OCDE, Eurostat, EIB / Epec, IJ Global (several years). See also R. Dalla Longa, *Il Public-Private Partnership: L'evoluzione Stato-mercato in opere pubbliche ed infrastrutture*, Roma, Carocci, 2017.

or another. For all PPP formulas, the basic element is represented by the relationship between contracting and project companies through a contract. This formula was valid until a decade ago, now no longer. In the case of some countries (e.g. European Union) we are seeing a new generation of PPP, in which (A) is added to (B) (see Figure 1).

FIG. 4.1 - EVOLUTION OF PPP MODELS (A), (B)



Source: our elaboration on GIH data, (2018)

Ppps Around the World: First Macro-Differentiation

Emerging countries⁷ can typically be profiled as follows:

- They are countries with high infrastructure needs (and recent investments represent a substantial part of fixed investments).
- They invest mainly in economic and greenfield infrastructures; they are countries with increasing growth forecasts (GDP) and this type of infrastructure can be a push factor for growth.
- The important thing for these countries remains a correct balance between the Procuring Authority and the Project Company enshrined in the PPP contract.
- The partial and imperfect transmission of risks from the public sector to the economic operator can be bridged by steady GDP growth. Increased growth will gradually outweigh asymmetries and incomplete knowledge of LTC consistency (Fig. 4.1 point A). In the end, what happens in the management of the LTC is not as important as the investment itself.
- In addition, emerging African, Asian and to some extent south American countries are the ones where significant urban growth is expected and urban infrastructures more suited to new forms of PPP are needed.

⁷ The emerging countries considered by the G20 are: Africa (a: low and lower middle income): Egypt, Ethiopia, Kenya, Morocco, Nigeria, Senegal; (b: upper middle income): South Africa. - Americas (b: upper middle income): Argentina, Brazil, Colombia, Mexico, Peru. - Asia (a: low and lower middle income): India, Philippines, Vietnam; (b: upper middle income): Malaysia, Thailand (Turkey an China between emerging and developed).

Developed European countries⁸ typically have the following profile:

- They have a developed infrastructure system.
- In future, investments will mainly involve brownfield infrastructures, i.e. pre-existing infrastructures that require modernisation or the merging of other typologies (new technologies, greens, etc.).
- They have very low growth rates (GDP) and the weight of infrastructure investments is reduced compared to fixed investments in other countries.
- They have high public debt. It is also useful to remember that stability pacts (Maastricht) and fiscal compacts are in force at EU level.
- For these countries, a correct balance between the Procuring Authority and the Project Company is insufficient. It is essential to establish immediately a correct balance between hard consistency (object), PPP contract and management of the PPP assembly for the duration of the LTC (Fig. 4.1 point B).
- The effective and permanent transmission of risk from the public sector to the economic operator becomes the central point of the PPP around which the feasibility and legitimacy of the formula are focused.
- Developed European countries are highly urbanised (more than 70% of the population living in urban areas compared to 40-50% in regions such as Asia and Africa). On the other hand, the increase in future urbanisation will be more contained than in other parts of the world. For these countries, this also indicates that PPP will become more focused on the reconversion of brownfield urban infrastructure.

⁸ The developed countries considered by the G20 are: Europe (c high income): France, Germany, Italy, Spain, United Kingdom. Among the Americas: USA, Canada, Oceania: Australia, New Zeland, Asia: Japan, South Korea, Singapore.

Growth in Infrastructure Investment Needs and Prospects for Ppps

An analysis of the 52 most developed countries worldwide showed investments in economic infrastructure for 2.3 trillion dollars in 2015 and a natural trend likely to take this figure to 3.8 trillion in twenty years (2040). To meet growing needs, however, investments for an additional 1.2 trillion dollars (+1/3) are already required at present.

Only with an injection of private capital through PPPs will it be possible to cover growing demand for infrastructure, considering that state spending on public procurement in developed countries, and particularly those of the EU, has been declining for several years.⁹

The highest growth in demand according to today's trend is seen in American (47%) and African (39%) countries, followed by Europe (16%), while global demand is estimated at 19%. Within the EU, the greatest demand is in Italy, which has compressed public investment in recent years due to the stability pact rules and a huge stock of sovereign debt. The need for off balance sheet investment is therefore key to development in many countries and a proper use of PPPs would be consistent with this need.

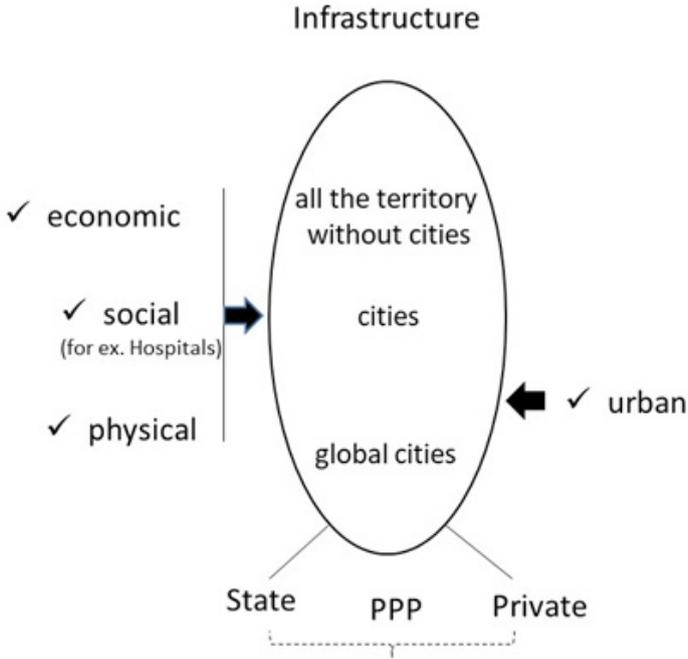
Data indicate that PPPs are destined to grow and assume different forms in future years. PPP perimeters will widen and PPP models will also vary depending on the type of infrastructure: management components, interdisciplinary knowledge, organisation culture and risk management will all be fundamental in diversifying models and in the symmetrical development of PPPs.

The Breakdown of Infrastructure

In terms of global macro-differentiation, PPPs can differ significantly depending on infrastructure type, region, and development and urbanization levels.

⁹ R. Dalla Longa (2017).

FIG. 4.2 - BREAKDOWN AND ORGANISATION OF INFRASTRUCTURES:
REGION AND STATE - MARKET



Source: author's elaboration

Different Forms of Infrastructure and Their Evolution Between State and Market

*Economic / social infrastructure
(the European PPP model)*

The primary difference here is between economic and social infrastructure.

Economic infrastructures are those that derive their revenues, and therefore the production of value (NPV¹⁰ and IRR¹¹), from tariffs paid by users. They generally operate according to market principles, often contrasting the emergence of monopolies (because they allow users to choose different solutions) and inhibiting state aid. European Directive 23 of 2014 introduced concessions in EU law for the first time and established the principle of “operating risk”: the state can no longer intervene, given an initial contribution limit (not exceeding 50%), to cover deficits or loss of value (NPV and IRR) of the project. National states violating the directive are subject to possible warnings and sanctions.

The state has a progressively diminishing role, if not a secondary one (planning, verifying impacts, evaluating transferred functions, avoiding implosions and taking on future costs). It is therefore up to the market to bear the greatest burdens: it is the economic operators (builders, lenders, providers, general contractors) who must assess whether a specific infrastructure is capable of producing value, for how long, and with what trend; in other words, they assume all operating risk.

Social infrastructures are based on public fees¹². The state contributes to fuelling the revenues of these infrastructures, therefore determining their production of value (NPV and IRR). The difference with respect to economic infrastructures is more crucial than it appears. Although these infrastructures are included in the PPPs and therefore share the management formulas of the Long-Term Contract (e.g. DBFOM - Design Build Finance Operation Maintenance, and other formulas), they are not included in the concessions but fall within EU directives 24 and 25 of 2014 on public procurement and special

¹⁰ NPV – Net Present Value

¹¹ IRR – Internal Rate of Return

¹² *Public fees* - in which government pays to a non-government partner all or a majority of the fees under a specific contractual arrangement, thus covering most of the total cost of the service provided (including the amortisation of the assets). In national accounts, this feature distinguishes PPPs from concessions.

sectors. Except in special cases, they don't have operating risk as reference; rather, the focus is on construction and availability risks. The birth of social infrastructures within a PPP takes place with the British PFI (Private Finance Initiative), later incorporated in the 2004 Green Paper¹³ by the European Commission. The role of the public administration in this case is more complex and must respond to more detailed, widespread and growing accountability rules. The most critical aspect for the Public Administration is how to transfer risk and make sure that it remains borne by the economic operator as if it were in fact an operating risk, even if it takes on a different connotation¹⁴. If this capacity is missing, investment with private capital is considered "on balance sheet" (with an immediate impact on public debt), and not "off balance sheet": this has a major impact on public finances, especially for countries like Italy with high structural deficits. In Europe, accountability applied to PPP for social infrastructure requires a high increase in management and knowledge by the Public Administration and consequently by the economic operators, who have to adapt. New (interdisciplinary) tools have to be introduced to ensure convergence between public and economic operators. The success of a Long-Term Contract cannot be determined by contract clauses alone. The Public Administration must considerably strengthen its internal skills and learn how to assemble a PPP. This is crucial, since the economic operator has no direct interest in on/off balance sheet accountability; this belongs only, or mainly, to the public "mission".

The evolution of governance, financeability and the assembly of infrastructures are central issues. The EU directive regulates the transfer of risk from the public to the economic operator. This requires a huge leap (almost a revolution) in Public Administration from the point of view of programming,

¹³ COM (2004) 327 final.

¹⁴ For social infrastructures the references are mostly the construction risk and above all the risk of availability which must remain constant throughout the Long Term Contract (LTC).

planning and the use of internal control and verification tools: the process must last the life cycle of the Long-Term Contract (LTC). If this revolution is missing, the PPP is destined to be constrictive and remain on stand-by. Before the EU directive, the programming was delegated to the PSC (Public Sector Comparator) which identified risks and demonstrated their transferability. VfM (Value for Money) has also been used to demonstrate the feasibility of a PPP compared, for example, to traditional public procurement. What indicated by the PSC and VfM was then often reported in a concession contract (or PPP). The legitimacy of a PPP was therefore delegated to instruments and a static contract more similar to a public procurement rather than a Long-Term contract (LTC). The weakness of this approach lay mainly in the possibility of manipulation (the optimistic transposition of risks from the public to the private sector and, in the case of economic infrastructures, overestimation of revenues from users based on unsustainable growth figures). From the 1990s onwards it has been shown that the overestimation of data (technically speaking, the incorrect assessment of “consistency” and the incorrect transfer of risks) and the evolution of environmental variables (the result of incorrect programming and planning) requires ex-post state intervention. That is to say that all the risks return to the public field and private value destroys public value, rather than creating a growing balance between the two. EU accountability (Directive 23 of 2014, the rules of ESA 2010¹⁵ and the transposition of EUROSTAT manual rules¹⁶) sanctioned this step.

At EU level, it is no longer possible for PPPs to delegate the transfer of risk to the contract. The Public Administration (Government sector) needs to greatly increase with management and tools, its capacity to assemble PPPs. If this cannot be done, the development of PPPs stops. They will create vicious circles

¹⁵ ESA - European system of Accounts.

¹⁶ EPEC-Eurostat, *A Guide to the Statistical Treatment of PPPs*, September 2016; EPEC-Eurostat, *A Guide to the Statistical Treatment of Energy Performance Contracts*,

of illegitimacy, an accounting defect and a lack of respect for vertical (EU) accountability. EU sanctions will then follow.

It is no longer automatic that debt remaining in the “belly” of a project company or private SPV (Special Purpose Vehicle) is considered off balance sheet. To remain off balance sheet, new European rules must be respected. This represents a revolution and a new critical issue when considering PPPs.

The key difference between the European model and others in emerging or developing countries concerns the standardisation of PSCs, VfM and contracts.¹⁷ In many of these countries, a Public Administration capable of intervening in the critical assembly stages is missing. Defining the elements (consistence of the object) to be included in the assembly of a PPP is difficult for these countries, in particular compared with EU nations: data, the upstream culture, and traceability are often missing. As a result, in Latin America, the average share of renegotiation of a significant sample of PPP was 42% after two years of activity. These figures would simply be incompatible with European accountability. Data show that what was initially indicated as a benefit soon turns into a criticality. And there is no advanced Public Administration capable of directing and regulating this choice ex-ante, during or ex-post¹⁸. As for the ECA area¹⁹ (Europe and Central Asia), sources close to the World Bank²⁰

May 2018; Eurostat, *Manual on Government. Deficit and Debt: Implementation of ESA 2010*, Luxembourg. EU, 2019.

¹⁷ A. Estache and C. Philippe, *The Impact of Private Participation in Infrastructure in Developing Countries: Taking Stock of about 20 Years of Experience*, ECARES Working Paper, 2012-043, Universite Libre de Bruxelles, Brussels, 2012.

¹⁸ J.L. Guasch, *Granting and Renegotiating Infrastructure Concessions: Doing It Right*, Washington DC, World Bank Development Studies, World Bank, 2004.

¹⁹ The ECA (Europe and Central Asia) is a World Bank classification made up of 23 most important nations of which are: Russia, Turkey, Serbia, Ukraine, Kazakhstan (the others are: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kosovo, Kyrgyz, Republic Moldova, Montenegro, North Macedonia, Tajikistan, Turkmenistan, Uzbekistan), among the ECAs, however, there are also 4 community members such as Poland, Bulgaria, Croatia, Romania.

²⁰ V. Cuttaree and X.C. Mandri-Perrott, *Public-private Partnerships in Europe and*

stated that in the face of a difficulty in attracting private capital, the state sometimes assumes the risk of user transport (loss of revenue) directly from the concessionaire, thereby undermining one of the constitutive mechanisms of the EU PPP.

Klijin and Koppenjan²¹ (2016) emphasise how the articulated interests of stakeholders within a PPP (assembly) can be a problem in the classic interpretation of Public Administration. However, this is not the case for the new forms of “Governance Network” that go beyond traditional categories of public administration in the Klijin-Koppenjan proposal. It is an evolving world and ambiguity is often necessary to motivate a greater number of actors. Accordingly, disagreements about the assembly of PPPs can easily occur: the process involves actors with different points of view on more aspects (problems, profit, the division of risks) this can cause bitter conflicts and possible dead spots. Klijin and Koppenjan support the idea that PPPs must be able to absorb all these complexities: it follows that a certain ambiguity may prove useful. Ambiguity creates the possibility for different actors to embrace an idea, despite disagreeing on certain aspects. Excessively tight rules would preclude the possibility of developing PPPs in these circumstances. When accounting rules were changed in the UK to avoid a discrepancy between the PSC, VfM and implementation, PPP projects became less attractive for many actors.

Urban Infrastructure

Another formidable field of development for the PPP is represented by global cities, evolved urban settings and the new logic and theory of urban infrastructure. In the future, the PPP through infrastructure will find even more space to shape urban form.

Central Asia: Designing Crisis-resilient Strategies and Bankable Projects, Washington DC, World Bank Publications, 2011.

²¹ E.H. Klijin and A.J. Koppenjan, *Governance Networks in The Public Sector*, London, Routledge, 2016

Looking at infrastructure in urban terms, significant changes can be identified. It is within this area that we have seen the most radical developments and the greatest variety in financing methods. Some authors²² emphasise that urban systems and especially big cities have revolutionised the concept of infrastructure, making it a fundamental, constitutive element. Globally, we are faced with growing urban concentrations where everything is interconnected between centers: transport, networks, energy transformations, wage and energy conversion systems, technologies, databases and switchgear and transformers of all kinds. Public and collective spaces together with infrastructures far overshadow private spaces (i.n. housing), if it were possible to liquefy them there would remain a quantity of cables, pipes, infrastructural systems, fluids and connective impulses. There is a new interconnectivity between ubiquitous ICT infrastructures and traditional, physical ones. In evolved urban systems, even the roads can change their meanings and functions. They are made of the same material as streets in smaller towns, but technology has made their use different: shared services mean that pavements are no longer for pedestrian use alone and apps guide the delivery of food by bike. Bike stations are found on pavements or at interconnections; charging stations with wallboxes are progressively more common; car parks are being replaced by cycle paths or routes for other vehicles (e.g. electric scooters). This is just one aspect of the evolution of PPPs. Global cities are in fierce competition with each other²³ the competitive advantage means being able to quickly transform obsolete functional areas, no longer responding, with new needs.²⁴ These areas, if precious and if enhanced and re-oriented, lead to major transformations and the rapid conversion of infrastructures. The goal is to allow an effective intertwining with real estate, which would otherwise become value-destruction.

²² A. Amin and N. Thrift, *Cities. Reimagining the Urban*, Cambridge, Polity Press, 2002; A. Amin and N. Thrift, *Seeing Like a City*, Cambridge, Polity Press, 2017.

²³ R. Dalla Longa, *Globalization and Urban Implosion*, London, Springer, 2010.

²⁴ R. Dalla Longa (2011).

Often, significant resources are spent and city skylines redefined. The financial costs are much higher if infrastructures are unable to follow the redevelopment of urban areas, there is no sale and there is a risk that the development itself will fail. Often the reference is to new metro lines with stops inside the conversions; or collective and public centers, all the reconverted underground infrastructures, including traffic, transport, parking and secondary infrastructures. Often, the economic operators within a PPP take charge of redevelopments to guarantee synchronisation and ensure maximum palatability for the sale or use of the new functions. This applied to Porta Nuova and City Life in Milan, and to Paddington in London.²⁵ In such cases, the state would be unable to intervene with traditional public procurement. A huge asymmetry would be created with enormous damage to production, and destruction of the value and competitiveness of global cities. The funds required for physical infrastructure conversions are huge. Urban contexts demonstrate a formidable intertwining between different types of infrastructure: older physical infrastructures increasingly need to be converted due to globalisation. Designed for old urban functions, major works are needed to replace or convert them. Concentrated infrastructures are also those most commonly in need of modifications and conversions in connection with sustainability, ubiquitous technologies and green policies. There is a complex and always lively correlation between greenfield interventions (prevalently D&C - Design and Construction) and brownfield (mainly O&M - Operation and Maintenance) but for urban infrastructure there is no clear division between the two. Until now, most interest in infrastructure has come from greenfield specialists but urban infrastructure has placed a structural emphasis on the complex intertwining of the two types, with brownfield interventions being far from marginal. Urban infrastructure itself is often

²⁵ R. Dalla Longa, "Il vantaggio competitivo della città globale", *Economia e Management (Infrastrutture Italia al crocevia - numero speciale)*, no. 4, October/December 2019.

a continuous transformation of physical infrastructure. For example, in the medium-long term, services that improve the energy efficiency of a city hospital can assume a monetary value comparable to the construction of a new hospital.

On the subject of energy efficiency, with the creation of Energy Service Companies (ESCOs)²⁶ in EPC PPPs,²⁷ economic operators and financiers often make new complexed investments within PPP developments. The intertwining of D&C and O&M within Long-Term Contracts (PPP) has increased the complexity of urban infrastructure and merits autonomous study.

PPPs are presently most common in urban infrastructure, in global cities and large agglomerations.

Physical Infrastructure

These are the more traditional infrastructures, made with different procedures and in different periods, in the construction of which the state often intervened with simplified procedures (public procurement). The life cycle of an infrastructure involves different management formulas and different construction materials that, in many cases, require replacement (especially when there is economic obsolescence). Often the reference to the assembly was only D&C (Design & Construction) did not include O&M (Operation & Maintenance). The fiscal crisis of the modern state and the introduction of the PPP required new, unexplored formulas. In countries like Italy, infrastructure management has shifted from one traditional model to another. The motorways are a typical example in which we limited ourselves only to the management formula (from public procurement to concession). Measurement systems for abatement, obsolescence, constant maintenance and innovative intervention systems have been lacking. The passage did not

²⁶ ESCO - Energy Service Company

²⁷ EPC - Energy Performance Contracting

activate or constrain this with new tools and a new support culture defined *ex ante*. A deep “hole”, an immense amount of public real estate, built over decades with traditional D&C public procurement, was given away in concession. This process led to oversimplification and mismanagement. The most iconic representation is the collapse of the Morandi bridge in Genoa, which killed 43 people in 2018. This, however, is only the tip of the iceberg. We are seeing a recomposition to D&C and O&M formulas and the creation of special purpose companies (SPVs). The best-known model for these is DBFOM, which has attracted project finance for years. This reformulation involves greenfield-infrastructure interventions in which the Long-Term Contract requires *ab initio* the contribution of private capital in the design and construction stages. With the brownfield more attenuated is the capital destined for D&C and it may happen that it is conveyed in the maintenances (M) of the O&M, in which not only the replacement is counted but also the remaking, or the innovative intervention. With the merger of D&C and O&M within PPPs and LTCs and the creation of special purpose companies, we are seeing a transformation of physical infrastructures into medium-large groups of companies, with the complexities that this entails for all operators. New cultures, professions and tools need to be developed, especially considering the special characteristics of these companies compared to traditional ones.

It is no coincidence that world funds have started to allocate an increasing share of their assets to infrastructures in all PPP formulas (with 300 billion coming from the largest 100 funds, equivalent to 10% of the capital managed by the funds).²⁸ In some cases, there has been a gradual transfer of funds from real estate to infrastructure and requests have been made for platforms to be set up for the control, orientation and management of these funds.

²⁸ A. Pike, P. O'Brien, T. Strickland, G. Thrower, and J. Tomaney, *Financialising City Stratecraft an Infrastructure*, Cheltenham, Edward Elgar, 2019.

Conclusion

The PPP model cannot be standardised globally. Standards can be implemented in the field of techniques (e.g. project finance, leasing), formulas (e.g. DBFOM, EPC etc.²⁹) and management and organisational companies (e.g. SPVs, ESCOs, project companies and FMCs³⁰). The key lies in the ability to create a new, integrated, interdisciplinary culture (finance, engineering-architecture, new public management or “governance networks”,³¹ dedicated risk management, law and public budgets). Barriers often prevent the rapid development of PPPs. Breaking down these barriers through interdisciplinary cultural support is the way forward. The shift from a traditional model (public procurement) to a more complex one (such as PPP) is not on its own enough to break through the dividing lines between state and market, contract and risk, or off and on balance sheet. When this has been done, other impediments (stranding) were created and we remained stuck at an early stage of development: the experiment was halted as it was considered too expensive. In some cases, the PPP has been defined as a “playground” for lawyers, and many interpretative holes have indeed yet to be filled.³² The PPP nevertheless represents an important line in global development that can go hand in hand with the segmentation and different natures of states. Acceleration of the old PPP model is still possible in some states (emerging countries) though in others (the developed countries) this model is on hold or at least experiencing a slowdown.

²⁹ R. Dalla Longa, “Il concetto di management del patrimonio immobiliare pubblico e il new PREM”, in R. Dalla Longa and G. De Laurentis (eds.), *La gestione del patrimonio immobiliare pubblico: fondi immobiliari, Public-private partnership, finanza e risk management*, Roma, Bancaria Editrice, 2014.

³⁰ Fund Management Company.

³¹ As it was defined in E.H. Klijn and A.J. Koppenjan (2016).

³² G. Dewulf and S. Wright, “Capital Financing Models, Procurement Strategies and Decision-making”, in AA.VV, *Investing in Hospitals of the Future*, London, EuHPN, Observatory Studies Series, no. 16, 2009.

The PPP presents itself as a possible area (perimeter) on which to draw a broad and in many ways unexplored development. Able to channel the huge mass of unused financial resources with collective beneficial ends into the “saver-user-consumer” chain.

There are new fronts on which to break through with the PPP, one of these is urban infrastructure: not only greenfield (more present in emerging countries and with strong urbanisation), but also brownfields (more present in developed countries and with consolidated urbanization where there is a rapid change of functions within urban structures). In the latter case we are faced with greater complexity, but also with a rapid contamination of different different typologies of infrastructure (physical-existing, all-inclusive-technological, “green deal”).

Finally, if interpreted correctly and with methodological rigor, the PPP could represent an important direction of development. The post Covid-19 (economic phase) will impose a strong investment in support of infrastructure. They are the backbone of economic development especially in the stagnation and crisis phase. The public spending (with or without EU support) will concern welfare (health, assistance); while the PPP may, under certain conditions, be the perimeter within which to organize the financing and assembly of the ‘green-brown-fields’ infrastructures.