

Public Governance and Territorial Development Directorate

Towards a Framework for the Governance of Infrastructure



ORGANISATION
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Public Governance and Territorial Development Directorate
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TOWARDS A FRAMEWORK FOR THE GOVERNANCE OF INFRASTRUCTURE

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1. Introduction

1.1. Good governance is a necessary condition for good infrastructure delivery

1. Infrastructure is the backbone of economic capacity, but it also impacts directly on human development, social inclusion, environmental sustainability and so the development of infrastructure is a fundamental concern of both governments and citizens. This is the case irrespective of the stage of development of a country, or of the prevailing economic culture and practice. What matters to governments around the world, and to the citizens they represent, is having in place high-quality infrastructure that supports the delivery of effective public services – in transport, education, health, culture, or any of the myriad of policy areas that affect people’s lives. Given that the interests and challenges in developing infrastructure are common across countries, international good practices can help governments better seize opportunities and meet related challenges. Building on discussions at OECD Networks and Committees, this paper aims to offer guidance to OECD Member and Partner countries in the area of public governance of infrastructure, where governments can bring their influence most directly to bear.

2. Up to now, much of the debate on infrastructure has focused directly on the financing challenges – how to raise funding for infrastructure projects, by using national levers and accessing international markets – whereas the broader public governance dimension has been neglected. However, OECD analysis has shown that substantial benefits can be realised by better managing public investment throughout its “life cycle” and across levels of government; and that the quality of public governance correlates with public investment and growth outcomes, at both national and sub-national levels (OECD, 2013). As with all areas of public governance, the governance of infrastructure entails its own distinct set of challenges and requires a considered, systematic approach. Indeed, the OECD guidance on overall budgetary governance (OECD, 2015d) recognises the distinct set of factors required to support public investment in infrastructure – including institutional capacity, public procedures, institutions and tools – and calls for the development of a coherent and integrated national framework. The elements and contours of a national governance framework for infrastructure – which is capable of providing the right infrastructure in a cost efficient, legitimate and affordable manner – are set out in this paper.

3. How can we go about identifying the elements of good infrastructure governance? One natural starting point is to assess the challenges that arise when governance arrangements fall short. Poor governance is a major reason why infrastructure projects fail to meet their timeframe, budget and service delivery objectives. Infrastructure projects with deficient governance often result in cost overruns, delays, underperformance, underutilisation, accelerated deterioration due to poor maintenance, and, occasionally, in expensive “white elephants” and bridges-to-nowhere.

4. In addition, evidence suggests that there are efficiencies that can be harnessed from a new and more comprehensive life cycle approach to public infrastructure (Productivity Commission 2014, Burger and Hawkesworth, 2011). By efficiency is also meant the identification, allocation and management of risk and uncertainty. While new forms of risk sharing can increase overall efficiency and effectiveness, transferring risk to the private sector comes at a price. The public sector must be able to decide when this price is appropriate and when risks should be retained. Meeting these new demands will require a re-thinking and a modernisation of the public governance of infrastructure.

The answer will, in its broadest sense, focus on good governance in terms of good planning, budgeting, project assessment and evaluation (throughout the project cycle), transparency, accountability and regulation. It will demand a strengthening of the entire institutional architecture of government in order to deliver the right strategic infrastructure on time, within budget and in a manner that commands the confidence of all stakeholders.

1.2. What is infrastructure governance?

5. By the governance of infrastructure is meant the processes, tools and norms of interaction, decision-making and monitoring used by governmental organisations and their counterparts with respect to making infrastructure services available to the public and the public sector. It thus relates to the interaction between government institutions internally, as well as their interaction with the private sector, users and citizens. It covers the entire life cycle of the asset, but the most resource intensive activities will typically be the planning and decision-making phase for most assets. More specifically it relates to the relationship between the delivery modality and the public and private sectors as described in Box 1.1.

1.3. The focus is on public infrastructure

6. Public infrastructure is defined as facilities, structures, networks, systems, plant, property, equipment, or physical assets – and the enterprises that employ them – that provide public goods, or goods that meet a politically mandated, fundamental need that the market is not able to provide on its own. This definition thus ranges from the direct provision of military installations to privately-owned and -operated utilities under government regulation, such as energy.

7. Public infrastructure is a fundamental component in the delivery of key public services in most countries. These services range from the traditional public-sector domains of defence, law enforcement, power generation, water, sanitation and transport to the social infrastructure, such as health care, social security, skills development, knowledge and innovation. The nature of the asset also varies from traditional fixed assets such as bridges and buildings to ICT architecture. In addition, sound public infrastructure is a key driver of enhanced capacity for real economic growth, both in the short and long terms. Infrastructure networks reduce the effect of distance, help integrate markets, and provide the necessary connections to international markets. These networks are also trade enhancing, especially when it comes to exports. Infrastructure services such as energy and water are critical inputs in production chains, the availability and quality of which determine both the quantity and price of outputs.

Box 1.1 - Modes of infrastructure delivery

Direct provision

Direct provision of infrastructure involves the government taking responsibility for all aspects of infrastructure delivery, including financing, construction and subsequent service delivery. This mode affords the government a maximum level of control over the infrastructure asset.

Traditional public procurement

In the traditional public procurement mode, a government body contracts with private partners to provide infrastructure-based goods and services. The government will contract separately for the design, construction, operation and maintenance of infrastructure assets. Contracts are allocated using competitive tender processes in order to obtain the optimal bundle of quality features and price.

State-owned enterprises (in full or in part)

Infrastructure, particularly in network industries such as water, public transport and electricity is often provided by state-owned enterprises (SOEs) that are owned (fully or partially) by the government. The government may relinquish infrastructure investments to an SOE if the latter is able to raise finance independently, although the actual investment decision may still be subject to government controls if they have fiscal implications. This may be an efficient mechanism for the delivery of infrastructure, especially if the SOE is to be "corporatised" as an independent legal entity and subjected to commercial pressures. An efficient solution further calls for the state's roles as enterprise owner and regulator to be conducted separately.

Public-Private Partnerships and Concessions

Public-private partnerships (PPPs) involve private investors financing and managing the construction of an infrastructure asset, which they then typically operate and maintain for a long period, often extending to 20 or 30 years. In return, the private partner receives a stream of payments to cover the capital expense as well as the operating and maintenance costs. This payment stream may be derived from the national budget, user fees or a combination of the two. Private firms are responsible for financing, constructing and operating the infrastructure assets. Governments retain control over project selection, establish the framework conditions and retain some regulatory powers.

Privatisation with regulation

When conditions for a competitive market exist in a particular sector, private firms subject to the discipline of market forces may provide the most efficient mechanism for the provision of infrastructure. In this mode of infrastructure delivery, private firms are not only responsible for the financing and delivery of infrastructure, but they also make investment decisions relating to which infrastructure assets to build. There are many cases of privatisation of sectors with market failures, e.g. water and energy. When privatisation has been the preferred option, governments have in parallel strengthened regulatory oversight in the sectors at stake – this has been notably the case with the establishment of independent regulators in the energy and water sectors when systems have been privatised.

1.4. Infrastructure investment is needed, but the scale varies

8. Estimates from the OECD suggest that annual global investment requirements by 2030 for telecommunications, road, rail, electricity (transmission and distribution) and water are likely to total around an average of 2.5% of world GDP. If electricity generation and other energy-related infrastructure investments in oil, gas and coal are included, the annual share rises to 3.5% of GDP (OECD, 2007). At the 2014 Meeting of Senior PPP Officials, Standard and Poor's estimated annual global funding needs for infrastructure at USD 3.4 trillion annually. These kind of assessments should, however, be taken with a grain of salt. There is little evidence that shows that such need assessments have historically hit the mark.

9. There are obviously differences between the needs of more mature economies, as found in OECD countries, and in more rapidly emerging economies. For OECD countries the needs are mainly found in the maintenance and upgrade of the existing stock of infrastructure. Indeed, in EU countries, around 70% of public investment is spent on maintenance costs associated with past infrastructure investments (OECD, 2014d). New build needs are to be found in assets meant to mitigate the effects of climate change, new green energy modalities and meeting the needs of ageing societies. There is also some evidence that points towards under investment in recent years. For the OECD countries as a whole, government spending on gross fixed capital formation as a share of total general government outlays fell from 9.5% in 1990 through 8% in the mid-1990s to approximately 7% in 2005 and 6.7% in 2011 (OECD, 2013). In addition, the global financial crisis has meant that governments and the private sector have been investing less. In the EU, for example, sub-national public investment declined by more than 20% over 2009-2012 (OECD, 2014d).

10. In rapidly emerging economies, the investment needs are clearer. The ADB estimates that the Asia Pacific region needs USD 800 billion yearly in annual infrastructure investment until 2020. The U.N. projects that the world's population will reach 9 billion by 2050, from about 7.1 billion today. Most of that increase will come from the developing world, where the population could surge by almost one-half – in particular in urban areas. There is thus a clear global need for new economic infrastructure in the areas of energy, water, transportation, as well as in social infrastructure such as schools and hospitals.

1.5. Background and next steps for the paper

11. In response to discussions on the need for further study on how to think about infrastructure governance and modality choice at the 2014 Annual Meeting of Senior PPP Officials in Paris on 17-18 February 2014, this paper sets out a draft framework for the public governance and delivery of infrastructure. The ambition is to harness OECD countries' experiences into a coherent tool that countries can apply to ensure that their infrastructure investment is effective, efficient, transparent, user centric and affordable.

12. This paper is based on the accumulated infrastructure work of the OECD, including in the areas of Public-Private Partnerships, fiscal policy and governance across levels of government, regulatory policy, integrity and anti-corruption, budgeting, and public sector innovation (see Box 1.2).

13. This endeavour has been ongoing for the last year and has benefited from substantial input from national officials, international organisations and academia, in particular the Hertie School of Governance. A High Level Focus Group of decision makers and experts was organised on 29 January 2015 in Paris on the basis of a previous version of this paper. The Focus Group's contributions are gratefully acknowledged. On 23-24 March 2015 the framework was endorsed at the Annual Meeting of Senior PPP and Infrastructure Officials, and the Public Governance Committee was consulted by written procedure by 10 April 2015. The comments and contributions by Member state officials are much appreciated. Some comments were received after official deadlines were passed and will be incorporated as soon as possible.

14. On this basis, the OECD has presented this framework to member countries at the OECD Ministerial Council Meeting on 3-4 June 2015 in Paris, in order to receive their input as to whether the issues and approach are in line with the needs and state of play for infrastructure in their countries as well as possible follow up activities. This resulted in a mandate to further this work in collaboration

with member countries. The framework was also presented to the Working Party of Senior Budget Officials during their 2015 annual meeting in Rome on 11-12 June.

1.6. How to read this paper

15. This working paper sets out by presenting concepts and challenges for public infrastructure followed by suggested preconditions for good infrastructure governance. Finally it presents an infrastructure decision tree that can guide countries in assessing and balancing their specific sectoral, country, and project needs in order to select a fitting infrastructure delivery modality.

Box 1.2 - Key relevant OECD recommendations that inform this work

- OECD (2015) Recommendation of the Council on Public Procurement
- OECD (2015) Recommendation of the Council on Budgetary governance
- OECD (2014) Recommendation of the Council on Digital Government Strategies
- OECD (2014) Recommendation of the Council on Effective Public Investment Across Levels of Government
- OECD (2014), The Governance of Regulators, OECD Best-Practice Principles for Regulatory Policy
- OECD (2014) Recommendation of the Council on the Governance of Critical Risks
- OECD (2013) G20/OECD High-level principles of long term investment financing by Institutional investors
- OECD (2012) Recommendation of the Council for the Public Governance of Public-Private Partnerships
- OECD (2012) Recommendation of the Council on Regulatory Policy and Governance
- OECD (2010) Guiding Principles on Open and Inclusive Policy making
- OECD (2010) Recommendation of the Council on Principles for Transparency and Integrity in Lobbying
- OECD (2007) Recommendation of the Council on Principles for Private Participation in Infrastructure
- OECD (2003) Recommendation of the Council on OECD Guidelines for Managing Conflict of Interest in the Public Service
- OECD (1998) Recommendation of the Council on Improving Ethical Conduct in the Public Service Including Principles for Managing Ethics in the Public Service

2. Framework for public governance and delivery of infrastructure

2.1. What should a framework for the governance of infrastructure provide?

16. The objective of the framework presented in this paper is to ensure that infrastructure programmes:

- make the **right projects** happen,
- in a **cost-efficient** and
- **affordable** manner, that
- is **trusted** by users and citizens to take their views into account.

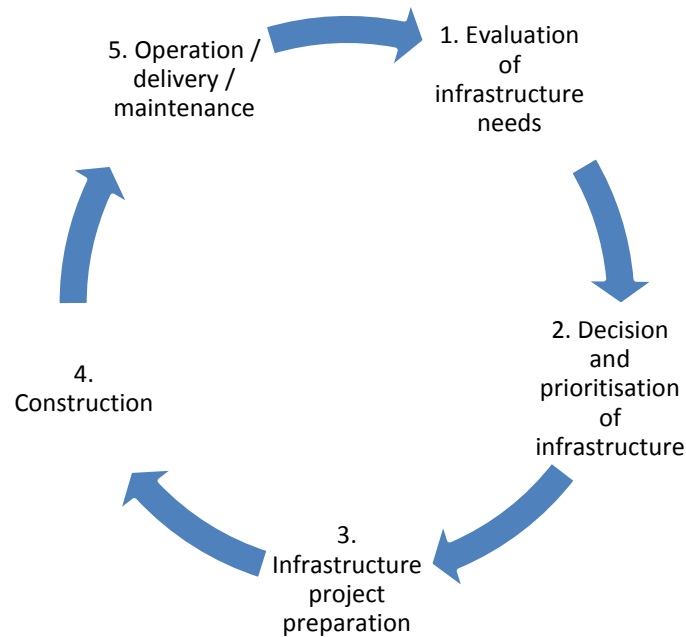
17. The framework offers decision makers a methodology to analyse challenges, mapping out options on how to solve them, and guides them in carrying through decisions. The framework consists of two components:

- i. A list of governance preconditions - these concern the overall enabling governance environment for infrastructure; and
- ii. A decision tree, which guides countries with respect to making sectoral decisions and overall infrastructure decisions.

2.2. Governance challenges

18. As an introduction to the governance challenges, it is helpful to bear in mind the various stages of infrastructure and how they interact with the governance dimension as illustrated in Figure 2.1 below. In the figure, the five phases in the life cycle of an infrastructure asset project are identified; each of these relate to separate governance challenges. First, there is the issue of evaluating the infrastructure needs. This requires the ability to gather evidence to identify the relevant needs across sectors and regions. Second, a prioritisation of these needs should take place based on planning, processes and tools that allow an aggregation of the many project dimensions and preferences of stakeholders. Third, in the project preparation phase, suitable procedures and skills in terms of technical design, affordability and value for money issues need to be applied. Fourth, in the construction phase, appropriate skills and systems should be available to ensure that project assumptions are delivered upon or that changes are subject to appropriate scrutiny. Fifth, in the operational stage of the project, the right incentives and tools for appropriate monitoring of asset performance and maintenance should be in place as well as mechanisms for reflection on the service provided. The governance challenges discussed below to a varying extent cut across the life cycle of the asset, but will usually play a fundamental role at a particular time of the asset.

Figure 2.1 Infrastructure governance cycle



2.2.1 Weak capacity for designing a strategic vision for infrastructure undermines the development of a sustainable development plan

19. A necessary condition for a successful infrastructure programme is appropriate strategic planning. This requires identifying what investment should be undertaken, determining the essential components, needs and trade-offs, and how they should be prioritised. Conversely, weak or insufficient planning often impedes their successful implementation and operation later in the project cycle. The reason why designing a clear and coherent strategic vision is difficult stems essentially from the complex nature of infrastructure investment. Issues include the fact that infrastructure investment has many stakeholders; Infrastructure development serves multiple objectives, with multiple policy goals; Good infrastructure requires identification of necessary complementarities across sectors.

2.2.2 Infrastructure impacts communities - without well managed consultation good projects may falter

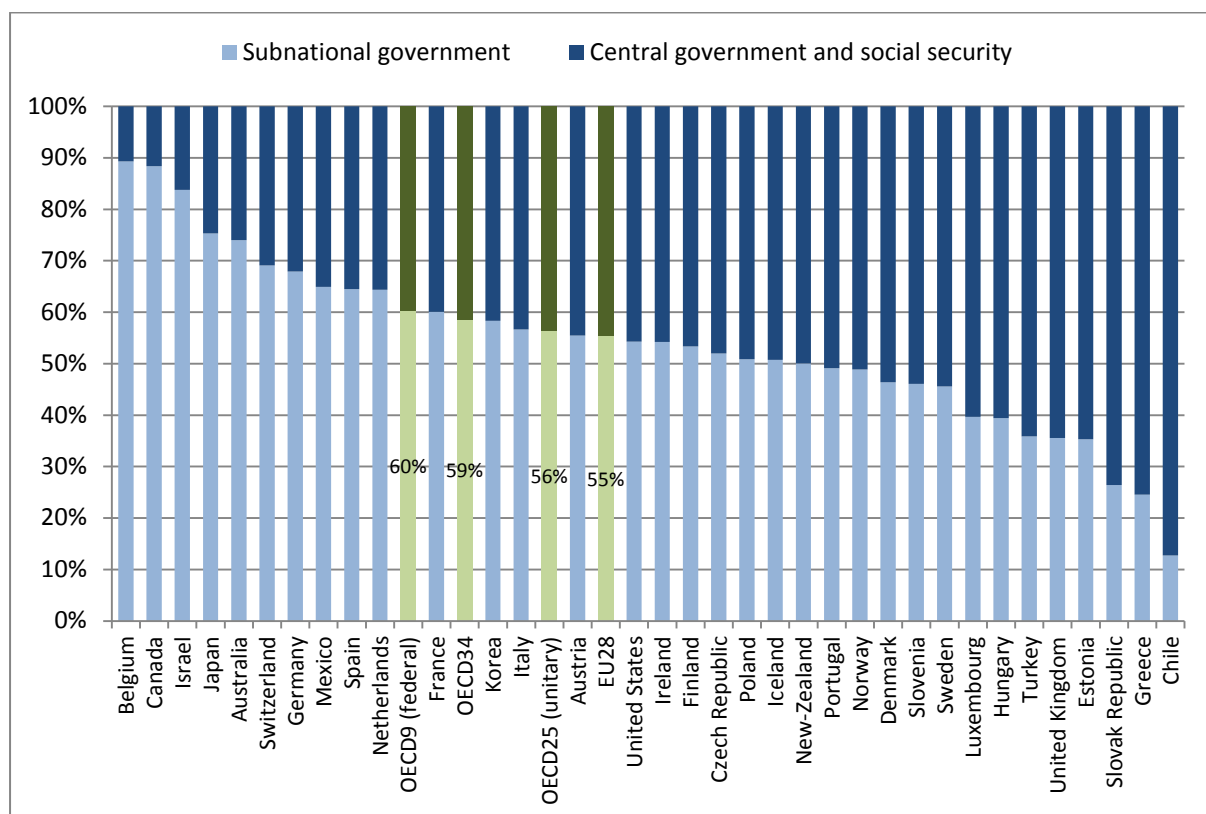
20. Involving stakeholders such as users, civil society organisations and the private sector, can improve the quality of planning efforts and ultimately the effectiveness of the asset. Stakeholder involvement can establish a shared vision for development, improve the assessment of investment needs, reveal the importance of cross-border linkages, strengthen trust in government and cultivate support for specific investment projects. It can also lead to demand-driven improvements in public investment management capacity. In practical terms, this means that both central and sub-national governments should have the capacity to engage in processes of stakeholder involvement in policy development and needs assessment in the early stages of the investment cycle, and feedback and evaluation in later stages (OECD, 2014c). Capacities for effective stakeholder involvement include issues such as identifying stakeholders, understanding their “stake”, designing outreach opportunities and managing grievances.

21. Private sector actors can play different roles at different stages of the public investment cycle, but risks of capture by specific interest groups need to be managed. Public authorities can encourage them to adopt a high degree of transparency, provide comprehensive information regarding the project’s parameters and the state of infrastructure operations, and actively engage around the environmental and social impacts of their activities (OECD, 2007). One example of that is Frankfurt Airport. The decision to build a new runway at Frankfurt Airport (Germany’s largest airport) was accompanied by a mediation process initiated by the state government of Hesse.

2.2.3 The coordination challenge - a multiplicity of actors across levels of government may ultimately derail a good project

22. Public investment is generally a shared responsibility across levels of government. Whether through shared policy competencies or joint funding arrangements, public investment typically involves different levels of government at some stage of the investment process. This makes its governance particularly complex. Sub-national governments, defined as states, regions and other municipalities, undertook 72% of total public investment in 2013 across OECD countries in terms of volume. Variations across countries are important, as sub-national public investment ranges from 13% in Chile to 88% in Canada (2013). A large part of public investment is spent on infrastructure.

Figure 2.2 Sub-national share of country’s public investment



Source: OECD (2015), Sub-national governments in OECD countries: key data

23. Effective public investment across levels of government not only requires substantial coordination to bridge information, policy or fiscal gaps that may occur, but it also calls for critical governance capacities at different levels to design and implement public investment projects (OECD, 2013). Governing the complex interactions across levels of government for public investment holds

important potential for improving efficiency and effectiveness, and hence investment outcomes (OECD, 2013).

24. All countries are confronted by these challenges, whatever the institutional context (in federal countries, or highly centralised countries) given the mutual dependency across levels of government. The OECD *Recommendation on Effective Public Investment Across Levels of Government* adopted in 2014 target the systematic obstacles that countries, regions and cities face when managing public investment, notably challenges in vertical and horizontal coordination, across sectors, and bottlenecks in sub-national capacities. Mechanisms used for vertical co-ordination between central and sub-national levels of government in OECD countries range from informal policy exchange platforms to co-financing arrangements for shared responsibilities or conditionality requirements for receiving central funds (OECD, 2013).

2.2.4 The skills challenge with respect to the life cycle of infrastructure

25. The Australian Productivity Commission notes the need to retain sufficiently skilled public sector employees to be responsible and accountable for performing a range of actions along the life cycle of infrastructure. Infrastructure investment requires a multiplicity of skills to assess, procure, manage and regulate that may not be sufficiently available in the relevant public sector organisation. Apart from certain sectors (such as transport) that have an on-going infrastructure programme, many projects are unique for the concerned authority and/or unique for the country as a whole (e.g. mega projects like the Olympics, very large fixed links, airports). They may also be new in the way they are financed (e.g. private finance) or be subject to technological change that requires new skills.

26. There are important challenges at both the national and sub-national level to catalyse sufficient regulatory capacity to oversee the performance of infrastructure service delivery. Regulatory delivery (the downstream of the regulatory policy cycle) is in particular perceived as the weak link.

27. At the sub-national level, government capacities also vary greatly across metropolitan areas and rural jurisdictions. Where the capacities to design and implement investment policies and projects are weak, policies may fail to achieve their objectives (OECD, 2013, OECD 2014c). Recent research has shown that public investment and growth outcomes are correlated to the quality of government, including at the sub-national level (OECD, 2013).

2.2.5 Uncertainty with regards to revenue flows and sources through the life cycle of the asset can result in a lack of confidence in the project's affordability

28. Financial sustainability over the long run can be an important challenge to a number of regulated infrastructure sectors that to a greater or lesser extent rely on user charges - in particular the sectors of water, energy and to some extent transport. The water sector is emblematic in that respect. OECD work highlights the critical importance of the three ultimate sources of funding for the sector (3Ts: Taxes, Tariffs and Transfers). In most countries, low cost recovery through user fees is coupled with strong reliance on budget subsidies (OECD 2009 and 2011b). However, subsidies are renewed on an annual basis and their reliability is therefore not ensured. In the current context of strong budget constraints, subsidies tend to be reduced and the long term financial sustainability of the systems and the services is therefore not ensured all other things being equal.

29. Tariff regulation is a critical determinant of the revenue flow in infrastructure sectors. Evidence shows that tariff setting and updating is a very difficult task in both OECD and non-OECD

countries and tends to be a highly political endeavour, in particular in the water sector¹. To remedy the situation and situate tariff setting at arm's length from political interests, a number of countries have chosen to make tariff regulation a key function of independent regulators and to issue tariff methodology (OECD, 2015c). A number of critical issues remain unresolved, however. These include: how to provide the relevant incentives for investment; and how to price capital and account for depreciation to ensure that any tariff policy achieves the objective of long term sustainability of the sector at the least costs for the customers (while addressing the monopolistic behaviour of the operators).

30. Tariffs alone will oftentimes not be sufficient to cover the investment's needs. Public funding remains an essential element of infrastructure financing. For projects that are wholly government funded both in the construction and operational phases, the revenue source is clearly the ordinary budget. However, there are examples of countries simply overinvesting and finding themselves in a position where there is simply insufficient general revenue to pay for the functioning of the asset, such as was found in Portugal with respect to certain PPPs after 2008.

31. For projects that rely on some form of private participation, the uncertainty and risks with regards to revenue flows primarily impacts a project when private counterparties are asked to carry some of this risk and require a commensurate risk-adjusted compensation. In addition, a private investor may insist on some form of minimum revenue guarantee to invest at all, which brings risks back on the governments' balance sheet.

32. There is no easy solution to the fact that there will often be uncertainties with respect to revenue due to both the nature of the particular project and its interface with the dynamics of the public sector. It is the responsibility of decision-makers to put in place governance arrangements that manage, mitigate and make transparent these risks and uncertainties to the extent possible.

2.2.6 Infrastructure decisions tend to be bound by administrative perimeters rather than relevant functional economic ones

33. Strategic planning challenges are amplified by the fact that jurisdictions need to be coordinated at the relevant scale, to avoid over or under-provision of public goods. Investing at the relevant "functional" socio-economic scale requires coordination across jurisdictions to increase efficiency through economies of scale and affordability of the asset for users and government (OECD 2014c). This is particularly true for metropolitan areas. This can be complex to achieve for political reasons, and there are numerous examples of bad infrastructure decisions linked to inadequate perimeters of investment.

34. The small scale of public investment projects in countries with high levels of administrative fragmentation can result in lower returns on that public investment, and ultimately poor service delivery to citizens (OECD 2015a). A good example to illustrate this is transport infrastructure in metropolitan areas. There are ten different transport authorities in the metropolitan area of Aix-Marseille in France, reflecting the fragmented administrative perimeter of the area, which has resulted in an overall supply of public transport that falls short of people's needs (OECD, 2013b): only 2% of the population living in the metropolitan area of Aix-Marseille for example has *high* access to transport (OECD, 2013). Public transport failures also reduce inhabitants' mobility and limit the *de*

¹ See the OECD Water Governance reviews of Mexico, Jordan and Tunisia (www.oecd.org/gov/regional-policy/country-reviews-on-water-governance.htm).

facto perimeter of their potential job market, thus contributing to heightening inequalities with regard to access to employment (OECD, 2013).

2.2.7 The lack of data and evidence on service delivery performance makes it difficult to use assessment tools well

35. Countries should carefully assess which investment modality is likely to yield the most value for money, but it can be a challenging task. Good practice requires the use of comprehensive cost benefit techniques and a robust assurance process.

36. Most countries use some kind of numerical value analysis when choosing whether to pursue a particular investment as well as which modality to use (e.g. PPP vs. traditional infrastructure procurement). For the latter a Public Sector Comparator (PSC) has been used in a number of countries. A PSC is a hypothetical risk adjusted reference project using a ‘traditional’ form of infrastructure procurement. However, experience shows that numerical value for money tests must be treated with caution. Indeed, such value for money calculation should not be perceived as a ‘pass or fail’ test. It is meant to be an element in a careful case that a line department should build in order to choose the appropriate investment strategy. Such exercises can be vulnerable to a degree to manipulation of data to achieve a preferred outcome and tend to over-focus attention on the numerical result of the exercise, rather than a more full set of considerations.

37. The fundamental element that enhances the solidity of any kind of value for money test is data. Unfortunately, there is a lack of systematic data-collection regarding the cost and performance of infrastructure assets across various modalities. While many countries do collect data, most of the data that would be required to compare the overall costs of projects financed through various alternative mechanisms is not systematically collected, processed or made available.

Box 2.1 - Assessing value-for-money in proposed public-private partnership projects

Prior to undertaking a public-private partnership a government should explore whether a public-private partnership will deliver better value-for-money compared to traditional public procurement. Generally speaking, four methods may be used to assess the relative value-for-money of the different delivery models:

- a complete cost benefits analysis of all alternative provisions methods available to both the government and private sector—this method is the most complex among the four presented here;
- calculation of a public sector comparator before the bidding process to assess whether a public-private partnerships in general offers better value for money (e.g. South Africa);
- calculation of a public sector comparator after the bidding process to assess whether a particular public-private partnerships bid offers better value for money (e.g. Victoria, Australia); and
- the use of competitive bidding process alone without a comparison between public and private provision methods (e.g. France).

Partnerships Victoria uses a public sector comparator to compare the net present cost of bids for the public-private partnership project against the most efficient form of delivery according to the output specification (a so-called reference project). The comparator takes into account the risks that are transferable to a probable private party, and those risks that will be retained by the government. Thus, the public sector comparator serves as a hypothetical risk-adjusted cost of public delivery of the output specification of a Partnerships Victoria project. The methodology for preparing the public sector comparator is published by Partnerships Victoria.

Box 2.1 - Assessing value-for-money in proposed public-private partnership projects (cont.)

Some have contested the robustness of the public sector comparator citing that it is constantly manipulated in favour of public-private partnerships. The United Kingdom has, for example, replaced the public sector comparator to incorporate quantitative and qualitative factors. Quantitative factors include a reference project, value-for-money and affordability benchmarks. Qualitative factors include project visibility, desirability and achievability (Wall and Connolly, 2009).

2.2.8 Adverse incentives provided by regulatory frameworks may generate suboptimal investment choices

38. It is a well-known fact that at times projects may be prioritised or cancelled for the wrong reasons. Motivations might include the wish to capitalise on an existing subsidy, jurisdictional boundaries, the need to show decisiveness or response to special interest groups. It is also true that decision makers, donors and investors often prefer to invest in greenfield projects, that will be seen as a tangible achievement, versus maintenance and renovation projects, that are less visible.

39. One way to overcome such issues is to set up procedures that assess cost efficiency and value for money such as cost-benefits analysis, ex-post evaluation and audits that are transparently communicated. A complement to such formal tools could be institutionalised stakeholders' engagement. Such procedures may also help transmit the actual needs and possible inappropriate investment design to decision makers.

40. The technical set up of the budgeting system may in itself also impact infrastructure. In OECD countries, public expenditure for infrastructure allocated via the annual budget process is transparently accounted for. However, many countries operate on a cash accounting basis with only a limited use of a public sector balance sheet – so the state of the public sector assets are not reported. In many countries the consequences have been that public infrastructure assets are badly maintained, shortening their effective life span, with a lack of clarity as to the infrastructure stock; and that investment needs may erupt suddenly, derailing medium- and longer-term fiscal planning. Countries have responded to this challenge in a number of ways: using the private sector to a greater extent, changing budgeting and accounting systems to accrual accounting, and putting in place a systematic upgrade of infrastructure management. Accounting rules have meant that some countries are tempted to choose particular procurement modalities as a way of off-budget borrowing. The use of PPPs, State Owned Enterprises (SOEs) or other vehicles has at times been driven by a wish to finance the asset in a non-transparent manner, off the government's balance sheet, rather than being a choice grounded in a wish for more cost efficiency

2.2.9 Unstable or burdensome regulatory frameworks can prevent long-term decisions and undermine sound decision-making from both public and private actors

41. The instability of institutions in charge of infrastructure development and management as well as frequent change in the regulatory framework will increase the sense of risk and arbitrary decisions for project developers. Moreover, in a number of jurisdictions, infrastructure projects may be subject to multiple layers of regulatory requirements that may be perceived as overly burdensome or comfort the feeling of unpredictability of investors. In addition to rule of law and established conflict regulation mechanisms, countries need to endeavour to maintain a stable and transparent regulatory regime with a clear allocation of roles between regulatory institutions responsible for

infrastructure investment and develop a credible and predictable pipeline of projects. This need for certainty should naturally to be balanced against the legitimate need for flexibility and political will.

42. A one-stop shop for infrastructure project development procedures may help investors navigate better in the bureaucracy of a specific jurisdiction and provide better certainty. In a number of countries, independent regulatory bodies have been established to catalyse regulatory expertise in the public sector that oversees economic regulation of infrastructure service delivery. Their success at restoring trust in regulatory decisions and ensuring the credibility of the regulatory frameworks will critically depend on their governance, including role clarity, adequate processes and structure to manage human and financial resources, independence, accountability, performance evaluation and funding as defined in the OECD Best Practice Principles on the Governance of Regulators.

2.2.10 Infrastructure procurement is vulnerable to corruption

43. Corruption allegations often surround government-led mega projects on infrastructure. The extent of public officials' discretion on the investment decision, the size of the projects and the multiplicity of stages and stakeholders involved make them more prone to corruption. The OECD Foreign Bribery Report identified that two-third of foreign bribery cases occurred in 4 sectors highly related to infrastructure; extractive (19%), construction (15%), transport and storage (15%) and information and communication (10%).

44. Assessing the scale of corruption in public investment is a challenge because corruption usually leaves no paper trail. However, several studies have tried to quantify the amount of money lost due to corruption. It has been estimated that 10-30% of the investment in a publicly funded construction project may be lost through mismanagement and corruption (COST, 2011). According to another estimation, "annual losses in global construction through mismanagement, inefficiency and corruption could reach USD 2.5 trillion by 2020" (COST, 2012) and within the European Union, corruption costs EUR 120 billion per year (European Commission, 2014).

45. Corruption in the different phases of an infrastructure project can involve a wide range of actors including elected and non-elected public officials, lobbyists, civil society organisations, trade unions, regulators, contractors, engineers and suppliers. In addition, corruption at different phases can take place in a wide variety of ways, such as undue influence or capture of the investment by specific interests, or bribery in the procurement process.

46. For instance, public investments are perceived in many countries to be politically driven. Politicians have tendencies to prefer new infrastructure projects rather than maintenance and repairs of the old ones in order to increase their visibility. By doing so, it opens entry points for political corruption in this process which can directly lead to failing trust in the government. Enhancing transparency and public participation can contribute to ensuring that the process is carried out based on policy priorities that the public officials are fulfilling its responsibility to serve the public interest.

47. Furthermore, most infrastructure projects are implemented using public procurement or private-public partnerships. Those engaged in corrupt practices often try to recover the cost that they have incurred through practices such as fraudulent billing, collusion, bid rigging, agreement to share the market or future contracts, price-gouging, use of inferior quality goods or setting higher prices of the services. A sound public procurement process is essential to ensure not only that practices for awarding contracts are competitive but also that the quality of goods and services is adequate.

48. If the public investment is proven to be carried out with transparency, integrity and proper management of public funds, they can become a flagship case for the government to showcase good governance, particularly in cases of low trust and would reinforce government efforts to curb corruption. *The OECD Checklist to Curb Corruption in Public Investment* assists governments to mitigate corruption risks in public investment by identifying corruption entry points over the entire investment cycle and provides real life guidance on how to prevent corruption.

2.2.11 Political and business cycles issues strongly impact the phases of infrastructure

49. It is difficult to reconcile the short term vs. long term challenges at stake. Infrastructure involves long-term agenda and needs predictability but infrastructure is extremely sensitive to political and economic/business cycles.

50. The local public investment cycle is for example highly correlated to the local election cycle: usually, the level of public investment rises the year that precedes municipal elections, and then declines the first years that follow the election. In the case of France, an analysis of three decades of local mandates (6 terms of 6 years) shows that public Gross Fixed Capital Formation FBCF rises on average by 5.9% on average the year that precedes the election, and declines by 0.5% just after the election, and 1.4% the year after (INSEE, 2002). Public investment is also highly sensitive to the economic cycle: it was for example used as the adjustment variable by many governments in the fiscal consolidation period that followed the crisis (OECD, 2013).

2.2.12 Identifying, pricing, and allocating risks between public and private parties can be difficult

51. A number of countries attempt to use more complex procurement methodologies (e.g. PPPs) in their infrastructure programs as a way to allocate more risks in a more efficient and effective way. In some cases this approach fails to take into consideration that increased risks need to be matched by increased reward. Consequently a lot of projects founder due to a misalignment between what private sector partners will accept in terms of risk and what some public sector entities hope for. Approaches that just look at risk reduction and cost management from a government perspective are therefore unlikely to result in sustainable solutions. As the project grantor, it befalls the public sector to design projects that only transfer those risks to the private side which it is better able to manage than the public side (see box 2.2.). Experiences from countries show that this may oftentimes entail transferring less risk than was originally thought. Countries should not attempt to use the private sector to mitigate problems that essentially stem from flawed governance. For instance, the private sector will usually be less suited to overcome land and right-of-way issues than the public side. While this risk can be off loaded to the private side, it will not be cost efficient. The use of more innovative risk-sharing arrangements therefore require that both public and private sector are able to identify, measure and allocate risks between them in a fair manner where the appropriate reward follows the allocation of risk.

Box 2.2 - The transfer of risks

As risks should be carried by those that manage them best. The key aspect to PPPs is thus identifying and sharing the risks between private and public partners. Three categories of risks, listed in the table below, can be identified: macroeconomic, commercial and legal/ political risks. Risks are events that can be measured and the probability for its occurrence assigned. Risks vary in nature, some of them are endogenous (controllable by a party to a meaningful extent) and some others exogenous, uncontrollable, to at least some of the parties, but measurable.

Risk	Agent	Types of Risk		
		Macroeconomic	Commercial	Legal and Political
External/ Exogenous	Private	Aggregate Demand	Force majeure	Different Investment preferences of alternating governments
		Interest rate risk	Demand risk	Expansionary anti-crises policies raising the cost of financing
		Liquidity risk		Risk of expropriation
		Exchange rate risk		
	Public	Aggregate Demand	Force majeure	
		Interest rate risk		
		Liquidity risk		
		Exchange rate risk		
Project specific/ Endogenous	Private		Project risk	
			Design and construction risk	
			Operation	
			Maintenance	
			Input and output quality and quantity risk	
			Residual value risk	
			Contractor failure risk	
			Renegotiation risk	
			Early termination risk	
			Security risk	
			Technology risk	
			Idiosyncratic interest rate	
			Idiosyncratic liquidity risk	
		Credit risk		
		of the SPV		
		of the constructing and operating of the financial institution		
	Public		sovereign risk	Different Investment preferences of alternating governments
		Demand risk	Expansionary anti-crises policies raising the cost of financing	
			Risk of expropriation	

As a general rule parties are better at managing those risks which are endogenous to them. However, it is difficult to determine a clear list of which risks should be borne by whom as this will often depend on an assessment of the concrete case. Legal/political risks are typically exogenous to the private partner but endogenous to the public partner and therefore are probably better managed by the public side. Macroeconomic risks are exogenous to both private and public partners, but the former could be expected to carry the normal business cycle movements. Commercial risk is a type of risk that can be both exogenous and endogenous for the public sector depending on whether the demand is based on end users' preferences or whether it is based on public sector consumption.

2.3. Infrastructure solutions – Governance preconditions

52. There is a set of governance dimensions that needs to be in place, regardless of the choice of delivery modality. These can be available in a multiplicity of organisational and institutional models to a greater or lesser extent. A strong capacity with regards to one pre-condition can to some extent

compensate for a weaker capacity in another. However, experience shows that they are mutually reinforcing and must be pursued as a package.

1. A long term national strategic vision for the use of infrastructure should be in place, which takes into account the multi-dimensionality of the challenges.
 2. Regulatory frameworks, principles and processes should encourage the sustainable and affordable development, management and renewal of infrastructure.
 3. The process for managing infrastructure projects over their life-cycle delivery should be user-centric. It should rest on broad based consultations, structured engagement and access to information and have a primary focus on the users' needs.
 4. Coordination across levels of government and jurisdictions should be frank, regular and performance oriented. Coordination within levels of government should balance whole of government perspectives and sectoral views.
 5. The appropriate skills and procedures to ensure rigorous projects assurance, affordability, value for money and transparency should be in place.
 6. Project assessments should be based on data and a balanced value for money procedure.
 7. Systems should be in place to ensure a focus on the performance of the asset throughout its life.
 8. Map corruption entry points at each stage of the public infrastructure project and enhance integrity and anti-corruption mechanisms.
 9. The choice of the appropriate delivery modality should integrate political, sectoral, and strategic aspects.
53. It should be emphasised that oftentimes the good decision will be one where a balance needs to be struck between competing legitimate interests, for e.g.: moving projects forward need to be balanced against a thorough consultation process; providing suitable incentives for private sector participation and risk transfer needs to be balanced against the price for such participation; and regulatory stability needs to be balanced against the need to adjust frameworks in light of developments. In essence these trade-offs require a capacitated public sector and a frank dialogue with all concerned stakeholders.

3. The infrastructure decision tree

54. The choice of how infrastructure is delivered has implications for public sector discretionary control, value-for-money and affordability. In many countries, however, the choice of modality is often based on habit and lacks specific criteria both for traditional infrastructure and private finance options (Burger and Hawkesworth, 2011).

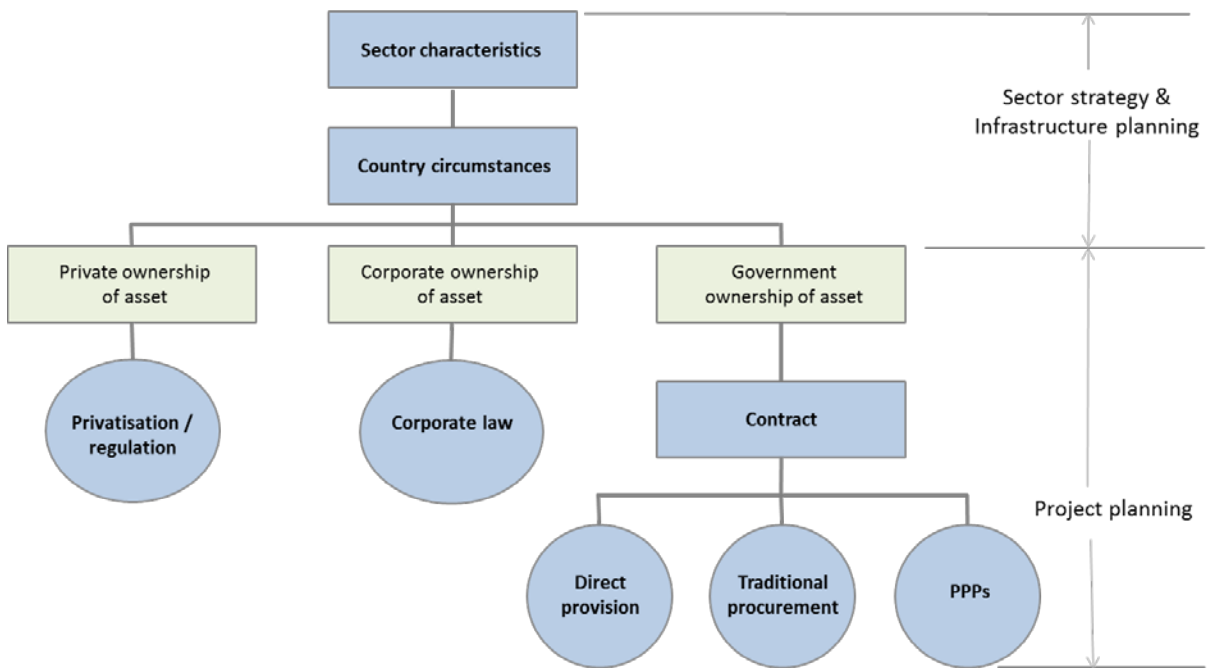
55. The decision tree and accompanying check lists below do not posit that one size fits all. Rather, they seek to raise issues that will be unique to each country and that will need to be assessed by countries in order to make specific decisions as to how infrastructure can best be delivered.

56. The framework should enable countries to take a fresh look at their infrastructure delivery choices and identify where a change might add value given new priorities. For instance, if the challenge is to introduce greater cost efficiency, a greater use of market mechanisms might be beneficial, insofar as the right country circumstances are present, such as a competitive market.

57. The framework presented offers a three-step process based on sectoral criteria, country criteria (national/sub-national levels) and project criteria. It suggests that countries:

- i. Set a preferred sectoral approach by assessing reform objectives and the characteristics of the sector**
- ii. Assess how the country circumstances (political economy, government's capacities, private sector's capacities, enabling legal environment, etc.) impact the sector**
- iii. Choose a delivery model based on the project characteristics and overall approach**

Figure 3.1 - Decision tree for infrastructure delivery option choice



3.1. Set a preferred sectoral approach by assessing reform objectives and the characteristics of the sector

58. First, the decision tree suggests that countries assess their sectoral objectives and sectoral characteristics. Considering these together, and prioritising them, should build a solid foundation for determining an optimal sectoral approach to infrastructure delivery.

Table 3.1 Set a preferred sectoral approach

<i>What are the prioritised sectoral policy objectives?</i>	<i>What characterizes the market and how politically sensitive is the sector?</i>
✓ Improving quality of services	Extent of Market Failures? <ul style="list-style-type: none"> • Potential for competition • Non-excludability • Network effects
✓ Improving access to infrastructure	
✓ Improving efficiency	
✓ Reducing the need for government subsidies	Political Sensitivity? <ul style="list-style-type: none"> • Equity Considerations • Environmental, land Issues • National Security
✓ Promoting innovation	
✓ Speed of delivery	
✓ Improving quality of services	
⇓ Optimal sector approach	

59. The choice of modality must take into account the objectives being pursued by policy makers (left column in table 3.1). If, for example, improving efficiency in a particular sector is a key objective, then delivery modes that subject the providers of infrastructure to commercial pressures (PPPs, including concessions), and, where possible, competitive forces (privatisation) should be privileged. On the other hand, it is unlikely that expanding access for a particular public service such as electricity to remote rural areas will generate sufficient returns to justify an investment using purely commercial criteria. Under such circumstances, some form of government intervention is likely to be required, whether in the form of government provision (direct provision or traditional procurement), regulation and/or subsidies (regulated privatisation). Since most infrastructure investments seek to achieve multiple goals – and certain objectives might require different approaches – policymakers should establish a clear prioritisation of objectives before determining an optimal delivery mode.

60. In addition to basing choices regarding infrastructure delivery modes on a clear prioritisation of objectives, policy makers should take into account the specific economic and political characteristics of a sector (right column in table 3.1). A key consideration is the extent of market failure within a particular sector. When market failures are significant, and thus impede the formation of price signals that accurately reflect supply and demand, government intervention (through regulation) or government provision (whether in the form of direct provision, traditional procurement, or PPPs) is likely needed in order to avoid under-provision or dominance by a monopolist.

3.2. Assess how the country circumstances impact the sector

61. Second, the country's circumstances must be taken into account. A sectoral analysis applying the criteria described above should help to determine what is the most economically efficient and politically acceptable mode of delivery for a particular infrastructure category. However, this analysis ignores the fact that achieving economic efficiency in the real world depends on having in place an appropriate set of functioning economic institutions, among other things. What is economically efficient in theory might be less so in practice if a country's circumstances are ill-adapted to a particular mode of delivery. For example, for the privatisation of infrastructure to be successful, there must be sufficient capacity in the private sector to deliver the infrastructure and create a credible threat of entry, as well as strong and independent regulatory institutions to ensure that private firms do not gain excessive market power to the detriment of consumers and taxpayers. If these conditions are not in place, privatisation carries the risk of degenerating into a private monopoly that lowers welfare.

Table 3.2 Country circumstances

Dimension	Components
Political economy	<ul style="list-style-type: none"> • Distribution of the political resources within an economy?
Government’s capacities	<ul style="list-style-type: none"> • Public sector capacity for implementation, regulation, and monitoring?
Private sector’s capacities	<ul style="list-style-type: none"> • Skills and abilities, the degree to which the market is competitive, whether there is a level playing field between incumbents and new-comers, including those from abroad?
The enabling legal environment	<ul style="list-style-type: none"> • Clear and prudent legislation? • Dispute resolution mechanisms? • Legal enforcement?

62. Thus, choices relating to sectoral approaches and delivery modes for infrastructure should be filtered by a consideration of a country’s political economy, its institutions, the capabilities of both the government and the private sector, and its openness to foreign investment. If the gap between a country’s circumstances and the requirement of a particular mode of delivery are too far apart, then pursuing that modality is sure to lead to failure. Governments then have the choice of pursuing the ‘second best option’, which might not be the most economically efficient solution in theory but carries a higher likelihood of delivering value for money and improving public welfare.

3.3. Choose a delivery model based on the project characteristics and overall approach

63. Third, once a sector strategy has been decided, the focus of planning and decision-making shifts down to the project level. Governments will exert a greater degree of influence over sectors that are characterised by forms of market failure (e.g. natural monopolies, negative externalities) and a high degree of political sensitivity, but there are a number of ways to exert such control and it may vary from project to project, even within sectors. The determination of who owns the asset will rest on a number of priorities, usually tied to the overall sectoral strategy as discussed above. The type of ownership will influence the options for how the project can be delivered illustrated in the decision tree (Figure 3.1.). If greater efficiency is the objective, privatisation or some form of corporate model will be appropriate if a market is present. If no market is present, government ownership will oftentimes be a more obvious choice, but various regulated models may also be relevant within a given political context. With regards to achieving value for money the choice of how to decide on delivery should be based on the following considerations (see also Box 3.1.):

- i. **The size and financing profile of the investment** - e.g. a large initial investment followed by significant operating and maintenance needs could indicate advantages to bundle the construction, operation and maintenance of the assets in a single contract.
- ii. **The potential for cost recovery from users or land value capture** - e.g. for investments in sectors that have a non-excludable nature, user fees will not be practicable and the project will need to be funded via government spending

- iii. **The extent to which quality is contractible** – e.g. when quality is difficult to specify and monitor, then contracts are likely to be costly and time consuming to develop, and will be highly vulnerable to renegotiation.
- iv. **The level of uncertainty** – e.g. many of the most catastrophic infrastructure investments are the result of poor assumptions, often made worse by excessive optimism (Flyvberg 2014). In sectors where change is highly unpredictable (e.g. where technology is in flux), preferred modes of delivery should be adaptable, not locked.
- v. **The ability to identify, assess and allocate risk appropriately** – e.g. are we sure which parties should carry what risks? (see also Box 2.2)

Box 3.1 - Check list for investigating relevant delivery mode²

Project size and profile

- Large initial capital outlay and long payback period?
- Is the project large enough to justify the additional legal, technical and financial costs of a PPP?
- Can quality enhancements in the design and construction phase generate savings during the operating phase of the project?
- Do these savings justify the additional transaction costs involved in bundling construction, operation and maintenance in a single contract?

Revenues and usage

- Can user fees be charged, are they affordable for the majority of users, and are they politically acceptable?
- Are user fees sufficient to cover the majority of capital and operating costs?
- Can usage be monitored?

Quality

- Can the quantity and quality of project inputs be specified and measured efficiently?
- Will design innovation be required to achieve improvements in efficiency and value-for-money?

Uncertainty

- What is the level of uncertainty relating to future technological or societal conditions?

Risks

- How are risks allocated?
- Is demand relatively predictable over the lifetime of the project?
- Who is best placed to influence demand for the infrastructure-based service?
- Is the private sector willing to and capable of bearing some or all of the demand risk?
- Are there particular integrity risks in terms of corruption and undue influence that merit attention?

Note: This box should not be interpreted to be either for or against increased public provision or private sector participation in infrastructure delivery. It is offered as a guide to key questions and indicates possible relevant experiences from OECD countries to reflect on. It attempts to compress the experience of countries and practitioners into an overall check-list format of key issues. There will therefore be cases, countries and sectors where the experiences are not sufficiently reflected in the above.

4. Concluding Remarks

64. It deserves repeating that the above discussions and checklists do not provide a ‘cook-book’ formula for determining how to govern and deliver an infrastructure asset that performs a public service.

65. Indeed, these decisions normally take place in an iterative fashion, with policy objectives, political economy and facts on the ground each informing the decision. There will consequently be lessons learnt and path dependencies developed that will need to be taken into account.

66. What will be constant is the fact that the governance pre-conditions and decision tree issues are necessary to ensure that this iterative process works in a timely, capacitated and transparent way.

Appendix 1. Delivery modes and governance mechanisms

Delivery modes	Direct provision	Traditional public procurement	SOEs	PPPs	Regulated privatisation	Privatisation with liberalisation
Role of government	Planner, manager, producer	Planner and manager	Owner and planner	Planner and regulator	Regulator	Referee
Responsibility for project selection	Government	Government	SOE and government	Government	Private firms with government influence	Private firms
Governance mechanisms	Command and control	Public procurement law	Corporate governance	Contractual agreements	Sector regulation	Competition policy
Relevant guidelines	OECD Draft Principles on Budgetary Governance	OECD Principles for Integrity in Public Procurement	OECD Guidelines on Corporate Governance of State-owned Enterprises	OECD Principles for the Public Governance of Public-Private Partnerships	OECD Recommendation of the Council concerning Structural Separation in Regulated Industries	OECD Recommendation of the Council concerning Structural Separation in Regulated Industries

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