

Single Window Interoperability (SWI) Discussion Paper

Abstract

This paper forms part of a series of four discussion papers supporting the UN/CEFACT project to create a recommendation on Single Window Interoperability (SWI). This paper explores the administrative, governance, and managerial conditions needed to be in place in order to support SWI. Governance of SWI is reviewed within both conceptual and business contexts and at the various stages of Single Window development and operation. Network, project, and other governance models are also explored.

Key words: Single Window Interoperability, Cross-border, Trade Facilitation, Supply Chain

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1 Introduction

Single Windows for external trade by their nature involve a large number of stakeholders: from the public regulatory agencies to private actors within the supply chain that will interact within the Single Window environment. Add a cross border dimension and the number of stakeholders increases exponentially. Governing these systems within such a broad operating context and involving varied interest groups becomes a challenge for planners and implementers.

1.1 Overall Scope

This paper forms part of a series of four related discussion papers exploring some of the issues identified specifically around Single Window Interoperability (SWI). While recognising that multiple interpretations exist, for the purpose of this discussion, the following definitions of scope have been applied:

- a. **Single Windows perform regulatory functions:** the UN/CEFACT Recommendation 33 definition of Single Window stipulates: “A Single Window is a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfil all import, export, and transit-related regulatory requirements.” Therefore, other systems that offer single views to traders, such as Port Community Systems that do not deal with regulatory requirements are not included in this discussion. That being said, there may be lessons to be learned from exploring models applied within these other systems that could be applicable in the context of regulatory Single Windows and these will be touched on within this discussion paper.
- b. **Interoperability is cross-border:** it is important to recognise that there are very few case studies of National Single Windows in the world today that do fulfil all regulatory functions. Instead, it is more common to see several systems performing various regulatory processes sometimes behind a single trader view, other times not. It is due to this fact that the phenomenon of multiple “Single Windows” within one national boundary may exist. The aim may be for these systems to converge behind one single trader view, in line with the definition provided by Recommendation 33. However, the purpose of this discussion paper is not to explore how these national systems may interoperate, but rather how Single Window systems within one country may interoperate with those of another. Thus, the scope of this paper is focused on cross-border interoperability although, similar to the above exclusion of non-regulatory Single Windows, lessons for cross-border interoperability may be drawn from more general interoperability frameworks.

The term “interoperability” in the context of this paper is defined as: the ability of two or more systems or components to exchange information and without special effort on the part of the trader to use the information that has been exchanged.¹ Interoperability is made possible through the use of standards but also, as explored in this discussion paper series, a framework that involves certain governance, policy, and technical structures. The other papers in this series will explore the specific legislative and technical requirements for SWI, including the business needs perspective. This paper will explore the administrative, governance, and managerial conditions needed to be in place in order to support SWI.

¹ Adapted from the definition of “interoperability” provided by the Institute of Electrical and Electronics Engineers (IEEE) Standards Glossary available on: <http://www.ieee.org>

1.2 Definition of Governance

The term “governance” in itself is a broad term and is often used to denote power, e.g. who sets the agenda (mission, plan, structure) within a given context. Various state-centric definitions of governance exist. For example, the World Bank suggests that governance is “the process – by which authority is conferred on rulers, by which they make the rules, and by which those rules are enforced and modified.”² The UNDP proposes that it involves “the exercise of economic, political and administrative authority [...]. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences”.³

In business, “governance” can be described as: “The combination of processes and structures implemented by the board to inform, direct, manage, and monitor the activities of the organization toward the achievement of its objectives.”⁴ This offers a much wider application of the term, which we can adapt to understand that governance involves processes, decision-making, definition of actions, distribution of powers and accountability as well as performance management. From this interpretation of governance, various questions arise:

- What processes are used for making decisions?
- What actions are necessary?
- To whom are powers granted and how?
- How is performance verified or measured?

These questions are all applicable in the context of planning and implementing interoperable Single Windows for trade across borders. This paper will seek to explore these questions and identify possible models that can be used to govern SWI.

2 Review of Guidance to Date

The concept of Single Windows for trade is not a new one and various guidance has been developed over the ten years since the release of UN/CEFACT Recommendation No. 33 to support policy-makers and implementers of National Single Windows. A few of the key sources are detailed below:

The UN/CEFACT Recommendation No.33 Guidelines on Establishing a Single Window provides no specific advice with regards to Single Window governance, although ideas on governance may be extrapolated from the Single Authority basic model for Single Window in which one agency is given authority to execute selected tasks on behalf of other agencies. The Swedish Single Window is given as an example in this case as Swedish Customs performs tasks for the National Tax Administration, Statistics Sweden, Swedish Board of Agriculture, and National Board of Trade.

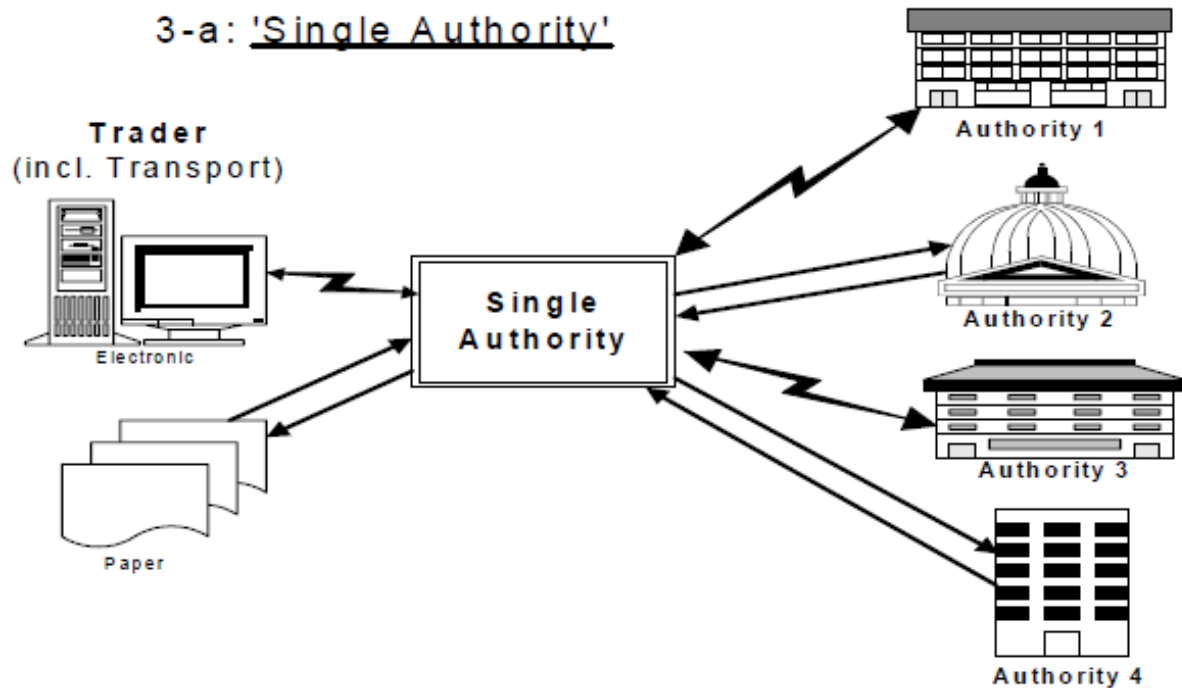
² The World Bank, “Arriving at a Common Understanding of Governance”:

<http://go.worldbank.org/G2CHLXX00Q>

³ United Nations Development Programme, “Governance for Sustainable Human Development”, UNDP Policy Document, New York, 1997.

⁴ Institute of Internal Auditors (IIA) “International Standards for the Professional Practice of Internal Auditing: Glossary”, <https://na.theiia.org/standards-guidance/mandatory-guidance/Pages/Standards-Glossary.aspx>

Figure 1: UN/CEFACT Recommendation 33's Single Authority Basic Single Window Model



The Single Authority model, by its nature, implies some form of governance structure has been applied in order to provide the framework for one authority to act on the others' behalfs. The alternative, automated models for Single Window provided in the Recommendation Guidelines do not necessarily carry the same implications for governance.

Beyond the Single Authority model, Recommendation 33 and its Guidelines provides a little more insight to governance options, introducing the idea of a Lead Agency for a Single Window but acknowledging that this will vary from country to country depending on legal, political and organisational issues and may be public, private or some combination of the two (e.g. the public-private partnership in Mauritius). It also touches upon the varying role a Lead Agency might have in the Single Window, either simply as a coordinator (e.g. Netherlands), or a stronger operator but does not go into further details.

Notably, the Recommendation 33 guidelines identify several characteristics for the Lead Agency stating that it must have the necessary:

- Vision
- Authority (legal)
- Political backing
- Financial and human resources
- Interfaces to other key organisations

Finally, it points out that Customs can be the agency best suited to lead a Single Window development and implementation, as was played out in the majority of the Single Window case studies reviewed for the Recommendation.

The World Customs Organisation (WCO) took forward the idea of Customs having a lead role in the establishment of National Single Windows and provided further guidance in the form of the WCO

Compendium on How to Build a Single Window Environment. This Compendium focuses on “a philosophy of governance” behind Single Window which contributes to the transformation of government structures in such a way that they better serve citizens’ needs. The Compendium draws a link between Single Window and other concepts such as Coordinated Border Management (also known as Integrated Border Management) and inter-agency cooperation but does not provide more detail as to the governance structures that might be put into place to manage such cooperation beyond the assignment of [Customs as] a Lead Agency.

UN/ESCAP’s Single Window Implementation Guide broke basic principles of governance into component parts including stakeholder collaboration, business and governance models enforcement including finance, implementation and operation governance among its 10 key components of its Single Window Implementation Framework (SWIF).⁵ This Guide provides a useful view of how cost benefit analysis may be conducted to determine the most appropriate National Single Window model for implementation. Although not explicitly stated, this analytical work may also be applied to distinguish the best governance model for a given implementation.

Moving beyond guidance and recommendations specifically aimed at the development of National Single Windows, the recent UNECE paper “Trends for collaboration in international trade: Building a common Single Window Environment” offers some more detailed advice for governance of SWI introducing the concept of centralisation versus federalisation (or network) in terms of organisation and governance of interoperability.

Other sources of information and related concepts that may be useful to acknowledge in the discussion on governance and SWI include:

- UN/CEFACT Recommendation 4 on National Trade Facilitation Bodies
- WCO guidance on Coordinated Border Management and Globally Networked Customs
- European Interoperability Framework and guidelines on Integrated Border Management
- Public-Private Partnerships
- Regional Integration

In addition to the above, Case Studies directly applicable to the SWI discussion include:

- ASEAN
- Korea (incl. Korea-China-Japan Maritime Platform)
- EU (UNECE paper, EU Interoperability Framework & TRACES system, Maritime SW, ICS & NCTS, TIR)
- African Alliance on eCommerce

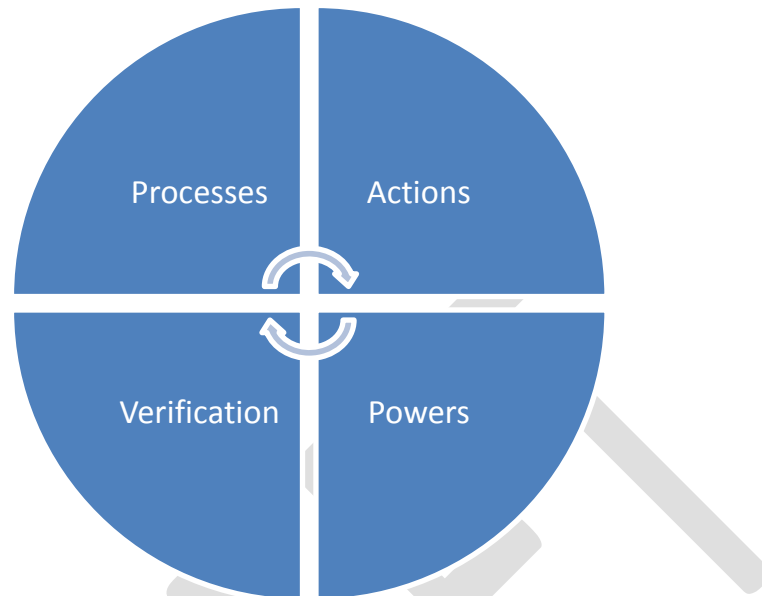
3 Governance Models

As shown, the guidance to date with respect to governance models for National Single Window implementation is fairly broad-based with little specific and direct relation to SWI. This discussion paper aims to extract lessons learned from conventional models and apply them in a new framework for SWI. In order to do this, it is necessary to revert back the original questions of governance,

⁵ The SWIF is based on “The Open Group Enterprise Architecture Framework”, TOGAF, which includes implementation governance as a key phase.

namely: (a) what processes are used for making decisions?; (b) what actions are necessary?; (c) to whom are powers granted and how?; and (d) how is performance verified or measured?

Figure 2: four questions of governance



In order to apply these governance questions more usefully to SWI, it is helpful to look at SWI in three distinct phases of design, development and operation as each may require different forms of governance. But first, it is especially important to understand the overall global context in which SWI is taking place as this, too, will have an effect on forms of governance that may be required.

3.1 Context of SWI Governance Models

The primary driver of SWI would be the globalization of trade and related supply chains. The increased flow of goods across borders and improved levels of communications create greater pressures on economies to be competitive and facilitate trade. Furthermore, there are increasing incentives for greater cross-border cooperation and enhancement of regional integration initiatives in order to reap benefits from economies of scale and access to markets.

Within the above framework, there are three key activities happening on a global level that will have an impact on the governance of Interoperable Single Windows.

First, the globalisation / convergence of trade facilitation initiatives. Perhaps most clearly illustrated in the World Trade Organisation's (WTO) Trade Facilitation Agreement (TFA).⁶ This Agreement identified Single Window and [Cross] Border Agency Cooperation as important tools for international trade facilitation (Articles 10.4 and 8.2 respectively). The TFA also contained several provisions for governance of these trade facilitation initiatives through the establishment of a Committee on Trade Facilitation as well as National Trade Facilitation Committees (Article 13).⁷

⁶ At time of writing, while the TFA had failed to gain the formal approvals required to come into force, there is most of the countries party to the agreement in December 2013 continue to pursue their commitments under it.

⁷ see also UN/CEFACT Recommendation 4

These trade facilitation bodies may be considered viable governance models for interoperable Single Windows.

Second, the development and use of international trade standards. Also contained within the WTO TFA (Article 10.3), the use of international standards for import, transit, and export formalities is not only an important trade facilitation tool but also central to the function of interoperability. Several key international standards for Single Windows are identified in Recommendation No. 33, implementations that have followed such guidelines stand a greater chance of being interoperable. Other standards for interoperability are being considered in the parallel discussion paper on technical semantics for SWI. Ongoing developments of international trade standards that are of particular importance to the Interoperability (and governance) of Single Windows are:

- Trader Identification
- Unique Consignment Reference (UCR) / transaction identification
- Product identification

Third, overlaying regional integration structures. Single Window, in its original form, was a tool to enhance a country's national trade facilitation position. Interoperable, cross-border and regional Single Windows can now be seen in their broader context as tools to not only improve national competitiveness but also to promote regional economic growth. There are many drivers for regional integration (security, social and economic) and regional integration initiatives have been increasing across all continents over the past decade. Regional Economic Communities (RECs) take many different forms and often overlap but their shape will certainly also have a significant impact on the governance of SWI within the region.

The Association for Southeast Asian Nations (ASEAN) offers a strong case study for the impact of a Regional Economic Community on the formation of a Regional Single Window system. Through such a case study we may see how the governance structures of the larger REC may impact the governance of a Regional Single Window. Similarly reflections may be drawn in highly integrated environments such as the EU as well as deep bilateral relationships such as between the US and Canada. The highly integrated systems of these latter examples attest to that fact.

Globalisation, international standards, and regional integration structures not only impact the governance models for SWI but also the business drivers, or needs, as well as the technical and legal framework in which Single Windows work. For this reason, it is expected that these issues will also be discussed in the other papers alongside this one.

3.2 Governance Models for the Initial Design Stage of SWI

During the early stages of Single Window design, it is most likely that existing governance structures will be utilised to initiate the SWI activities. In particular, the processes for decision-making and power structures already in place may be utilised to govern commencing activities and functions gearing towards SWI.

In a cross-border setting, these existing governance structures will be in the form of bilateral or multilateral agreements and will be closely linked with the level of [regional] integration between the parties as set by these agreements. These may be deeply evolved state-level treaties defining detailed decision-making processes and conferring powers at a supranational level (such as governed by the European Parliament and related legal institutions). They may be detailed inter-

governmental agreements such as between the US and Canada; or more general cross-border agreements such as the Greater Mekong Subregion Cross-Border Transport Facilitation Agreement (EU); or institutional-level Memoranda of Understanding (MoU) such as those that might be agreed by Customs authorities across a border. Each level of agreement will come with different legal implications for SWI, to be considered in the parallel discussion paper on legal issues.

Centralised versus Network Governance Models

The existing cross-border governance structures and legal environment may differ, but in order for SWI to take shape, a set of characteristics are required that are much the same for a lead organisation to take forward in any Single Window development, they are: vision, authority, political will, financial and human resources, and access to key stakeholders.⁸ This may be achieved through a strong centralised model where an authority with supranational powers exists, but given global experience, in a cross-border context, it is more likely that a decentralised, network governance model would be more applicable. A network governance model would be more likely to have the ability to reach the wider number and more diverse set of actors across increasingly complex international supply chains.

Characteristics of a Network Governance Model:

- Involve a large number of interdependent actors who interact in order to produce common purpose.
- Based on negotiation
- Compliance is ensured through trust and political obligation which, over time, becomes sustained by self-constituted rules and norms.⁹

Benefits of Network Governance:

- Greater access to stakeholders (a network of networks).
- Improvements based on knowledge sharing
- More effective, collective problem-solving.

Looking beyond the State-level, a governance model for SWI could be developed from a network of customs agencies (e.g. the WCO's Globally Networked Customs), or perhaps in future, a network of National Trade Facilitation Committees (as foreseen by the WTO FTA).

Regardless of whether or not it takes on a centralised or decentralised shape, the starting point for any governance model is identification of a common need. For the initial stages of SWI design, any governance structure will be focused on the following activities to articulate the common need or "vision" [in accordance with international best practice]:

- Defining technical structures (see technical discussion paper in this series)
- Defining legal framework (see legal discussion paper in this series)
- Identifying operational requirements (see business needs paper in this series)
- Cost-benefit analysis of all of the above

In tandem with this, the governance model at the initial design stage will also be focused on:

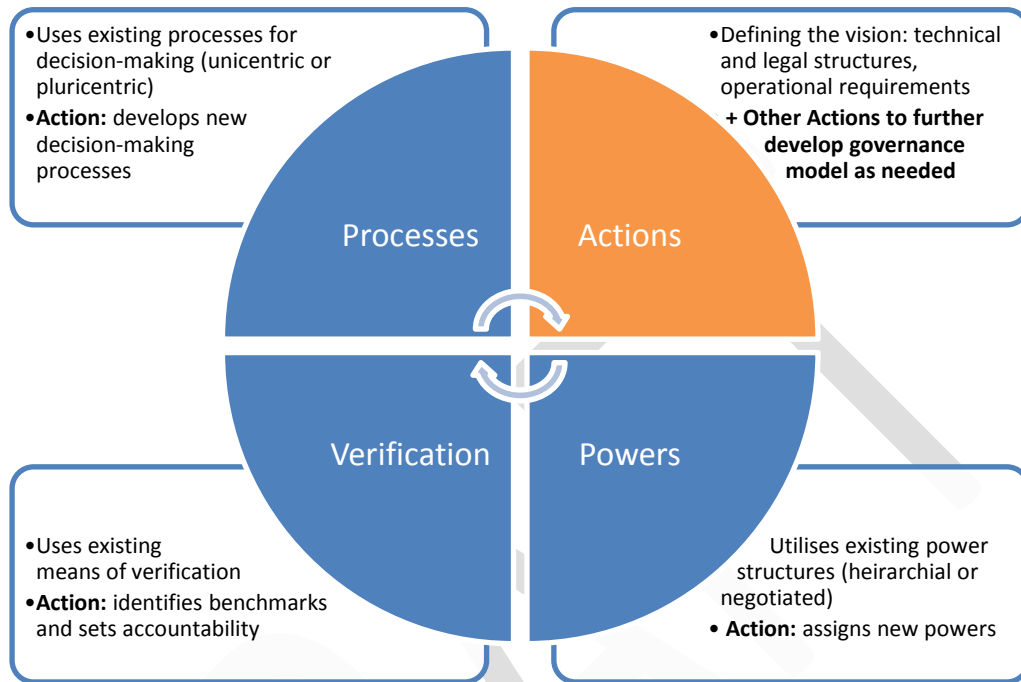
- Assigning powers and accountability (that relate to the decision-making process needed to achieve the above actions)
- Setting benchmarks (linked to the above)
- Refining decision-making processes for interoperable Single Windows

⁸ It is possible that National Trade Facilitation Committees foreseen by the WTO TFA would be a natural place to start.

⁹ Nielsen, K. & Pedersen, O. K. 1988. 'The Negotiated Economy: Ideal and History', *Scandinavian Political Studies*, 11(2): 79–101.

These powers may be assigned to groups (e.g. technical working groups), either inside or outside the organisation or network through contracts or other legal mechanisms to be discussed separately. At this stage, the focus would be on identifying and assigning powers, processes and means of verification as actions - the specific powers and decision-making processes needed to do this would be derived from the existing governance structures.

Figure 3: focus of governance during the initial stages of designing SWI



3.3 Governance Models for the Development of SWI

Once the technical shape, legal frameworks, and operational requirements have been defined during the design stage, the governance structure will need to be adjusted in order to take on more specific actions or functions related to the development of interoperable Single Windows. These actions may include and are not limited to:

- Procurement of resources (financial and human, internal and external)
- Development of software
- Installation of infrastructure
- Business process re-engineering; and pilot testing.

These activities form part of any Single Window development, regardless of whether or not they are going to interoperate across borders. They may therefore be governed by national (or organisational) structures.

There are, however, several activities that may be needed specifically for the development of interoperable Single Windows that will require cross-border governance, namely:

- Cross-border process harmonisation / alignment

- Development of new standards to be used within the Single Window system (as needed, if International standards do not apply or need adapting – e.g. common tariff nomenclature, trader identification, etc)
- Pooled human and financial resources for the development of core services and common utilities (software or infrastructure e.g. centralised software / gateways / information management, etc).

The existing governance systems in place for the design phase may not be sufficient (in terms of power or decision making process) therefore, adjustments to governance structure may be implemented (in accordance with the original designs / visions), as needed, and/or new governance institutions may need to be created.

Project Governance Models to Manage Development

An important point to note is that the development stage of SWI has a defined end, that is: when the Single Windows are interoperable in line with the agreed common vision. Therefore, it may be helpful for the development phase of SWI to be considered as a “project”.¹⁰ Project governance models are always temporary and offer a very specific advantage in situations where existing organisational structures are not sufficient to manage the activities required to achieve the project’s outcome.

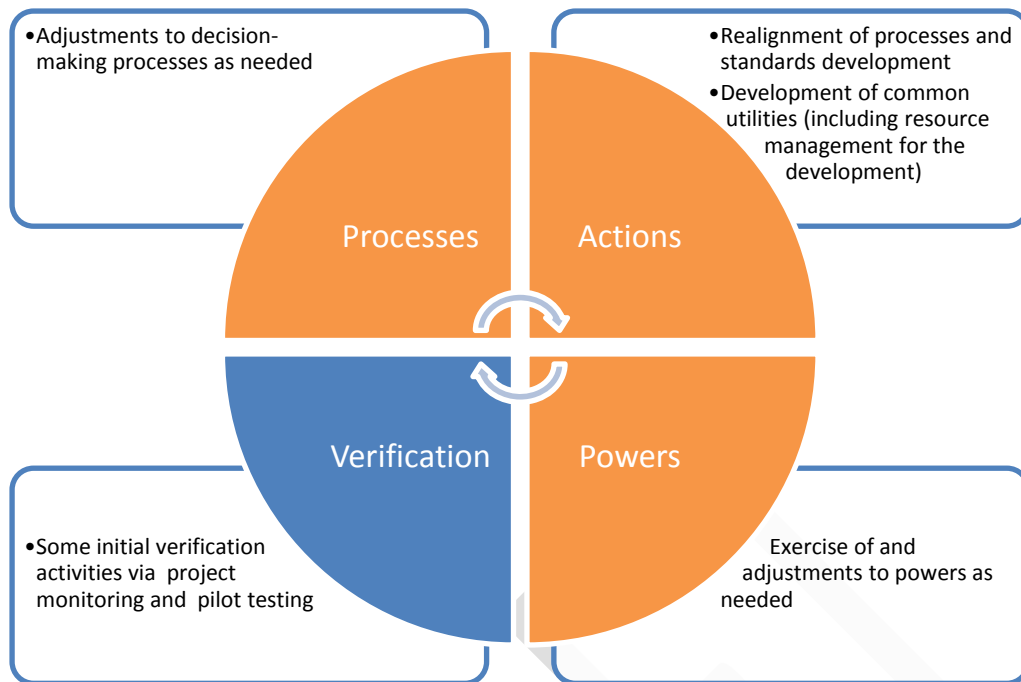
Best practice in Project Management envisages a hierarchical structure to manage the execution of the project tasks under the control of a Project Director and/or Manager, but the governance structure above that is more inclusive with the form of a Project Board (or Steering Committee). The wider network governance structure outlined as a possibility in the initial design of SWI may be suitably transitioned into the Project Steering Committee or Board.

One of the challenges posed by installing a project governance structure for the development of SWI is the fact that it requires temporary and specific resource allocation. This challenge is often overcome by outsourcing as is seen in most cases where the development of Single Windows is outsourced to private sector entities.

Whether or not project governance or other models of governance are used during the development of interoperable Single Windows, it is clear that the demands on governance functions are more significant and more specific during the development phase than in the design phase. With proper awareness of this fact, appropriate plans are made during the design phase to make the necessary adjustments to the governance framework.

¹⁰ The Project Management Institute defines a Project as “A temporary endeavour undertaken to create a unique product, service, or result.” *A Guide to the Project Management Body of Knowledge*, Fourth Ed. (Glossary).

Figure 4: focus of governance during the development of SWI



3.4 Governance Models for Operation of Interoperable SW

Once two Single Windows are interoperable with each other, the focus of the form of governance should shift to sustainability. If a project governance structure or something temporary was put into place during the development, then it should be replaced or evolved into something that will last indefinitely. Key functions will include:

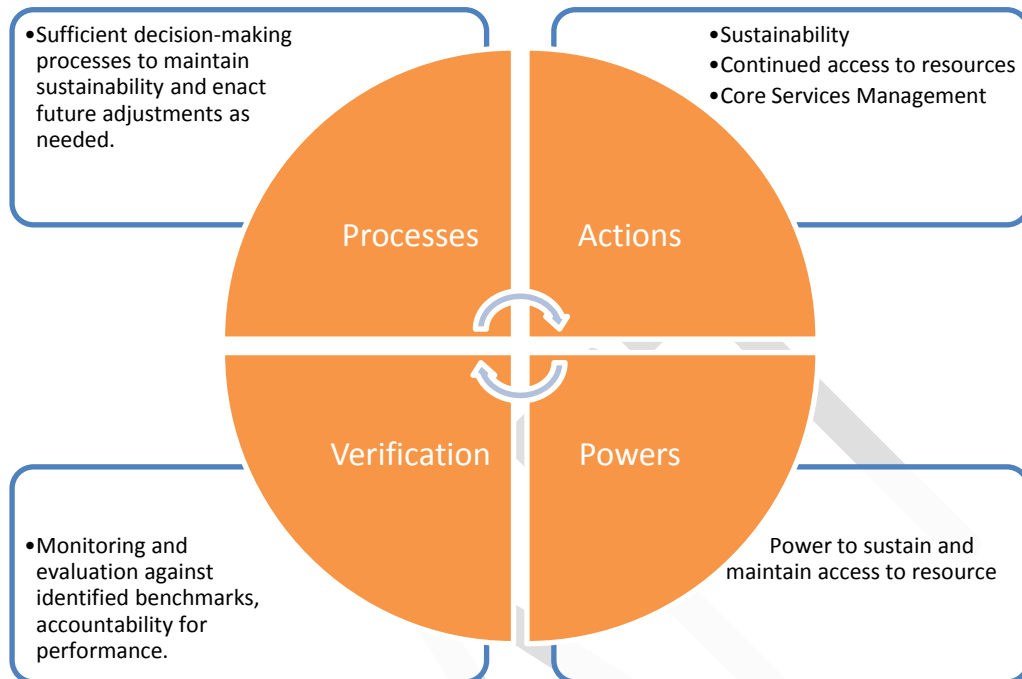
- Sustainability
- Continued access to resources
- Core services management

The options for ongoing operational management of the interoperable Single Windows will depend once again on the existing level of cross-border integration as either a centralised or networked governance model could be applied in the ongoing operation of interoperable Single Windows. In addition to the consideration of the cross-border governance context, the form of governance that was used during the development stage may also be considered as a factor in determining the final model of governance chosen for SWI.

If, during the development phase, (a) a strong centralised governance structure was created, either temporarily as part of a project governance approach, or otherwise; and (b) this structure was found to be self-sustaining either by design or adaptation, then it would be possible for a networked governance approach to be used during the design phase and a centralised governance form employed during the operational stage.

Public-private-partnerships are models that are frequently employed between public and private sectors to engage a strong project management approach in the development of a system and sustain it through to SWI operation; however these come with a number of challenges and

considerations for all parties involved. Even if strong central control provides for good immediate access to resources and core services management, this may be hindered in the long run due to the fact that multiple stakeholders need to continue to be involved in order to ensure key data is kept up-to-date and overall sustainability is achieved. A hybrid network governance approach may be necessary.



4 Conclusions

The governance framework for SWI is complex, driven by a wider context involving globalisation of trade, internationalisation of standards, and regional integration. Each governance approach to SWI will need to be adapted to suit the specific environment in which the parties will operate cross-border. That being said, there is merit in exploring the idea that certain forms of governance may be more useful at some stages over another. For instance, network governance models may be particularly applicable during the design of SWI, whereas project governance models might be more appropriate for the development. Further case studies may help shed light on these aspects.