

5. Financial and business model analysis

This section discusses the rationale and content of a financial and business model analysis especially on issues related to the investment and sustainability of Single Window development and operations. While the detailed analysis can be carried out by specialists, policy managers and policy makers need to know what topics should be included in the analysis, and their implications. The outcome of the study including advantages and disadvantages of several options, and recommendations for the best possible model provide a basis for a focused discussion among the stakeholders. Then, the decision on the appropriate financial and business model should be agreed and mandated by the right level of authorities and sponsors.

5.1 Why is the financial and business model analysis needed?

Finding an appropriate cost and investment model for setting up and operating a Single Window is a concern for many developing economies. The possible options could range from a system totally financed by government (such as in Finland, Netherlands, Sweden and the United States) to an entirely self-sustainable model (Germany and Guatemala). Possibilities for public-private partnerships (China, Malaysia, Mauritius, Senegal and Singapore) could also be explored, if this is considered suitable for the particular economy.⁴³ Clarity on this point can significantly influence decision-makers towards supporting the Single Window system.⁴⁴

Other topics should also be included in a financial and business model analysis; in particular, the expected direct and indirect costs and benefits of the system, different institutional and organizational models for the implementation, operation and extension of its services, and the long-term sustainability of those services.

Normally, those who are in charge of planning and operating the Single Window project will conduct or commission a study to evaluate different funding and investment options and also the business models for delivering services to the users of the Single Window environment. This analysis could form part of the overall detailed feasibility study as described in Section 4.2 or become a separate document.

The outcome of the study, including advantages and disadvantages of several options, and recommendations for the best possible scenario, will be used to discuss among relevant stakeholders and the decision on the appropriate financial and business model should be reached and mandated by the right level of authorities and/or the authorized sponsor.

⁴³ Referring to http://www.unece.org/cefact/single_window/welcome.html.

⁴⁴ This topic was also discussed in the UNECE Recommendation No. 33 on Guidelines for Establishing a Single Window, 2005.

5.2 What should be covered in the analysis?

The following topics should be included in the analysis:⁴⁵

Business and governance models

- *What are the possible business and governance model options and their rationale? – Which public and private agencies will be involved in the facility? Which parts of the Single Window system should belong to the government as a whole and/or to which government agencies; and which parts should belong to the private sector? Are there any substantive sub-systems that should be hosted by any public-private partnership scheme? The above analysis should also include the rationale, advantages and disadvantages of those different options where necessary.*
- The application architecture as described in section 3 helps to distinguish the different components of the future system. The architecture diagrams and associated descriptions can assist in the analysis and decision-making process of the above options specifically on deciding which of the different parts of the SW facility should be governed or administratively managed by which agency.

Cost and financial analysis

- How should the different parts of a Single Window be financed (totally by the government, the private sector, or a public-private partnership)?
- What is the required investment?
- What will be the ongoing operational costs (normally estimated annually and for a series of years)?
- How will the system be financially sustained (totally by the government, the private sector, or a public-private partnership, and/or by some user fees and revenues)?
- What should be the appropriate user fees (if any) and annual revenue? What will be the basis for calculating the fees (fixed price per year, price per transaction, combination, or other model)?
- Who will be the main users/clients?
- Should the use of Single Window facilities be compulsory or voluntary?
- What are the documents and information that will be electronically processed? How many transactions per day that the facility will expectedly handle?
- When will the revenues generated cover operational costs or will it eventually make a profit?

⁴⁵ Suggested topics here are adapted from the UNECE Single Window Repository, http://www.unece.org/cefact/single_window/welcome.html.

- What are the risks and how to manage and minimize those risks or threats that may jeopardize the realization of the project goals? – to be discussed further in section 5.4.
- There are several costs associated with the implementation of a Single Window system both directly and indirectly. They include network investment costs, hardware/software investment costs, cost of requirement analysis and design, continuous software development, operational support, research and development, training, change management, and new requirements. Cost issues related to government inter-agency communication and institutional cooperation may also be included.
- Many factors impact on the estimation of the cost of such a system, including:⁴⁶
 - Size of economy
 - Extent of existing systems
 - Support through public-private partnerships
 - Geographical diversity
 - Openness for change
 - Sophistication of design in terms of technology and equipment
 - Need for network development and infrastructure
 - Existing Customs automation
 - Need for software licences
 - Training costs
 - Marketing and promotion of the system.

Example:

- A United Nations study and estimation⁴⁷ reveals that, depending on the size of the economy and the complexity of the system, a Single Window project can cost between 11 million and 56 million USD for implementation alone. Operation costs can range from 227,208 USD per annum to 9.2 million USD.
- The use of Single Window facilities is compulsory in Finland, Guatemala, Mauritius and Senegal. In China, Germany, Malaysia, Sweden and the United States, it is voluntary. Single Window services vary and are provided free of charge in Finland, Sweden and the United

⁴⁶ Single Window: Assessment of the Costs of Trade-Related Regulatory Requirements In Ireland, March 2010, FORFÁS.

⁴⁷ UN/CEFACT (2009a): UN/CEFACT Single Window Repository, Geneva.

States. While in Guatemala, Germany, China, Malaysia, Mauritius, Senegal and Singapore, there are service fees based on various payment schemes⁴⁸.

Benefit analysis

- What would be the benefits to users/clients and to the participating agencies?
- How will the target Single Window facility benefit the trading community and the Government?
- What is the impact on Customs revenues?
- What problems will the Single Window facility solve?

Cost-benefit analysis

- What are the comparisons between the costs and benefits (both quantitative and quality values) to business and to the government from the implementation and usage of the target Single Window?
- The cost-benefit analysis can be carried out on several levels, for example:
 - a) National or economy level – consideration of what the Single Window can do for an economy with expected trade transaction cost reduction, faster transaction, better security and compliance.
 - b) Government level – consideration of what are costs, savings and other possible benefits from an administrative perspective, e.g. more effective and efficient deployment of resources, correct and/or increased revenue yield, improved trader compliance, enhanced security, increased integrity and transparency.
 - c) Service provider/business level – consideration of revenue potential versus establishment and operating/running costs.
 - d) Community participant level – consideration of probably separate cost/benefit analysis for different business sectors, when necessary.

For national Single Window development and operation, it is important that the measurable cost/benefit projection for the Single Window vision is established at the national level. This projection could be extended on the regional level. For example, the national Single Window vision of each APEC member economy should be designed to align with the APEC Ease of Doing Business Goals to achieve 25% better, faster and cheaper trading-across-border indicators within five years (by 2015)⁴⁹.

There is no unique model for a Single Window as the system needs to be adapted to the specific national or regional conditions and requirements. This reinforces the recommendation that a comprehensive financial and business model analysis study is required to assess the potential

⁴⁸ UNECE Case Studies on Implementing a Single Window, 2005.

⁴⁹ Referring to http://publications.apec.org/publication-detail.php?pub_id=1217.

cost benefits that would accrue from implementation, operations and utilization of a particular Single Window model.

5.3 Some approaches and techniques on how to conduct the analysis

The financial and business model analysis is normally commissioned to professionals. The objective of this section is to briefly discuss some approaches and techniques that the professionals may use for the analysis.

The financial and business model analysis could be undertaken with regard to the costs and benefits to business and to the government from the implementation, usage and sustainability of a Single Window. An analysis through case studies, for example, could be carried out related to some strategic goods and/or major modes of transportation. Also, the costs between the current procedures and the more efficient future procedures can be compared. Complicated export and import procedures can be examined to highlight the maximum cost in various circumstances.

A simple tool such as **what-if analysis** or some **basic mathematic models** could be used to give some guidance on doing the actual calculations and on the sort of information to collect. A simple model for calculating the return-on-investment (ROI) scenario, for example the Internal Rate of Return (IRR), can be applied. In doing the analysis, not only addressing specific numbers for costs and benefits, some specific case scenarios and qualitative analysis could also be included.

The analysis should include the cost effectiveness of different alternatives in order to see whether the benefits outweigh the costs, and by how much. The costs and benefits of Single Window implementation to be calculated are usually financial and time. The overall benefits of a government project are often evaluated in terms of the public's willingness to pay for them, minus their willingness to pay to avoid any adverse effects. The guiding principle in evaluating benefits is to list all parties affected by a project and place a value, usually monetary, on the (positive or negative) effect it has on their welfare as it would be valued by them.

The analysis would include calculation of tangible costs and benefits (i.e. direct costs and benefits such as hardware/software instalment, training, reduction in time and trade transaction cost and fee) and intangible costs and benefits (i.e. indirect costs and benefits such as human resource development, business opportunities, and better compliance) to identify all of the significant costs and benefits.

In making an estimation of a possible benefit and cost that will occur in the future, the scale of uncertainty about the actual values and the future value of costs and benefits has to be considered. Comparing costs and benefits to determine the net rate of return is needed. Also, comparing net rate of return from different options may be conducted with the scenario that

the government and private sectors may have limited funds at their disposal and therefore need to prioritize.

Cost-benefit analysis can be carried out using only tangible financial costs and financial benefits. A more sophisticated approach to cost-benefit measurement models is to try to put a financial value on intangible costs and benefits. However, the inclusion of intangible items within the analysis needs to be carefully assessed as the estimation of a value for intangible items inevitably brings an element of subjectivity into the analysis.

Hypothetical Example of a “What-If Analysis”

To exemplify the cost and benefit analysis, the calculation of possible benefits from trade transaction improvement in Lao People’s Democratic Republic is presented. The measurement of trade transaction cost for both export and import, at the macro level analysis, could be calculated by the following formula

$$\begin{aligned} \text{Trade transaction cost (at the national level) per year} = \\ (\text{export cost per container} \times \text{total number of export containers per year}) + \\ (\text{import cost per container} \times \text{total number of import containers per year}) \end{aligned}$$

If we rely on and use the quantitative indicators from the World Banks’ Doing-Business report 2011, the cost of exporting and importing a 20-foot container of standardized cargos of Lao PDR is 1,860 USD and 2,040 USD respectively. With trade statistics related to export/import of fiscal year 2009-2010⁵⁰, the number of containers for export and import in that country is 961,794 and 928,317 respectively, we can calculate the export/import trade transaction cost as following

$$\begin{aligned} \text{Trade transaction cost per year (in Lao PDR)} &= (1,860 \times 961,794) + (2,040 \times 928,317) \\ &= \sim 3,800 \text{ million USD per year} \end{aligned}$$

We could assume that a suitable Single Window project reduces the trade transaction costs for Lao PDR by 5%. or 190 million USD per year⁵¹. This cost reduction is tremendously beneficial since it contributes about 3% of the country’s GDP⁵² and is much higher than the likely costs for implementation and operation of the Single Window.

In addition, the Single Window would be beneficial not only to business community but also to the government because of its other impacts, e.g. better and more effective regulatory control and more visible information management by the government.

Of course, the above analysis is only viable if the project management succeeds in implementing the project and the Single Window can deliver a 5% reduction in transaction costs.

⁵⁰ Trade Statistics: Export & Import of Fiscal year 2009- 2010 by economies of destination and by group of products, Ministry of Industry and Commerce, Lao PDR, <http://www.moc.gov.la/statistic.asp> .

⁵¹ Note that this is a hypothetical scenario just for the sake of example.

⁵² Lao PDR’s GDP 6.26 billion USD in 2010, <http://www.tradingeconomics.com/lao/indicators> .

Table 5.1 - Trading across borders improvement from 2007 to 2009 after reforms enabled by paperless Customs and national Single Window partially implemented in Thailand

| Trading Across Borders data | Doing Business 2007 | Doing Business 2008 | Doing Business 2009 |
|-------------------------------------|---------------------|---------------------|---------------------|
| Rank | | 51 | 10 |
| Documents for export (number) | 9 | 7 | 4 |
| Time for export (days) | 24 | 17 | 14 |
| Cost to export (US\$ per container) | 848 | 615 | 625 |
| Documents for import (number) | 12 | 9 | 3 |
| Time for import (days) | 22 | 14 | 13 |
| Cost to import (US\$ per container) | 1042 | 786 | 795 |

Real case example

Another calculation scenario about import and export transactions and documentation fulfilments in Thailand, comparing between 2007 and 2009 (World Bank's Doing Business Reports) as shown in Table 5.1, can be demonstrated. This case shows actual benefits and impacts after the real implementation of paperless Customs and partial Single Window development. From the cost-to-export and cost-to-import indicators of 2007 and 2009 within Table 5.1, the trade transaction cost reduction for export and import is 223 USD and 247 USD respectively per container. In 2009, there were about 3.5 million containers for export, and roughly an equal number for import in Thailand. Therefore the overall trade transaction cost reduction per year contributing to the economy as the whole is as follow: s

$$\begin{aligned} \text{Trade transaction cost reduction per year} &= (223 \times 3.5 \text{ million}) + (247 \times 3.5 \text{ million}) \\ &= \sim 1,600 \text{ million USD} \end{aligned}$$

This transaction cost reduction already contributes and provides economic gain to Thailand for about 1% of the economy's GDP⁵³.

One warning is that this is a very rough approximation at the macro level. The World Bank survey covers only the import and export of standardized cargos with minimum set of documents by not including specialized cargos, e.g. agriculture and dangerous goods that require more procedures and special permits and certificates. Nevertheless, this calculation gives a good approximate figure that could capture the interest and support of high-level policy decision makers and stakeholders.

During the course of analysis, the study team may organize workshops to discuss the findings and possibly inviting Single Window operators from other economies to share lessons. The workshops should cover at least about business model options and how the Single Window

⁵³ Use an approximate GDP of about 300 billion USD for Thailand for ease of calculation, <http://www.tradingeconomics.com/thailand/indicators>.

should be financed (e.g. by government, private, or public-private partnerships), what were the costs of establishing the facility, what are the operational costs, how will the system be sustained over the coming years, how much should be the user fees and annual revenues—if any, and what are the recommended financial and business model for the economy.

5.4 Risk assessment

The Single Window vision is well accepted in many economies but to turn this vision into reality is not simple as there are several risks and issues involved.

According to the World Intellectual Property Organization, the main business risk factors relevant to almost all organizations and the mark assigned to them can be summarized as below⁵⁴.

- | | |
|-----------------------------|-----|
| • Financial risk | 35% |
| • Strategic risk | 25% |
| • Operational risk | 25% |
| • Legal and compliance risk | 15% |

Financial risk is related to money and the uncertainty associated with how and will the SW facility be adequately financed.

Strategic risk is the current and prospective impact on earnings or capital arising from adverse business decisions, improper implementation of decisions, or lack of responsiveness to changes of requirements. This risk is a function of the compatibility of an organization's strategic goals, the business strategies developed to achieve those goals, the resources deployed against these goals, and the quality of implementation.

Operational Risk is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events.

Legal and Compliance Risk is the risk arising from failure to comply with statutory or regulatory obligations. It also arises if the rights and obligations of parties involved in a payment are subject to considerable uncertainty, for example if a payment participant declares bankruptcy.

It is evident that the financial risk is given the highest rank as it has a significant effect on the organization's financial viability if it occurs. Then the risks that can put in jeopardy the organization's established strategy, goals and objectives are ranked second. Operational risks as part of the daily operational activities are marked third, and finally, any legal and compliance risk that can occur.

⁵⁴ Risk Assessment Methodology, World Intellectual Property Organization, http://www.wipo.int/about-wipo/en/oversight/audit/risk_assessment.html

Policy and project managers of the Single Window need to identify, manage and minimize any possible risks or threats that may jeopardize the realization of the project goals. Risk assessment is a process for analysing risks, and determining what controls are necessary to protect sensitive or critical assets adequately and cost-effectively.

Possible risks that the Single Window projects can face are issues of market acceptance, law/regulations, human-related change management and infrastructure that could make it extremely difficult to deliver a solution at both a reasonable cost and a sufficiently attractive service level. Certain components of a financial and business model analysis, such as return-on-investment calculations, are elements of a risk assessment.

- A proper risk assessment would lead the project management group to make appropriate cost commitments and realistic benefits forecasts. The investment decisions will consequently be made better at preferred levels of risks by taking into account the best current knowledge of the future. It is recommended here that risk assessment and analysis should be done along with the financial and business model analysis.

In conclusion, this section describes the need for analysing financial and business models, especially in relation to the investment and sustainability issues of Single-Window development and operation. Policy managers and policy makers should understand at least what should be the main topics of the study so that the authorized decision makers will be able to make good decisions related to the outcomes and recommended models from the study and to drive further the appropriate Single Window implementation and sustainable option.