Public-Private Partnerships in e-GOVERNMENT

GUIDE

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INTRODUCTION

This document deals with the Guide for PPPs in e-Government” presented during the two day workshop “PPPs in e-Government” held in Kyiv, Ukraine on 17 – 18 February 2015.

This Guide is mainly based on desk researches, above all on the infoDev (World Bank)’s “PPP in e-Government: handbook” [1] and “PPPs in e-Government: Knowledge Map” [2], use case literature and on the pluri-annual e-Gov practitioner experience of the author of this Guide.

As such, after considering basic definitions of PPPs, it presents the main motivations for e-Government PPPs. In order to properly cope with all the aspects of e-Government the European Union Service Maturity Model is introduced along with the Life Event approach and its consequences in terms of Service Interoperability and Re-engineering of the public administration processes.

The Guide then goes through the main aspects of the e-Gov PPPs, including the main contract models, the Key Policy objectives, the Key Regulatory Pre-requisites, Challenges, Risks and Constraints.
An entire section is devoted to describe all the steps involved in the e-Government PPPs Life Cycle, namely, identifying/selecting the best candidate for PPPs, analysing/structuring projects in viable PPPs, feasibility analysis, Tendering/Procuring and Project Managing.

Finally, relevant e-Gov PPPs case studies have been included.
DEFINITION OF PUBLIC PRIVATE PARTNERSHIP IN e-GOV AND ITS MOTIVATION

A Public-Private Partnership in e-Government may be defined as a legally enforceable contract between a private sector entity and a government body that requires the private partner to deliver a desired electronic public service, for which the private sector must invest some of its own resources (financial, technological, time, corporate reputation, etc.), and must become responsible for some of the risks of service delivery, and for which payments to the private partner are made only in exchange for actual performance delivered.

Generally, the operating risks are allocated to the private sector partner (generally the “commercial” risks) while the “political” risks are allocated to the public sector partner. In practice, there are many kinds of risks that do not fall neatly into the categories of “commercial” or “political”, and those risks are allocated between the parties based on negotiations.

The goals of PPPs in e-government are:
- To mobilize new private sector investment in order to leverage public funds required in the development of e-government networks, including both underlying information and communications technology infrastructure and equipment, as well as the public services being delivered on these networks;
- To attract private sector experience, technology, and innovation in the design of electronic networks and services, and to benefit from private sector creativeness and ingenuity; and
- To utilize private sector marketing channels and customer service expertise in the commercial delivery of services to customers of the e-government system.

The potential benefits of PPPs in e-government are:
- Increased pace of rolling out e-government services, applications, and infrastructure, due to the financial participation of the private sector through both investment and profit-sharing;
- Use of more advanced technologies in the engineering design and availability of more custom-tailored engineering systems, made available by the private sector;
- Increased focus on outcomes resulting in better quality of service delivery and increased client satisfaction; and
- Downstream effects in terms of a more capable domestic private sector

There are a number of PPP models; however, some of the key models (see section below) in e-government include:
- contracting for electronic services and ICT facilities management;
- JV co-ownership and financing of projects;
- BOT arrangements.

contracting for electronic services and ICT facilities management
Contracting or outsourcing involves the provision of services and infrastructure that have previously been provided by government. Contracting enables government to provide the specifications. Service contracts enable government to procure service provisions for a specified period of time. The three popular PPP contracting mechanisms are service, management, and leasing.
JV co-ownership and financing of projects
PPP policies in many countries either require or allow the government to retain some share of the stock in profitable or strategic companies making them, in effect, joint ventures.

BOT arrangements
Governments around the world use turnkey projects with consortia of private companies to build ICT, telecommunication, and other large, infrastructure facilities and networks. Governments in both advanced and developing countries often use build-operate-transfer (BOT) agreements, in which they buy or lease completed facilities constructed by private investors after the companies have recouped their investment and a reasonable return by operating the facilities for an agreed period of time.
TRENDS OF e-GOVERNMENT IN THE EUROPEAN UNION

We define e-Government as “the use of information and communication technologies in public administration combined with organisational change and new skills in order to improve public services and democratic processes and to strengthen support to public policies”.

As such, e-Government covers/integrates findings from different disciplines/sectors: public administration sciences, ICT, economics and public governance, jurisprudence, social and socio-technological sciences, etc. Indeed, public administrations are made up of people (the social system) using tools, techniques and knowledge (the technical system) to produce public services valued by the governments’ constituency (external to the public administration).

The European Union has proposed an e-Service Maturity Model [4]:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>The service provider or the administrative responsible level does not have a publicly accessible website or the publicly accessible website managed by the service provider or by the administrative responsible level does not qualify for any of the criteria for the stages 1 to 4</td>
</tr>
<tr>
<td>1</td>
<td>Information: online information about the public service - The information necessary to start the procedure to obtain an environment-related permit is available on a publicly accessible website managed by the service provider or by the administrative responsible level.</td>
</tr>
<tr>
<td>2</td>
<td>One-way interaction: downloading of forms - The publicly accessible website managed by the service provider or by the administrative responsible level offers the possibility</td>
</tr>
<tr>
<td>3</td>
<td>Two-way interaction: processing of forms, including authentication. The publicly accessible website managed by the service provider or by the administrative responsible level offers the possibility of an electronic intake with an official electronic form to start the procedure to obtain an environment-related permit.</td>
</tr>
<tr>
<td>4</td>
<td>Transaction: full case handling, decision and delivery/payment. The publicly accessible website managed by the service provider or by the administrative responsible level offers the possibility to completely treat the delivery of environment-related permit via the website. Case handling, decision and delivery of a standard procedure to obtain an environment-related permit can be treated via the web. No other formal procedure is necessary for the applicant via “paperwork”.</td>
</tr>
</tbody>
</table>
In the EU model, 20 basic services are considered, 12 focusing on citizens, 8 on business:

<table>
<thead>
<tr>
<th>Public services for citizens</th>
<th>Maximum stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income taxes</td>
<td>5</td>
</tr>
<tr>
<td>Job search services</td>
<td>4</td>
</tr>
<tr>
<td>Social security benefits</td>
<td>5</td>
</tr>
<tr>
<td>Personal documents (passports / driver's license)</td>
<td>5</td>
</tr>
<tr>
<td>Car registration</td>
<td>4</td>
</tr>
<tr>
<td>Application for building permission</td>
<td>4</td>
</tr>
<tr>
<td>Declaration to police</td>
<td>3</td>
</tr>
<tr>
<td>Public libraries</td>
<td>5</td>
</tr>
<tr>
<td>Certificates</td>
<td>4</td>
</tr>
<tr>
<td>Enrolment in higher education</td>
<td>4</td>
</tr>
</tbody>
</table>

*Personalization: pro-active service delivery, automatic service delivery. The proactive service delivery means that the government pro-actively performs actions to enhance the service delivery quality and the user friendliness. Examples of pro-activity are: the government warns the user that action could be required, the government pre-fills data in the application forms that it already contains in governmental databases to the extent permitted by law. The automatic service delivery means that the government automatically provides specific services being social and economic rights for citizens (and business), linked to a certain condition of the user. There is no need for the user to request the service.*
The 9th EU Service Benchmark [4] states that service presence has reached almost 90% in the EU (10 years to reach such level was needed). However take up of e-Service among citizens between the age of 15 – 65 is less than 40%!

As a response to this challenge more natural citizens’ interactions have been proposed and the Life Event approach (e. g., [3], [5]) is one of the most important. According to this paradigm:

- Services that are directly related to the solution of a particular problem should be linked or integrated in such a way that the customers gain quick and convenient access to all the services.

<table>
<thead>
<tr>
<th>Public services for businesses</th>
<th>Maximum stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social contributions for employees</td>
<td>4</td>
</tr>
<tr>
<td>Corporate tax</td>
<td>4</td>
</tr>
<tr>
<td>VAT</td>
<td>4</td>
</tr>
<tr>
<td>Registration of a new company</td>
<td>4</td>
</tr>
<tr>
<td>Submission of data to statistical offices</td>
<td>5</td>
</tr>
<tr>
<td>Customs declaration</td>
<td>4</td>
</tr>
<tr>
<td>Environment-related permits</td>
<td>5</td>
</tr>
<tr>
<td>Public procurement</td>
<td>4</td>
</tr>
</tbody>
</table>
they need in one place, regardless of the distribution of competences between different public agencies and businesses

- Such approach is called a life-event approach since it integrates services, which are specifically designed around nodes that directly correspond to a particular life-event (e.g. moving a house, starting a business, getting married, etc.).

The need for such more natural citizen interaction coupled with the need of mobility across the member states has led to the definition of the European Integration Framework, inspired by the Service Oriented Architecture principles, a conceptual model for integration of e-Services across the Union.

In parallel, new organisational and technological models for delivering services both online and via complementing, more traditional channels are taking hold, including Re-engineering of public administration processes.
### THE MAIN ASPECTS OF PPPs IN e-GOVERNMENT

The Main PPPs in e-Government Models

<table>
<thead>
<tr>
<th>Types of PPP Contracts</th>
<th>Duration (years)</th>
<th>What the private contractors receive</th>
<th>Nature of Private contractor Performance</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service Contract (outsourcing)</strong></td>
<td>1-3</td>
<td>Fee from government for performing a non-core services</td>
<td>Definitive, often technical type of service</td>
<td>Website design and management, ICT Capacity Building</td>
</tr>
<tr>
<td><strong>Management Contract</strong></td>
<td>3-8</td>
<td>Fee from government for the service and a performance-based incentive</td>
<td>Manage the operation of a government service</td>
<td>Call center staffing; Management and operation of a new records management project</td>
</tr>
<tr>
<td><strong>Lease</strong></td>
<td>8 - 15</td>
<td>All revenues, fees or charges from consumers for the provision of the service; the service provider rents the facility from government</td>
<td>Manage, operate, repair, and maintain (and maybe invest in) a service to specified standards and outputs</td>
<td>Equipment and ICT facilities for delivering a new electronic service, Existing Govt. office space, interconnections, kiosks, etc.</td>
</tr>
<tr>
<td><strong>BOO &amp; BOT</strong></td>
<td>15 - 25</td>
<td>The government mostly pays the service provider on a unit basis</td>
<td>Design, finance (long-term) construct/install and operate, to specified standards, the facilities necessary for service provision</td>
<td>ICT Infrastructure; e-procurement systems; e-business portals; Network of public kiosks</td>
</tr>
<tr>
<td><strong>Concession</strong></td>
<td>15 - 30</td>
<td>All revenues from the end-users of the e-government service; the service provider may pay a concession fee to the government and may assume existing debt</td>
<td>Manage, operate, as well as invest in and expand, maintain and operate an ICT facility/network or e-government services to specified standards</td>
<td>Telecom operations and expansion, New ICT networks for the delivery of e-government services</td>
</tr>
</tbody>
</table>
- **Service Contracts or Outsourcing**
  - Service contracts are legally binding agreements between a government authority and a private partner to perform specific, usually non-core tasks. Examples include government agencies such as utilities, ministries, and municipal offices that contract out for website design and management, capacity building, janitorial services, billing and tariff collection, or security services. These are usually short-term contracts and avail government of private sector expertise. They save time and money spent on non-core services.

- **Management Contracts**
  - Management contracts transfer responsibility for the operation and maintenance of government-owned entities to the private sector. Asset ownership and commercial risk remains with the government, while management control and authority are transferred to a private partner, which applies its expertise to improve management systems and practices. Compensation may be in the form of a fixed fee, as in the case of a fixed fee management contract, or may be linked to performance indicators.

- **BOT and Variants**
  - Build-operate-transfer (BOT), build-own-operate (BOO), build-own-operate-transfer (BOOT), design-build-finance-operate (DBFO) and similar arrangements are contracts specifically designed for new projects or investments in facilities that require extensive rehabilitation. Under such arrangements, the private partner typically designs, constructs and operates facilities for a limited period from 15 to 30 years, after which all rights or title to the assets are relinquished to the government. Under a build-operate-own (BOO) contract, the assets remain indefinitely with the private partner. The government will typically pay the BOT partner at a price calculated over the life of the contract to cover its construction and operating costs, and provide a reasonable return.

- **Concessions**
  - Under a concession, the private partner, or “Concessionaire”, bears the overall responsibility for the services, including operation, maintenance, and management, as well as capital investments. The fixed assets either remain the property of the public authority or revert to public ownership at the end of the concession period. The main advantage of a concession is that it passes full responsibility for operations, maintenance, rehabilitation, renewal, and service expansion to the private partner and creates incentives for efficiency in all activities. Therefore, concessions are an attractive option where large investments are required.

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**Potential applications of e-Gov PPP**

**National**

At the national level, a range of e-government PPPs are possible including national undertaking by national agencies such as the Defense department (IT systems), Internal Revenue Agencies, (e-filing and computerization), Procurement Agencies, (e-Procurement), and the like. It is estimated that governments can save billions of dollars at the national level by outsourcing or divesting certain national agency functions or services to the private sector via PPP’s.

**Sub-national**

At the sub-national level, including state, regional, local, a number of PPP projects are viable in the ICT and e-government field. In fact, many innovative projects have been undertaken at the local level which have “liberated” funding from traditional tax sources and moved the financing of municipal services “off balance sheet” whilst improving efficiency. Examples include local issuance of drivers’ licenses and other motor...
vehicle services, voting, property registration, utility services, emissions controls, education, and parks and recreation. In countries where service delivery is delegated substantially down to the local level, there are literally billions of dollars of potential transactions and cost savings, if the capacity existed, to implement e-government and ICT projects effectively.

Key Policy Objectives and Issues in PPP

PPPs can realize these objectives best when they are part of an overall policy framework of reform in the delivery of public services and the management of governmental administrative procedures. Key elements of these policy frameworks should include:

- Government ministries that focus on policymaking and planning, but that delegate operational decision-making to public contracting agencies, their Boards and their managers;
- Regulation & performance monitoring of these public contracting agencies and any private service providers (PPPs) that is done by an independent regulatory body, or by a dedicated contract compliance office (CCO);
- Ownership of a sector’s underlying, long-term assets by a public contracting agency, utility, parastatal, or asset holding company, which is responsible for service delivery or contracting delivery of these services;
- Operation of public assets and networks, and the delivery of public services by private contractors through transparent, competitively-procured

The policy objectives of PPPs in e-Government could include:

- Improved efficiency in the delivery of public services or the performance of public administrative procedures;
- Expanded access to public services and to public information;
- Greater transparency & reduced corruption through improved access to public information;
- Improved quality of service by both measuring and achieving key performance indicators;
- Reduced costs in the delivery of public services or the execution of public administrative procedures;
- The transfer of key risks away from the public sector’s limited resources and onto the private party that can best manage them;
- Maximizing Value for Money through reduced costs and lower risks to the public sector;
- Improved competitiveness of the overall governance and economic framework
- Improved commercial performance in the delivery of public services and execution of public administration, such as achieving levels of cost-recovery specific performance indicators;
- Transfer of technology and improved capacity of the public sector to better manage public services and administrative procedures

The Key Legal and Regulatory Pre-requisites for PPP in E-Government

- **PPP Laws**
  - All forms of PPP, from the most capital intensive to the least capital intensive are usually covered under a “Law on Concessions” or “PPP Law” (depending on the country). While it used to be common that each sector would have its own law on PPP or concessions, most countries are
increasingly establishing multi-sector concession laws or “umbrella” legislation to harmonize the key legal issues in PPP across sectors. At a minimum, a concession or PPP law will clearly establish what sectors are eligible for PPP, the form of eligibility, eligible PPP approaches, the rights and obligations of the parties, how projects are approved, limits to ownership, financial requirements, public roles and responsibilities, and dispute resolution responsibilities.

- **PPP Central Body**
  - Many PPP frameworks include a coordinating body, often created by law, to manage PPP transactions. The PPP Central Body or “PPP Unit” generally serves as the focal point to spearhead the PPP process either across sectors or even within a specific sector or city.

- **PPP Guidelines**
  - Establishing guidelines on how PPP arrangements are planned, approved, and awarded creates a predictable environment in which private partners are willing to engage. Ukraine has established a PPP unit within the Ministry of Economic Development and Trade. Technical assistance provided by USAID through the “Public-Private Partnership Development Program (P3DP) has assisted the PPP unit in improving the PPP legal and regulatory framework and creating development tools for agencies and municipalities working to create PPPs. PPP units in Kosovo and Moldova are other examples of how PPPs are being enabled through clearly established guidelines. Below are some of the fundamental areas where standardized guidelines:
    - *Project Identification* – Potential e-government PPP projects are best identified by the government agency that will be responsible for implementation. For example, if the department of Transportation needs an electronic system for managing its employee payroll, the department itself must express this need rather than rely on any central PPP body for project identification.
    - *Project Prioritization* – Given that there will likely be needs for more than one e-government PPP project, there must be a process for determining which are priorities vis-à-vis available government resources and already established government policies.
    - *Project Feasibility Studies* – Once potential projects have been identified and prioritized, there should be clear guidelines for carrying out project feasibility analysis.
    - *Project Approval* – Once a project has been determined to be financially and technically feasible, there must be clear guidelines that determine which government department or agency will approve the project’s readiness for the procurement stage.
    - *Project Procurement Guidelines* – These guidelines must include standardized bidding documents, procedures for announcing the project for public tender, transparent procedures for evaluating private sector bids, and methods for contract award, including specified time frames for project mobilization.

- **Financial Instruments**
  - *Public Sector Comparator (PSC)* – The PSC is a method used to calculate the “in house” costs to government of preparing and delivering a service. Knowledge of such costs is essential when determining whether or not to pursue a PPP project, and determine if the project represents a good value for money. The PSC is used to varying degrees by PPP units worldwide.
  - *Value for Money Framework* – The Value for Money Framework, employed by the Government of Queensland in Australia, applies to all infrastructure projects over $100 million over the life of the asset. It encourages discipline such as focusing on outputs, understanding whole of life costing, identifying risks and appropriately allocating these risks to the party best able to manage them. It provides a rigorous and transparent analytical framework to ensure the government obtains the best value for money.
- **Sovereign Guarantees** – this is given to reduce public sector financial support and ensure payment to the private operator or lender in a PPP project, in case of government default on contractual obligations or in case of a natural disaster, or a financial crisis such as a severe currency devaluation.

- **Contract Compliance and Dispute Resolution Procedures**
  - From the moment a contract is awarded, it is vital that the government and the appropriate regulatory bodies ensure compliance with the terms of the contract and the prevailing laws and regulations. This can be done in two ways: regulation by contract, meaning the contract is the dominant document that states the key terms and conditions, or regulation by decree or statute, often done under a regulatory body. The contract or regulatory decrees must also state what the dispute resolution procedures will be.

- **Asset Ownership**
  - Typically with PPP public and private sectors join to design, build or rehabilitate, finance and operate new or improved facilities, such as schools, hospitals, toll roads and power generation plants. Over the life of the project, usually 25–30 years, the private financier owns the asset and the private operator receives periodic payments for asset operation. At the end of the contract, the assets revert to public ownership.
  - In the case of e-government, where assets are likely to be ICT infrastructure or systems with great potential for roll-out to clients other than government, there are needs for some allowance for asset ownership by the private partner during and after the end of its contract with the private sector.

- **Labour Laws**
  - They should mitigate the potential problems raised by PPP when, for example, a displacement of civil servant is needed. They should encompass, e.g., retaining the same position, salary, seniority and pension fund.

- **Tax Law**
  - Tax laws can be drafted or amended to create an incentive based enabling environment for PPP. In the e-government sector, tax laws can be amended to reduce import and duty taxes on computer, server, and other Internet-based hardware as well as encourage greater investments in technology based solutions for improved service delivery and “partnerships” with government.

- **Digital Signature Law**
  - Some e-government PPP projects will require the use of digital signatures (define), while others will not. In this case, the government must have a digital signature law on record that gives digital signatures the same level of trust and assurance as the handwritten ones.

- **Sector Regulation**
  - Each sector is governed by its own regulations, rules, and procedures. Most countries are moving either to sector specific or multi-sector regulation. No need for a specialised e-Gov PPP Unit if a capable PPP Unit already exists.

- **Independent Regulator**
  - The key elements of a regulatory framework are:
    - **Independence**: In order for any regulatory body to be truly effective, it must be free to make decisions without undue interference from outside parties. Processes and rules governing the selection of regulators must be transparent and demonstrate the body’s independence from special interest groups.
    - **Transparency**: The mandate of the regulatory body and its processes should be clearly specified in all pertinent legislation. Additionally, there should be clear procedures for the publication and explanation of all decisions make by the regulators.
• **Accountability:** A well-established and publicized public participation process and an accessible appeals process will provide a system of checks and balances ensuring that the regulatory body fulfils its mandate. It is especially important that the courts have the authority to determine the merits of appeals so that the regulatory body will not be bogged down with unnecessary litigation.

• **Consistency:** All regulatory decisions should be consistent with the regulatory body’s goals and purposes and applied in a consistent fashion to clearly demonstrate its goals and principles. This consistency will reduce regulatory uncertainty and ensure that, when any change in method is required, it can be accomplished in a manner that is acceptable to all parties

- **Competition Law**
  - Competition Laws drive market structure. Most ICT and e-government PPP’s are either a result of competition law or policy that “unbundled” the market for services or they are a result of an inadequate existing ICT or governance sector where e-government PPP’s are in response to customer demand.

- **Stakeholder Consultation**
  - Stakeholder consultation is a particularly important element of any PPP program, and the following often results from good consultation programs:
    - Increased demand responsiveness of public services.
    - Growing support for reform among key constituents.
    - Improved coordination between various branches of the public sector.
    - Stakeholders who are prepared for the changes that will come about as a result of PPP.

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**The Institutional Roles and Responsibilities in PPP Projects**

*Function of PPP Units*

While individual operating policies in PPP units varies from country to country, they typically serve to answer three main questions:

- Is the project affordable?
- Is the project a priority for the government?
- How can the project be implemented?

*Project Affordability*

The PPP Unit, either through its staff or through independent contractors will conduct financial pre-feasibility analysis, and financial feasibility studies to determine if the project is economically viable.

*Project Prioritization*

Once a government department proposes a PPP project, the PPP Unit will liaise with other departments and/or the Ministry of Finance to determine if the project is an overall priority for government. For example, the department of Transportation may see a need for a highway investment project, but the PPP Unit has the responsibility of evaluating that need along with other investment needs in the department of Health or Education. The PPP Unit has the benefit of an “arms length” perspective.

*Project Support*

The PPP Unit serves as a center of expertise for all government departments in identifying, structuring, and implementing viable PPP projects, including deal flow, capacity building.
The Major Political Constraints and Challenges to PPP

The following are several of the most common constraints or challenges to PPP.

- **Perceived Misuse of Taxpayer Money** – When a private operator is introduced into public services, there is often the risk that the public will perceive that tax-payer money is transferred to profit-driven enterprises.

- **Private Profits in Exchange for Service Quality** – Often the public perception is that the only way the private operator can make a profit in PPP projects is by cutting corners in service quality. Past failures in large-scale PPP infrastructure projects cast a shadow on current PPP initiatives in other sectors.

- **Past Failures in Technology Investments** – Past public expenditures in technology have not always yielded expected results. In these cases, the public criticizes the waste of money, and become wary of supporting other major investments in ICT or e-government.

- **Political Elections Cycle** – If PPP projects are proposed and debated during an election year, the changes that a PPP project is likely to bring to the lives of different stakeholder groups might be exaggerated, or downplayed, by political candidates seeking to garner support for their campaign.

- **Lack of capacity to develop and manage PPP** – It is possible to have political will to support PPP, but no skills in government to further them. In this situation, it is extremely useful to establish a designated PPP Unit within government, and invest in the training of its staff.

- **Lack of a Public Spokesperson** – e-government PPPs do not have the ‘champions’ that more traditional PPPs have had. There is not always an easily identified stakeholder group, such as utility customers, doctors, or parents of school children, to work with in the early planning stages of a PPP initiative.

- **Lack of local private ICT industry** – Many emerging market countries lack private ICT industries that are sufficiently developed to partner with the government on e-government PPP projects.

The Financial Challenges and Constraints in PPP Projects

PPP financing are the combination of public finance, corporate finance; and project finance.

- **Public Finance**
  - Characterised by a direct lending to the project, or by a government guarantee provided to the private sector lenders, or a combination of the two.
- **Corporate Finance**
  - It involves providing the lender(s) with recourse to the Borrower’s, or if the Borrower is a new Special Purpose Vehicle (SPV) company that has been established to become the operator then, both the Borrower’s and the Borrower’s Parent Company’s, assets to secure loan repayment.

- **Project Finance**
  - It can be either “non recourse” or “limited recourse” financing, which means the lender’s access to the assets and revenue streams of the borrower and/or its parent company is entirely or partially limited. Funds to repay the loan are supposed to come entirely or partially from the project.

- **Payment Mechanisms**
  - There are a wide variety of payment mechanisms in PPP Project Finance. Loans can be either senior debt, in which the loan payments must be made regardless of the financial performance of the project, or they can be subordinated debt, in which case, the loan payments have to be made to the extent that the project earnings and profits are realized.
- **Incentives for Investors**
  - Traditionally, governments have offered “investment incentive” schemes that focused on tax holidays, tax exemptions, labour training grants, import duties exemptions, subsidized land and/or buildings provision.

- **PPP Funding Facilities**
  - It can be in the form of a *project development facility (PDF)*, which is a pool of money, usually donor grant funded with possibly some contribution from the government. Otherwise it can be *PPP project finance facility (PFF)*.

**The Major Risks in PPP Projects and How are they Managed**

- **Risk Sharing**
  - The *price and quantity of services* that are projected over the concession period are essential inputs to the financial projections are good starting point for this analysis.
    - **Price**: determined by market conditions but governments can offer the private partner some kind of monopoly over the provided services in order to recover the investments
    - **Quantity**: is estimated by demand projections and as such it represents a commercial risk for the private partner. However, the public partner do not have to adversely impacts the quantity of demand

- **Categories of Risks**
  - **Construction Period Risk** is allocated to the private party, which is usually required to provide a bond to ensure that, if it experiences delays and/or cost overruns in construction beyond a certain point, then the government can liquidate the bond to cover its costs associated with such delays and/or cost overruns.
  - **Operations and Maintenance (O&M) Risk**. The private partner must conduct a sufficient O&M to enable the facilities to deliver the required levels of quantity and quality of service.
  - **Quality of service** risk is covered to some degree by O&M requirements, to the extent that quality of service is dependent on the quality of the facilities. But in PPP projects, it is essential to keep the focus on the outputs. How the Concessionaire delivers the outputs is its responsibility. Output Specifications are a key component to any PPP Project

**Roles and Responsibilities**

The roles and responsibilities of the parties to a PPP contract are:

- **Bidder** – this is the private legal entity or consortium that submitted a bid and was awarded the concession;
- **Contracting Authority (CA)** – this is the government body that has the legal authority to execute the concession agreement on behalf of the government;
- **Executing Agency (EA)** – this is the government body that is tasked with performing all of the obligations of the government under the Agreement;
- **Regulator** – there always has to be a regulator that will oversee the contract and protect the interests of all parties to the contract as well as consumers; and
- **Third Parties** – if any third parties are bound by any provisions of the contract then those parties should execute the agreement.

Care must be taken in confirming that the contracting authority may legally bind other government agencies that might be involved in the contract and service provision. This is a weak area in many PPP Contracts, for example a ministry of public works agrees to acquire all land necessary for the project, but in
practice the funds for such purchases have to come from the ministry of finance. If the ministry of finance is not going to be a signatory to the agreement, then the contracting agency should be required to produce a letter of commitment from the ministry of finance for the land purchases.

Key Issues and Challenges

- Because PPP projects are essentially business joint ventures, and government officials are more familiar with traditional procurement than with business, it can be difficult for the government to assemble a contract negotiations team that will be able to handle the virtual “army” of lawyers, accountants, and highly skilled negotiators that the private sector will mobilize for large projects. This creates a necessity for extensive consultant assistance to protect the government’s interests.

- To protect the public interest, ownership of the “backbone” or “basic assets” or “platform” is often kept with the government, such as telecoms fiber optic backbone, airport runways and taxiways, and internet-based platform for e-gov. Although the focus of PPP is on service delivery and not ownership, the government might want to retain ownership, or have a transfer of ownership at the end of the concession period, to protect the public interest.

- Tariff regulation is a recurring area of complexity in PPP projects. The mandate of the government is to protect the consumer, but this may be in conflict with the private sector operator’s need who wants to have prices to fluctuate and respond in accordance with market forces. This dichotomy makes the presence of a politically and financially independent regulator particularly important in PPP projects. Unless tariff regulation is conducted by an independent regulator, future disputes between the parties regarding tariffs and tariff adjustments are likely to occur.

- Subsidies are an area of concern in PPP projects. The government’s mandate is to protect the consumer by ensuring the availability of “basic services” for low-income groups, and this mandate conflicts with the PPP project’s goal of profitability. Subsidies are required when the government requires the operator to provide such services to low-income groups, like railway passenger traffic. Yet governments often find that they are unable to make such subsidy payments and then disputes arise.

- There is a continuing issue of response time in PPP projects. While the private operator can respond quickly to changes, the government is usually less able to be responsive in a timely manner. Because of this, disputes often arise in PPP projects over a government delay in making a tariff adjustment or in issuing a permit, while the market forces necessitating such acts have already occurred.

The Best Practices in Tendering, Evaluating, and Negotiating PPP Transactions

**Affordability:** (a) Conduct consumer demand, affordability, and willingness to pay surveys to determine whether the tariff rates required for the project to be financially viable are acceptable and affordable to people who will be the consumers of the services provided by the project; and (b) perform a review of budget resources for government’s projected share of costs in the project; if there are not sufficient resources in the current budget, determine whether the required amount can be put into the next fiscal budget.

**Risk Allocation:** Does the proposed PPP project appropriately transfer risk to the private sector, and does the resulting risk allocation matrix appropriately match each category of risk with the partner best able to manage that kind of risk? The general principle is that the public sector partner manages political risks while the private sector partner manages commercial risks. In practice, there are always a few categories of
risk that the partners must share, like tariff risk, which fluctuates based on both commercial demand/supply factors and political factors.

**Value for Money:** The proposed PPP project must give the government more value for money than it would get if it did the project without a private sector partner. It will be necessary to develop a “base case” scenario, in which the cost of doing the project with no private partner is estimated. Then, a “public sector comparator” is calculated to give a figure that can be compared to the cost of doing the project with a private sector partner. In the final stage of selecting which partner to accept, the financial proposals will be evaluated and ranked based largely on this value for money criterion.

As the PPP project moves through the tender/bid process, the 3-stage appraisal criteria described above are applied in the following manner:

1. *Request for Qualifications (RFQ):* The tender/ bid process begins with the RFQ, unless the requirement is consulting services, in which case the process begins with a Request for Expressions of Interest, and within the RFQ information about the project must be presented. At this stage, the pre-feasibility study must have been completed, so that such information can be provided, and the affordability test must have been passed. Usually, a PPP Unit performs this test, and provides guidance to the project sponsor regarding the tender/bid process.

2. *Request for Proposals:* While the submissions in response to the RFQ are being received and evaluated, the project sponsor, the government body proposing the PPP project, should develop the pre-feasibility study into a full feasibility study. At the same time, the PPP unit should be completing its risk allocation review, the result of which should be a draft contract, or Draft Concession Agreement, revealing the proposed allocation of contractual obligations between the partners. The results of the feasibility study should be included, in summary form, in the Request for Proposals (RFP) along with a disclaimer that the project sponsor, or the Contracting Authority that will execute the Contract, does not represent or warrant that any of the information is accurate, and that proposed private partners must conduct their own due diligence.

3. *Bidder Selection:* After the technical proposals have been evaluated and scored the financial proposals will be opened. The information contained in the financial proposals will enable the tender committee to make its selection, and will also enable the PPP unit to determine which proposal offers the government the best value for money, for the amount of financial resources project, and which bidder offers the most benefits in return for such contribution. The interpretation of “benefits” can include both financial and economic benefits, usually expressed in terms of service delivery.

4. *Negotiation begins* after the preferred bidder is selected via the process described above. The focus is the draft contract, or Concession Agreement, that was included in the RFP. The government should take care to ensure that members of the negotiation committee have experience in PPP transactions and understand the business aspects of the project. This requires skills that are not usually found in negotiation committees for standard project procurement. Non-PPP projects do not carry the complex business partnership aspects of a PPP project, in particular the risk allocation that is a cornerstone of PPP transactions.

The focus of the contract negotiations for PPP projects is Service Delivery Standards, in terms of both quantity and quality of service, which represent an essential part of the contract. In traditional procurement, the focus is on getting what the government wants to buy, at the lowest price and the least risk necessary. In PPP procurement, the focus is on getting the highest quantity and quality of service for consumers, within the budget that the government has allocated for the project. Value for money, rather than cost savings, should be the primary objective of contract negotiations.
The Lessons Learned in Monitoring PPP Agreements

A government considering PPP models for e-government projects should bear in mind the following:

- **Contract design is the most important part of contract compliance.** A poorly designed contract will be difficult to enforce, leaving the government, consumers, and the private partner open to unnecessary risk. Clearly established guidelines for PPP arrangements are a critical component to the legal framework.

- **Contracts must contain the necessary contract monitoring clauses.** Specifically, the contract should clearly articulate: how the technical performance of the private partner will be evaluated; procedures for collecting, managing, and reporting data for internal and external (like media, constituents) use; scenarios under which tariffs, if applicable, may be raised.

- **Contracts should clearly specify who is responsible for monitoring.** A good e-government PPP contract identifies the individual, department, or agency with oversight responsibilities so that the private partner...knows who to talk to...about when any issues or challenges in project implementation arise. Many governments choose to set up a contract-monitoring unit (CMU) for large-scale PPP projects.

- **Contracts must include dispute resolution procedures.** Dispute resolution procedures define the context under which contracts can be renegotiated, under which the government or private sector can default on the agreement, such as “force majeure”, and what third party body will arbitrate, in the event that disputes cannot be resolved between the private partner and the government contracting agency.

The Gaps in our Knowledge of PPP in E-Government

**Knowledge Gaps**

- Case Studies are not well documented: E-Government is relatively new, and the use of PPP for e-government is even newer, leaving inadequate time to assess whether or not the e-government PPP initiatives have been “successful.” For example, the useful website, E-government News (www.egovnews.org), which includes reports on e-government projects launched through PPP models, has only been operational since January 2006.

- PPP and E-Government Dialogue is not Harmonized – There are a growing number of initiatives and websites that attempt to document best practices and lessons learned in PPP and also in e-government. There is not a specific source that discusses highlights in the application of PPP to e-government.

- Didactic material on PPP in E-Government is sparse: While there are countless articles, websites, and projects dedicated to dispersing excellent didactic material on public-private partnerships, their application is largely confined to the physical infrastructure sectors.

- Many officials and specialists involved in the e-government and ICT sectors are unfamiliar with the potential role of the private sector in general, and the use of PPP as a risk-sharing tool in particular. Most of these individuals have limited experience with the economic and financial aspects of “unbundling” a public service via private investment, management, and technology.

What Has Worked

- **Citizen Service Centers** – In areas where the Internet coverage in households is low, government service centers or kiosks have been successful e-government PPP applications. Here, citizens have been able to
access the Internet to carry out several citizens to government transactions such as vehicle registration, utility bills, business licensing, from a centrally located service center staffed by professional ICT specialists.

- **E-Portals** – Online portals that offer access to government services, as well as private sector commercial services, in one location have been successful in markets where the Internet coverage is high, and widely available. Success of these portals is also dependent on a high-level of Internet security and the user comfort with online financial transactions, as well as a history of contracting out key government functions to the private sector.

- **ICT Infrastructure Development PPPs** – PPPs that involve a transfer of government physical land or infrastructure to the private sector for the purpose of building or improving ICT assets like IT parks, telephony, have been successful in developed and emerging market, where a significant portion of the population is technologically literate and where the country can support large influxes of ICT businesses.

Moreover, these types of e-government PPPs are only possible if the government is already experienced in PPP selection, procurement, and monitoring.

THE LIFE CYCLE OF PPPs in e-GOVERNMENT

Identifying and Selecting Appropriate Candidate Projects for PPPs in E-Government

Assemble All Available Information about the Project

Assess:

- **Need**
  Is there a clear need (e.g., government priority) for the project?
- **Technical scope**
  Can the project be accurately and clearly described in terms of minimum output and performance standards that it must meet
- **Stakeholders**
  Identify all of them and clearly understand their stake
- **Leadership**
  To support the preparation, the transaction, and the on-going operation of the new project

Initial project risk identification,

<table>
<thead>
<tr>
<th>Risk</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology/Design</td>
<td>The technology for a given project does not perform in practice as well as planned</td>
<td>A project proposes to interconnect different public agencies to allow each to access each other’s databases. However, when the project...</td>
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<tr>
<td>Risk Type</td>
<td>Description</td>
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<td>---------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Construction and Completion Risk</td>
<td>The cost of constructing a project is more than was originally planned, or the project was completed later than planned. A new e-government initiative requires that new high-speed connections be made between different government agencies. However, the private contractor is unable to complete these interconnections on time due to installation cost overruns.</td>
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<tr>
<td>Operating Risk</td>
<td>The costs of operating and maintaining a project is more than was originally planned. A proposed e-government project assumes that it will require US$100,000 per year to operate the system. However, in practice, the private operator’s annual costs are US$200,000.</td>
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<tr>
<td>Market/Demand Risk</td>
<td>The demand for the project from users and customers is less than what was originally planned. A new project installs a new electronic collection network for motor vehicle drivers’ licenses, and proposes to recover the new investment and operating costs through user fees. However, in practice, the number of new license applicants is less than was originally anticipated, and fees collected do not allow the operator to recover its full costs.</td>
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<tr>
<td>Economic Risk</td>
<td>If the local economy goes through a recession, demand for the project could fall as incomes and growth decline. A new electronic tax collection system is launched just as the economy begins a recession. As a consequence of lower local incomes, the amount of revenues collected decreases.</td>
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<tr>
<td>Collection Risks</td>
<td>Users may consume the project’s service but not actually make payments for them. A new, electronic Automated Remote Metering (ARM) system is installed to both read and issue bills to electricity consumers. However, many consumers make their own illegal connections, and consume electricity without being billed and without paying for it.</td>
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<tr>
<td>Political and Regulatory Risks</td>
<td>New laws or regulations may be passed that raise a project’s costs or reduce its ability to perform as anticipated. Due to rising inflation, the operating costs of an e-government project also rise, prompting the private contractor to seek a reasonable and justified increase in its user fees. However, the government blocks the request, because it finds the increase to be politically unpopular and untimely.</td>
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<tr>
<td>Foreign Exchange Risks</td>
<td>The value of the local currency depreciates significantly relative to the value of hard currencies such as US dollars, Euros, and Yen. An e-government project collects its user fees from consumers or from a Govt. agency in the local currency. However, the construction and installation costs of the project were financed using a foreign, hard currency. The value of the local currency suddenly depreciates. When the local currency depreciates against hard currencies, the local revenues are no longer adequate to cover the debt service.</td>
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</tbody>
</table>
payments required by the project’s banks and lenders

<table>
<thead>
<tr>
<th>Force Majeure Risks</th>
<th>“Acts of God” such as storms, floods, earthquakes, and even strikes and riots</th>
<th>An e-government project, relying on the Internet, is suddenly struck by an external computer virus, which forces the entire project to shut down for a period of two weeks, during which it is unable to operate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Risks</td>
<td>Consequences from the project that cause damage to the surrounding environment and its natural resources</td>
<td>An e-government project is launched to electronically and remotely monitor and record water quality and pollution levels around a crowded city, and to signal when environmental alerts and other preventive actions should be taken. If the project fails to perform as expected, part of the costs of the project’s failure is the additional damage to water resources and to public health, which may become the liability of the private operator of the project.</td>
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</table>

• Initial VFM Assessment
  Has the private sector the proper expertise and offers better VFM that the public one?
  • Deciding whether to Proceed to Full Feasibility Analysis and PPP Project Preparation

Prioritize Candidate E-Government PPP Projects

• Gather up all available documents and reports on the given e-government candidate project.

• Prepare a Multi-Criteria Analysis (MCA) matrix,

• Evaluate each Candidate E-Government PPP Project

• Select the weighting for each criterion

### Common Selection Criteria for e-Government PPP projects

<table>
<thead>
<tr>
<th></th>
<th>Likely financial viability and fiscal support needed by the Project</th>
<th>How likely is the project to be financially viable (i.e., offering an attractive financial rate of return to the private operator)? How likely is the project to need public fiscal support, such as long-term fixed payments from the government, in order to become viable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Project’s “Readiness” and Initial Risk Profile</td>
<td>Compared to other projects, how susceptible is this project’s viability to major risks (demand, technology, legal and institutional, etc.)? Given these risks, how likely is that the project will be</td>
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<td></td>
<td>MCA Criteria</td>
<td>Higher Score</td>
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<td>--------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Likely financial viability and fiscal support</td>
<td>Viable: FIRR &gt; 20% No Govt. fiscal</td>
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<tr>
<td></td>
<td></td>
<td>Support needed</td>
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<tr>
<td>2</td>
<td>Readiness and Risk</td>
<td>Few major issues Risks</td>
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<tr>
<td></td>
<td></td>
<td>and Project is generally “Ready”</td>
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<td>3</td>
<td>Socio-economic benefits</td>
<td>EIRR &gt; 15% Major Macro Impact</td>
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<td></td>
<td>Regional development</td>
<td>Impact</td>
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<td></td>
<td>Provides positive impact on Low-Medium income Provinces and/or Medium poverty alleviation benefits</td>
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<td></td>
<td></td>
<td>Provides positive impact on High income Provinces and/or Low poverty alleviation benefits</td>
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<tr>
<td></td>
<td>Sector network role importance in sector plan</td>
<td>Forms integral part and already included in sector plans</td>
</tr>
<tr>
<td></td>
<td>National integration and security</td>
<td>Strengthens National security/ integration</td>
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<tr>
<td></td>
<td>Environmental Impacts</td>
<td>Few Issues: Low Environmental Impacts</td>
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<tr>
<td></td>
<td>Impact on Economic Growth and Exports</td>
<td>Major economic growth benefits and trade/tourism impacts</td>
</tr>
<tr>
<td></td>
<td>Safety</td>
<td>High Safety Focus</td>
</tr>
<tr>
<td></td>
<td>Project type/cost</td>
<td>Primary infrastructure construction costs estimated at &gt; $50 million</td>
</tr>
<tr>
<td></td>
<td>Demand Growth</td>
<td>Project Demand Growth rate &gt; 15% per annum</td>
</tr>
</tbody>
</table>

**E-Government PPP Identification Report**

To consider need, technical scope, stakeholders, initial project risk identification, initial value for money assessment.

**Analysing and Structuring E-Government Projects to be Viable PPPs**

**How to Analyse Technical Feasibility**

The analysis of a proposed e-government PPP project’s technical feasibility is the procedure that:

- estimates and analyses the size the project;
- proposes the minimum technical and operational performance standards; and
- Proposes the key technical components the project will require in order to be deemed feasible.
This procedure includes:

- providing technical descriptions and plans for alternative technical solutions for the project;
- identifying relevant engineering and non-engineering components;
- Estimating capacity and performance standards;
- Providing preliminary design options; and
- providing a preliminary cost estimate for the project to a range of within +/– 20%

gather data needed to answer the following requirements:

- Technical Rationale
- Scope
- Demand
- Timeliness
- Reliability
- Technical Components
- Output standards

Outputs:

- Summarized technical description of the project, including a technical description of the project’s overall goals and objectives;
- Scope of the project;
- Size and nature of the demand for the project;
- Description the timeliness standards that the project should meet;
- Description of the reliability standards that the project should meet;
- Description of the overall technical components and functions of the project;
- List and description of clear, measurable minimum output performance standards

How to Analyse the E-Government PPPs Legal and Institutional Feasibility

This task should consist of a review of all existing relevant laws and regulations within the country and within the specific sector in question. It should be checked:

- If PPP regulations and laws exits and are enforced
- Property of technology used
- Ownership of data,
- Existence of privacy/secret data
- If government has proper resources to monitor projects.

Conducting PPP Financial and Economic Feasibility Analysis

The goal of this procedure is to estimate a realistic range of prices or tariffs that the PPP contractor would have to earn in order to cover all of the costs of the new project, including a reasonable level of profit. A simple financial model:

1. A PPP project earns its revenues (collected either by government agency or from individual retail consumers and users.
2. The project must pay its operating and maintenance expenses (includes wages and labour benefits, any consumable used up by the project, as well as taxes on sales or gross revenues)
3. The project must repay its debt service obligations. BOTs and concession-type PPPs feature significant new investments in long-term assets and facilities. Therefore, debt service obligations include both interest payments and principal repayments.
4. Taxes on income or profits must be paid to the government.
5. Any remaining positive cash flow is classified as either “profits”—if it is a private project—or as “net surplus”—if it is a public sector project.

**Designing a PPP Financial Feasibility Model**

All cash flow systems have in common the following components

- Key Inputs and Results:
- Financing Structure:
- Income Statement
- Cash Flow Analysis
- Balance Sheet

**Listing the Key Input Data to Gather**

- The next step is to list the key data that will needed
- as inputs for the model. This will serve two important functions

**Project Technical Data**

- Minimum required performance standards of the new project/facility, expressed in terms of outputs.
- Background data on demand and growth projections from existing official master plans for the sector (20–30 years).
- Class identity of users (i.e., retail, institutional, etc.)
- Background data on existing network: size and age of existing facilities and assets.
- Proposed or possible location for the facility

**Capital and Operating Cost Data**

Preliminary Capital Expenditure estimates of project construction and start-up. Sub-categories of these costs could include:

- Any Civil works or major preparations;
- Installation, broken down by sub-project and project phase;
- Equipment, broken down by category;
- Interconnection costs;
- Other capital expenditures;
- Periodic rehabilitation

**Project Technical Data**

Operating and maintenance cost estimates for major cost categories including:

- Wages;
- Overheads;
- Utilities and electricity;
- Any consumables required;
- Other operating and maintenance costs

**Financing Data**

Debt:

- List potential commercial lending sources;
• Estimates of Debt/Equity leverage acceptable;
• Lending periods available;
• Currencies and estimated ranges of interest rates and spreads;
• Terms of any grace periods available;
• Terms for any subordinated debt available;
• Minimum coverage ratios required; interest and debt service.

Equity:
• Estimates of Debt/Equity leverage acceptable;
• Estimates of expected return on equity by likely investors

How to Identify Relevant PPP Risks

<table>
<thead>
<tr>
<th>N.</th>
<th>Risk name</th>
<th>Risk description</th>
<th>How this Risk Impacts the Specific PPP Project</th>
</tr>
</thead>
</table>
| 1  | Land or Interconnection Availability and Acquisition | • Land needed for the project is not available or has not been acquired.  
• There is uncertainty over how much it would cost to acquire needed land and when it could be acquired | • This could increase the construction costs of the project beyond what is planned.  
• This could significantly delay construction, adding interest costs during construction, and delaying when the project could earn its first revenues |
| 2  | Health, Safety and Permits/Licenses          | • Absence of compliance with regulations and standards on health, safety, permitting, licenses, etc.                                                                                                           | • Workers or neighbouring residents could suffer poor health, injuries, or other safety consequences.  
• The project might have to pay significant new large sums to mitigate or correct these health/safety damages.  
• The project might have to pay significant new large sums in fines, penalties, or punitive damages.  
• The project might have to cease operations altogether, or until it has successfully corrected these violations |
| 3  | Currency Availability and Transferability    | • Foreign currency is not available to transfer funds from local to hard currency.  
• Profits earned by the PPP project inside the country cannot be repatriated to its | • If this risk is present during the tendering phase, then international bidders will not bid on the project, and the tender may fail.  
• If this risk is present during the operating phase, investors will not be able to earn their projected financial returns, and may seek disputes, termination or damages. |
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</table>
| 4 | Operating Costs | owners outside the country  
  • The costs of operating the project are higher than expected  
  • This would reduce the profitability of the project for its owners, and the creditworthiness or coverage ratio for its lenders  
  • Lenders may require more investments, such as reserve accounts, from owners.  
  • Investors may try to request price or tariff increases from the government or its contracting agency |
| 5 | Interest Rate |   
  • Interest rates on the loans used to construct the project increase.  
  • This would reduce the profitability of the projects for its owners, and the creditworthiness or coverage ratio for its lenders.  
  • Lenders may require more investments, such as reserve accounts, from owners.  
  • Investors may try to request price or tariff increases from the government or its contracting agency |
| 6 | Exchange Rate |   
  • The local currency depreciates in value relative to the hard currencies in which the PPP project’s loans and equity investments are denominated.  
  • This would reduce the profitability of the projects for its owners, and the creditworthiness or coverage ratio for its lenders.  
  • Lenders may require more investments, such as reserve accounts, from owners.  
  • Investors may try to request price or tariff increases from the government or its contracting agency to be able to pay these higher debt service return on equity costs. |
| 7 | Market |   
  • The actual quantity of outputs or services demanded by users or the off-taker is less than anticipated.  
  • The project’s tariffs or prices are not adjusted according to the escalation formula agreed upon.  
  • This would reduce revenue and therefore also the profitability of the project for its owners, and the creditworthiness or coverage ratio for its lenders.  
  • Lenders may require more investments, such as reserve accounts, from owners.  
  • Investors may view this as a contract violation and thus seek disputes, termination or damages. |
| 8 | Responsibility of Design |   
  • The government has provided a faulty or inappropriate design (If the government is responsible for providing the project’s design)  
  • This could increase construction costs, because new, more expensive designs would have to be completed and built.  
  • This could increase operating costs more than anticipated, as a result of having followed a faulty or inappropriate design.  
  • This could significantly delay construction, |
| 9 | Detailed Design, Specifications and Standards | - The project’s performance standards and design specifications are inappropriate for the project’s needs | - This could increase construction costs, because new designs may have to be completed and built.  
- This could increase operating costs more than anticipated, as a result of having followed an inappropriate design.  
- This could significantly delay construction, adding interest costs during construction, and delaying when the project could earn its first revenues.  
- The private developer may have to pay penalties to the contracting agency, if it is not able to meet the project’s minimum contracted performance standards. |
| 10 | Design Data | - Wrong or inaccurate data was used during the project’s construction. | - This could increase construction costs as new designs may have to be completed and built.  
- This could increase operating costs more than anticipated as a result of having to follow an inappropriate design.  
- This could significantly delay construction, adding interest costs during construction and delaying when the project can earn its first revenues.  
- The private developer may have to pay penalties to the contracting agency, if it is not able to meet the project’s minimum contracted performance standards. |
| 11 | Procurement and Construction | - Completion of the project construction was delayed | - This could increase construction costs through higher interest-during-construction costs.  
- This could delay when the project could earn its first revenues.  
- The private developer may have to pay penalties to the contracting agency, if it is not able to start-up operations by the contracted deadline. |
<p>| 12 | Construction Cost | - Total construction costs were more than anticipated | - This would reduce the profitability of the projects for its owners, and the creditworthiness or coverage ratio for its lenders. |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>13</td>
<td>Program</td>
<td>• The completion of the project is delayed or there is a cost over-run, due to faulty work scheduling.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lenders may require more investments, such as reserve accounts, from owners.</td>
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<td></td>
<td>• Investors may try to request price or tariff increases from the government or its contracting agency</td>
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<td>• This could delay when the project could earn its first revenues.</td>
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<tr>
<td></td>
<td></td>
<td>• The private developer may have to pay penalties to the contracting agency, if it is not able to start-up operations by the contracted deadline.</td>
</tr>
<tr>
<td>14</td>
<td>Operation</td>
<td>• The project is not able to function and operate as fully as had been anticipated.</td>
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<tr>
<td></td>
<td></td>
<td>• This could reduce the project’s revenues, if its outputs are lower than anticipated.</td>
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<td></td>
<td></td>
<td>• This could increase operating costs, if more capital needs to be spent on operating costs to achieve higher levels of output.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• This could significantly delay construction, if a new, corrected design must be completed and built.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The private developer may have to pay penalties to the contracting agency, if it is not able to meet the project’s minimum contracted output or performance standards.</td>
</tr>
<tr>
<td>15</td>
<td>Maintenance</td>
<td>• The project and its assets are not properly maintained.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The project could face unscheduled outages, reducing its revenues, creditworthiness, and profits.</td>
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<td>• The project may face higher and sooner than anticipated asset rehabilitation, renewal, and replacement costs on its un-maintained assets.</td>
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<td></td>
<td></td>
<td>• If the project is not able to meet its minimum contracted availability standards, it may need to pay penalties to the contracting agency.</td>
</tr>
<tr>
<td>16</td>
<td>Ancillary Features</td>
<td>• Ancillary infrastructure services that the project needs, such as approach-roads, interconnection facilities, etc., are not provided and completed on time.</td>
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<tr>
<td></td>
<td></td>
<td>• This could delay the date when the project could earn its first revenues, reducing its creditworthiness for lenders and profitability for investors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The developer may seek either price increases or damages from the contracting agency or government body responsible for completing and delivering the ancillary services on time.</td>
</tr>
<tr>
<td>17</td>
<td>Transfer</td>
<td>• The condition of the project is not satisfactory.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• This could increase the costs to the project.</td>
</tr>
<tr>
<td>Page</td>
<td>Scenario</td>
<td>Description</td>
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<td>------</td>
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<td>-------------</td>
</tr>
</tbody>
</table>
| 18   | Regulatory | - The terms and conditions of the PPP contract regarding the private operator’s ability to collect revenues and to seek reasonable tariff increase in accordance with the contract’s price escalation formula are not fulfilled; or  
- New laws or regulations are passed which increase the costs or reduce the revenue of the PPP contractor, without fair compensation  
- This would reduce the profitability of the projects for its owners, and the creditworthiness, or coverage ratios, for its lenders.  
- Lenders may require more investments, such as reserve accounts, from owners.  
- The developer may claim a dispute or seek compensation damages from the contracting agencies for the lost revenue, increased costs, or lost profits from the regulatory action |
| 19   | Political/Sovereign | The government nationalizes the project  
- The private developer may seek damages for breach of contract.  
- The government may compensate the private developer at a level that is below its costs, making it unable to repay the balances of the loans it owes to lenders, and unable to meet expected level of profits for owners.  
- If there is political risk insurance (such as from MIGA or OPIC) or a Partial Risk Guarantee (such as from the WB or ADB), then these may be called and the government may end up owing these multilaterals |
| 20   | Force Majeure | The project is unable to perform due to terrorism, riots, war, or natural disasters  
- If the damage is fatal or complete, the project may be terminated.  
- If the damage is partial, the project may have a time limit within which to return to operational status. |
Assessing the Risks in Proposed E-Government PPP Projects

Using the risks identified through the previous technique’s Risk Identification Matrix for each risk, estimate the most likely cost of each risk event, as well as the probability of the risk event actually occurring. To assist the completion of this process, a risk analysis template can be used that proposes several scenarios for each risk event, such as:

- Catastrophic Scenario: The maximum possible cost from the risk event occurring.
- Critical Scenario: The costs from a large impact from the risk event occurring.
- Serious Scenario: The costs from a medium-sized impact from the risk event occurring.
- The Planned Scenario: The original, planned cost of the project (i.e., no change)
- Favourable Scenario: The cost savings from a favourable risk event occurring (i.e., the project is completed under-budget)

Next, estimate the probability, expressed as a percentage, of each of the five risk scenarios identified by the above matrix occurring.

<table>
<thead>
<tr>
<th>N.</th>
<th>Risk name</th>
<th>Risk description</th>
<th>Risk Allocation</th>
</tr>
</thead>
</table>
| 1  | Land or Interconnection Availability and Acquisition | - Land needed for the project is not available or has not been acquired.  
  - There is uncertainty over how much it would cost to acquire needed land and when it could be acquired | Government       |
| 2  | Environmental                                 | - The project causes major environmental impacts on its surrounding natural resources | Private         |
| 3  | Health, Safety and Permits/Licenses          | - Absence of compliance with regulations and standards on health, safety, permitting, licenses, etc. | Private         |
| 4  | Currency Availability and Transferability    | - Foreign currency is not available to transfer funds from local to hard currency.  
  - Profits earned by the PPP project inside the country cannot be repatriated to its owners outside the country | Government       |
| 5  | Operating Costs                               | - The costs of operating the project are higher than expected                    | Private         |
| 6  | Interest Rate                                 | Interest rates on the loans used to construct the project increase.              | Private         |
| 7  | Exchange Rate                                 | - The local currency depreciates in value relative to the hard currencies in which the PPP project’s loans and equity investments are denominated. | Government       
  Private
<table>
<thead>
<tr>
<th></th>
<th>Market</th>
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<tbody>
<tr>
<td>8</td>
<td>The actual quantity of outputs or services demanded by users or the off-taker is less than anticipated.</td>
<td>Shared</td>
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<td></td>
<td>The project’s tariffs or prices are not adjusted according to the escalation formula agreed upon</td>
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<td>9</td>
<td>Responsibility of Design</td>
<td>Government</td>
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<tr>
<td></td>
<td>The government has provided a faulty or inappropriate design</td>
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<td>(If the government is responsible for providing the project’s design)</td>
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<tr>
<td>10</td>
<td>Detailed Design, Specifications and Standards</td>
<td>Private</td>
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<td></td>
<td>The project’s performance standards and design specifications are</td>
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<td>inappropriate for the project’s needs</td>
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<td>11</td>
<td>Design Data</td>
<td>Private</td>
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<tr>
<td></td>
<td>Wrong or inaccurate data was used during the project’s construction.</td>
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<tr>
<td>12</td>
<td>Procurement and Construction</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Completion of the project construction was delayed</td>
<td></td>
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<tr>
<td>13</td>
<td>Installation Cost</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Total installation costs were more than anticipated</td>
<td></td>
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<tr>
<td>14</td>
<td>Completion</td>
<td>Private</td>
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<td></td>
<td>The completion of the project is delayed or there is a cost over-run,</td>
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<td>due to faulty work scheduling.</td>
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<td>18</td>
<td>Transfer</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>The condition of the project’s assets at the end of the contract</td>
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<td></td>
<td>term, when they are transferred back to the government, is</td>
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<td></td>
<td>not in compliance with the PPP contract’s maintenance and</td>
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<td></td>
<td>performance standards</td>
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<tr>
<td>19</td>
<td>Regulatory</td>
<td>Government</td>
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<tr>
<td></td>
<td>The terms and conditions of the PPP contract regarding the private</td>
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<td></td>
<td>operator’s ability to collect revenues and to seek reasonable</td>
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<td></td>
<td>tariff increase in accordance with the contract’s price escalation</td>
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<td>formula are not fulfilled; or</td>
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<td>New laws or regulations are passed which increase the costs or</td>
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<td>reduce the revenue of the PPP contractor, without fair compensation</td>
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<td>Political/Sovereign</td>
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<td>-------------------------------------------------------------------------------------------------------</td>
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<td>Force Majeure</td>
<td>• The project is unable to perform due to terrorism, riots, war, or natural catastrophes, such as earthquakes, fire, or flooding.</td>
</tr>
</tbody>
</table>
Tendering and Procuring PPP Projects in E-Government

How to Set Up and Manage a PPP Procurement Committee for E-Government Projects

• Establish the PPP Evaluation Committee and Provide it with its Official Responsibilities and Authorities
To be officially appointed and given clear authority (gov. representation, hire/fire, issue/evaluate bids, etc.)
  • Select the Members of the PPP Procurement Committee
It should be led by a senior knowledgeable person, available full time
Representation of key ministries and agencies, observers (consumers, monitoring staff, etc.)
Team knowledgeable of PPP evaluation (tendering, risk analysis, etc.)
  • Finalizing Establishment of the PPP Procurement Committee
Issue a report on goals/priorities, official docs, list of members and their CVs, timetable

• Utilizing Transaction Advisors for Procuring E-Government PPP Contracts
  Expert supporting the Committee activities
  • Preparing the Terms of Reference for PPP Transaction Advisors
Prepare TORs according to the needed project evaluation skills
  • Tendering for PPP Transaction Advisors
  • Selecting the PPP Transaction Advisors

• Selecting the Appropriate Procurement Technique
  • Identify and Complete Required Reforms Before the Procurement Begins
    ❖ Retail tariffs for certain services may need to be raised from their current levels to a new baseline level that is at or near cost-recovery, before a PPP in the sector could become viable and sustainable.
    ❖ The government may have to confirm its intent to provide minimum levels of public supports to PPP projects, such as assuming some contingent liabilities or pledging to provide fixed unitary payments prior to the release of a PPP tender.
    ❖ Land, buildings or office space required for the installation of the new project may need to be acquired prior to tender.

Debts owed to a client government agency may need to be paid-up or written-off, such as long-standing accounts receivable owed to it by other public sector customers who have consumed the public utility’s services but not paid-up

Selecting the Appropriate Procurement Technique
  • Identify and Complete Required Reforms Before the Procurement Begins
    ❖ The status of the sector’s current workforce may need to be clarified—this may involve reduction in staff, confirmation of severance packages, quantification of pension liabilities, etc.
    ❖ Issues about the legal ownership of individual assets and equipment related to the new PPP project may need to be resolved. In some cases, existing assets, equipment, and public facilities are co-owned by mixtures of local governments and public enterprises
Select the Appropriate Procurement Technique
- Open Competitive Tendering
  required for most larger-sized PPP projects
- Limited Competition and Short-listing
- Competitive Negotiations
- Direct Awards and Sole Sourcing
- Unsolicited Bids

Prepare Bid Documents and Conduct Bidding for e-Government PPP Projects

Issues to be detailed:
- The minimum output performance requirements of the Project
- the allocation of key risks between the parties
- the rules by which bidders must present and submit their bids
- the evaluation criteria against which those bids will be reviewed

Tasks
- Preparing Bid Documents
- Distributing Requests for Proposals, Managing the Tender Process, and Receiving Bids
- Evaluating PPP Bids
- Preparing a PPP Bid Management Report

Prepare, Conduct, Manage and Finalize Contract Negotiations

A Checklist of Items to Ensure are Included in the PPP Contract and Addressed in Negotiations:
- Scope of Work and Output Standards Contracting
- Technology Escrow Account
- Reporting
- Records
- System Maintenance
- Ownership
- Collusion and Conflicts of Interest
- Termination
- Insurance
- Indemnification
- Legal Compliance

Ensuring That Signed PPP Contracts Reach Financial Closure And Implementation

Understanding the Requirements of Project-Backed Financing for PPPs
• In “Project Finance” the new project’s own revenues are relied upon to repay all loans and investments, rather than these loans simply being guaranteed by a host government or guaranteed by being carried directly on the balance sheets of the private sponsors.

Understanding the Need to Strengthen PPP Bankability: Credit Enhancements
• Once PPP contracts have been awarded and signed, a very important negotiating process begins between the private developers and their selected lenders

Performance Monitoring and Contract Monitoring for E-Government PPPs

As a general recommendation we should consider:

How to Design and Manage PPP Contract Performance Monitoring Institutions/Units
• Regulation by Contract: The Contract Compliance Office
  Regulation by contract means that nearly all of the decisions about the issues of whether or by how much tariffs and prices should be adjusted are contained within the specific terms and conditions of the contract itself
• Regulation by Commission: The Infrastructure/Utility Regulatory Commission
  When a PPP creates a private monopoly (one single seller) selling to individual retail consumers, then a regulatory mechanism is needed to protect the legitimate interests of consumers and private investors

How to Manage Requests for Adjustments in PPP Contract Prices and Costs
It is practically impossible to write a single PPP contract that can foresee with certainty all material changes to a contract’s conditions for 10 years.
• Rate of Return Regulation
  In rate of return regulation, the regulator must first review all of the assets in which the PPP project company has invested, and determine whether they are “used and useful.” Second, the regulator reviews the operating expenses of the PPP project, and determines whether they are all “prudent and necessary.”
• Price-Cap Regulation
  Price-cap regulators set the prices that private contractors may charge during a given test period—say five years or longer—and allow the company to earn and keep whatever returns they achieve for that period

How to Measure and Monitor E-Government Contractor Performance
PPP contractor performance monitoring is the function carried out by the regulatory body:
  o to determine what level of service the PPP contractor is actually providing; and
  o to devise a system of rewards and penalties to incentivize the contractor to meet and to exceed these performance levels
Examples of KPI:
  o The number and timing of new interconnections made (if relevant);
  o The volume of transactions provided or records processed;
- The percentage of time that the project is available for users;
- The availability of the project to provide service;
- The proven ability of a new project or service, through commissioning tests, to operate at its intended and contracted capacity;
- The number of proven and justified complaints received from consumers for inadequate service

**How to Manage Contract Revisions, Renegotiations, and Dispute Resolution**

- **Project Oversight Committees**
  The Oversight Committees should represent the senior managers and owners of the various parties, who should be given a chance to review disputes within the context of the overall partnership relationship of the project.
- **Mediation of PPP Disputes**
  Mediation requires both sides to agree to appoint a qualified official—indeed of either of the two parties—who is knowledgeable about PPPs in general, and about the given infrastructure sector in particular.

- **How to Manage Contract Revisions, Renegotiations, and Dispute Resolution**
  - **Arbitration and Binding Arbitration**
    Under arbitration procedures, both sides agree to appoint a single arbitrator or a panel of arbitrators to hear their case.
  - **Litigation**
    PPP disputes may also be resolved through formal litigation in courts of law. However, this tends to be the most costly and to take the longest time to resolve, which imposes significant expenses on all parties, including the “winner.”
  - **Contract Termination**
    The final option available to end a PPP dispute is to seek the termination of the PPP contract. All contracts should specify in detail the procedures for contract termination.
CASE STUDIES

Mobile Signatures – Moldova

The mobile signature service was launched in September 2012 [6], in partnership with Moldcell and Orange mobile operators. The government entered into PPP with mobile operators deliberately, relying on their commitment to innovate, quality customer service and capacity to issue mobile signature to citizens all over the country. Both the Legislation/Regulation context, with laws on e-signed documents and mobile electronic ID and on PPP already established and the Consumer environment (mobile market penetration is 120%).

After consulting mobile operators, a mobile device client-based solution was adopted, considering:

- Implementation costs
- Maintenance costs
- Implementation timeframe
- Usability
- Costs for end users
- Administrative usability
- Technical support

The Technical Solution

In the client-side meID solution, the cryptographic material is stored on the client and the mobile subscriber is provided with a special SIM card, which contains the PKI functionality.
### Public and Private actors Roles in the PPP

<table>
<thead>
<tr>
<th></th>
<th>Government</th>
<th>Mobile Operators</th>
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<tbody>
<tr>
<td><strong>Enrolment</strong></td>
<td>CA Role</td>
<td>RA Role</td>
</tr>
<tr>
<td></td>
<td>Issue qualified signature certificates</td>
<td>Ensure large coverage through distribution network</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>Validation</td>
<td>Provides end-user operation and secure data exchange with CA:</td>
</tr>
<tr>
<td></td>
<td>Time stamping</td>
<td>Signature on handset</td>
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<tr>
<td></td>
<td></td>
<td>End user charging</td>
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<tr>
<td></td>
<td></td>
<td>Customer support</td>
</tr>
</tbody>
</table>

### Public and Private actors Roles in the PPP

The major part of the investment required in infrastructure procurement was provided by the private partners. The government built on existing PKI infrastructure and let the private select & procure the most appropriate mID platform.

### Key success factors in effective deployment of mID service:

- Strong championship of the Government and sustained capacity development efforts within government agencies
- Knowledge sharing activities facilitated by the World Bank (IDM Experts Group) and other development partners
- Reuse of existing government PKI infrastructures
- Use of proven technologies and standards
- Existing enable legal regulatory framework

### Lessons Learned

- Past experience in comparable contexts has demonstrated that low adoption of the traditional digital signature solutions is mainly due to the:
- Lack/limited number of e-services provided to citizen
- High costs associated with the deployment and usage of infrastructure
- Insufficient mobility – card readers needed to be carried and additional client side software needed to be installed on client computer
- Insufficient portability – classic digital signature kits on smartcards were impractical on new platform such as tablets
- Insufficient outreach – single registration authority in the capital city
insufficient client support – lack of capacity to offer acceptable quality client support

The Government of Moldova developed a sustainable model to address these challenges and to ensure:

- financial sustainability of the deployment and operations
- large scale deployment capability
- multi-dimensional adoption of services (both governmental and commercial)
- collaborative promotion and client support

Regional Broadband Initiatives - Italy

Regional broadband projects have been initiated by public stakeholders over the last ten years in Europe mostly to convey private funding into forms of PPP with the scope of reducing digital divide or supporting economic development.

We consider three regional broadband initiatives in Italy [7]:

- High Bandwidth – Lombardy
- Trentino Network - Trentino
- Digital Divide Emilia Romagna – Emilia Romagna

While launching a Broadband Initiative we distinguish 4 main stages:

- initiatives’ targets (Stage 1)
- governance mechanism (Stage 2),
- network structure (Stage 3)
- provision of services (Stage 4)

Stage 1 identifies social and economic targets, which inspire the entire project and provide a rationale to public stakeholders to intervene in the market. At this stage, the level of expected residential and business demand for broadband-based services will be examined. Such market analysis can be accompanied by demand stimulation initiatives in the form of subsidies or policies to incentivize the use of trans-sectoral services (e.g. in the case of e-government or e-health). Decisions on ownership structures are taken at this stage depending on the degree of public commitment and the expected risk exposure. In addition, the location and capacity of existing (broadband) infrastructure is investigated at this stage in order to verify the expected benefits (and limits) of upgrading and avoid duplication of networks.

At Stage 2 resources and competences by partner investors are matched and the different fields of activities of partners are defined. These activities of stakeholders are embedded in particular governance and business models defining the roles of players at different layers of the network.

At Stage 3 the main features of network deployment are developed. The project rationales are at this stage transformed into business actions. As a consequence, funding mechanisms are developed – also depending on the technology adopted to estimate the duration of the project as a whole. Projections about payback periods are done on the basis of estimated costs for connected households and expected average revenue per user.

Stage 4 looks at broadband-based services to be provided once the network (or even parts of it) is deployed. These services can be alternatively provided by private or public stakeholders depending on a variety of factors such as the degree of competitive supply, the expected demand from residential and/or business users, and the extent of trans-sectoral services provided (e.g. healthcare services, e-business etc.).
Initiative N. 1 - Ultra Wide Band – Lombardy
- Area: Lombardia (167 towns)
- Period: 2010 – ongoing
- Investment: €1.2 billion
- Technologies: NGA; new e-services (e.g. e-health, egovernment)
  - Stage 1: Stimulation and aggregation of demand; attracting new investments and developing e-services for business and residential customers (off-set digital divide justifications)
  - Stage 2: Ownership and risk sharing: local government 49%, private investors 51%. Governance: BOOT PPP with Special Purpose Vehicle to operate passive layer
  - Stage 3: Implementation by regional government
  - Stage 4: Open access: yes. Critical aspects: Geographical extension of the project with diverging public and private interests, potential cannibalization fixed-mobile services, undefined governance structure of the project (i.e. ownership of the infrastructure)

Initiative N. 2 - Network Trentino
- Area: Provincia Autonoma di Trento
- Period: 2003–2018
- Investment: €210 million
- Technologies: NGA (optical and wireless) network and new e-services (e.g. e-health)
  - Stage 1: Reduction of digital divide, support to new investments and development of eservices for business and residential customers
  - Stage 2: Ownership and risk sharing: Trentino Network 70% and Trentino NGN 30%. Governance: Trentino NGN plans, builds and manages the passive layer, providing access to operators; Trentino Network provides services to local administrations
  - Stage 3: Implementation by regional government
  - Stage 4: Open access: yes, Critical aspects: private stakeholders’ low propensity to invest, uncertainty of regulation affecting longterm financial sustainability of the initiative

Initiative N. 3 - Digital Divide Emilia Romagna
- Area: Emilia Romagna
- Period: 2007–2011
- Investment: €28 million
- Technologies: Broadband infrastructure and e-government services
  - Stage 1: Reduction of digital divide, promotion of social cohesion and correction of market failure
  - Stage 2: Ownership and risk sharing: Ministry of economic development (via Infratel) 60%, Region Emilia Romagna 15%, multiservice companies 13%, local administrations 12%. Governance: Public stakeholders finance, build and operate the network at wholesale and retail level; private partners operate the active layer and provide services in collaboration with public institutions
  - Stage 3: Implementation by regional government
  - Stage 4: Open access: yes, Critical aspects: low incentives for private operators to invest; high dependence from public investments

The Lombardy initiative is somewhat different from the others:
- It has a greater geographical extension of the project (stage 1);
- The governance is not specified (stage 2)
• a radical migration from copper to fiber (Stage 3);
• that there is a greater risk of cannibalizing fixed-mobile services (and infrastructure) (Stage 4)

This created the following problems:
1. The large area created a divergence of interests among private and public actors caused a delay of the project kick- and a lack of convergence in terms of medium and long-term goals.
2. The governance offered a large participation to private companies which were reluctant to share. A success was most likely if private investment has been limited to the active network and the provision of services.
3. The migration from copper to fiber was too radical: a converge of different private business strategies was needed
4. Investment of mobile operator in LTE were under risks

**Building an e-Service Ecosystem - Sweden**

This case study [8] investigates an e-Gov PPP in one Local Municipality (Sweden) targeting the development of an e-Service ecosystem. The drive for such a research was that PPPs have mainly been employed in the infrastructure and software layer of e-government not so many in the Service layer. This study has been able to identify these main barriers:

**The bureaucratic barrier**
• While acknowledging the important role that bureaucracy play as a value creator in the delivery of e-services, the current organizational mode serve as an efficient barrier towards establishing a platform based partnerships, or symbiotic ecosystems.
• Whereas procurement laws serve a noble cause, to enable more efficient partnership-forms laws may need to be revised and reconsidered as they are often found to do more harm than good. Rather than preventing foul play, in this particular area they rather seem to be working as an effective inhibitor of innovation and competition

**The interface barrier:**
• lack of shared API are affecting the creation of new services

**The business barrier**
• Estimating demand and establishing prices (especially when gov servicea are free) is difficult for private actors
LIST OF ABBREVIATIONS

BOO: Build-Own-Operate
BOOT: Build-Own-Operate-Transfer
BOT: Build-Operate-Transfer
BPM: Business Process Management
BPR: Business Process Re-engineering
CAPEX: Capital Expenditure
CEN: Comité Européen de Normalisation (French: European Committee for Standardization)
CCO: Contract Compliance Office
CIO: Chief Information Officer
CMU: Contract Monitoring Unit
DSCR: Debt Service Coverage Ratio
EBIDTA: Earnings Before Interest Depreciation Taxes and Amortization
e-Gov: Electronic-Government
EIRR: Economic Internal Rate of Return
EU: European Union
FIRR: Financial Internal Rate of Return
FOREX: Foreign Exchange
FS: Feasibility Study
G2B: Government to Business
G2C: Government to Citizen
G2G: Government to Government
HL7: Health Level Seven International (HL7) is a not-for-profit, ANSI-accredited standards
HW: Hardware
ICB: International Competitive Bidding
ICT: Information and Communications Technology
IFC: International Finance Corporation
IT: Information Technology
JV: Joint Venture
KPI: Key Performance Indicator
meID: mobile electronic Identification
MCA: Multi-Criteria Analysis
PPIAF: Public-Private Infrastructure Advisory Facility
PPIFF: Public-Private Infrastructure Financing Facility
PPP: Public-Private Partnership
ROI: Return on Investment
SOA: service Oriented Architecture
SoE: State-Owned Enterprise
SPV: Special Purpose Vehicle
VAT: Value-Added-Tax
VfM: Value for Money
XML: Extensible Markup Language
WB: World Bank
REFERENCES


