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► Enhancing social security accessibility in the Lao People's Democratic Republic: A road map for the Lao Social Security Organization's digital transformation and service delivery optimization



► **Enhancing social security
accessibility in the Lao
People's Democratic Republic:
A road map for the Lao Social
Security Organization's digital
transformation and service
delivery optimization**

Warren Daly

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Acronyms and abbreviations

A4AI	Alliance for Affordable Internet
AI	artificial intelligence
ASEAN	Association of Southeast Asian Nations
BCEL	Banque Pour Le Commerce Extérieur Lao
FAQs	frequently asked questions
ICT	information and communication technology
ITIL	Information Technology Infrastructure Library
ITU	International Telecommunications Union
KYC	Know Your Customer
LMIS	Labour Market Information System
LSSO	Lao Social Security Organization
MIS	management information system
MoHA	Ministry of Home Affairs
MoLSW	Ministry of Labour and Social Welfare
MPS	Ministry of Public Security
MTC	Ministry of Technology and Communications
NERD	National Enterprise Registration Database
NSSF	National Social Security Fund
SOP	standard operating procedure
SQL	Structured Query Language
SSO	Social Security Office
TaxRIS	Tax Revenue Information System
UNDP	United Nations Development Programme

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▶ Executive summary

The Lao Social Security Organization (LSSO) is seeking to optimize social security service delivery through digital channels. A significant initiative is the development of a mobile app to integrate seamlessly with existing systems. This app and associated APIs¹ are being designed to facilitate connectivity with other government databases, thereby ensuring citizens can access various services with ease. As the LSSO continues to align its strategic objectives with national digital strategies, it is imperative that the LSSO focuses on strengthening areas such as digital infrastructure, digital skills and cybersecurity.

In anticipation of the LSSO app and its associated APIs, this report presents:

- ▶ Analysis of government legislation, policies and frameworks that are relevant to digital transformation at the LSSO.
- ▶ A situational analysis of the LSSO's digital ecosystem that identifies areas for improvement.
- ▶ A short- and medium-term mobile app and API development plan to help LSSO IT achieve project success.
- ▶ A road map of milestones to achieve, providing actionable recommendations and innovative ways to overcome operational challenges.
- ▶ Recommendations for digital transformation strategies for the LSSO to reference in this nascent stage of its digital transformation journey.

As the LSSO embarks on this digital transformation journey, this document provides a valuable resource for navigating the process and achieving its goals.

Key findings

While mobile data costs within the Lao People's Democratic Republic have dropped significantly in recent years, they are still high for the region, particularly in view of the average income in the country. This contributes to significant barriers to access and limits economic, educational and social opportunities, particularly in rural and underserved communities, slowing the adoption of digital services and applications. This necessitates a comprehensive evaluation to better understand the current landscape of internet affordability in the Lao People's Democratic Republic.

The Lao People's Democratic Republic ranks poorly compared to its South-East Asian neighbours on global indices of digital readiness. In the 2024 Network Readiness Index, the Lao People's Democratic Republic placed 108th out of 133 countries in terms of overall rankings across four pillars: technology, people, governance and impact.

¹ Namely, the 10-Year National Digital Economy Development Strategy (2021-2030). See section 4.2.2.

A recent Digital Maturity Assessment (DMA) of the Lao People's Democratic Republic conducted by the United Nations Development Programme (UNDP) highlighted that nearly 80 per cent of ministries have not established clear employee development paths for ICT-focused civil servants, nor have they offered adequate pay or retention incentives for these positions. The DMA categorized the Lao People's Democratic Republic as “digitally nascent”, the lowest level among five used to evaluate a country's readiness in digital systems, services and capacities. There is significant variability in digital competency across ministries and institutions.

The Lao People's Democratic Republic has laid down a legal and regulatory framework for digital governance, including laws on electronic transactions, digital signatures, data protection, consumer protection and cybercrime prevention. Despite these positive developments, **still more needs to be done by the Government to achieve a comprehensive digital government transformation.**

Since the 2012 enactment of the Law on Electronic Transactions, the e-commerce scene has rapidly developed in the Lao People's Democratic Republic. The LSSO is required to adhere to the legal standards set by the Law, which includes implementing adequate cybersecurity protocols and reporting mechanisms for cyber incidents. **Thus, LSSO staff will require continuous training in cybersecurity best practices and the latest developments in cyber threat management.**

The Lao People's Democratic Republic currently lacks a unified national ID system, resulting in institutional overlap and confusion and complicating the development of a national digital ID or unique identifier number.

The Lao People's Democratic Republic does not have specific laws dedicated to regulating artificial intelligence (AI). The legal and regulatory regime in the Lao People's Democratic Republic is still developing, with significant gaps in key technical areas, including AI. The absence of a dedicated national AI strategy means that the country's approach is currently more about creating a conducive environment for AI development rather than implementing a structured AI strategy. The broader governmental focus on digital capabilities and integrating AI technologies in public services could influence how the LSSO adopts and implements AI solutions in the future, particularly in automating and enhancing service delivery.

The functions and services of the LSSO's Information Technology Division (LSSO IT) have been developed piecemeal over the years, leading to inconsistencies between them, delays in rollout and difficulties in usage. LSSO IT should consider creating a master plan for updating, refactoring or replacing these systems to minimize potential risks and maintain operational efficiency.

As the LSSO embarks on developing its mobile app, it has a unique opportunity to show leadership and set a precedent for other government organizations by showcasing the value of user-centric design principles. The LSSO should continuously engage with users and stakeholders to collect feedback, discover unmet needs, and refine the digital functionality and usability through iteration.

A rapid IT staff survey provided valuable insights into the strengths and areas needing improvement (see Annex 2). **Encouraging and supporting employees to participate in professional training programmes would benefit the organization's technical capabilities.**

A service desk is required to provide effective and efficient customer support and service delivery for the new mobile app and associated digital services.

Digital transformation is a cross-functional effort that requires collaboration and coordination between various departments within an organization. It encompasses a more holistic approach to transform the LSSO processes, culture and customer experiences by leveraging technology. As such, a fixed five-year plan may not be agile enough to adapt to rapid changes in the marketplace, in technology and in customer demands.

Recommendations for consideration

The following is a summary of the recommendations presented by this report. Each of the recommendations below is presented in significantly greater detail in Section 8 of the report.

Frameworks, policies and regulations

Recommendation 1. Align strategic objectives with national strategies

Alignment between the LSSO's strategic objectives and the National Digital Economy Development Strategy can be seen and strengthened in the following areas:

- ▶ Digital infrastructure and connectivity;
- ▶ Digital innovation and entrepreneurship;
- ▶ Digital skills and human capital; and
- ▶ Cybersecurity and data protection.

Recommendation 2. Consider using Convention 108+ guidelines

Convention 108+ is a set of guidelines developed by the Council of Europe to protect personal data in automated systems. Convention 108+ establishes guidelines for processing personal data in a lawful and secure manner, and consideration should be given to incorporating these guidelines into the existing software development processes.

Recommendation 3. Incorporate electronic signatures into applications

Integrating e-signatures into digital apps can significantly improve user experience, efficiency and security in digital transactions.

Organization-wide

Recommendation 4. Promote the use of the e-Office suite

Promoting the use of e-Office within the LSSO would enhance efficiency and streamline workflows.

LSSO IT

Recommendation 5. Monitor all network infrastructure and consider upgrading bandwidth

Deploy network monitoring tools: Implement a robust network monitoring solution that provides real-time visibility into network traffic, bandwidth utilization and performance metrics. These tools can help identify anomalies, diagnose issues and provide historical data for capacity planning and optimization.

Develop an upgrade plan: Create an upgrade plan for existing office links (or point to point links) and internet connectivity. For offices with a single internet connection, a secondary link should be considered for failover.

Recommendation 6. Define and use a focused set of technologies

It is important to maintain a balance by both limiting technology stacks and being open to new ones with potential advantages. Selecting a focused technology stack for the frontend and backend can be a wise strategy for future-proofing software development in the LSSO.

The LSSO should regularly assess and evaluate their selected technology stacks to ensure they still meet the LSSO's needs, and explore emerging technologies for a competitive edge or to address specific business needs.

Recommendation 7. Use application performance monitoring

An application performance monitor (APM) aids in monitoring and managing software performance. An APM offers real-time visibility into application performance, user experience, database usage and infrastructure metrics, helping teams quickly detect and resolve problems, optimize resource utilization and enhance overall system dependability.

Recommendation 8. Improve accessibility

Accessible mobile apps ensure that people living with disabilities, such as visual, auditory, motor or cognitive impairments, can effectively use and benefit from the application. Features such as text-to-speech, voice commands and adjustable font sizes make for a more inclusive experience, reaching a broader user base.

Recommendation 9. Codify the user journey

A collaborative effort between the third-party software developers and the LSSO is required to deliver sequence diagrams and mockups that serve as a baseline sequence of events. Every workflow should have an associated sequence diagram or flowchart with version number and date.

Recommendation 10. Expand developer operations

The LSSO should seek to develop or otherwise secure the following as part of their digital transformation:

- ▶ LSSO-owned Git repository;
- ▶ Software documentation;
- ▶ An LSSO-controlled Google Play and Apple store account;

- ▶ API documentation;
- ▶ Operation manuals, user guides and administration manuals;
- ▶ A knowledge management system (KMS); and
- ▶ Project management tools.

Recommendation 11. Create and utilize customer journey maps

The LSSO can enhance customer experiences by creating and utilizing customer journey maps. Creating a customer journey map involves several steps that help you understand and visualize your customers' experiences:

- ▶ Define the customer personas;
- ▶ Determine the stages of the customer journey;
- ▶ Identify touchpoints;
- ▶ Understand customer actions and emotions;
- ▶ Identify pain points and opportunities;
- ▶ Map the journey; and
- ▶ Take action and iterate.

Recommendation 12. Design philosophy recommendations

A successful design philosophy prioritizes user needs by developing efficient and responsive solutions. For the LSSO, such a philosophy is especially vital because it prioritizes enhancing experiences for staff, beneficiaries and end-users. **The design process should focus on user needs** to ensure effectiveness, efficiency and responsiveness.

Recommendation 13. Stronger data security and management practices

Implementing strong data security and management practices is vital to protect sensitive information in compliance with laws and regulations. This includes adopting encryption, secure data storage solutions and stringent access controls to safeguard confidential data.

Role-based access controls will ensure that only permitted personnel can access or update sensitive operational data. Efforts should be made to provide secure communication channels and avoid parallel data transfer or case operations outside of the system (for example, transferring client images or data files via WhatsApp, Telegram or similar).

Recommendation 14. Create an updated IT strategy and planning initiative

An IT strategy document serves as a road map for an organization's technology investments and initiatives, aligning them with overall business goals and ensuring effective resource allocation and decision-making. To effectively plan and initiate an IT strategy and planning initiative, the following sequence of steps should be considered:

- ▶ Define IT objectives and goals;
- ▶ Current state assessment;
- ▶ Develop a strategic IT plan;
- ▶ Stakeholder engagement;
- ▶ Financial planning;
- ▶ Risk management;
- ▶ Implementation road map; and
- ▶ Monitoring and evaluation.

Guidelines for API and mobile app development

Recommendation 15. Perform vulnerability assessment and penetration testing

Vulnerability assessment and penetration testing (VAPT) is a process of evaluating the security of a computer system, network or application by identifying, analysing and measuring the potential vulnerabilities and weaknesses in the system. VAPT is typically conducted by security professionals, either as part of an organization's security programme or as an external service provided by specialized companies. This involves identifying, quantifying and prioritizing (or ranking) vulnerabilities in a system. Vulnerability assessments can be automated or manual, with the goal of identifying weaknesses that could be exploited by attackers.

Penetration testing (also known as pen-testing or ethical hacking) involves evaluating the security of a computer system, network or web application by simulating an attack from a malicious actor. Penetration testing aims to uncover vulnerabilities, evaluate attack consequences and propose security measures for enhanced protection.

VAPT should be performed by a third party not related to the developers of the source code.

Recommendation 16. Utilize the ISSA Guidelines on Information and Communication Technology for social security

The International Social Security Association (ISSA) Guidelines on Information and Communication Technology provide a framework for social security institutions to effectively manage and implement ICT systems. The Guidelines are designed to help institutions improve their services, increase efficiency and satisfy stakeholders.

Recommendation 17. Incorporate the UNDP Digital Standards

The [UNDP Digital Standards](#) help system designers and builders to create inclusive digital ecosystems, and ways in which to navigate complex challenges they might face. By setting boundaries for data management and product creation, these standards ensure that evolving tech is aligned with development goals, preventing investments in obsolete or incompatible technologies. Formed with input from internal and external experts, the Standards integrate real-world project insights and broad organizational experience.

Recommendation 18. Build IT staff capacity

The rapid staff survey results (see Annex 2) provide valuable insights into the strengths and areas needing improvement within the LSSO IT team. Several areas would benefit from further development and training:

- ▶ Infrastructure;
- ▶ IT security;
- ▶ Emerging technologies;
- ▶ Monitoring tools; and
- ▶ e-Office suite.

Recommendation 19. Create a service desk

A service desk is required to provide effective and efficient customer support and service delivery. Steps needed to operationalize a service desk include:

- ▶ Defining objectives;
- ▶ Identifying requirements;
- ▶ Designing processes;
- ▶ Selecting a platform;
- ▶ Establishing guidelines, standard operating procedures and practices;
- ▶ Training staff;
- ▶ Implementing key performance indicators (KPIs); and
- ▶ Reporting.

Recommendations for strategy deployment**Recommendation 20. Evaluate IT service management practices**

ITIL 4 (IT Infrastructure Library version 4) is the latest evolution of the widely adopted IT service management framework, developed by AXELOS. ITIL 4 provides organizations with a comprehensive set of guidelines and best practices to manage IT services and align them with business objectives, while embracing digital transformation. ITIL 4 will help the LSSO to successfully execute their strategy and drive performance and success.

The LSSO should evaluate their IT service management practices using the ITIL 4 framework. The LSSO will gain valuable insights into its current IT operations through this evaluation, identifying areas for improvement and aligning with ITIL 4 principles. Likely outcomes include better service delivery, increased efficiency, improved integration of IT services with strategic objectives and enhanced risk management.

Recommendation 21. Ensure effective communication of your strategy

This step should involve all levels of the organization and is crucial for ensuring a clear understanding of the LSSO's direction and priorities. Sharing the strategy should not just happen once, but should be continuous. The IT management teams can use email, intranet and social media to maintain employee engagement and increase awareness of the strategy. This also ensures that new employees are aware of ongoing activities.

Digital transformation strategy

Recommendation 22. Create a digital transformation taskforce

To achieve seamless collaboration and informed decision-making, the following coordination strategies should be implemented:

- ▶ Establish a digital transformation taskforce;
- ▶ Open communication;
- ▶ Define clear roles and responsibilities;
- ▶ Develop a shared vision and road map;
- ▶ Coordinate training and change management efforts;
- ▶ Establish feedback loops and continuous improvement mechanisms; and
- ▶ Establish a change management team.

Recommendation 23. Develop a digital transformation strategy

To develop a digital transformation strategy for the LSSO, the following steps should be taken:

- ▶ Develop a strategic plan;
- ▶ Start small and scale up;
- ▶ Establish a governance framework;
- ▶ Focus on skills and culture;
- ▶ Leverage external partnerships; and
- ▶ Monitor, evaluate and adapt.

Recommendation 24. Risk management

Risks	Mitigation
Cybersecurity threats	
As the LSSO increases its reliance on digital platforms, the risk of cyberattacks, data breaches and unauthorized access to sensitive information grows. Ensuring robust cybersecurity measures are in place is crucial to protect both LSSO and users' data.	Implement multi-layer security and regularly update robust security measures such as firewalls, antivirus software and encryption. Conduct regular security audits and vulnerability assessments. Provide cybersecurity training to all staff members. Establish and enforce strict data access and usage policies.
Infrastructure	
Low internet connectivity	Develop offline capabilities in mobile apps.
Digital divide	
A digital divide can result in disparities in digital literacy and technical skills among team members.	Provide user education and support programmes. Provide training and support to improve digital literacy among team members. Ensure equitable access to technology and resources for all employees. Encourage a culture of collaboration and knowledge sharing to bridge skill gaps.
System integration and compatibility	
Integrating new digital systems with existing legacy systems can be challenging. There is a risk of compatibility issues, which can lead to disruptions in service delivery and increased costs.	Conduct a thorough assessment of existing systems before implementing new solutions. Engage IT experts to develop a comprehensive integration plan. Use APIs to facilitate seamless communication between different systems.
User acceptance and resistance to change	
There may be resistance to adopting new technologies from both LSSO staff and social security beneficiaries. This can stem from a lack of familiarity with new systems or fear of change, potentially leading to lower adoption rates and reduced effectiveness of new digital solutions.	Involve users in the design and implementation process to increase acceptance. Provide comprehensive training and support to help users become familiar with new systems. Communicate the benefits and rationale behind new technologies clearly and transparently. Implement a phased rollout to give users time to adjust and provide feedback.

Regulatory and compliance issues	
As digital transformation involves handling increased amounts of personal data, the LSSO must ensure compliance with data protection laws and regulations.	Establish clear policies and procedures for data handling and privacy. Regularly review and update policies to maintain compliance. Collaborate with legal experts to ensure adherence to regulations.
Resource allocation	
Significant financial and human resources are required for a successful digital transformation. There is a risk that these resources might not be adequately allocated, leading to incomplete or delayed implementation.	Develop a detailed budget and resource plan before starting the digital transformation. Regularly monitor and evaluate resource utilization throughout the project. Prioritize investments in essential technologies and solutions. Consider phased implementation to distribute costs over time.

Recommendation 25. Effective transitions/change management

Current readiness	Recommendations for effective transition
Infrastructure	
The LSSO has started its journey to expand its digital services, but the extent of digital infrastructure specifically tailored for robust, widespread social security services needs further development.	Invest in reliable and secure ICT infrastructure to support the increased load from digital transactions and data processing. Examples include planning a disaster recovery site, improved or dual internet connections at provincial offices.
Skill levels	
There may be a gap in digital skills among LSSO staff, which is crucial for managing and sustaining digital transformation.	To enhance the digital literacy of all employees, comprehensive training programmes should be implemented as part of staff training and development.
Systems integration	
Efforts to integrate digital solutions with existing legacy systems are underway, but the seamless functionality of these integrations remains a critical factor. It is challenging for existing staff to maintain scripts to perform this duty	A short- to medium-term plan for systems integration should be formulated and implemented.
Regulatory framework	
The LSSO operates under national regulations that may need updates to fully support digital operations, especially concerning data protection and cybersecurity.	Formally engage with government bodies to ensure regulations adapt to support digital innovations, especially those that prioritize protecting user data and privacy.

Recommendation 26. Developing plans

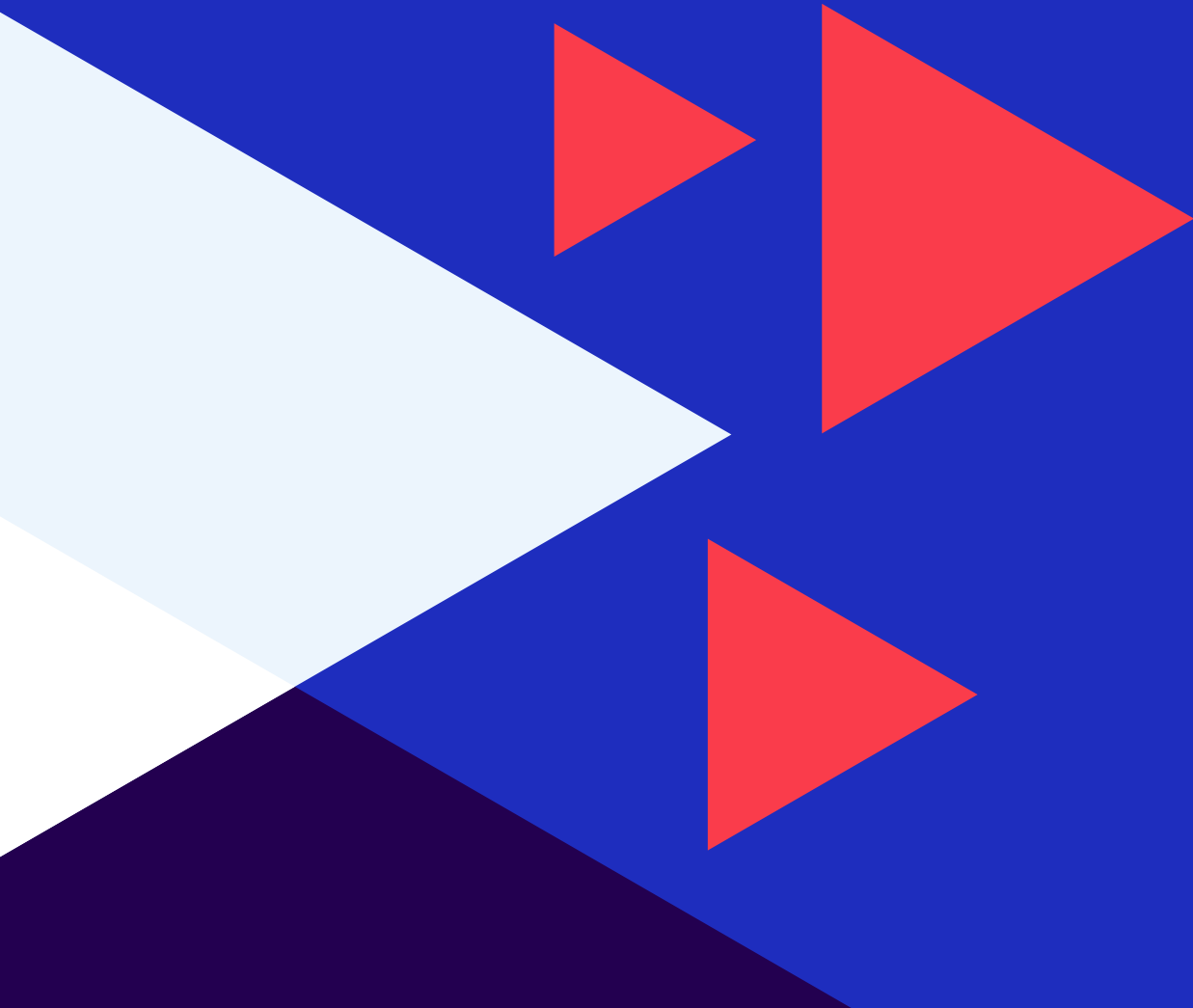
A fixed five-year plan may not be agile enough to adapt to rapid changes in the marketplace, technology and customer demands. Adopting an Agile-like approach to planning will help to respond effectively to technological advances (such as machine learning, AI, new security threats and so on), digital trends, market disruptions and regulatory shifts. This will help to make the LSSO digital strategic plan responsive, agile and flexible. A digital transformation task force in collaboration with governance teams should frequently evaluate key performance indicators. The LSSO should also focus on strengthening collaboration among internal teams and engaging external stakeholders, such as government agencies, technology providers and industry experts.

Enhanced feedback loops with emphasis on continuous learning, adaptation and improvement should be used. By incorporating feedback at multiple stages, the LSSO can deliver better services, improve customer satisfaction and drive ongoing innovation.



01

Introduction



The Lao Social Security Organization (LSSO) is the key institution responsible for managing and implementing social security policies and programmes in the Lao People's Democratic Republic. The LSSO operates under the supervision of the Ministry of Labour and Social Welfare (MoLSW) and is managed by a Board of Directors that includes representatives from the Government, employers and employees. The LSSO plays a crucial role in the implementation and success of the National Social Protection Strategy, through expansion of social security coverage and strengthening social security service delivery.

Through guided digital transformation, the LSSO is working to enhance its service delivery and operational efficiency in order to make social security more accessible and effective for all workers in the Lao People's Democratic Republic. The ILO is supporting the LSSO with its digital transformation journey, and in 2024, the LSSO's Information Technology Division (LSSO IT) began working with a third-party software company to design and develop a mobile app that integrates with existing LSSO systems and links to other government databases and systems outside of the LSSO through the use of application programming interfaces, or APIs.

► **Box 1. What is an API?**

An application programming interface, or API, connects various systems, servers, applications and devices by allowing them to communicate with one another. APIs unlock many benefits, ranging from enhanced user experiences to increased business efficiency. The most common advantages of APIs include:

Interoperability and innovation: APIs can be used by external stakeholders to securely connect to internal systems. This spurs innovation and accelerates development by enabling developers to repurpose existing functionality to create new digital experiences for customers, such as adding new functionalities and services over time.

Automation: APIs can be used to automate repetitive, time-consuming work so that humans can focus on more complex tasks.

Security: APIs can provide an additional layer of protection against unauthorized breaches by requiring authentication and authorization for any request to access sensitive data.

The ultimate purpose of this report is to put forward a road map for the LSSO's digital transformation and service delivery optimization. To this end, the report focuses on a number of outputs, as follows:

1. Analysis of government legislation, policies and frameworks that are relevant to digital transformation at the LSSO.
2. A situational analysis of the LSSO's digital ecosystem that identifies areas for improvement.
3. A short- and medium-term mobile app and API development plan to help LSSO IT achieve project success.
4. A road map of milestones to achieve, providing actionable recommendations and innovative ways to overcome operational challenges.
5. Recommendations for digital transformation strategies for the LSSO to reference in this nascent stage of its digital transformation journey.

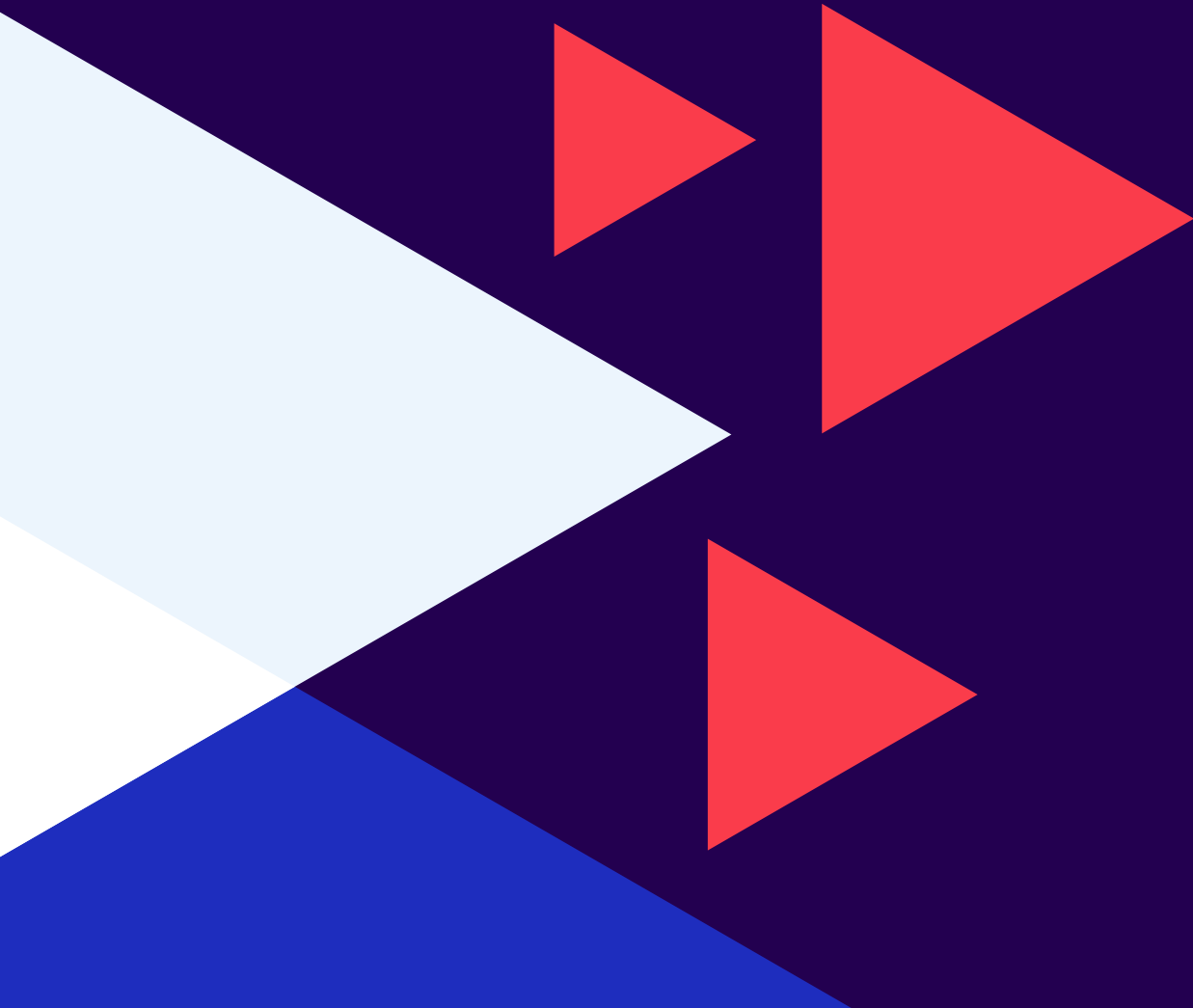
This report continues in Section 2. with a brief overview of the methodology employed to collect and assess information relevant to digital transformation at the LSSO. This is followed in Section 3 by an overview of the digital ecosystem in the Lao People's Democratic Republic. Section 4 considers national and regional frameworks related to digital government, including Lao national strategies/plans and relevant legislation. Section 5 provides an overview of the social security landscape in the Lao People's Democratic Republic, including an examination of the strategic framework and the LSSO itself, with a particular focus on LSSO IT. Section 6 examines the broader questions of digital transformation at the LSSO, before Section 7 explains what may be involved in the creation of an LSSO mobile app and API from a stakeholder needs perspective and in view of good practices in digital development. Section 7 also provides a detailed overview of the specific tasks and milestones that will be required to make the mobile app, the API and additional supporting initiatives a reality. The report concludes with Section 8, which provides a series of recommendations aimed at supporting the digitization of the LSSO to better serve stakeholders in both the public and private sectors, including Lao employers and workers.





02

Methodology



The contents of this report rely on a mixed methods approach using both qualitative and quantitative techniques to analyse the current situation and strategies of the LSSO IT department. This includes:

- ▶ three missions to LSSO headquarters;
- ▶ key informant interviews with all LSSO division heads;
- ▶ discussions with personnel from the “Reducing vulnerability in the Lao PDR: Advancing social protection and labour rights and entitlements in the coffee and tea sectors of Lao PDR” (SOLAR) project;
- ▶ meetings with MoLSW staff operating the Ministry's Labour Market Information System (LMIS), as well as LuxDev consultants;
- ▶ one visit to an LSSO branch office;
- ▶ one visit to an LSSO provincial office;
- ▶ three surveys for all LSSO IT staff, and follow-up face-to-face meetings with LSSO IT division heads;
- ▶ meeting and discussions at the Ministry of Technology and Communications (MTC);
- ▶ meetings with external software developers (SB LAB 856);
- ▶ review of the legal frameworks in which the LSSO operates; and
- ▶ review of documents supplied by the ILO and LSSO.

Reviews of government policies, laws and frameworks were performed to ensure that LSSO strategies are aligned with the national and regional frameworks and policies. A more detailed overview of key informant interviews carried out for this study can be found in Annex 1.

03

Digital ecosystem in
the Lao People's
Democratic Republic



As the LSSO aims to launch a new mobile app and associated APIs in 2025, understanding the context of the wider digital ecosystem in the Lao People's Democratic Republic is important.

The scope of the challenge faced by the Lao People's Democratic Republic when it comes to advancing its digital ecosystem can be seen in the country's rankings in the Network Readiness Index (NRI), one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. The 2024 NRI report maps the network-based readiness landscape of 133 economies based on their performances in four different pillars: technology, people, governance and impact. **The Lao People's Democratic Republic ranks 108th out of the 133 economies** (Dutta and Lanvin 2024).

3.1. Internet connectivity

► **Figure 1. Internet infrastructure connectivity map of the Lao People's Democratic Republic and surrounds**



Source: ITU, n.d.-a.

As a landlocked country, the Lao People’s Democratic Republic faces challenges in relation to internet connectivity because of its lack of direct access to submarine cables, with this issue further exacerbated by the country’s mountainous terrain and limited infrastructure. These factors contribute to high latency and unreliable connectivity, especially in rural areas. The Lao People’s Democratic Republic depends heavily on its neighbouring countries to secure connectivity to the general internet, leading to higher costs and lower per capita internet bandwidth than countries with direct access to submarine cable systems. Within this context, the Government has committed to expanding high speed internet via a fibre optic transmission network across all 148 districts nationwide, as outlined in its 9th National Socio-Economic Development Plan (2021–2025). To achieve this, the Government has prioritized enhancing its connectivity infrastructure as part of a broader strategy to transition from a “landlocked country” to a “land-linked country”. The national fibre optic backbone spans approximately 98,500 kms as of May 2024, and is largely part of the Greater Mekong Subregional Information Superhighway, a regional effort that aims to enhance connectivity and cooperation among the Lao People’s Democratic Republic, Cambodia, China, Myanmar, Thailand and Vietnam – and, in turn, the rest of the world.

3.2. Mobile penetration

Mobile networks in the Lao People’s Democratic Republic cover the vast majority of the population, but admittedly not through the latest generation technology. According to the latest available data from the International Telecommunications Union, in 2021, 2G services covered 95 per cent of the population, 3G coverage reached 85 per cent, and 4G coverage stood at 52 per cent (Table 1). In the National Socio-Economic Development Plan (2021–2025), the Government set a target of expanding 3G coverage to 100 per cent of the population and 4G coverage to 90 per cent by 2025.

► Table 1. Mobile network coverage in the Lao People’s Democratic Republic

Mobile network generation	Coverage of total population (%)	Expected real-world speed	Real-world applications
2G	95	Up to 50Kbps	SMS, phone calls, MMS, WAP
3G	85	Up to 7.2 Mbps (HSPA+)	Social media, simple video calling, browsing, video streaming
4G	52	Up to 100 Mbps (4G) Up to 1 Gbps (4G LTE)	Conferencing, video streaming, gaming, cloud computing
5G	Limited	Up to 1 Gbps (sub-6GHz) Up to 10 Gbps (mmWave)	4k/8k video, Smart City, connected cars and autonomous vehicles, Internet of Things, augmented/virtual reality, industrial automation, telemedicine

Source: World Bank 2022 and independent research by the author.

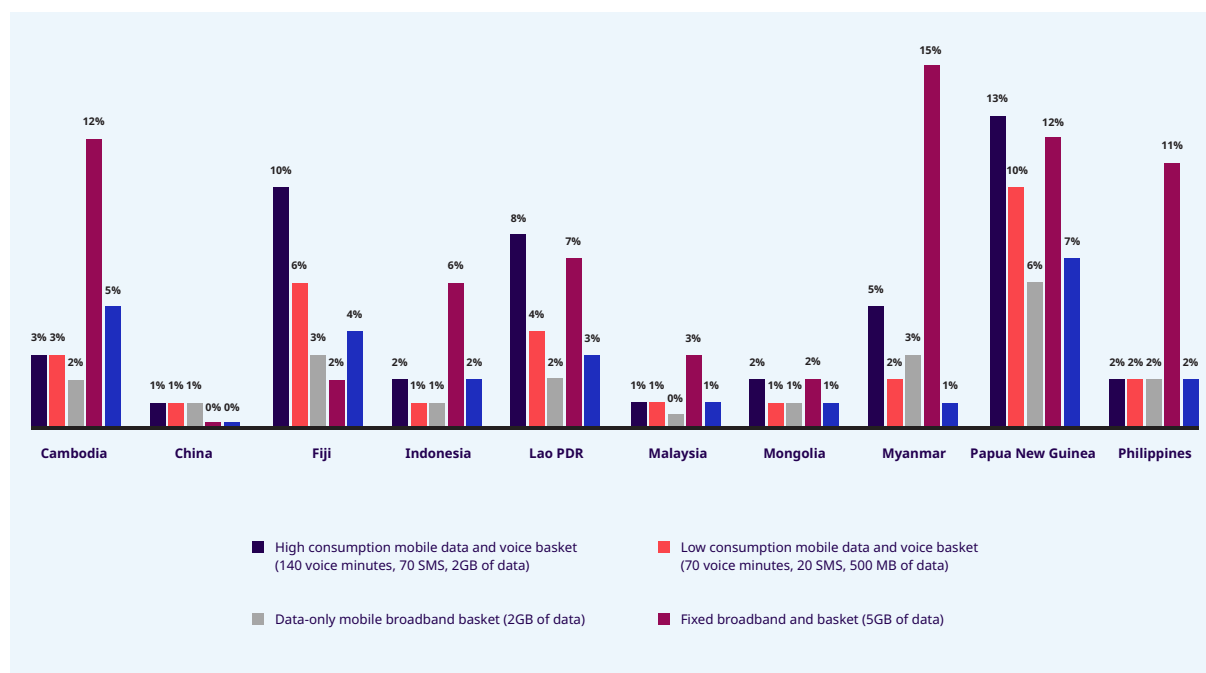
3.3. Affordability and accessibility

As of January 2024, the population of internet users in the Lao People's Democratic Republic was approximately 5.08 million, or 66.2 per cent of the total population of around 7.69 million. According to the Lao Social Indicator Survey-III 2023, 68.9 per cent of households have access to the internet by any device at home. These figures obscure differences and gaps in internet usage between Vientiane and rural areas (38.6 per cent of the population live in urban areas, while 61.4 per cent live in rural regions), as well as the digital divide between men and women. For instance, the COVID-19 pandemic exposed a significant digital divide in the Lao People's Democratic Republic: while urban areas had relatively reliable access to digital services, rural areas struggled because of inadequate digital infrastructure. This disparity affected the ability of individuals in rural areas to access vital information and services during the pandemic.

The available information on mobile data costs within the Lao People's Democratic Republic is mixed and inconclusive, with different studies suggesting everything from significant price drops in recent years to increases driven by inflation. A 2023 study ranked the Lao People's Democratic Republic as the 14th cheapest country in the world for the cost of mobile data, with 1GB of mobile data costing US\$0.25 on average (BestBroadbandDeals.co 2023). This placed the Lao People's Democratic Republic second in South-East Asia, and represented a drastic improvement from 2022, when the same study calculated the estimated average cost of 1 GB of data to be US\$0.99. However, the Alliance for Affordable Internet (A4AI) found that the cost of mobile data in the Lao People's Democratic Republic exceeds the A4AI's affordability target of 2 per cent of gross national income per capita (Figure 2). The high cost of internet compared to income constitutes a significant barrier to access, and consequently limits economic, educational and social opportunities, particularly in rural and underserved communities, by slowing the adoption of digital services and applications.

The rapid depreciation of the Lao kip in recent years has also exacerbated the complexity of affordability concerns. For example, mobile data plans now provide half the data they previously offered because of the kip's nearly 50 per cent depreciation and devices purchased with Lao currency have witnessed a twofold increase in cost. This intricate interplay of factors necessitates a comprehensive evaluation to better understand the current landscape of internet affordability in the Lao People's Democratic Republic.

► **Figure 2. Cost of ICT services as a share of GNI per capita in selected countries in 2022, by ICT price basket**



Source: ITU, n.d.-b.

Similarly, the extent to which the cost of internet-accessible devices acts as a barrier to internet access in the Lao People's Democratic Republic also remains unclear, though various studies provide insights into mobile phone ownership among the Lao population. For instance, the Lao Social Indicator Survey-III 2023 shows that approximately 80 per cent of individuals aged 15–49 own a mobile phone. Similarly, a 2024 Association of Southeast Asian Nations (ASEAN) Digital Literacy Program report found that about 88 per cent of their Lao sample owned a mobile phone (ASEAN Foundation 2024). **Budget smartphones typically retail for a minimum of US\$60, which represents approximately 40 per cent of the average Laotian monthly income.** This cost burden is likely even higher for individuals in rural areas, where average monthly incomes are lower.

3.4. Digital literacy and skills

The Lao People's Democratic Republic ranks poorly compared to its South-East Asian neighbours on global indices of digital readiness. For instance, in the 2023 Network Readiness Index, the Lao People's Democratic Republic placed 98th out of 134 countries in the preparedness of individuals for ICT use. According to the Lao Social Indicator Survey-III 2023, approximately 8 per cent of individuals aged 15–24 engage in computer-related tasks, slightly below the national average of around 10 per cent.

According to a Digital Maturity Assessment (DMA) of the Lao People's Democratic Republic conducted by the United Nations Development Programme (UNDP), which broadly evaluated digital skills across the Government, only about 60 per cent of ministry and provincial-level public employees show competence in basic ICT and digital skills. In addition, both central and provincial government offices face challenges as their dedicated information technology (IT) support staff often lack qualifications or certifications. **The DMA highlighted that nearly 80 per cent of ministries, including the MTC, have not established clear employee development paths for ICT-focused civil servants, nor have they offered adequate pay or retention incentives for these positions (UNDP 2022).**

Addressing these gaps is integral to the implementation of the **Digital Government Masterplan (2023)**, which outlines several critical actions. These include establishing a Skills Development Council involving the MTC, the Ministry of Education and Sports, MoLSW, and other relevant entities. The MoLSW – which was itself identified in the DMA as a ministry with significant digital skills deficiencies – is tasked with conducting a comprehensive assessment of the Government's digital skills gaps, aiming to identify immediate and long-term training needs to enhance digital proficiency across the Government. As part of the Digital Government Action Plan, the MoLSW and MTC are tasked with creating defined career paths and job descriptions for digital government professionals. This initiative will probably affect the LSSO positively as it seeks to improve its digital service delivery and operational efficiency. The MoLSW and MTC are also developing a digital learning platform that will feature training materials produced in collaboration with the Ministry of Home Affairs (MoHA) and private sector partners. These initiatives are crucial steps towards improving digital service delivery and ensuring that the Government's workforce is prepared to effectively meet the challenges of the digital age.

3.5. Cybersecurity

The Government has been working with international partners and organizations to strengthen cybersecurity in the country. The Lao Computer Emergency Response Team (LaoCERT) plays a crucial role in handling cybersecurity incidents, including through collaboration with other organizations and by strengthening international cooperation. In a 2022 incident report submitted to APCERT², LaoCERT highlighted online scams as the most frequently reported cyber incidents, with these often linked to Chinese Special Economic Zones and targeting vulnerable workers and migrants for exploitation and human trafficking. Phishing scams were also prevalent, where cybercriminals impersonate Banque Pour Le Commerce Extérieur Lao (BCEL) staff via platforms like WhatsApp and TikTok. Ransomware attacks have been less common, partly attributed to limited financial liquidity within digital systems in the Lao People's Democratic Republic.

² Namely, the 5-Year National Digital Economy Development Plan (2021–2025).

04

**Digital government:
Overview of policy and
regulatory frameworks**



The Lao People's Democratic Republic is embarking on modernizing its governing systems by implementing online government services and platforms. By digitizing administrative processes, the Government aims to increase efficiency and citizen engagement. This transition to e-governance will enhance transparency and provide citizens with easier access to services.

Within this broader effort to digitize government, alignment of the LSSO's operations with national policies and regulations is crucial. This being so, this section examines the broader digital government objectives of the Lao People's Democratic Republic as set forth in applicable legislation, policies and frameworks.

4.1. International frameworks

As a Member State of ASEAN, the Lao People's Democratic Republic has also committed to the **ASEAN Digital Master Plan 2025**, whose Development Objective 2 calls for increased quality and coverage of fixed and mobile broadband infrastructure.

In addition, Strategy 7 of the Lao 10-Year National Digital Economy Development Strategy (2021–2030) specifically references the aim of implementing the **United Nations Sustainable Development Goals**, including through “embedding digital technology as a foundational factor in people's living and business operations”.

4.2. National policy framework

Digital transformation is a core component of the Lao People's Democratic Republic's strategy to modernize the economy, enhance public services and increase competitiveness in the global market. The Government wishes to have comprehensive integration of digital technology into all areas of business and government, changing how these entities operate and deliver value to citizens.

The National Digital Economy Development Vision (2021–2040) and Strategy (2021–2030) outline the **long-term goals for digital transformation in the Lao People's Democratic Republic, aiming to increase the digital economy's contribution to GDP from 3 per cent to 10 per cent by 2040**. The Lao Government's strategy focuses on several pillars, including digital government services, digital payment systems, human resource development in digital skills, support for micro-, small- and medium-sized enterprises (MSMEs) in the digital sector, and enhancing digital security. The establishment of the Payment Systems Department by the Bank of the Lao PDR in 2018 to supervise digital payment systems is a testament to these efforts.

4.2.1. 20-Year National Digital Economy Development Vision (2021–2040)

Through the 20-Year National Digital Economy Development Vision (2021–2040), the Lao People's Democratic Republic has unveiled a forward-thinking road map aimed at transforming the nation into a digital economy by 2040. Recognizing the global shift towards digital platforms, the Lao People's Democratic Republic is embracing change to reduce poverty and boost its economic stature regionally and internationally. The comprehensive framework of the 20-year plan aims to integrate digital technologies across various sectors, calling for substantial improvements in digital infrastructure, the creation of value-added services and building human resource skills to support this digital transformation.

The plan not only aims to improve productivity and economic growth, but also to position the Lao People's Democratic Republic as a self-reliant nation with a robust economic structure. **The plan includes a combination of a long-term vision, a medium-term strategy³ and a short-term development plan⁴ to ensure a strategic rollout of this digital transformation.** Overall, the Lao People's Democratic Republic envisions a digitally driven economy that contributes significantly to national GDP.

4.2.2. 10-Year National Digital Economy Development Strategy (2021–2030)

The 10-Year National Digital Economy Development Strategy (2021–2030) seeks to systematically advance the Lao People's Democratic Republic's digital aspirations, as laid out in the 20-Year National Digital Economy Development Vision detailed above. Priorities of the Strategy include legislative development, infrastructure advancement and cybersecurity. By focusing on these pillars, **the Lao People's Democratic Republic aims to embrace digital practices in public administration and services.** The Strategy is itself supported by the more detailed 5-Year National Digital Economy Development Plan (2021–2025), which lays out the specific actions to be taken during the first half of the Strategy's deployment.

A major component of Strategy is enhancing the country's digital infrastructure. This includes: expanding high-speed internet access, especially in underserved regions; increasing internet penetration; and enhancing telecom networks, including 5G connectivity.

Amidst this proposed digital expansion, ensuring cybersecurity will be imperative. To this end, the Strategy emphasizes creating resilient systems to safeguard data and maintain public trust. Enhancing the Lao People's Democratic Republic's cybersecurity infrastructure will necessarily involve proactive threat management and establishing protocols for managing data breaches. **The plan involves updating legislation to protect digital transactions and consumer rights by building a safe digital environment.** The Government is establishing committees to oversee the implementation of cybersecurity practices across industries, thereby promoting secure digital economy practices. Plans also include developing expertise within local institutions to detect and neutralize cyber threats effectively. Protecting digital assets and private information will ensure that digital growth is sustainable, with citizens and businesses enjoying the benefits of a secure environment. **Building this trust is vital for ongoing development.**

³ The TaxRIS system already has APIs in place with other government databases, making it a particularly good candidate for the LSSO to connect with via its own API.

⁴ Vanity metrics are statistics that look spectacular on the surface but do not necessarily translate to any meaningful results. Common examples include the number of social media followers or the number of views on a promotional video, as these do not necessarily indicate that users actually undertook a desired behaviour (for example, registration with the NSSF).

Embracing innovative technologies like artificial intelligence (AI) and blockchain presents unique opportunities for the Lao People's Democratic Republic' digital future. These technologies are expected to revolutionize various sectors by improving efficiency and transparency. **The Strategy encourages the deployment of AI in public services to enhance decision-making and the use of blockchain technology for secured transactions.** For more on AI in the current Lao context, see section 4.4.2 below.

4.2.3. Digital Government Strategy and Master Plan

Following the 2022 Digital Maturity Assessment, the MTC developed a Digital Government Strategy and Master Plan in partnership with the UNDP. The vision of this strategy is that the Government becomes “a fully digital-enabled government that can provide equally accessible, transparent and quality services”. The Master Plan provides a prioritized road map for short-, medium- and long-term digital government reforms, and catalyzes the establishment of a Digital Government Centre and an inter-ministerial body under the coordination of the MTC. These bodies will adopt a holistic “whole-of-government” approach, leveraging specialized expertise from various ministries as necessary. **The broad goals of the Master Plan are to increase transparency and accountability in government, strengthen the institutional structure and authority of digital government to deliver digital public services, build a strong ICT infrastructure to expedite the deployment of digital government, and increase the digital literacy of civil servants.**

4.3. National regulatory framework

Implementing such an extensive strategy demands robust legal and governance structures. The Lao People's Democratic Republic is committed to amending existing regulations and creating new legislation to facilitate smooth digital operations. Enabling policies for digital platforms, cybersecurity and e-commerce are being prioritized to ensure compliance with international standards. These legislative measures will also provide a regulatory environment that supports innovation and digital payment systems, boosting user trust and safeguarding data. **By focusing on strong governance, the Lao People's Democratic Republic plans to create a conducive landscape for digital innovation and growth while protecting its citizens.**

The Lao People's Democratic Republic has firmly committed to advancing digital government through its National Digital Government Plan, which is integral to the broader 5-Year National Digital Economy Development Plan (2021–2025) referred to above. The National Digital Government Plan outlines roles, responsibilities, goals and objectives aimed at digitizing 50 per cent of government services by 2025. To support these efforts, the Government issued Decree No. 290/2022 on Digital Government Administration and Services. **The Lao People's Democratic Republic has laid down a legal and regulatory framework for digital governance, including laws on electronic transactions, digital signatures, data protection, consumer protection and cybercrime prevention** – all of which are discussed in the subsections that follow.

Despite these positive developments, **there is still significant ground for the Government to achieve a more comprehensive digital government transformation.** The aforementioned UNDP Digital Maturity Assessment categorized the Lao People's Democratic Republic as being “digitally nascent”, the lowest level among five used to evaluate a country's readiness in digital systems, services and capacities. **There is significant variability in digital competency across ministries and institutions.** For instance, the Ministry of Planning and Investment, the MTC and the Bank of the Lao PDR demonstrated higher scores in the DMA; whereas the MoLSW (which oversees the LSSO), the National Assembly and the Ministry of Justice showed notably lower scores.

4.3.1. Decision on Electronic Signatures, No 1101/MPT (2020)

In an era where digital interactions are pivotal, the Lao People's Democratic Republic is steering its way to secure electronic transactions through an official Decision on electronic signatures. In 2018, the National Assembly passed the Law on Electronic Signatures, No. 59/NA, which paved the way for certain types of electronic signatures to be used within the Lao People's Democratic Republic in place of traditional handwritten signatures.

The Law was operationalized through the Decision on Electronic Signatures, No. 1101/MPT, issued by the Ministry of Posts and Telecommunications⁵ in 2020, which aimed to strengthen national security and socio-economic growth by establishing clear guidelines for the use, management, and certification of electronic signatures. This Decision states that its purpose is "to promote the conduct of business in an orderly manner: accurate, standardized, modern and prompt, aimed at protecting the rights and interests of the State, individuals, legal entities and organizations to ensure national security, peace and social order contribute to the socio-economic development of the nation" (article 1). A detailed overview of the Decision on Electronic Signatures is available in Annex 3 of this report.

► Box 2. What are electronic signatures?

Electronic signatures, also known as e-signatures, are digital equivalents of traditional handwritten signatures. They enable individuals to sign documents, agreements or transactions electronically, replacing the need for physical paperwork and ink signatures. E-signatures are legally binding, secure and can be verified for authenticity.

E-signatures are based on digital encryption and authentication technologies, ensuring the signer's identity and the integrity of the signed document. They can take various forms, such as a scanned image of a handwritten signature, a digitally drawn signature, or a simple electronic authentication process using a unique identifier like a password or PIN.

4.3.2. Law on Electronic Transactions (2012), as amended (2022)

Since the 2012 enactment of Law on Electronic Transactions, the e-commerce scene has rapidly developed in the Lao People's Democratic Republic. Seeing increased mobile usage for transactions, stakeholders urged legal updates. This led to a collaboration between the MTC and the United States Agency for International Development (USAID) that aimed to align the law with international standards. The resulting 2022 legislative update to the Law on Electronic Transactions solidifies e-commerce in the Lao People's Democratic Republic by ensuring that paper-based and electronic documents receive equal treatment under the law.

⁵ This ministry has since been replaced by the Ministry of Technology and Communications.

4.3.3. Law on Prevention and Combating Cyber Crime (2015)

The Law on Prevention and Combating Cyber Crime, No. 61/NA (2015) aims to address and mitigate cyber threats, ensuring the security of information systems and data. The Law criminalizes cybercrime; sets up campaigns to mitigate and prevent cybercrime, including training, education, increasing awareness and developing better data and network security; and establishes LaoCERT as the nationally designated Computer Security Incident Response Team and outlines its responsibilities. While not specifically targeting the LSSO, the Law affects it in several significant ways:

Data protection and security: The law mandates stringent measures to protect data against cyber threats, which is crucial for the LSSO given its handling of the sensitive personal and financial information of its members. The LSSO must ensure that its data handling and storage practices comply with the cybersecurity measures outlined in the law to prevent data breaches and cyberattacks.

Compliance and legal obligations: The LSSO is required to adhere to the legal standards set by the Law, which include implementing adequate cybersecurity protocols and reporting mechanisms for cyber incidents. Failure to comply can lead to legal repercussions, including fines and penalties, which would require a robust internal cybersecurity policy and regular audits.

Training: Abiding with the legal obligations set by the law effectively requires ongoing training for the LSSO staff in cybersecurity best practices and the latest developments in cyber threat management. This is essential to equip them with the skills needed to recognize and mitigate potential cyber risks.

By safeguarding its digital infrastructure against potential cyber threats, the LSSO ensures the continuity of its operations. This is vital for maintaining trust in and the reliability of the social security system, as any disruption could affect the timely delivery of benefits and services to its members.

4.3.4. Data protection legislation

A series of laws aimed at regulating electronic data, cybercrime, telecommunications and protection of children's data have shaped the Lao People's Democratic Republic' data protection landscape. **Key regulations like the Law on Electronic Data Protection (2017) and the aforementioned Cybercrime Law (2015) lay down comprehensive rules for handling electronic data.** These include guidelines for data collection, usage and sharing, ensuring the safety and confidentiality of digital information across sectors. Supplementary laws cover areas like commercial banking and electronic transactions, further fortifying the foundation of data protection in the Lao People's Democratic Republic.

► **Box 3. What is data protection legislation?**

Data protection legislation refers to a set of laws, regulations and legal frameworks designed to protect individuals' privacy and personal data. These legislations govern how personal data should be collected, processed, stored and shared by organizations, businesses and government entities. **They also provide individuals with rights to access and control their personal information.**

Some notable examples of data protection legislation from around the world include the [General Data Protection Regulation](#) in the European Union, the [California Consumer Privacy Act](#) in the United States of America, and the [Personal Data Protection Bill](#) in India.

Data protection legislation in the Lao People's Democratic Republic mainly refers to the protection of data in the electronic format, which can be found in the Law on Electronic Data Protection, No. 25/NA (2017). The Law provides data protection to Lao citizens in circumstances where electronic information is collected, accessed, used or disclosed. **The Law provides for general protection of personal information and establishes essential concepts such as consent, data retention and deletion practices, and ensuring data accuracy.** The Law has been supplemented by the Instructions on the Implementation of the Law on Electronic Data Protection (2018), which sets out examples of how data protection procedures may be implemented by companies.

The data protection laws in Lao categorize data into general and specific types, with specific data requiring explicit consent from data subjects for access or disclosure. This approach ensures that sensitive information is protected and only manipulated under strict regulatory oversight. Data subjects in the Lao People's Democratic Republic have significant rights concerning their electronic data. Users can be informed about data collection purposes, access and change their data, request data erasure, and object to data sharing. However, **the right to data portability and protection against automated decisions are not granted under current laws.**

Data controllers in the Lao People's Democratic Republic must adhere to a set of obligations, including guaranteeing data security, maintaining confidentiality, and complying with national and international agreements. These responsibilities aim to uphold data integrity and prevent unauthorized data dissemination. Controllers must also ensure smooth coordination between technical systems and regulatory bodies during data transfers.

The **Ministry of Technology and Communications** is the central authority overseeing data protection and cybercrime in the Lao People's Democratic Republic. It coordinates with other ministries and agencies to enforce laws and policies, promote data protection awareness, and ensure compliance. The MTC's duties include developing technical standards, managing electronic security codes, and offering training in data protection.

4.3.5. Draft legislation

There are some draft laws and strategies that might affect the LSSO as it intersects with digital government initiatives and cybersecurity measures. An expected update to the Cybersecurity Law will directly affect how the LSSO manages and secures its digital infrastructure. As part of a cybersecurity initiative under the Digital Government Strategy and Master Plan, the MTC has been working on a new Cybersecurity Law that was expected to be completed in 2024, and will define critical infrastructure and include new regulations that will be crucial for the LSSO to comply with, ensuring the protection of sensitive social security data against cyber threats.

Proposed revisions to the Law on Data Protection could also affect the LSSO, particularly in relation to how it handles the personal data of beneficiaries.

4.4. Notable gaps in the national regulatory framework

4.4.1. Digital ID/unique identification number

The Lao People's Democratic Republic currently lacks a unified national ID system, resulting in institutional overlap and confusion and complicates the development of a national digital ID or unique identifier number (UIN).

A national identity card is a compulsory form of identification, issued by the Ministry of Public Security (MPS) on behalf of the MoHA. **In 2021, it was estimated that one-quarter of all adults held a valid national ID.** In 2015, the Government launched a \$37.5 million Electronic Identification Card Project to provide all citizens with new electronic identification cards. China Eximbank supported the project through a preferential buyer's credit, with Huawei Technologies Co., Ltd. supplying the platform. The Family Management and Grass Roots Development Department of the MPS began issuing the E-ID cards in a phased rollout that will replace the old cards. The initiative targeted Laotian citizens aged 15 and above. Once the customer management information system (CMIS) for e-civil registration and vital statistics (e-CRVS) is fully operational, these two systems could be integrated, paving the way for a unique identifier number for all citizens. **The vision includes interoperability between the e-CRVS, CMIS, the MPS family book system, and DHIS2 (District Health Information System 2), aiming for a comprehensive approach to civil registration, identity management and legal identity management from birth to death.**

In August 2024, Viet Nam pledged to support the Lao People's Democratic Republic in building a National Population Database and Identity Card Management System. **This situation requires close monitoring, as it may affect the future of LSSO digital systems, requiring API connections for ID verification and e-Know Your Customer (KYC) requirements.**

The Lao People's Democratic Republic will also need to enact a Digital Identity Law to facilitate the implementation of a national ID system, as no such regulation exists as of late 2024. According to the National Digital Government Master Plan, the MTC and MoHA will oversee the establishment of the national ID system. **The Master Plan also aims to issue national IDs to 50 per cent of the population by 2029.** During the COVID-19 pandemic, the Lao Know Your Customer (LaoKYC) programme launched by the MTC enabled users to report symptoms and register for testing and vaccinations via a mobile phone connection. Nearly all telephone numbers in the Lao People's Democratic Republic have been registered through LaoKYC, funded by mobile network operators.

4.4.2. Artificial intelligence

The Lao People's Democratic Republic does not have specific laws dedicated to regulating AI. The legal and regulatory regime in the Lao People's Democratic Republic is still developing, with significant gaps in key technical areas, including AI. This gap in the legal framework suggests that while AI may be used in various sectors, there are no specific legal safeguards or governance structures in place to regulate its use, address potential human rights issues, or protect against technology-facilitated gender-based violence related to AI. Efforts are being made to engage with international partners and regional bodies to enhance the Lao People's Democratic Republic's legal and regulatory capabilities, which could eventually lead to the development of AI-specific legislation. However, as of now, the focus remains on updating existing digital laws to better reflect the rapidly evolving digital landscape.

In addition to the lack of AI legislation, the **Lao People's Democratic Republic does not have a national, overarching strategy specifically devoted to AI.** However, several measures have already been taken to lay the groundwork for AI adoption in both the public and private sectors. These initiatives are part of broader efforts to enhance the digital landscape and support economic development through technological advancements. The Government's approach includes revising policies to encourage foreign investment in AI and promoting AI education at the university level. These actions are in alignment with the broader goals outlined in the 10-Year National Digital Economy Development Strategy (2021–2030) and the 5-Year National Digital Economy Development Plan (2021–2025), which aim to build a robust research and development ecosystem, which includes AI research, and to invite foreign private investment into AI to improve research and development in this area. While these efforts indicate a move towards integrating AI into the Lao People's Democratic Republic's socio-economic development, the absence of a dedicated national AI strategy means that the country's approach is currently more about creating a conducive environment for AI development rather than implementing a structured strategy.

The broader governmental focus on digital capabilities and integrating AI technologies in public services could influence how the LSSO adopts and implements AI solutions in the future, particularly in automating and enhancing service delivery.



05

**Social security:
Overview of strategic and
institutional frameworks**



This section begins by stepping back from a strict focus on digital government to offer an overview of the strategic framework that governs the operations of the LSSO in reference to its core mission of collecting social security contributions and distributing social security benefits. This is followed by an examination of LSSO IT, the key department driving the digital transition within the LSSO in line with the objectives set out in Section 4.

An overview of the Social Security Law (2013, as amended in 2018) can be found in Annex 4 of this report, and a brief look at the laws and decrees that collectively establish the legal and operational framework of the LSSO can also be found in the Annex 5.

5.1. Strategic framework for social security

5.1.1. National Social Protection Strategy (Vision 2030, Goal 2025)

The National Social Protection Strategy (Vision 2030, Goal 2025) (NSPS) was adopted in 2020 with the goal of strengthening the nation's social protection system by 2030. Structured around the three pillars of health insurance, social security and social welfare, the Strategy aims to reduce poverty and inequality, boost socio-economic development and reinforce social cohesion among residents. **By 2025, the NSPS plans to strengthen the social protection system to protect people from socioeconomic shocks and life-cycle risks and to build resilient communities.** It seeks to align with international standards such as the Universal Declaration of Human Rights and the Sustainable Development Goals, with the intention of promoting inclusive economic growth and addressing growing inequality.

One of the NSPS pillars is to fortify social security to protect workers in formal enterprises and in the informal sector. The Strategy aims for greater social security coverage through increased outreach via digital and physical means, as well as through law enforcement by improving the legislative framework and implementing mechanisms for monitoring compliance. The NSPS also aims for reform of benefits and better alignment with international labour standards, backed by necessary financial assessments and studies.

The Lao People's Democratic Republic aims to extend social welfare to include broader coverage for poor and vulnerable groups such as children, persons with disabilities and the elderly. These initiatives are crucial, given that not all people have benefited equally from economic growth. By rolling out social welfare programmes to complement the social security system, the NSPS is committed to uplifting those sectors of the community that have been disadvantaged or marginalized. The approach is inclusive, mindful of cultural contexts and designed to bridge inequality gaps, ensuring that these groups receive adequate resources and opportunities to thrive within society.

To track progress effectively, the NSPS stresses implementing well-structured monitoring and evaluation mechanisms. These systems are crucial for assessing the Strategy's effectiveness, allowing room to adapt and refine approaches. The feedback loop created by these mechanisms will enable the identification of areas needing improvement while prioritizing transparency, timely service delivery, and data-backed decision-making.

Coordinated inter-ministerial efforts are crucial for the NSPS's successful implementation. The Strategy calls for cohesive actions across different governmental sectors to maintain alignment with broader socio-economic plans. By developing frameworks for cooperation, the NSPS seeks to streamline efforts, avoid redundancies, and maximize impact. Inter-agency collaboration is positioned as a critical driver for the successful delivery of social protection services, leveraging collective capacities and resources.

5.1.2. Five Year Social Security Development Plan 2021–2025

Drawing from state mandates, the MoLSW's Five Year Social Security Development Plan 2021–2025 aims to expand coverage, enhance management and drive sustainability in social security. With ambitious targets, the Plan promises to refine, strengthen and expand social security systems, ensuring a more secure future for all members.

In its quest for efficiency, the Social Security Development Plan emphasizes revamping administrative processes. Projects designed to strengthen organizational structures and enhance staff capabilities are underway, ensuring services are faster and more reliable. Electronic service upgrades, such as online benefit eligibility checks and contribution tracking, and efforts to reduce paperwork are already underway. An agreement has been signed with a Lao mobile money firm to disburse social security benefits. Other agreements have been made with two banks to allow users to pay National Social Security Fund (NSSF) contributions using the banks' apps. These efforts highlight that the MoLSW is focused on enhancing digital access and convenience for social security services.

The Plan calls for improved monitoring and actuarial analyses that will underpin sustainable fund management. It also aims towards strategic, low-risk and high-return investments, for greater sustainability. By 2025, the social security reserve fund is expected to reach 3,151.13 billion kip and poised to generate investment returns of 146.58 billion kip. Such efforts would not only strengthen social security, but also ensure it adapts to changing socioeconomic landscapes, providing members with robust and dependable support.

The Plan also calls for an “integrated management information system” that aims to improve the social security system by integrating the management information systems for the civil servant, formal enterprise and voluntary schemes, which are currently fragmented. Specifically, the system is to focus on:

- ▶ Integration of information systems between central and local levels
- ▶ Integration with other databases like the national ID card, the MPS's family book and the MoLSW's labour market information database

This approach is expected to streamline the management, enhance transparency and improve efficiency across the different social security schemes and ultimately provide efficient services to all members.

The Plan emphasizes upgrading management structures and staff training for more knowledgeable and tech-savvy personnel. A centralized information system is integral to the Plan, linking various schemes and facilitating online access for both enterprises and individual members. A key goal is to streamline payment processes, reducing dependence on cash and potentially integrating healthcare benefit management for a more comprehensive service offering.

► **Box 4. LSSO projects under the MoLSW's Five Year Plan 2021–2025**

Dissemination of the Social Security Law (2013, as amended in 2018): Communicate the amended Social Security Law effectively to the public by developing information, education and communication (IEC) materials for better delivery of social security information.

Monitoring and inspection for compliance: Ensure compliance with the Social Security Law by regularly monitoring and inspecting relevant labour units. Apply appropriate measures against any violations discovered during inspections.

Development and improvement of management information systems: Enhance the current systems by introducing electronic mechanisms and tools that facilitate easier access to social security information and services for members.

Single window service system improvement and electronic services development: Focus on streamlining the service system for better efficiency and reducing paper usage by developing electronic services.

Extension of social security coverage at the district level: Expand the number of social security district offices across the country, ensuring more citizens in rural and remote areas have access to these essential services.

Monitoring and supervision of health services: Oversee the quality and performance of health services provided under the National Health Insurance System.

Improvement of contribution collection and benefit payment systems: Enhance the systems' accuracy, speed and timeliness for both contribution collection and benefit payments.

Reserve fund investment monitoring: Ensure a high return rate and minimal risk by closely monitoring the investment of reserve funds.

Social security actuarial analysis: Conduct analysis and make projections of social security expenditure estimations and required contributions in each period.

Project implementation monitoring and inspection: Ensure the accuracy and transparency of projects undertaken by the LSSO by closely monitoring and inspecting their implementation.

► Box 5. Potential amendment of the Social Security Law

There is currently a collaborative effort underway among the National Assembly, government, employers, workers and other stakeholders, and with support from the ILO, to amend the Social Security Law and reform the Lao social security system to make it more robust, sustainable and aligned with international practices. These reforms are essential to provide better social protection to the Lao population, to address vulnerabilities and to support socioeconomic stability:

Alignment with international standards: As noted by Thongphanh Xayyalath, Deputy Director-General of the LSSO, in an interview for this study, there is a need to align the law with international labour standards, particularly the [ILO Social Security \(Minimum Standards\) Convention, 1952 \(No. 102\)](#). Such alignment would help to ensure that the Lao People's Democratic Republic meets global benchmarks for social security provisions, enhancing the protection and benefits for its workforce.

Addressing current gaps: The existing law has some gaps and limitations that do not adequately address the situations of workers in different types of employment or meet the current socio-economic needs of the population.

Improving financial sustainability: The proposed amendment aims to improve the financial sustainability of the NSSF. By revising benefits, eligibility requirements and contribution rates, the Fund can be better managed to ensure long-term viability and reliability.

Enhancing compliance and enforcement: Strengthening the legal framework and deepening its scope can also improve compliance with social security contributions and enforcement of the law. This is crucial for maintaining the integrity of the system.

5.2. Lao Social Security Organization

5.2.1. Vision

The vision of the LSSO is to ensure that all people across the Lao People's Democratic Republic have access to comprehensive social security benefits and services that improve their living conditions and contribute to the country's socioeconomic development. This vision aligns with the broader goals of the National Social Protection Strategy, which aims to extend social protection coverage to all citizens, particularly vulnerable populations, and to develop a robust, fair and sustainable social security system. The LSSO strives to manage social security policies and affairs legally, centrally and nationwide, ensuring that contributions from the government, employers and employees support the NSSF effectively. This vision supports the organization's commitment to fairness, accountability, transparency and sustainability in managing social security benefits.

5.2.2. Organization

The LSSO operates under the MoLSW, which provides the overarching governance and policy direction. This alignment ensures that the LSSO's operations are in sync with national labour and welfare policies.

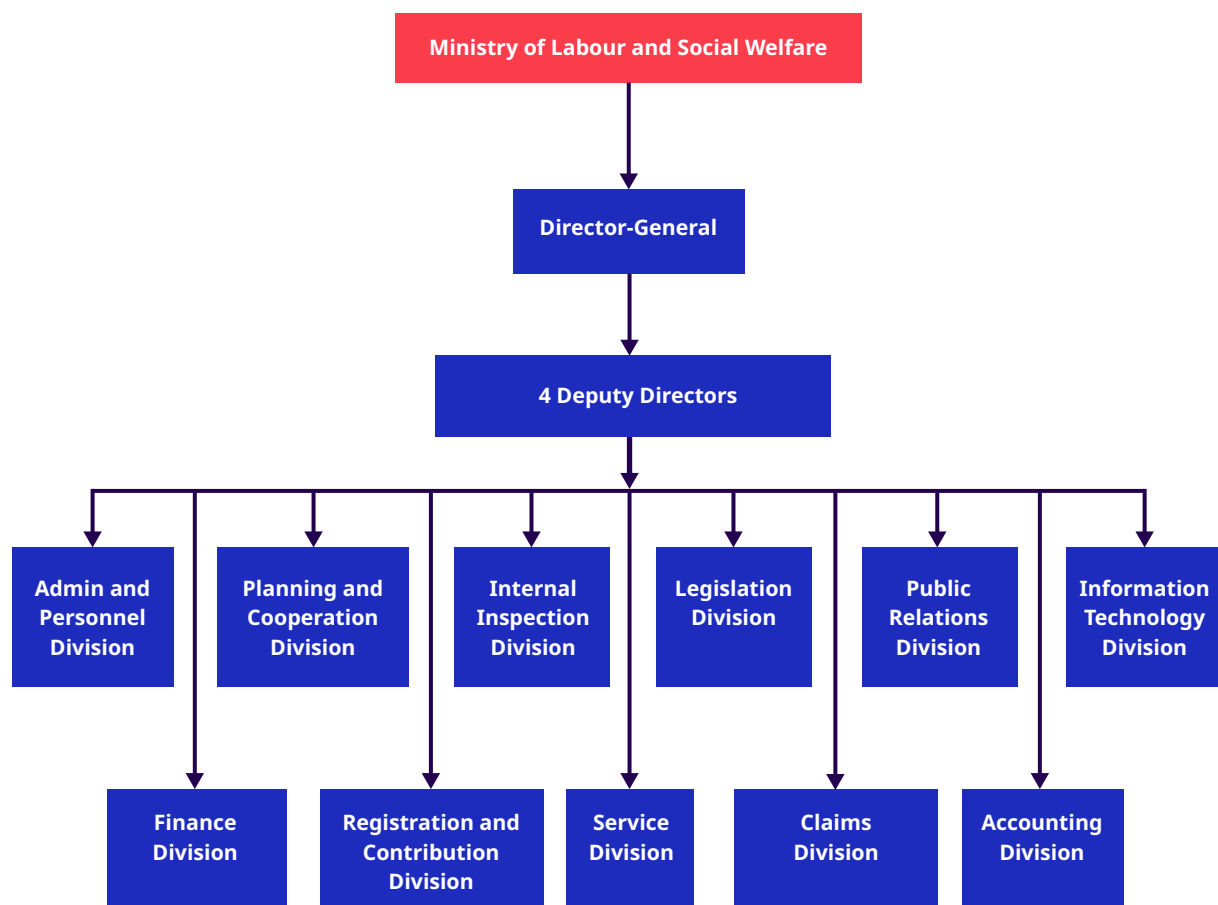
The LSSO currently employs around 450 staff and operates a network of offices to facilitate access to its services across the country. These offices include:

- ▶ 17 provincial-level offices and 1 in Vientiane Capital.
- ▶ 8 district offices are newer additions aimed at expanding the LSSO's outreach in rural areas. These district offices function primarily as counters for receiving registration applications, which are then processed at the provincial or Capital offices.

These offices are crucial for face-to-face interactions, especially for registration, claims processing and providing general information about social security benefits.

To reach remote and rural areas the LSSO also deploys mobile offices. These mobile units travel to areas with significant population concentrations to deliver information about social security, register new members and sometimes provide basic services. The LSSO also makes use of trained outreach officers to reach sparsely populated and remote areas. These officers provide information and help with registration and accessing benefits, targeting informal workers who may not have easy access to other channels.

▶ **Figure 3. LSSO organizational chart**



5.2.3. Institutional framework and collaboration

The LSSO operates within a structured institutional framework that facilitates its collaboration with various government sectors. This framework is essential for the effective delivery of social security services and for implementing reforms and policies.

The LSSO's collaboration extends to several government sectors, crucial for integrating social security services with other national welfare and economic programmes. Key collaborations include:

- ▶ **Ministry of Health:** The LSSO works closely with the Ministry's National Health Insurance Bureau, ensuring that social security contributions are transferred to the Bureau regularly and beneficiaries receive the appropriate healthcare services.
- ▶ **Ministry of Finance:** Collaboration with the Ministry ensures the proper funding and financial management of the civil servant scheme.
- ▶ **Ministry of Industry and Commerce:** The LSSO coordinates with the Ministry of Industry and Commerce regarding enterprise registration and contribution processes and their compliance with social security legislation.

The LSSO engages in multi-sectoral dialogues, which involve representatives from various ministries, the workers' union and employers' associations. These dialogues are part of the ongoing process to amend the Social Security Law, aiming to address common concerns and issues and gather diverse inputs to refine social security policies and practices. Through these collaborative efforts, the LSSO aims to ensure sustainability of the NSSF, enhance coverage and provide comprehensive benefits, aligning them with international standards and the socio-economic context of the Lao People's Democratic Republic.

5.2.4. Notable recent activities

In the field registration

The LSSO started piloting roaming registration units in May 2023 in specific areas to further increase social security accessibility for remote populations. While the initiative is entitled "Mobile Registration" and the team do use digital tools, the registration process does not use a mobile app. The pilot facilitated the registration and payment of social security benefits directly in villages, using a transportable setup equipped with necessary technologies, including laptops, card printers, scanners, cameras and Wi-Fi hotspots. The pilot aimed to test and refine the procedures and IT systems to ensure efficient service delivery, especially in remote areas where permanent LSSO offices are lacking.

Over the past three years, the number of voluntary members has risen substantially from 15,351 individuals to 35,332 individuals. Building upon the successful pilot run from May 2023 to February 2024, the service is now being expanded to additional locations across the country. By bringing these essential services closer to local communities, the mobile social security service has contributed to a significant increase in voluntary participation (Samavong and De 2024).

Assessment, design and implementation of e-office systems

The MTC has developed a suite of digital government administration systems that aim to streamline administrative processes, reduce paperwork, improve communication and collaboration, and enhance data security within government organizations. It is a comprehensive suite of applications and acts as an alternative to platforms such as those offered by Google or Microsoft.

► **Table 2. Key components and functionalities of the e-Office system**

Component	Description
e-Office	Core system
e-Document	Document management system with workflow automation.
e-Task	Digital task management: ► Prioritize tasks ► Team collaboration ► Workload sharing ► Manage deadlines ► Track time spent on tasks
e-Appointment	Department schedules and activities. Meeting and meeting room management.
e-Report	Centralized reporting system with activity logging.
e-Signature	Electronic signature of documents (removes the need to sign hardcopies).

The LSSO requested e-Office as part of a plan to modernize management at all levels, enabling faster, more convenient and more accurate document and claims processing.

The local technology firm SB LAB 856 performed an assessment, designed and implemented the e-Office system for the LSSO in 2021. Activities included:

- documenting current processes, workflows and document types used in the LSSO;
- assessment of existing IT infrastructure in order to host e-Office; and
- updates to some IT systems in use by the LSSO.

Trainers delivered sessions on the management and use of e-Office for LSSO employees at the central and municipal/provincial levels in September 2023. This five-day training session involved 82 participants, including the Director-General of the LSSO, the Directors of provincial/municipal Social Security Offices (SSOs), and key technical staff. This training covered topics including system access, general use, document management, search, task entry and delegation, and e-leave. Training on the administration of e-Office included adding and removing users, setting and resetting passwords, basic data management, document flows, meeting schedules, notifications, email settings, and system reports.

The degree to which the e-Office platform has been adopted and is in regular use across various provincial and district SSOs is unclear. Resistance to change and a lack of digital literacy continues to hinder the regular use of e-Office. LSSO management has, however, instructed its central office and subordinate SSO offices to increase their use of e-Office, and IT officers were requested to provide further training.

5.2.5. Strategic alignment with national policies

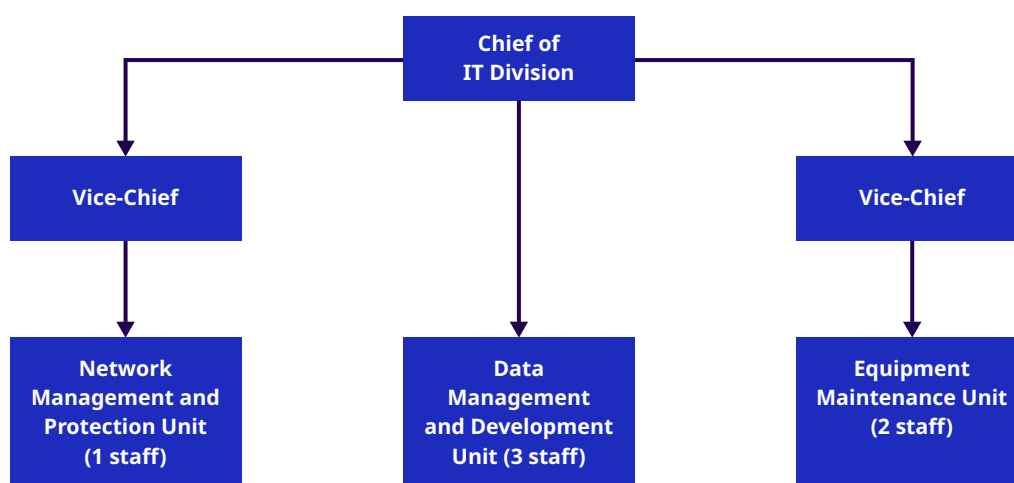
The strategic objectives and actions of the LSSO are aligned with national policies and are designed to address both current needs and future challenges in the social security system. Key elements of the LSSO's strategic plan include:

- ▶ **Extending coverage:** Increasing the number of informal workers covered by the NSSF, as well as improving overall enrollment rates.
- ▶ **Improving service delivery:** Enhancing the efficiency and accessibility of services through digital transformation initiatives, such as the development of a centralized enterprise contribution and registration database system.
- ▶ **Financial sustainability:** Ensuring the long-term financial health of the social security funds through actuarial studies and appropriate financial management and investment strategies.
- ▶ **Regulatory and legal frameworks:** Updating and amending social security laws and regulations to strengthen the legal framework and ensure alignment with international standards.
- ▶ **Capacity-building and public awareness:** Conducting training for officials and running information campaigns to educate the public about social security benefits and the importance of participation.

5.3. LSSO IT

The LSSO's Information Technology Division comprises a structured team of nine staff dedicated to managing and supporting the organization's information technology needs.

► **Figure 4. Organizational structure of LSSO IT**



The Chief of the IT Division oversees all IT operations, strategic planning and the implementation of IT solutions.

Two Vice-Chiefs assist the Chief of the IT Division, focusing on specific areas such as network management and protection, and equipment maintenance.

Technical officials handle day-to-day IT tasks. Their responsibilities include software development, database management, system maintenance and technical support.

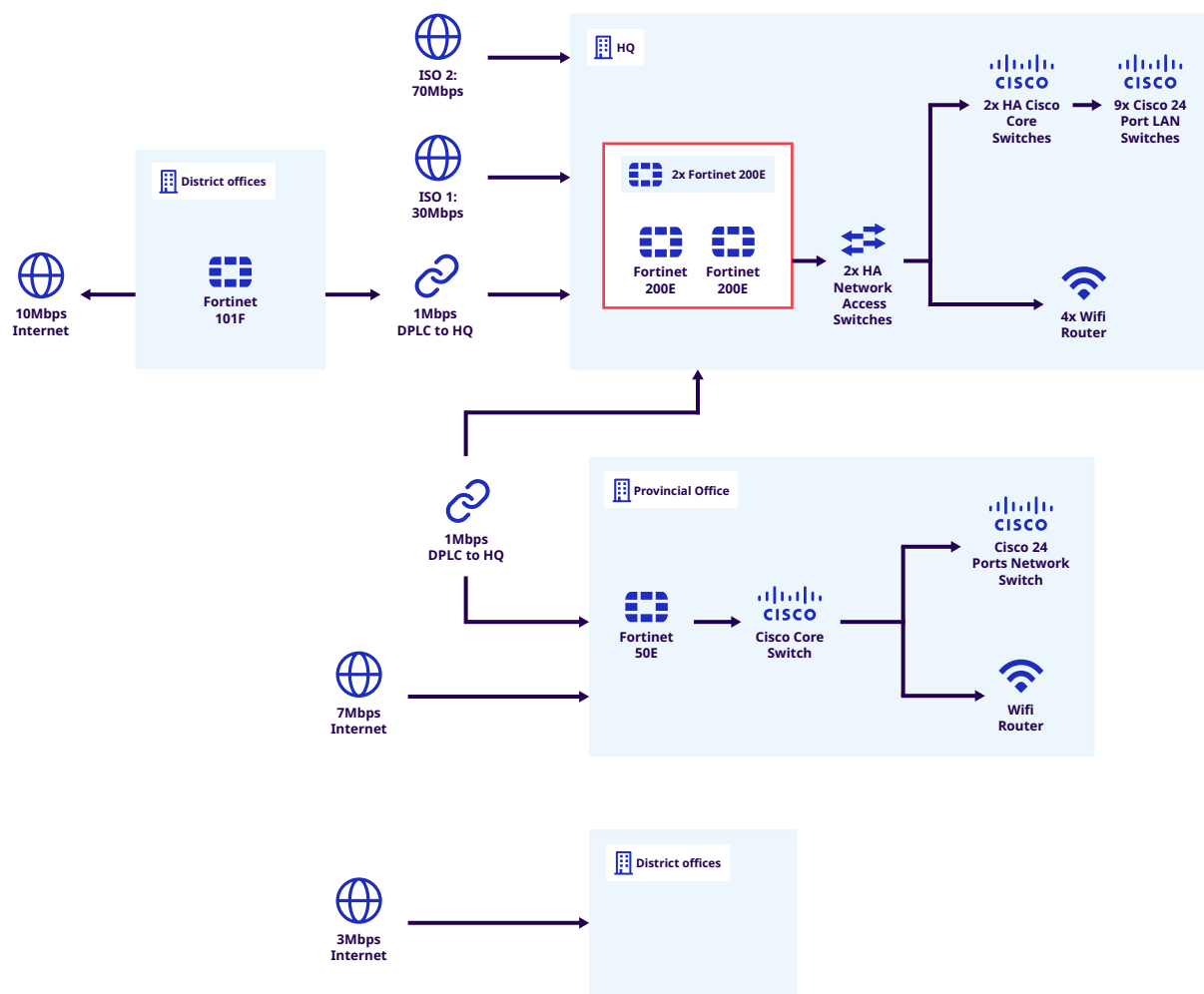
This team is crucial in managing the LSSO's IT infrastructure, including the development and maintenance of systems like the enterprise contribution and registration database system, and ensuring the future integration of various government databases through API development. They will also play a significant role in the digital transformation initiatives of the LSSO.

Given the importance of LSSO IT to this transition and to the overall operation of the LSSO, a gap analysis was conducted by conducting a rapid survey with all of the members of the LSSO IT team. The survey examined team members' level of familiarity with a variety of IT concepts and programmes relevant to supporting a digital transformation. The results of this gap analysis can be found in Annex 2.

5.3.1. Current technological infrastructure/ecosystem mapping

The LSSO uses a hierarchical network topology (access, core and distribution) design at each of its office locations. This type of topology is commonly used in enterprise networks to allow for high availability, efficient data transmission, and so network resilience can be achieved.

► **Figure 5. LSSO network topology diagram**



5.3.2. Application technology stack matrix

The matrix in Table 3 below presents a diverse range of technologies used across different departments at the LSSO, including a mix of programming languages, frameworks, databases and operating systems. This expansive mix showcases the current challenges in terms of knowledge sharing, maintenance and overall IT management. Several different database systems are in use, including MySQL, MariaDB, MS SQL Server, and MS SQL Express, and this variety can complicate data integration and management efforts. Consolidating to fewer database systems will help streamline administration and improve data consistency.

The LSSO also uses systems that are running outdated technologies and pose compatibility, security or support challenges. Functions and services have been developed piecemeal over the years, leading to inconsistencies between them, delays in rollout and difficulties in usage. LSSO IT should consider creating a master plan for updating, refactoring or replacing these systems to minimize potential risks and maintain operational efficiency. Using a consistent technology stack can simplify development, maintenance and knowledge-sharing efforts.

► Table 3. Application technology stack matrix for selected divisions of the LSSO

LSSO Division	System	Frontend	Backend	OS	Notes
Claims and Pensions	Public Sector	MS Access 2021	MySQL 5.7	Windows Server 2016	
	Private Sector	PHP/Laravel, GO	MariaDB 10	Ubuntu 20.04	Currently transitioning from legacy system build with FoxPro 6
Accounting	Internal	PHP, EasyUI	MySQL 5	Windows Server 2016	
Admin and Personnel	HR	.NET, C#	MsSQL Express 2019	Windows Server 2016	
Registration and Contribution	Private Sector Registration	PHP/Laravel, GO	MariaDB 10 Cluster	Ubuntu 20.04	
	Public Sector Registration	MS Access	MySQL	Windows Server 2016	The client software is compiled by IT, the executable is shared on a folder, and run by each client.
	GoToHos Public Sector	MS Access	MySQL		
	GoToHos Private Sector	PHP/Laravel, GO	SQL Server	Ubuntu 20.04	Connects to ATD at the main hospital in Vientiane ATD at provincial hospitals use XLS for OPD
Core Database			MS SQL 2008 R2	Windows 2008 R2 Ent	
	Claims and Pension	Visual FoxPro	Connects to Core Database	Same Server as Core Database	Sends notification messages via SMS gateway Outputs XLS reports
	Lao Development Bank's Bank Connector	.NET, C#	MS SQL on Core database server	Windows 2016 Standard	

LSSO Division	System	Frontend	Backend	OS	Notes
Service	Registration Public Sector, Registration Claims Contribution Private Sector, and Accounting	PHP/Laravel, GO MS Access 2021, PHP, EasyUI	MySQL MariaDB Cluster	Ubuntu 20.04 Windows 2016 Standard	These systems are for internal use.
Public Relations	Website	Joomla CMS (PHP)	MySQL	Hosting Service based in Singapore	

5.3.3. Administrative tools

LSSO IT uses a number of tools for day-to-day operations. These include:

- ▶ **FortiView:** A comprehensive monitoring tool developed by Fortinet that allows IT administrators to monitor Fortinet firewalls and other devices.
- ▶ **Elasticsearch:** A powerful, open-source search and analytics engine used for various applications, including application search, website search, enterprise search and log analytics.
- ▶ **vCenter:** A centralized management platform for VMware vSphere environments. It provides a single point of control for data centre infrastructure, virtual machines and containerized applications.
- ▶ **HP Enterprise DR Site:** HPE (Hewlett Packard Enterprise) offers a range of disaster recovery (DR) solutions and services to ensure business continuity and data protection in case of disruptions. HPE's DR offerings include data replication, backup and recovery, storage, and cloud-based services.
- ▶ **phpMyAdmin:** A free, open-source web application written in PHP that provides a user-friendly web interface for administering MySQL and MariaDB databases. It allows users to perform common database operations like creating tables, managing user permissions, running SQL queries and importing/exporting data.
- ▶ **SSMS (SQL Server Management Studio):** A graphical user interface tool developed by Microsoft for managing and administering Microsoft SQL Server instances and databases. It offers features for database design, administration, querying and performance tuning. SSMS provides a comprehensive environment for SQL Server developers and administrators to manage their database systems efficiently.

5.3.4. Data centre

LSSO IT has a small data room that consists of a single rack at their headquarters in Vientiane. They are currently investigating the use of a government data centre to host their new applications. LSSO IT are in initial steps of designing and utilizing a disaster recovery site.



06

Digital transformation
and the LSSO



Digital transformation is not just about converting paper to digital formats or simply implementing new technologies. It encompasses a more holistic approach to transforming LSSO processes, culture and customer experiences by leveraging technology. At its core, digital transformation involves reimagining business processes by analysing existing processes and workflows to identify areas where technology can streamline operations, reduce inefficiencies and improve productivity. The LSSO can enhance customer experiences by leveraging technology to better understand customer needs and preferences, developing innovative solutions and providing employees with the necessary tools, training and resources to adapt. Additionally, the LSSO should prioritize data-driven decision-making by collecting and analysing data to inform strategic decisions.

It is important to underscore the complexity and multifaceted nature of digital transformation in social security. Overall, there is a need for coordinated efforts, strong governance, and a focus on inclusion and improving customer experiences. The 2023 ILO Working Paper “Digital Transformation of Social Security Administration and Services: A Comparative Analysis of Australia, Canada, Denmark, and France” highlights several key points:

- ▶ A coordinated approach to digital transformation involves synchronizing and aligning various aspects of an organization's strategy, operations and culture to ensure that digital transformation initiatives are cohesive and practical.
- ▶ Effective digital transformation in social security requires robust governance structures and collaboration across various government sectors.
- ▶ Legal and regulatory frameworks are crucial for ensuring data privacy, security, and interoperability of systems.
- ▶ The backbone of successful digital transformation is an advanced technological infrastructure that supports the integration of services and facilitates efficient service delivery.
- ▶ User-centric design emphasizing the importance of user experience: Digital technologies should enable more personalized and responsive services, allowing users greater control over their interactions with social security agencies.
- ▶ Ensuring that digital transformation does not exclude marginalized or under-banked communities is vital. This involves creating inclusive systems that are accessible to all citizens, regardless of their socio-economic status (UNU-EGOV 2023).

The dynamic nature of technology and societal needs requires ongoing innovation and adaptation in the social security sector. This includes regular updates to systems and policies to accommodate new technologies and changing public expectations.

Digital transformation is a cross-functional effort that requires collaboration and coordination between various departments within an organization. While the IT department plays a crucial role in implementing and maintaining technology solutions, collaboration with other departments and third parties with experience in project management, planning and execution are essential in ensuring the successful adoption and integration of digital initiatives.

Being a late adopter can have certain advantages, particularly in digital transformation. The LSSO can learn from the experiences of others to avoid similar pitfalls (for example, in relation to rapid expansion of services and nationwide rollout). The LSSO can plan their implementation strategy with more information, allowing for a more tailored approach that fits their specific needs and challenges. In addition, using proven technologies that have gone through several iterations and improvements will lead to more stable technology choices that have already been tested in various environments and use cases.

However, in an interview for this study, the Deputy Director-General of the LSSO highlighted several challenges to achieving the above, including the digital divide for rural populations and low levels of digital literacy. They also pointed out that limited budgets and resources further complicate the ability of the LSSO to undertake a digital transformation. These issues will need to be taken under consideration.

6.1. Leveraging unique insights

By leveraging the unique insights and influence of colleagues from different departments and branches, LSSO IT can build a more inclusive and collaborative environment that not only supports the successful implementation of solutions but also enhances organizational cohesion and effectiveness. Involving people from various departments to champion a solution can significantly enhance the implementation and acceptance of that solution inside and outside of the LSSO.

Here is how taking such an inclusive approach can be beneficial:

- ▶ **Diverse perspectives:** People from different departments bring varied perspectives and expertise. This diversity can lead to more innovative and comprehensive solutions that are well-rounded and consider multiple facets of LSSO operations.
- ▶ **Enhanced support:** When employees from various parts of the organization are involved in the development and rollout of a solution, there is a greater likelihood of support. These departmental representatives can advocate for the solution within their teams, explaining the benefits in a context that applies to their specific roles.
- ▶ **Improve communication:** Champions from different departments can facilitate better communication channels. They can relay information back to their teams in a manner that is clear and relevant, reducing misunderstandings and increasing clarity.
- ▶ **Tailored implementation:** Each department has its unique workflow and challenges. Involving representatives from these departments can help tailor the solution to meet specific needs, making the implementation smoother and more effective.
- ▶ **Increased engagement:** Engaging employees as solution champions can increase their sense of ownership and commitment to the project. This engagement can lead to higher motivation and enthusiasm, which are contagious.
- ▶ **Feedback loop:** Champions from different departments can serve as a feedback loop, providing real-time insights and suggestions for improvement. This ongoing feedback is crucial for the iterative development of the solution, ensuring it remains relevant and effective.

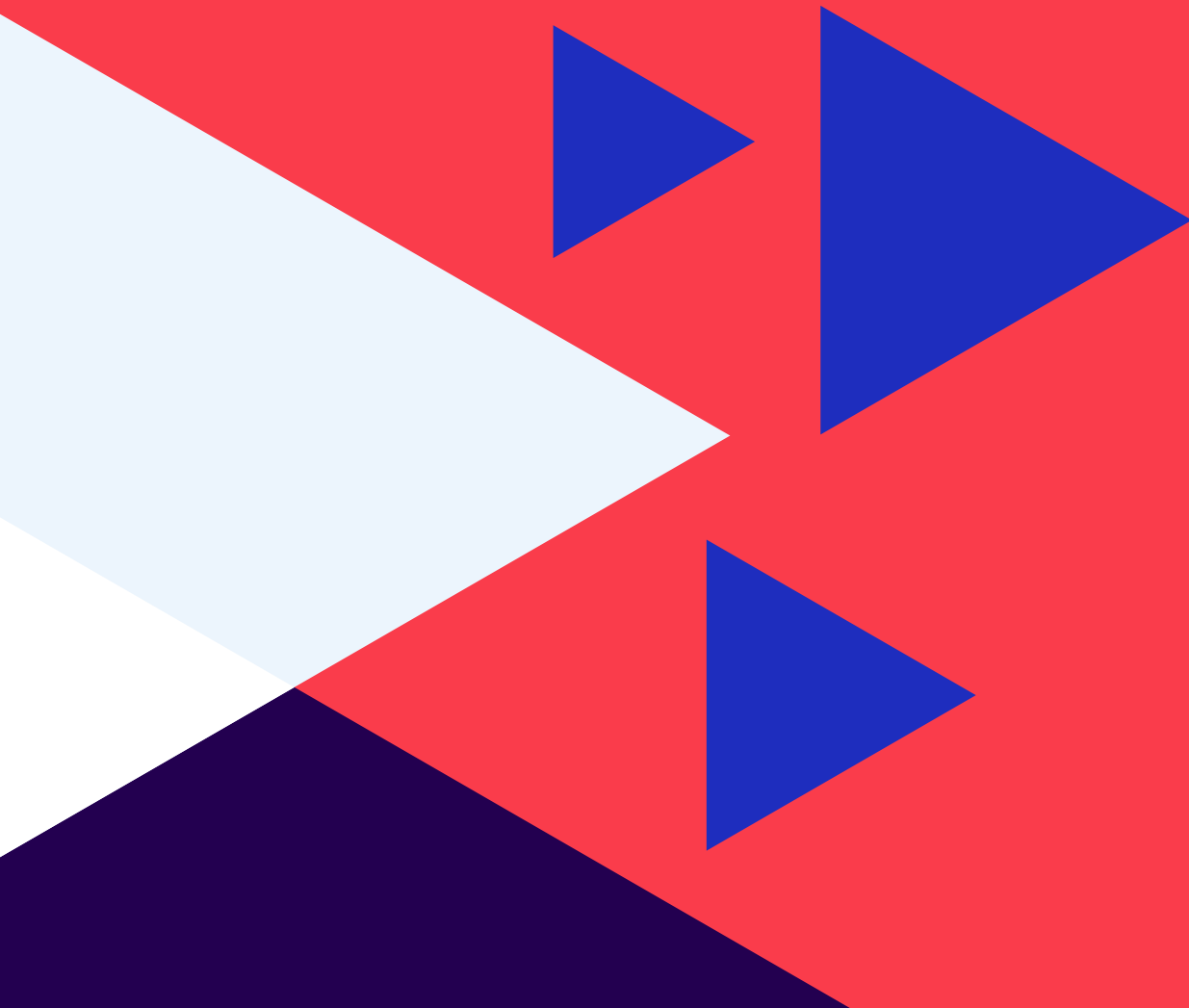
6.2. Risk assessment

Managing risks requires a comprehensive approach that includes robust cybersecurity measures, effective data governance frameworks, continuous monitoring of technological and regulatory landscapes, and extensive training and support for all stakeholders. By implementing strategic planning and continuous training, and by ensuring inclusive access to digital services, the LSSO can fully realize the benefits of digital transformation for social security in the Lao People's Democratic Republic while managing potential risks.



07

**Mobile app and
API development:
Looking ahead**



The LSSO is working to develop a mobile app that will expand the LSSO's service channels and simplify access to services like NSSF registration, document submission, contribution payments, eligibility checks, healthcare entitlements, and benefit applications.

In addition, the LSSO is engaged in API development to allow LSSO systems to communicate with other relevant government databases, such as the MoLSW's Labour Market Information System, the Ministry of Industry and Commerce's National Enterprise Registration Database (NERD) and the Ministry of Finance's Tax Revenue Information System (TaxRIS)⁶. This integration is crucial for improving the efficiency and accuracy of data management across different government platforms.

7.1. Overview of the mobile app and APIs

The common connection between national policies and the LSSO's initiatives in mobile app development and interoperability is to enhance service delivery and operational efficiency. **The LSSO policies are aligned with the broader national directives for digital transformation**, as outlined in the National Digital Economy Development Vision 2021–2040. The 20-year Vision mandates government agencies to adopt digital technologies to improve public service delivery. The LSSO's development of a mobile app and APIs is a direct response to these policy requirements, aiming to ensure that LSSO services are made more accessible and efficient through digital means.

The LSSO's primary business objectives are improving the accessibility and efficiency of social security services, expanding coverage and ensuring the sustainability of the system. The mobile app directly supports these objectives by providing a convenient platform for users to interact with LSSO services, such as checking eligibility, paying contributions, and claiming benefits. The development of APIs, on the other hand, is crucial for achieving interoperability between the LSSO's database and other relevant systems like LMIS, NERD and TaxRIS. This interoperability is essential for seamless data exchange and integration, which supports accurate and efficient service delivery. APIs ensure that the LSSO can leverage data from various sources effectively, enhancing the accuracy of eligibility checks and benefit processing.

Through a competitive bidding process, the LSSO has selected a local IT company [SB LAB 856](#) to design, build, test and roll out a new mobile app and the associated APIs. The LSSO also sought support from the ILO to improve its IT systems and database through staff training, app development, API integration and server upgrades. These requests are summarized as follows:

Capacity-building for IT staff

1. Practical training in APIs, apps, server maintenance and troubleshooting.
2. AI training.
3. Engaging international experts for in-person training sessions.

⁶ That is, the Asia Pacific Computer Emergency Response Team.

App development

Mobile app with features that allow LSSO members to:

- ▶ Submit documents;
- ▶ Register for the NSSF;
- ▶ Apply for benefits;
- ▶ Check eligibility;
- ▶ Review healthcare entitlements;
- ▶ Pay contributions.

API Development

Create an interface enabling their database to communicate with other relevant databases such as LMIS, NERD, TaxRIS and so on.

The development of the app is going to be based on a three-phase development strategy, with each phase making use of the results of the prior phase. This structured approach allows for gradual implementation and scaling based on real-time feedback and technological assessments. Table 4 below provides a brief overview of the API and mobile app development plans for 2024–25.

The LSSO IT has acknowledged a **lack of capacity to edit and maintain the code** for the app, as required. To ensure strong, sustainable solutions, they have requested the ILO's assistance in remedying this matter.

► **Table 4. Current API and mobile app development plans**

2024								2025							
May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
API development Payment features ▶ Payment of voluntarily insured members. through service points and banking applications (BCEL, Lao Viet Bank, and so on). ▶ Payment of voluntarily insured members through the eWallet services of Lao Telecom companies. Data exchange (linking) with third party systems ▶ Integrate with Lao KYC for the biometric certification of insured members in order to login to the LSSO app. National databases ▶ TaxRIS for the verification of income tax payment and contribution payment. ▶ LMIS for issuing labour registration numbers to insured members. ▶ National Health Insurance database, enabling the insured members to check their eligibility and medical background.								Mobile app development Customer features ▶ Insured member details and profile(s). ▶ Spouse and children's eligibility. ▶ Contribution payment information. ▶ Short-term benefits info and calculation: Sickness, maternity, death grant, unemployment, employment injury and occupational diseases. ▶ Long-term benefits info, and calculations: Pension, loss of working capacity, lump sum pension, and caretaker. ▶ Medical care background of insured members. ▶ Claims tracking. ▶ Informational pages with details of national laws, instructions and other notices. ▶ Labour registration number integrated into LMIS. ▶ Comparison of income tax and payment of contribution to the LSSO by integrating with TaxRIS. ▶ Receiving short- and long-term benefit payments through bank account, M-Money and U-Money. Infrastructure ▶ Register the LSSO app on the Apple Store (IOS) and Play Store (Android).							

7.2. Additional needs to support service delivery

7.2.1. Service desk

A service desk is required to provide effective and efficient customer support and service delivery. The primary functions of a service desk include:

- ▶ **Centralized support:** Manages customer issues in a streamlined way through a single point of contact.
- ▶ **Improved communication:** Facilitates clear communication between users and support staff.
- ▶ **Issue tracking and resolution:** Tracks issues from when they are reported until they are resolved.
- ▶ **Knowledge management:** Helps document solutions to common problems, building a knowledge base.
- ▶ **Enhanced productivity:** Automates routine tasks and allows IT staff to focus on more complex issues.

▶ Table 5. The major system components of a service desk

Ticketing system	A system for logging, tracking and managing user requests, incidents and problems. It ensures timely resolution and provides visibility into service desk operations.
Knowledge management	A repository of information, including known issues, resolutions, frequently asked questions (FAQs) and best practices. It enables service desk staff to find solutions quickly and consistently.
Communication channels	Various methods for users to contact the service desk, such as email, phone, chat, self-service portals and walk-in support. Efficient communication ensures prompt resolution of issues.
Incident management	The process of identifying, logging and resolving unplanned interruptions or reductions in the quality of IT services. It aims to restore services as quickly as possible.
Request management	The process of handling user requests for information, advice or access to services. It focuses on fulfilling requests efficiently and accurately.
Problem management	The process of identifying and resolving the root causes of incidents to prevent future occurrences. It contributes to the overall stability and reliability of IT services.
Service level management	The process of defining, agreeing upon and monitoring service level targets and commitments with users. It ensures that service desk performance meets or exceeds user expectations.
Continuous improvement	A systematic approach to identifying, analysing and implementing improvements in service desk processes, tools and performance. It enables the service desk to adapt to changing needs and deliver better support over time.

7.2.2. Standard operating procedures

Written procedures known as standard operating procedures (SOPs) outline the steps needed to complete a particular task or process. SOPs ensure individuals perform tasks consistently and efficiently, while meeting quality standards.

► **Table 6. Reasons for utilizing standard operating procedures**

Ensuring consistency	SOPs provide a consistent and uniform approach to carrying out tasks, processes or operations. Employees can maintain consistency – including by minimizing errors, variability and misunderstandings – by adhering to predefined procedures.
Enhancing efficiency	Employees can perform tasks more efficiently when they have documented procedures to refer to. It saves time by reducing decision-making and problem-solving efforts.
Facilitating training	SOPs are an important tool for training new team members, making onboarding smoother.
Maintaining quality	Adhering to SOPs guarantees tasks are done to a set standard, preserving the quality of LSSO products and services. This consistency can contribute to customer satisfaction and the reputation of the LSSO and other components of the ecosystem.
Supporting compliance and audits	SOPs are essential for maintaining compliance with laws, regulations and industry standards. They assist with internal and external audits, demonstrating the LSSO's compliance with established processes and procedures. They also ensure that case management is consistent, efficient and effective, providing clear guidelines for all stakeholders, as there should be overlapping SOPs that involve both service delivery processes and IT processes.

7.2.3. Server upgrade

The LSSO needed to upgrade its servers as the capacity of their existing servers is almost full, causing the system to perform slowly. The LSSO is currently deploying a new server to their data centre at LSSO headquarters.

During meetings with LSSO IT, the team mentioned the memory and CPU usage of some applications was at 100 per cent, but that the root cause was unclear. To ensure visibility into application performance, user experience, and infrastructure metrics, application performance monitoring tools should be used.

► **Box 6. A note about customized software using microservices**

Microservices architecture enables the creation of flexible and scalable software systems through small, independent services that communicate via APIs. By adopting this modular approach, the LSSO can adjust system components to meet existing and new unique needs. With a microservices architecture, developers have the flexibility to choose the best technology stack for each service, leading to improved performance and innovation. By using this approach, the LSSO and other stakeholders can take advantage of innovative technologies and adapt to emerging tech trends. In addition, the failure of a single service, thanks to resilience and fault isolation, will not affect the entire system. This allows for the isolation and resolution of issues without causing major downtime or disruptions to other services, resulting in improved system resilience and stability.

Microservices also enable easier integration of new features or external systems without affecting the entire application. This results in quicker release of new features and improved ability to respond to developing business requirements.

7.3. Stakeholder needs analysis

For the LSSO to successfully develop a mobile app and APIs that link with other government systems and databases, understanding the roles, needs and expectations of key stakeholders is crucial. The following are the primary stakeholders involved:

Beneficiaries

- **Role:** Primary users of the mobile app for accessing social security services.
- **Needs and expectations:**
 - User-friendly interface suitable for individuals not familiar with digital tools.
 - Reliable and secure access to personal data and transaction history.
 - Clear instructions and support for using the app, especially for those in remote areas or with limited tech literacy.
 - Accessibility for individuals who are underserved, living with disabilities and so on.

LSSO employees

- **Who:** All LSSO and SSO departments.
- **Role:** Administer and manage the services provided through the app and APIs.
- **Needs and expectations:**
 - Efficient tools and functions within management information system (MIS) or apps to process claims, update beneficiary information and manage communications.
 - Training on the new digital tools to ensure smooth transition and ongoing support.
 - Robust backend systems to handle queries and data management securely and effectively.

Other government agencies

- ▶ **Who:** MoLSW (LMIS), Ministry of Industry and Commerce (NERD), MTC, Ministry of Finance (TaxRIS).
- ▶ **Role:** Collaborate with the LSSO to ensure seamless integration of services and data sharing.
- ▶ **Needs and expectations:**
 - ▶ Secure and reliable APIs that facilitate real-time data exchange without compromising data integrity.
 - ▶ Clear protocols for data access and sharing to protect privacy and comply with regulations.
 - ▶ Regular updates and maintenance to adapt to changing needs and security threats.
 - ▶ Key contact points, defined communications channels and escalation procedures.

Solution providers

- ▶ **Role:** Develop and maintain the mobile app and API infrastructure.
- ▶ **Needs and expectations:**
 - ▶ Clear specifications from the LSSO regarding functionality, security requirements and integration points.
 - ▶ Ongoing collaboration with the LSSO for troubleshooting, updates and scaling the solutions.
 - ▶ Concise documentation, procedures and source code supplied to the LSSO for development in-house, collaboration with other solution providers and security reviews.

Financial service providers

- ▶ **Who:** BCEL, Lao Development Bank, Joint Development Bank, LaoQR.
- ▶ **Role:** Develop and maintain the API payment gateways and financial services.
- ▶ **Needs and expectations:**
 - ▶ Ongoing technical support from the banks to the LSSO to address any issues in the integration process or operational challenges post-integration.
 - ▶ Robust support systems for handling customer queries related to transactions facilitated to and from LSSO systems.

Regulatory bodies

- ▶ **Role:** Ensure that the app and APIs comply with legal and regulatory standards.
- ▶ **Needs and expectations:**
 - ▶ Compliance with data protection laws and cybersecurity regulations.
 - ▶ Regular audits and compliance checks to ensure ongoing adherence to standards.

7.4. General guidance on digital development

7.4.1. User centricity

User centricity prioritizes user and customer needs and experiences in service design and implementation. This approach aims to ensure that the services provided are accessible, relevant and beneficial to all stakeholders. LSSO IT caters to a diverse user base with unique requirements:

- ▶ **Internal** – General IT services provided to other LSSO divisions.
- ▶ **Internal** – Business applications and outputs for other LSSO divisions.
- ▶ **External** – Website and app for beneficiaries of social security programmes.

7.4.1.1. Understanding customer journeys

A customer journey map is a visual representation of the various stages a customer goes through while interacting with a company, product or service. Customer journey maps help organizations understand the customer's perspective, experiences and emotions throughout their entire experience. They are valuable tools for business because they help to:

- ▶ Uncover opportunities to improve the experience, identify pain points, and highlight areas for enhancement **at each stage of the customer journey.**
- ▶ **Develop targeted marketing and communication strategies** to better engage customers throughout the various stages.
- ▶ **Strengthen cross-departmental collaboration** by providing a common understanding of the customer experience.
- ▶ **Monitor** changes in customer behaviour and satisfaction to assess the effects of improvements.

► Table 7. Example of a customer journey map for LSSO services

Journey steps	Stage 1 – Awareness	Stage 2 – Consideration	Stage 3 – Registration	Stage 4 – Post Registration
Story	Citizen learns about the LSSO	Citizen considers registration	Citizen registers with LSSO	Citizen contributes, utilizes benefits
Actions	Research, inquire	Evaluate options, compare benefits	Gather documents, submit application	Regularly check account, claim benefits
Touchpoints	LSSO website, local office, community events	Talk with colleagues/ family/friends; engage on social media; or seek advice from LSSO staff.	LSSO app, local office	LSSO app, customer service hotline
Emotions	Curiosity, interest	Analytical, cautious	Hopeful, motivated	Secure, supported
Pain point(s)	Information overload	Uncertainty about eligibility	Complex paperwork, long waiting times	Difficulty navigating benefits claim process
Backstage	Develop clear, concise information materials. Ensure channels provide accurate and up-to-date information.	Offer eligibility checking tools. Provide detailed FAQs and case studies.	Streamline document requirements. Implement an online appointment system.	Develop user-friendly app features. Ensure responsive customer support.

As the LSSO embarks on developing its mobile apps, it has a unique opportunity to show leadership and set a precedent for other government organizations by showcasing the value of user-centric design principles.

7.4.1.2. Feedback mechanisms

There are opportunities for users to provide feedback via the LSSO Facebook page, the LSSO hotline (1508) and email, although it is not clear how this feedback influences the design and improvement of e-services. This highlights a need for greater transparency and impact in relation to how feedback shapes service design.

The Public Relations Division is using questions posted by the public to the LSSO Facebook page to inform and help design short training videos and other digital materials. This demonstrates a commitment to understanding and addressing customers' needs and preferences, which is essential for effective marketing and customer engagement, and can serve as a model for other departments within the LSSO.

7.4.2. Principles for Digital Development

The [Principles for Digital Development](#) are a set of nine guidelines that help digital development practitioners integrate good practices into their work and should also be considered.

7.4.3. Open source software

The Government has a growing interest in adopting open source software as part of its broader digital transformation strategy. According to the Digital Government Masterplan, there is a high-level vision for government enterprise architecture standards that includes open source software. This approach is seen as a way to address financial constraints by reducing reliance on licensed software solutions that incur annual fees. Additionally, adopting open source software is expected to increase innovation and creativity among the Lao People's Democratic Republic's burgeoning community of young programmers. However, the move towards open source software is also being approached with caution due to potential challenges such as maintenance and the quality of some open source platforms compared to licensed alternatives. The Government's interest is balanced by a recognition of these potential drawbacks and the need for careful implementation.

Currently, LSSO IT are using a hybrid model involving a mix of licensed proprietary software and open source software.

7.5. Overview of specific tasks and milestones required

In order for the ILO to support the LSSO to develop their mobile app and APIs we must look at a list of tasks and milestones that would be required for these components to be designed, tested, piloted, operationalized and maintained. It should be noted that some of the items below have already been achieved, some are completed but might be insufficient, and others are likely out of scope for the current contractor, as they were not defined in their terms of reference. **The LSSO will also require assistance for other critical components of this plan.**

To launch their mobile app, the LSSO needs to perform several key tasks:

- 1. API development:** Create interfaces for communication with databases like LMIS, NERD and TaxRIS. API development will include:
 - ▶ **APIs provided by third parties.**
 - ▶ **Data exchange with third-party systems:** Integration with Lao KYC for biometric certification of insured members, verification of income tax payment through TaxRIS, linking with LMIS for issuing labour registration numbers and accessing the National Health Insurance database for beneficiaries.
 - ▶ **Functional requirements:** Define operations, endpoints, request/response formats and data structures involved.
 - ▶ **Non-functional requirements:** Detail performance, scalability, reliability, security and maintainability requirements.
 - ▶ **Data models:** Structure and relationships of the data objects that the API will handle, along with data validation or constraints.

- ▶ **Data exchange:** Memorandum of understanding (MOU), technical specifications from each entity, API endpoints and methods, authentication and authorization agreements, and performance testing of API linkages and adjustments.
- ▶ **Monitoring and escalation procedures:** Develop concise documentation on all error handling and API messages from stakeholders.
- ▶ **Developer operations:** Establish LSSO-owned source code repository for APIs, document repository and knowledge base.

2. App development: Design and build an app for services such as contribution payments and benefit applications. App development includes:

- ▶ **Infrastructure:** Register the LSSO app on the Apple App Store and Google Play Store (IOS and Android).
- ▶ **App feature development:** Development of menus and features of the LSSO app, insured member details and profiles, spouse and children's eligibilities, contribution payment information, short and long-term benefits info and calculations, medical care background of insured members, claims tracking, labour registration number integration with LMIS, and comparison of income tax and contribution payment via TaxRIS, as well as information about payment service points, linkages with banking apps, and ability to pay using eWallets from fintech and telecom companies.
- ▶ **Project management:** Setting milestones, monitoring, updating meetings and using a ticketing system for reporting bugs and feature requests.
- ▶ **System requirements:** Complete specification including functional and non-functional requirements.
- ▶ **Business process mapping:** Sequence diagrams and data flowcharts.
- ▶ **Data model:** Defining data structures, relationships and storage.
- ▶ **Security and privacy:** Measures like authentication, encryption and access control.
- ▶ **User interface (UI)/user experience (UX):** Layout, navigation, interaction design and visual aesthetics.
- ▶ **Review and feedback:** Solution progress evaluation and integration of feedback.
- ▶ **Piloting:** Training participants, monitoring and evaluation, and analysing improvements.

3. Capacity-building: Train LSSO IT staff for maintenance and troubleshooting. These steps aim to equip the team with skills needed for efficient digital service delivery and operational efficiency in line with the LSSO's transformation goals:

- ▶ **Practical training:** Training in server maintenance, troubleshooting, mobile app development, API integration and understanding source code.
- ▶ **AI and cybersecurity training:** Enhancing staff skills in artificial intelligence and cybersecurity across the entire organization.
- ▶ **Engagement with experts:** Collaborating with international experts for in-person training sessions on new technologies and systems.
- ▶ **Utilization of modern business tools:** Implementing tools for strategic thinking and continuous improvement.
- ▶ **Encouraging a culture of innovation:** Promoting change, innovation, and learning through incentives and training.

- 4. Server upgrade:** Enhance servers to accommodate increased load.
- 5. Integration and testing:** Test integrations with biometric systems and payment gateways.
- 6. Security measures:** Implement data protection via encryption and authentication. Additional tasks include project management, defining system requirements, data modeling, UI/UX design, internal testing, piloting and official app launch with monitoring.



► **Table 8. Draft workplan for LSSO mobile app and API development, November 2024 through August 2025**

[illegible]

[illegible]

[illegible]

7.5.1. Potential ILO support

In the short term (six to nine months):

1. Business process mapping for future features, functions, and app and API expansion.
2. Assist with the formulation of a multi-year digital transformation plan.
3. Assistance with operationalizing the mobile app.
4. Assistance with operationalizing a service desk.
5. Training of LSSO IT staff on specific subjects (databases, AI, cybersecurity).
6. Cybersecurity training for all LSSO staff.

In the medium term (two years):

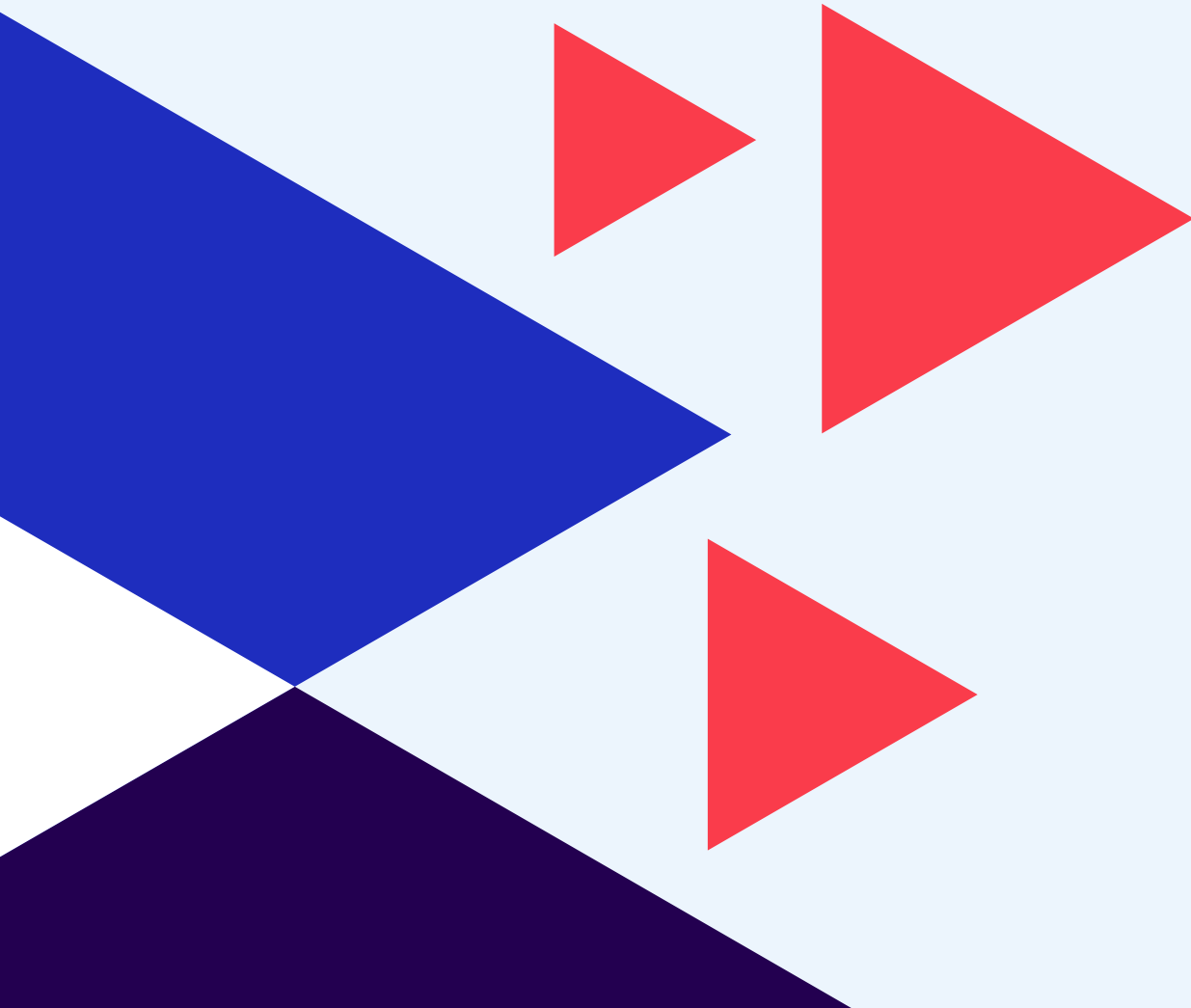
1. Design and implementation of digital transformation plan.





08

Recommendations



8.1. Frameworks, policies and regulations

Recommendation 1. Align strategic objectives with national strategies

Alignment between the LSSO's strategic objectives and the National Digital Economy Development Strategy can be seen and strengthened in the following areas:

- ▶ **Digital infrastructure and connectivity:** Aligning with the National Strategy's focus on digital infrastructure, the LSSO can leverage improved connectivity to expand social security coverage, particularly in rural areas.
- ▶ **Digital innovation and entrepreneurship:** The LSSO can explore innovative solutions, such as mobile applications and new digital platforms, to enhance service delivery and access.
- ▶ **Digital skills and human capital:** The LSSO can contribute to the national strategy's human capital development goals by training its staff in digital skills and providing digital literacy programmes for beneficiaries.
- ▶ **Cybersecurity and data protection:** In line with the national strategy's emphasis on cybersecurity, the LSSO must ensure the protection of sensitive beneficiary data, building trust and safeguarding citizens' privacy.

Recommendation 2. Consider using Convention 108+ guidelines

Convention 108+ is a set of guidelines developed by the Council of Europe to protect personal data in automated systems. Convention 108+ establishes guidelines for processing personal data in a lawful and secure manner. The steps required to integrate Convention 108+ into the existing software development processes include:

- ▶ **Identifying personal data:** The first step is to identify the personal data that the LSSO software will process. This could include data such as names, addresses, phone numbers, financial account details and other personal information.
- ▶ **Data minimization:** Only collect and process personal data that is necessary to disburse funds. Ensure that you collect and process only necessary personal data, and delete the data when it is no longer required.
- ▶ **Data security:** Implement technical and organizational measures such as access controls, encryption, and regular security audits of the LSSO's systems to ensure data security.
- ▶ **Conduct a data protection impact assessment (DPIA):** Analyse the potential risks associated with processing the identified personal data. This should involve assessing the impact on data subjects, the likelihood of risks, and the potential consequences of a data breach.
- ▶ **Data subject rights:** Convention 108+ stipulates the beneficiaries' rights awareness and provides the ability to exercise those rights, such as the right to access their personal data, the right to have their data corrected and the right to object to the processing of their data.

- ▶ **Appoint a Data Protection Officer (DPO):** Convention 108+ requires the appointment of a DPO to oversee data protection activities and ensure compliance.
- ▶ **Monitoring:** Document and monitor data processing activities by maintaining records, conducting regular reviews and updating policies and procedures as necessary.

Recommendation 3. Incorporate electronic signatures into applications

Integrating e-signatures into digital apps can significantly improve user experience, efficiency and security in digital transactions. Some examples of how e-signatures are incorporated into digital applications include:

- ▶ **In-app signature capture:** Allow users to sign documents directly within the app by drawing their signature on the touchscreen or uploading an image of their handwritten signature.
- ▶ **Biometric authentication:** Utilize device biometric features, such as fingerprint or facial recognition, to verify users' identities and authenticate e-signatures.
- ▶ **Email or SMS verification:** Send unique verification codes or links to users' email addresses or mobile numbers to authenticate their e-signatures.
- ▶ **API integration:** Integrate e-signature APIs from specialized service providers like DocuSign, Adobe Sign or HelloSign into the app to handle e-signature functionality.

Note: Software developers should ensure that e-signed documents and related data are stored securely and transmitted using encryption methods for privacy and data integrity.

8.2. Organization-wide

Recommendation 4. Promote the use of the e-Office suite

Promoting the use of e-Office within the LSSO would enhance efficiency and streamline workflows. To promote the use of e-Office, the LSSO should:

- ▶ **Provide refresher training courses and offer support:** Ensure all LSSO staff receive refresher training on e-Office, including its features, functionalities and best practices.
- ▶ **Provide support:** Develop support channels such as tutorials, user guides and a dedicated helpdesk to assist staff in using the system effectively.
- ▶ **Expand existing processes and flow diagrams:** Review and update the existing e-Office processes and flow diagrams to ensure they align with the current needs and goals of the LSSO. Engage with key personnel to identify additional areas where e-Office integration will be beneficial and update the process documentation accordingly.
- ▶ **Monitor system usage:** Regularly track and assess e-Office usage among staff members to measure adoption rates, identify bottlenecks and ensure the system is being utilized to its full potential. Analyse usage data to inform future improvements, enhancements and training initiatives.

8.3. LSSO IT

Recommendation 5. Monitor all network infrastructure and consider upgrading bandwidth

Deploy network monitoring tools: Implement a robust network monitoring solution that provides real-time visibility into network traffic, bandwidth utilization and performance metrics. These tools can help identify anomalies, diagnose issues and provide historical data for capacity planning and optimization. The LSSO should consider implementing a Netflow collector to allow monitoring of all network traffic across all their networks. This will help to identify any circuits that require bandwidth increases.

Develop an upgrade plan: Create an upgrade plan for existing DPLC links and internet connectivity. For offices with a single internet connection, a secondary link should be considered for failover.

Recommendation 6. Define and use a focused set of technologies

It is important to maintain a balance by both limiting technology stacks and being open to new ones with potential advantages. Selecting a focused technology stack for the frontend and backend can be a wise strategy for future-proofing software development in the LSSO. This approach offers several benefits:

- ▶ **Using a limited set of technology stacks throughout the LSSO will help achieve standardization:** The LSSO IT department should concentrate on a smaller range of technologies and become experts in their chosen stacks, making it simpler to maintain, update, and secure applications. Standardization makes it easier for new team members to learn and share knowledge.
- ▶ **With a smaller range of technology stacks, integrating applications and platforms becomes less complex and less prone to compatibility problems.** As a result, it creates a more unified and productive IT system, facilitating improved cooperation and data sharing among employees.
- ▶ **By reducing the number of technology stacks, it becomes easier to enforce security best practices and comply with regulations across all applications and platforms.** This reduces the risk to the LSSO and simplifies maintaining a strong security posture.

The LSSO should regularly assess and evaluate their selected technology stacks to ensure they still meet the LSSO's needs, and explore emerging technologies for a competitive edge or to address specific business needs.

Recommendation 7. Use application performance monitoring

An application performance monitor (APM) aids in monitoring and managing software performance. An APM offers real-time visibility into application performance, user experience, database usage and infrastructure metrics, helping teams quickly detect and resolve problems, optimize resource utilization and enhance overall system dependability. Some key features of an APM include:

- ▶ **Monitors performance indicators** like response time, error rates and throughput for different applications and databases.
- ▶ **Infrastructure monitoring** tracks the well-being and efficiency of cloud-based and on-premises infrastructure, such as servers, containers and microservices.

- ▶ **Browser monitoring** keeps track of user experience and performance in web applications, such as page load times, and third-party service performance.
- ▶ **Mobile monitoring** allows you to gain insights on the performance and user experience of iOS and Android mobile apps.
- ▶ **Log management** involves collecting, indexing and analysing log data to aid in issue troubleshooting and system behaviour comprehension.

Recommendation 8. Improve accessibility

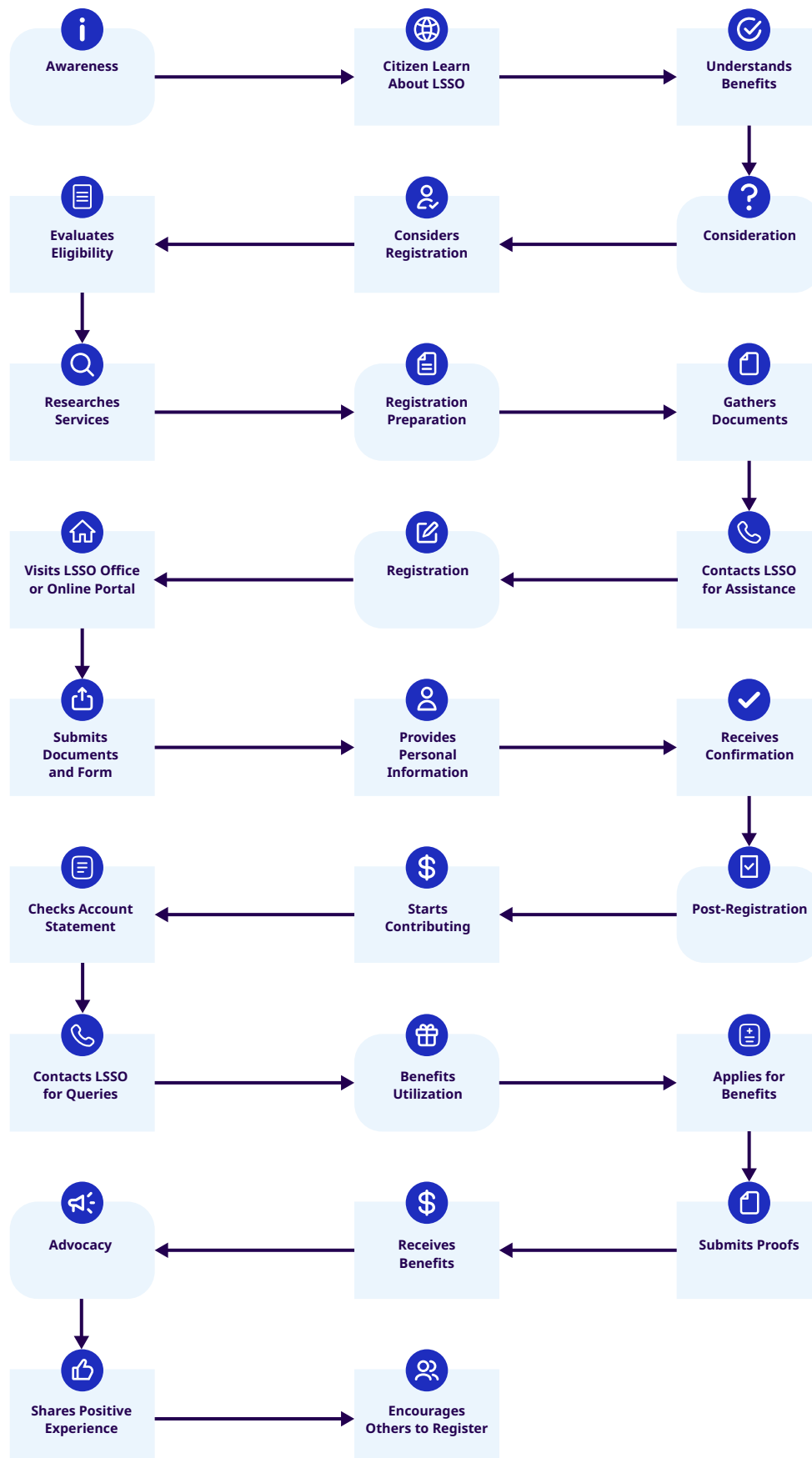
Accessible mobile apps ensure that people living with disabilities, such as visual, auditory, motor or cognitive impairments, can effectively use and benefit from the application. Features such as text-to-speech, voice commands and adjustable font sizes make for a more inclusive experience, reaching a broader user base. Some key considerations to prioritize and use (where applicable and appropriate) include:

- ▶ **Compliance with accessibility standards:** Ensure the system adheres to relevant accessibility standards, such as WCAG 2.1.
- ▶ **Screen reader support:** Design the system to be compatible with screen readers, allowing users with visual impairments to navigate the system effectively.
- ▶ **Clear and readable content:** Employing clear language, ensuring proper heading hierarchy and using readable fonts can significantly improve readability for all users.
- ▶ **Contrast and colour:** Ensure adequate color contrast between text and background to make content easily distinguishable for users with low vision or colour blindness.
- ▶ **Accessible forms:** Design forms with clear labels, instructions and error messages to guide users through the process.
- ▶ **Responsive design:** Implement a responsive design that adjusts to different screen sizes and devices, accommodating users with varying needs and preferences.
- ▶ **Text alternatives:** Provide text alternatives for non-text content such as images, video and audio files, allowing users with visual or auditory impairments to access the information.
- ▶ **Zoom and magnification:** Ensure the system functions effectively when users zoom in or magnify the content for better visibility.

Recommendation 9. Codify the user journey

A collaborative effort between the third party software developers and the LSSO is required to deliver sequence diagrams and mockups that serve as a baseline sequence of events. Every workflow below should have an associated sequence diagram or flowchart with version number and date. Below is a draft flowchart for LSSO registration.

► Figure 6. Draft flowchart of LSSO registration process



Recommendation 10. Expand developer operations

LSSO Git repository: Create a Git repository owned by the LSSO. The LSSO can grant developers repository access and monitor their progress. The LSSO should fully control and own all projects and repositories, with centralized management of access, permissions and security. This ensures that projects stay under LSSO control despite developer departures or role changes, ensuring project continuity and stability.

Software documentation: Comprehensive documentation is crucial for compiling and testing code effectively, as it provides essential information and guidance for developers to understand, build, test and troubleshoot the codebase, ultimately ensuring high-quality and reliable software. Well-documented projects make it easier for new team members to get up to speed with the codebase, tools and processes, reducing the time required for onboarding and training.

An LSSO-controlled Google Play and Apple store account: An LSSO account allows for centralized management of app submissions, updates and removals, ensuring a consistent and organized approach to app distribution. It also ensures that the app aligns with LSSO brand guidelines.

API documentation: API documentation provides detailed information on how to use the API, including available endpoints, parameters, request/response formats and error codes. This helps developers understand and effectively integrate the API into their applications. Third party APIs should always supply documentation listing all response and error codes.

Operation manuals, user guides and administration manuals: The full life cycle of new system creation – design, construction, testing and deployment – must result in a greater number of operational, user and administrative manuals. These need a secure central location to be stored, and should act as living documents that are updated as needed.

A **knowledge management system (KMS)** assists organizations in creating, storing, organizing and sharing knowledge and information internally. A KMS's main objective is to enhance collaboration, efficiency and decision-making by providing easy access to relevant information for employees and stakeholders. Features commonly found in KMS platforms include document management, search, collaboration and content creation. A KMS is primarily concerned with managing knowledge and information in a variety of formats, not solely documents.

Project management tools: To stay on track and adapt to changes, the LSSO should use modern tools to monitor progress, measure performance and make adjustments as required. It is recommended to use a single modern project management tool.

Recommendation 11. Create and utilize customer journey maps

The LSSO can enhance customer experiences by creating and utilizing customer journey maps. Creating a customer journey map involves several steps that help you understand and visualize your customers' experiences:

- ▶ **Define the customer personas:** Identify the key customer segments and create personas representing their needs, goals and behaviours.
- ▶ **Determine the stages of the customer journey:** Define the stages your customers go through when interacting with your organization, products or services. Common stages include awareness, consideration, access, retention and advocacy.

- ▶ **Identify touchpoints:** List the different points of interaction customers have with your department or organization at each stage of their journey. Examples of touchpoints include visiting the LSSO website, calling the service desk or using the LSSO app.
- ▶ **Understand customer actions and emotions:** List the actions customers take and the emotions they experience at each touchpoint. Use qualitative and quantitative data from surveys, interviews and analytics tools to gain insights into customer behaviour and sentiments.
- ▶ **Identify pain points and opportunities:** Analyse each stage and touchpoint to uncover potential pain points and areas of improvement in the customer experience. Prioritize areas that have the most significant impact on customer satisfaction and business outcomes.
- ▶ **Map the journey:** Visualize the customer journey using a table, diagram or other visual representation. Include the stages, personas, touchpoints, actions, emotions, pain points and opportunities. To ensure growth and satisfaction, the LSSO should regularly update maps to understand customer experiences and make data-driven decisions. See section 7.4.1.1 for an example of a customer journey map for the LSSO.
- ▶ **Take action and iterate:** Develop action plans to address pain points and improve customer experiences based on the insights gathered. Regularly collect customer feedback, track behavioural shifts and adapt the customer journey map accordingly.

Recommendation 12. Design philosophy recommendations

A successful design philosophy prioritizes user needs by developing efficient and responsive solutions. For the LSSO, such a philosophy is especially vital because it prioritizes enhancing experiences for staff, beneficiaries and end-users. **The design process should focus on user needs** to ensure effectiveness, efficiency and responsiveness. The following points are to be considered:

- ▶ **Strengthen the programme** by using ICT to enhance LSSO effectiveness, not as a fix for fundamental issues.
- ▶ **Promote user-centred design** by prioritizing the needs, experiences and workflows of social service providers and clients to ensure the new systems are intuitive, efficient and adaptable.
- ▶ From the start, **incorporate considerations for gender, age and social inclusion** to ensure the system is accessible and beneficial to all users.
- ▶ Implement robust security measures and adhere to data privacy principles to **protect sensitive information** and promote responsible data management practices.
- ▶ **Implement interoperable systems and applications** that connect and share data, facilitating the creation of holistic service offerings.
- ▶ Continuously engage with users and stakeholders to collect feedback, discover unmet needs and refine the software's functionality and usability through iteration. This is what is called continuous development and **continuous improvement (CD/CI)**.

Recommendation 13. Stronger data security and management practices

Implementing strong data security and management practices is vital to protect sensitive information in compliance with laws and regulations. This includes adopting encryption, secure data storage solutions and stringent access controls to safeguard confidential data.

Role-based access controls will ensure that only permitted personnel can access or update sensitive operational data. Efforts should be made to provide secure communication channels and avoid parallel data transfer or case operations outside of the system (for example, transferring client images or data files via WhatsApp, Telegram or similar),

Recommendation 14. Create an updated IT strategy and planning initiative

An IT strategy document serves as a road map for an organization's technology investments and initiatives, aligning them with overall business goals and ensuring effective resource allocation and decision-making. To effectively plan and initiate an IT strategy and planning initiative, the following sequence of steps should be considered:

- ▶ **Define IT objectives and goals:** Align IT objectives with the broader goals of the LSSO, such as improving service delivery, enhancing data security and increasing accessibility for all stakeholders. Set clear measurable goals for the IT strategy that reflect the organization's priorities.
- ▶ **Current state assessment:** Conduct an in-depth assessment of LSSO IT infrastructure, systems, processes and capabilities, including a SWOT analysis and ITIL 4 gap analysis.
- ▶ **Develop a strategic IT plan:** Create a comprehensive IT plan that addresses technology upgrades, system integrations and new implementations. Plan for both short-term improvements and long-term transformations, informed by the current state assessment.
- ▶ **Stakeholder engagement:** Involve key stakeholders from various departments within the LSSO to ensure the IT strategy meets diverse needs and gains broad support. Engage external stakeholders, including IT experts and potential technology partners, for insights and collaboration.
- ▶ **Financial planning:** Estimate the financial investment required for the IT initiative, including costs for new technologies, training and potential hires. Secure funding and allocate resources efficiently to ensure the sustainability of the IT strategy.
- ▶ **Risk management:** Identify, assess and develop mitigation strategies for potential risks associated with the IT strategy.
- ▶ **Implementation road map:** Develop a phased implementation plan that allows for gradual integration of new systems and technologies. Include timelines, milestones and accountability measures to track progress. Ensure the road map addresses training and support for LSSO staff.
- ▶ **Monitor and evaluate:** Regularly assess the impact of the IT strategy on organizational performance and service delivery. Adjust the plan as needed based on feedback and evolving technology trends.

8.4. Guidelines for API and mobile app development

Recommendation 15. Perform vulnerability assessment and penetration testing

Vulnerability assessment and penetration testing (VAPT) is a process of evaluating the security of a computer system, network or application by identifying, analysing and measuring the potential vulnerabilities and weaknesses in the system. VAPT is typically conducted by security professionals, either as part of an organization's security programme or as an external service provided by specialized companies. This involves identifying, quantifying and prioritizing (or ranking) vulnerabilities in a system. Vulnerability assessments can be automated or manual, with the goal of identifying weaknesses that could be exploited by attackers.

Penetration testing (also known as pen-testing or ethical hacking) involves evaluating the security of a computer system, network or web application by simulating an attack from a malicious actor. Penetration testing aims to uncover vulnerabilities, evaluate attack consequences and propose security measures for enhanced protection.

VAPT should be performed by a third party **not** related to the developers of the source code.

Recommendation 16. Utilize the ISSA Guidelines on Information and Communication Technology for social security

The International Social Security Association (ISSA) Guidelines on Information and Communication Technology provide a framework for social security institutions to effectively manage and implement ICT systems. The Guidelines are designed to help institutions improve their services, increase efficiency and satisfy stakeholders. Key aspects include:

- ▶ **ICT governance and management:** The ISSA Guidelines emphasize the importance of establishing clear governance structures and management practices for ICT systems in social security institutions. This includes defining roles and responsibilities, setting strategic objectives, and implementing risk management processes.
- ▶ **Planning and managing ICT services:** Setting a comprehensive ICT strategy, managing continuity and implementing effective change management processes are critical. The Guidelines advocate for a well-curated portfolio of ICT services, including effective demand and capacity management to ensure service availability and reliability. Agile and DevOps methodologies are recommended to enhance the quality and reduce the deployment time of ICT solutions, helping to create a responsive and adaptive social security ecosystem.
- ▶ **Data management:** A structured data governance framework is essential to overseeing data security, privacy and quality across operations. This involves creating a unique master data model for consistency and reliability, as well as adopting strategic data management processes. From maintaining data accuracy to upholding privacy standards, institutions are encouraged to establish robust mechanisms for data retrieval, analysis and management. The goal is to use data as a strategic asset, enhancing decision-making and operational efficiency across the board.

- ▶ **Enhancing security and privacy:** Security and privacy are paramount, particularly when handling sensitive social security data. The Guidelines propose comprehensive security measures encompassing database protection, network security and incident management. Cybersecurity processes should involve identification, protection and recovery to mitigate risks. The emphasis is on creating a safe ICT environment that supports secure digital identities and app security in mobile services, thereby safeguarding against breaches and identity theft.
- ▶ **Data analytics for informing social security decisions:** Leveraging data analytics can significantly improve the efficiency of social security institutions. By utilizing descriptive, diagnostic, predictive and prescriptive analytics, institutions can gain insights that inform future planning. Machine learning can further support administrative functions by predicting trends and optimizing resource allocation. Aligning analytics frameworks with international standards and training teams for emerging technologies are crucial steps towards informed decision-making.
- ▶ **Digital transformation of benefits administration:** Social security institutions are progressively embracing digital transformation to enhance benefits administration. The Guidelines advocate for a unified business process model that accommodates scheme specificities yet promotes standardized ICT practices. This aims to streamline registration, contribution collection and benefit applications, fostering compliance and efficiency. By adopting electronic submissions and ensuring rigorous eligibility checks, institutions can enhance benefit delivery speed and accuracy. Continuous assessment through performance indicators ensures that processes remain effective and adaptable to changing demands.
- ▶ **Implementing interoperable social security systems:** Interoperability is a key focus, enabling different systems to communicate effectively within and across borders. The Guidelines recommend establishing interoperability frameworks that consider political, organizational, semantic and technical elements. By integrating ICT systems and ensuring coherent data exchange protocols, institutions can improve service delivery and benefit portability.
- ▶ **Maximizing the potential of mobile technologies:** Mobile technologies offer tremendous opportunities to improve social security services by enhancing accessibility and efficiency. The Guidelines emphasize the importance of secure mobile applications, advocating for strong user authentication and advanced encryption standards. Institutions are encouraged to plan mobile strategies that prioritize user privacy and security while ensuring technical integration is seamless, expanding reach and simplifying interactions for beneficiaries.
- ▶ **Aligning ICT investments with institutional goals:** Careful management of ICT investments is crucial to maximizing their value. The Guidelines suggest a life-cycle cost model to optimize resources, ensuring that ICT investments are strategically aligned with institutional objectives. This involves continuous monitoring and evaluation to assess investment performance and realized value. By coordinating ICT budgets with financial plans and personnel management, institutions can manage assets effectively, keeping infrastructure current and responsive to technological advancements.
- ▶ **Embracing emerging technologies in social security:** Emerging technologies like the Internet of Things and big data are transforming social security landscapes by offering innovative solutions to long-standing challenges. Implementing frameworks for these technologies ensures they are used effectively, while also respecting data protection and privacy standards. By integrating machine learning and data analysis tools, institutions can improve service provision, anticipate changes and innovate in programme planning. The Guidelines advocate for continuous alignment of technology deployment with strategic goals and performance reviews, ensuring that social security systems remain robust, secure and adaptive to future trends.

Recommendation 17. Incorporate the UNDP Digital Standards

The [UNDP Digital Standards](#) help system designers and builders to create inclusive digital ecosystems, and ways in which to navigate complex challenges they might face. By setting boundaries for data management and product creation, these standards ensure evolving tech is aligned with development goals, preventing investments in obsolete or incompatible technologies. Formed with input from internal and external experts, the Standards integrate real-world project insights and broad organizational experience.

What follows are particular insights derived from the UNDP Digital Standards.

Understanding exclusion

Certain groups face significant barriers to digital access, including women and the elderly. These barriers range from affordability issues to infrastructural gaps and language barriers. Understanding who is being left out helps tailor solutions effectively.

► **Table 9. The Dos and Don'ts of building inclusive digital services**

Do	Don't
Speak to people from groups more likely to be excluded.	Design for yourself.
Build for low literacy when possible by using visual signals and illustrative content instead of heavy text.	Assume the solution will work for everyone.
Observe real people using an early version of the solution to make sure it is accessible.	Continue without honest discussions about how you will address potential risks of exclusion.
Consider barriers and pain points where users might be excluded and work out how to address them.	
Localize your application by translating into ethnic languages.	

Design with user feedback

Testing is crucial to understanding what users truly need and want. By creating simple prototypes, like sketches or digital drafts, you can gather invaluable feedback without the costly effort of full development. Skipping straight to feedback before launching ensures your solution is desirable and viable in the intended context, saving both time and resources.

The power of prototypes

Prototypes allow for rapid testing and learning. Early testing helps identify the feasibility and adaptability of solutions, enabling adjustments before significant investments are made. Use tools like Figma or Marvel to experiment fast and iterate based on user insights. Remember, collecting feedback from real users helps refine functionality and boosts the chances of your project's success.

► **Table 10. The Dos and Don'ts of developing prototypes and utilizing feedback**

Do	Don't
Base your decisions on actual user data and feedback.	Base all your decisions only on managerial opinions.
Create prototypes before building anything.	Ask leading questions during usability testing.
Gather feedback on early ideas from at least 5 users.	Test functionality without the users.
Create a list of your assumptions.	

Core skills for success

Every digital project needs core talents: a designer to envision holistic solutions, a developer to build them, and a project manager to keep efforts aligned and timely. Together, they ensure that products are not just functional but effective and impactful.

Leveraging local knowledge

Build relationships with local digital experts and institutions. Engage teams with relevant lived experiences to ensure solutions that resonate. Regular communication with vendors can bring fresh insights and align efforts with the project's goals.

► **Table 11. The Dos and Don'ts of working with internal and external talents**

Do	Don't
Understand the expertise you need.	Outsource project management – take full ownership and responsibility.
Map skill set you have in your organization (not just IT).	Hire a vendor with a few milestones and wait until they deliver the final product.
Meet with vendors regularly (a minimum of twice per month).	
Ensure vendors continuously share insights and research that support decision-making.	
Ensure sufficient internal capacity is in place to manage the work.	

Define success with measurable outcomes

Establish clear success metrics for projects by assigning numbers to outcomes. Automatic data collection from analytics platforms, like user activity statistics, helps track progress. Real insights allow adjustments towards success, unlike vanity metrics,⁷ which provide little value for guiding strategies.

Enhance usability with short-term insights

Continuously measuring product performance reveals usability issues and user behaviour patterns. Focusing on short-term insights, rather than distant goals, aids in making real-time improvements. This approach supports effective decision-making and aligns technological developments with intended outcomes.

► **Table 12. The Dos and Don'ts of using data to design and update/improve digital projects**

Do	Don't
Track the number of users, their gender and their level of engagement, whenever possible.	Build your own data/metrics platform from scratch.
Use analytics if you have a web or mobile component.	Leave monitoring and evaluation until the end of the development cycle. Instead think about it from the beginning.
Feed data into a PowerBI Dashboard automatically.	Only measure vanity metrics or tech performance – be sure to focus on impact as well.
Collect data on product crashes/outages.	
Define your success metrics before launch.	
Check your metrics and course correct your product/service regularly.	
Use data to make informed design and business decisions.	
Establish feedback loops using qualitative insights developed through ongoing testing and user feedback, as well as web and programme analytics.	
Track metrics from disaggregated data (while respecting privacy) to understand where the digital divide might be showing up (for instance, the product works well for male users, but fewer female users are completing the journey).	

⁷ Namely, the 5-Year National Digital Economy Development Plan (2021–2025).

Recommendation 18. Build IT staff capacity

The rapid staff survey results (see Annex 2) provide valuable insights into the strengths and areas needing improvement within the LSSO IT team. Several areas would benefit from further development and training:

- ▶ **Infrastructure:** The team reports low knowledge and experience in cloud, hypervisors and storage systems. As these technologies are becoming increasingly crucial in modern IT environments, the team should prioritize training in these areas.
- ▶ **IT security:** While the team's general IT security knowledge is at a moderate level, specific security aspects like security tools and frameworks require improvement. Increasing proficiency in these areas would enhance the LSSO's overall security posture.
- ▶ **Training:** There is a considerable need for upskilling, as demonstrated by the low number of professional courses attended by team members in the past 12 months. Encouraging and supporting employees to participate in professional training programmes would benefit the LSSO's technical capabilities.
- ▶ **Emerging technologies:** Knowledge levels in emerging technologies such as AI, blockchain, big data analysis, biometrics and robotic process automation are relatively low. As these technologies continue to transform the IT landscape, investing in the team's understanding of these topics would be advantageous.
- ▶ **Monitoring tools:** Proficiency in application performance and server monitoring tools is currently low. Developing skills in these areas would help ensure optimal performance and stability of the organization's IT infrastructure.
- ▶ **e-Office suite:** The survey results indicate limited experience with e-Office applications, including e-Document, e-Task, e-Appointment, e-Report and e-Signature. Enhancing the team's familiarity with these tools would improve overall efficiency and collaboration in the digital workplace.

Recommendation 19. Create a service desk

A service desk is required to provide effective and efficient customer support and service delivery. The primary functions of this service desk should include:

- ▶ **Centralized support:** Managing customer issues in a streamlined way through a single point of contact.
- ▶ **Improved communication:** Facilitating clear communication between users and support staff.
- ▶ **Issue tracking and resolution:** Tracking issues from when they are reported until they are resolved.
- ▶ **Knowledge management:** Helping document solutions to common problems, and building a knowledge base.
- ▶ **Enhanced productivity:** Automating routine tasks and allowing IT staff to focus on more complex issues.

Steps needed to operationalize a service desk include:

- ▶ **Define objectives:** Establish clear, measurable, and achievable objectives for the service desk.
- ▶ **Identify requirements:** Assess IT infrastructure, technology and resource needs to support the service desk. Identify the skills and expertise required from the service desk team.
- ▶ **Design processes:** Develop standardized, user-friendly processes for ticket management, issue resolution and communication with users. Ensure processes are efficient, scalable and adaptable to changing needs and technologies.
- ▶ **Select a platform:** Evaluate service desk software options based on your specific requirements, scalability, ease of use and budget. Choose a platform that offers necessary features such as automation, reporting and analytics.
- ▶ **Establish guidelines, standard operating procedures and practices:** Develop guidelines and best practices that support standard operating procedures, such as communication etiquette, problem-solving methodologies and escalation procedures. Encourage consistency in service delivery while allowing for flexibility to handle unique situations or exceptions.
- ▶ **Train staff:** Ensure the service desk team has the necessary technical and interpersonal skills to deliver quality support. Provide initial training, as well as ongoing professional development opportunities, to keep staff updated on new technologies, policies and best practices.
- ▶ **Implement KPIs:** Establish key performance indicators (KPIs) that align with the service desk objectives and overall goals in social services delivery. Monitor KPIs regularly to track progress and identify areas for improvement.
- ▶ **Reporting:** It is useful to see a detailed breakdown of how many support calls are logged, using which application, for what issue, the demographics of the user logging the call, how the issues are solved, what the recurring issues are, and how these issues are fed into the bug fix or feature request to the development teams. It may also be worthwhile having a service level agreement (SLA) defining the performance metrics, for example, the maximum time to respond to and resolve a request.

8.5. Recommendations for strategy deployment

Recommendation 20. Evaluate IT service management practices

ITIL 4 (IT Infrastructure Library version 4) is the latest evolution of the widely adopted IT service management framework, developed by AXELOS. ITIL 4 provides organizations with a comprehensive set of guidelines and best practices to manage IT services and align them with business objectives, while embracing digital transformation. ITIL 4 will help the LSSO to successfully execute their strategy and drive performance and success.

The LSSO should evaluate their IT service management practices using the ITIL 4 framework. The LSSO will gain valuable insights into its current IT operations through this evaluation, identifying areas for improvement and aligning with ITIL 4 principles. Likely outcomes include better service delivery, increased efficiency, improved integration of IT services with strategic objectives and enhanced risk management.

Recommendation 21. Ensure effective communication of your strategy

This step should involve all levels of the organization and is crucial for ensuring a clear understanding of the LSSO's direction and priorities. Consider the following activities:

- ▶ Town hall-style meetings can promote a shared understanding and cultivate a sense of common purpose.
- ▶ Use presentations to elaborate on the strategy, covering the analysis, goals, objectives and key initiatives. Show these slides to various groups at the LSSO.
- ▶ Produce written materials like brochures and fact sheets (also consider video or multimedia content) that outline the strategy and its key components. Distribute these materials to all employees and ensure they are available for reference on an intranet.
- ▶ Facilitate interactive workshops or training sessions to increase employee engagement and enable them to see how the strategy relates to their specific responsibilities.

Sharing the strategy should not just happen once, but should be continuous. The IT management teams can use email, intranet and social media to maintain employee engagement and increase awareness of the strategy. This also ensures that new employees are aware of ongoing activities.

8.6. Digital transformation strategy

Recommendation 22. Create a digital transformation taskforce

To achieve seamless collaboration and informed decision-making, the following coordination strategies should be implemented:

- ▶ **Establish a digital transformation taskforce:** Form a dedicated task force with representatives from all relevant departments, including project management, planning, IT and execution teams. This task force will serve as a central hub for digitization efforts, enabling members to exchange ideas, discuss challenges and make collaborative decisions.
- ▶ **Open communications:** Encourage transparent and open communication among departments to facilitate knowledge sharing and joint problem-solving. Utilize various communication channels, such as team meetings, workshops and internal collaboration platforms, to keep stakeholders informed and engaged throughout the digital transformation process.
- ▶ **Define clear roles and responsibilities:** Clearly define the roles and responsibilities of each department in the digitization process, ensuring that everyone understands their contributions and areas of expertise. This helps prevent confusion, redundancies and potential conflicts.
- ▶ **Develop a shared vision and road map:** Create a unified digital transformation vision and road map that aligns with the overall organizational strategy. This road map should include short-term and long-term goals, key milestones, and success metrics, providing a clear direction for all departments to work towards.
- ▶ **Coordinate training and change management efforts:** Ensure that each department actively participates in training and change management initiatives to equip employees with the necessary skills and knowledge to adapt to new technologies and processes. This collaborative approach helps build a supportive and cohesive work environment during the digital transformation journey.

- ▶ **Establish feedback loops and continuous improvement mechanisms:** Encourage ongoing feedback and learning from all departments to refine digitalization strategies and address any emerging challenges. Regularly review the progress and impact of digital initiatives, making data-driven adjustments as needed.
- ▶ **Establish a change management team:** Set up a dedicated team to manage the transition, equipped with clear roles and responsibilities to oversee all aspects of the digital transformation process.

Recommendation 23. Develop a digital transformation strategy

Develop a strategic plan: Create a clear digital transformation strategy that aligns with LSSO objectives. Prioritize initiatives that offer the most value and can be implemented with your current resources. Set realistic timelines and milestones for each phase of the transformation.

Start small and scale: Begin with small, manageable projects that can deliver quick wins and demonstrate the value of digital transformation. Use the success of these projects to build momentum and support for larger initiatives.

Establish a governance framework: Form a digital transformation team or committee to lead the initiative. This team should include leaders from various departments to ensure a holistic approach and facilitate cross-functional coordination. Define roles, responsibilities and decision-making processes clearly.

Focus on skills and culture: Invest in training and development to build digital skills across the organization. Build a culture that embraces change, innovation and learning.

Leverage external partnerships: Consider partnerships with technology providers, consultants or industry peers who can offer expertise and resources. These partnerships can provide access to new technologies and insights that accelerate your transformation efforts.

Monitor, evaluate and adapt: Continuously monitor the progress of your digital initiatives against set goals. The LSSO should be prepared to adapt their strategy based on feedback and changes.

Recommendation 24. Risk management

Risks	Mitigation
Cybersecurity threats	
As the LSSO increases its reliance on digital platforms, the risk of cyberattacks, data breaches and unauthorized access to sensitive information grows. Ensuring robust cybersecurity measures are in place is crucial to protect both LSSO and users' data.	Implement multi-layer security and regularly update robust security measures such as firewalls, antivirus software and encryption. Conduct regular security audits and vulnerability assessments. Provide cybersecurity training to all staff members. Establish and enforce strict data access and usage policies.
Infrastructure	
Low internet connectivity	Develop offline capabilities in mobile apps.
Digital divide	
A digital divide can result in disparities in digital literacy and technical skills among team members.	Provide user education and support programmes. Provide training and support to improve digital literacy among team members. Ensure equitable access to technology and resources for all employees. Encourage a culture of collaboration and knowledge sharing to bridge skill gaps.
System integration and compatibility	
Integrating new digital systems with existing legacy systems can be challenging. There is a risk of compatibility issues, which can lead to disruptions in service delivery and increased costs.	Conduct a thorough assessment of existing systems before implementing new solutions. Engage IT experts to develop a comprehensive integration plan. Use APIs to facilitate seamless communication between different systems.

Risks	Mitigation
User acceptance and resistance to change	
There may be resistance to adopting new technologies from both LSSO staff and social security beneficiaries. This can stem from a lack of familiarity with new systems or fear of change, potentially leading to lower adoption rates and reduced effectiveness of new digital solutions.	Involve users in the design and implementation process to increase acceptance. Provide comprehensive training and support to help users become familiar with new systems. Communicate the benefits and rationale behind new technologies clearly and transparently. Implement a phased rollout to give users time to adjust and provide feedback.
Regulatory and compliance issues	
As digital transformation involves handling increased amounts of personal data, the LSSO must ensure compliance with data protection laws and regulations.	Establish clear policies and procedures for data handling and privacy. Regularly review and update policies to maintain compliance. Collaborate with legal experts to ensure adherence to regulations.
Resource allocation	
Significant financial and human resources are required for a successful digital transformation. There is a risk that these resources might not be adequately allocated, leading to incomplete or delayed implementation.	Develop a detailed budget and resource plan before starting the digital transformation. Regularly monitor and evaluate resource utilization throughout the project. Prioritize investments in essential technologies and solutions. Consider phased implementation to distribute costs over time.

Recommendation 25. Effective transitions/change management

Current readiness	Recommendations for effective transition
Infrastructure	
The LSSO has started its journey to expand its digital services, but the extent of digital infrastructure specifically tailored for robust, widespread social security services needs further development.	Invest in reliable and secure ICT infrastructure to support the increased load from digital transactions and data processing. Examples include planning a disaster recovery site, improved or dual internet connections at provincial offices.
Skill levels	
There may be a gap in digital skills among LSSO staff, which is crucial for managing and sustaining digital transformation.	To enhance the digital literacy of all employees, comprehensive training programmes should be implemented as part of staff training and development.
Systems integration	
Efforts to integrate digital solutions with existing legacy systems are underway, but the seamless functionality of these integrations remains a critical factor. It is challenging for existing staff to maintain scripts to perform this duty	A short- to medium-term plan for systems integration should be formulated and implemented.
Regulatory framework	
The LSSO operates under national regulations that may need updates to fully support digital operations, especially concerning data protection and cybersecurity.	Formally engage with government bodies to ensure regulations adapt to support digital innovations, especially those that prioritize protecting user data and privacy.

Recommendation 26. Developing plans

A fixed five-year plan may not be agile enough to adapt to rapid changes in the marketplace, technology and customer demands. Adopting an Agile-like approach to planning will help to respond effectively to technological advances (such as machine learning, AI, new security threats and so on), digital trends, market disruptions and regulatory shifts. This will help to make the LSSO digital strategic plan responsive, agile and flexible. A digital transformation task force in collaboration with governance teams should frequently evaluate key performance indicators. The LSSO should also focus on strengthening collaboration among internal teams and engaging external stakeholders, such as government agencies, technology providers and industry experts.

Enhanced feedback loops with emphasis on continuous learning, adaptation and improvement should be used. By incorporating feedback at multiple stages, the LSSO can deliver better services, improve customer satisfaction and drive ongoing innovation. To this end, table 13 presents a draft LSSO Digital Road Map.



► Table 13. Draft LSSO Digital Road Map

	2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Continuous initiatives								
Stakeholder engagement and communication								
Partnership and collaboration								
Digital literacy and culture								
Innovation management								
Compliance and regulatory alignment								
Cybersecurity and data privacy initiatives								
Sequenced Initiatives								
Digital transformation taskforce								
Updating IT strategy and planning								
Training and capacity-building design and implementation (Phase 1)								
Service desk design and rollout (Phase 1)								
Mobile app launch								
Performance metrics and monitoring (Phase 1)								

	2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sequenced Initiatives								
Business process reengineering (Phase 1)								
Digital transformation strategy design and workshops								
Governance and change management initiatives								
Design of new digital services and self-service options								
LSSO Digital Transformation Vision and Road Map								
Digital transformation strategy launch								
Training and capacity-building design and implementation (Phase 2)								
Service desk expansion								
Explore further integration and interoperability opportunities								
Data governance and quality								
User experience (UX) and accessibility								
Risk management and business continuity								
Expanding mobile application features								
Build and rollout new MIS systems								
Business process reengineering (Phase 2)								

▶ References

ASEAN Foundation. 2024. *One Divide or Many Divides? Underprivileged ASEAN Communities' Meaningful Digital Literacy and Response to Disinformation*.

BestBroadbandDeals.co. 2023. "The Cost of 1GB of Mobile Data in 237 Countries".
https://bestbroadbanddeals.co.uk/mobiles/worldwide-data-pricing/?mc_cid=a886a58da4#resources.

Council of Europe. n.d. "Lao People's Democratic Republic: Cybercrime Policies/Strategies".
<https://www.coe.int/en/web/octopus/-/lao-people-s-democratic-republic>.

DLA Piper. n.d. "Data Protection Laws in Laos".
<https://www.dlapiperdataprotection.com/index.html?t=law&c=LA>.

Dutta, Soumitra, and Bruno Lanvin (eds.). 2024. *Network Readiness Index 2024 – Building a Digital Tomorrow: Public-Private Partnerships for Digital Readiness*. Portulans Institute.

ESCAP (United Nations Economic and Social Commission for Asia and the Pacific). 2021. *Enhancing Capacities on Digital G2P and G2B Transfers and Digital International Remittances in Lao PDR*.

ISSA (International Social Security Association). 2019. *Social Security for the Digital Age: Addressing the New Challenges and Opportunities for Social Security Systems*.

ITU (International Telecommunication Union). n.d.-a. "Infrastructure Connectivity Map".
<https://bbmaps.itu.int/bbmaps/>.

———. n.d.-b. "ICT Price Baskets (IPB)". <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/IPB.aspx>.

Lao People's Democratic Republic, LSB (Lao Statistics Bureau). 2024. *Lao Social Indicator Survey III–2023: Key Indicators Report, January 2024*.

Lee-Archer, Brian. 2023. "Effects of Digitalization on the Human Centricity of Social Security Administration and Services", ILO Working Paper No. 87.

Merttens, Fred, Chansathith Chaleunsinh, Wajid Habib, Paul Jasper, Umer Naeem, and Revita Wahyudi. 2024. *Understanding Informality and Expanding Social Security Coverage in the Lao People's Democratic Republic*. ILO.

Oxfam. 2021. *Promoting Informal Workers' Access to the Lao Social Security Fund*.

Pavanello, Sara. 2021. *Digital Cash Transfers in Lao PDR*. WFP.

Samavong, Chansy, and De, Loveleen. 2024. *Report of the Mid-Term Review of the National Social Protection Strategy in the Lao People's Democratic Republic*. ILO.

UNCDF (United Nations Development Capital Fund). 2021, *Lao PDR Financial Inclusion Refresh*.

UNDP (United Nations Development Programme). 2022. *Digital Maturity Assessment – Lao PDR: Supporting Digital Government Transformation*.

UNU-EGOV (United Nations University Operating Unit on Policy-Driven Electronic Governance). 2023. "Digital Transformation of Social Security Administration and Services: A Comparative Analysis of Australia, Canada, Denmark, and France", ILO Working Paper No. 93.

World Bank. 2022. *Position the Lao PDR for a Digital Future: Priority Measure to Accelerate Digital Economy Development*.

▶ Annex 1. Key informant interviews

LSSO divisions and offices
Admin and Personnel Division
Planning and Cooperation Division
Internal Inspection Division
Legislation Division
Public Relations Division
Information and Technology Division
Finance Division
Registration and Contributions Division
Services Division
Claims Division
Accounting Division
Vientiane Province Social Security Office
Vangvieng District Social Security Office

Organization	Subjects discussed	Interviewees
ILO	Social protection, social security, LSSO, SSOs, MoLSW, LMIS	Loveleen De, Social Protection Programme Manager
ILO	Social protection, social security, LSSO, SSOs, MoLSW, LMIS	Thongleck Xiong, National Programme Coordinator on Social Protection
ILO	Social health protection	Marielle Phe Goursat, Project Manager on Social Health Protection
UNDP	LMIS	Lackuna Alounthong, Head of Exploration Korakot Tanseri, Head of Experimentation
LuxDev	LMIS and interoperability between LMIS and LSSO systems	Somsay Ouanphilalay, Labour Market Information Advisor to MoLSW
LuxDev	LMIS and interoperability between LMIS and LSSO systems	Janusz Dobkowski, LMIS International Expert
MoLSW	Data exchange, LMIS, interoperability, data centre hosting	
MTC	Interoperability, data centre hosting	
SB Lab 856	Mobile app development	

► Annex 2. Gap analysis – LSSO IT

The matrix below summarizes the replies to rapid staff surveys that were sent to all LSSO IT team members. The rapid survey asked respondents to rate their knowledge and experience in various areas including; business tools, infrastructure, IT security, training, emerging technologies, software, database technologies, monitoring tools and the e-Office suite. The results were aggregated to give a situational score, marked as: low (red), medium (yellow), and high (green).

► Annex Table 1. Gap analysis of LSSO IT team members

Topic	Situational score	Topic	Situational score
General		Software	
Tertiary education	High	GIT	Medium
Business tools		NodeJS	Medium
Project management	Medium	C#	Medium
Flowchart and diagrams	Medium	Python	Low
Data visualization tools	Medium	Flutter	Low
Figma	Low	Database technologies	
Infrastructure		NoSQL	Low
Servers	Medium	MySQL	Medium
Cloud	Low	MS SQL	Medium
Hypervisors	Low	Oracle Autonomous DB	Low
Storage systems	Low	Monitoring tools	
IT security		Application performance	Low
General	Medium	Server monitoring	Low
Firewalls	Medium	e-Office	
Tools	Low	e-Document	Low
Frameworks	Medium	e-Task	Low
Training		e-Appointment	Low
Professional courses attended in the past 12 months	Low	e-Report	Low
Emerging technologies		e-Signature	Low
Use of AI tools	Medium		
Experience of using AI	Medium		
Blockchain	Low		
Big data analysis	Low		
Biometrics	Low		
Robotic process automation	Low		
Machine learning	Low		

► Annex 3. Commentary on the Decision on Electronic Signatures

As noted in section 4.3.1 above, the Decision on Electronic Signatures, No. 1101/MPT, was issued by the Ministry of Posts and Telecommunications⁸ in 2020 to operationalize the Law on Electronic Signatures (2018). This annex provides a commentary on the Decision.

Purpose of the Decision

This Decision establishes principles, rules and measures for regulating electronic signatures in the Lao People's Democratic Republic. It aims to facilitate business by promoting the orderly conduct of transactions in an accurate, prompt and standardized manner. The overarching goal is to protect state, individual and organizational rights; enhance national security; and support socio-economic development. By defining these standards, the Lao Government seeks to align its digital transaction systems with international best practices, ensuring peace and social order in the digital realm. This proactive approach is a strategic step towards integrating technology into governmental infrastructures, proving beneficial for various sectors.

Understanding electronic signatures

Electronic signatures are described as symbols or processes created digitally to authenticate and verify the identity of the signatory. This technological advancement is crucial for documents where traditional signatures are impractical. They involve using public and private keys to encrypt and decrypt information securely. The initiative outlines the framework for managing these signatures, emphasizing standardized practices. Subscribers, including individuals and organizations using these signatures, must comply with specified certificate policies to ensure the authenticity and integrity of their digital communications, fostering trust within the digital space.

Roles of certification providers

The decision categorizes certification providers into two main levels: (i) the National Root Certificate Authority; and (ii) Sub-Certificate Authorities. The former provides overarching national certification, while the latter encompasses public, government, foreign and private certificate authorities. Each authority has distinct roles in managing and issuing digital certificates that serve different sectors and purposes, ensuring robustness in digital communication channels. The Lao National Internet Center (LANIC) plays a pivotal role in issuing national certificates, acting as a backbone for digital security infrastructure in the Lao People's Democratic Republic. This structured approach ensures every level of interaction in the digital domain is secure and verifiable.

⁸ The TaxRIS system already has APIs in place with other government databases, making it a particularly good candidate for the LSSO to connect with via its own API.

Types of certification services

A variety of services are offered for electronic signature certifications, including digital certificates, secure sockets layer (SSL), time stamps and others as decided by the Ministry. These services provide a foundational layer of trust for digital interactions. Digital certificates ensure authenticity, while SSL and time stamps enhance connection security and establish data integrity over time. By adopting these services, organizations can assure stakeholders of secure and authenticated digital communications. This comprehensive suite of services equips businesses and governmental entities with the necessary tools to thrive in a digital-first world, ensuring secure, verified interactions.

Licensing requirements

For entities wishing to provide general electronic signature certification services, stringent licensing requirements are in place. Applicants must be legal entities with a minimum registered capital of 10 billion kip in the Lao People's Democratic Republic. They must not be in bankruptcy or have a history of revoked licenses. Additionally, possessing domestic technical expertise for system management is mandatory. The application process encompasses extensive documentation to assure applicants meet detailed eligibility criteria. This rigorous process guarantees that service providers are well-equipped and financially stable, ensuring reliability and security within the electronic signature ecosystem.

Operational standards and security

Facilities offering electronic signature services must adhere to strict location and safety standards. This includes surveillance systems, proper installations to avoid water damage and secure room access control. Moreover, essential infrastructure, such as backup power systems and fire prevention methods, must be in place to ensure uninterrupted operations. Security of user information is paramount, necessitating robust systems to prevent unauthorized access and data loss. By enforcing these standards, the decision safeguards the integrity of digital transactions, ensuring users can trust the services provided, which is critical for maintaining public and organizational trust in electronic communications.

Preventative measures and compliance

The decision outlines measures to prevent outages or security breaches in electronic signature services, requiring providers to implement security alerts and unauthorized connection prevention systems. Providers must also maintain alternate backups for critical data, ensuring availability even during emergencies. Compliance with these standards is crucial, as it is designed to protect against exploitation by malicious actors. Adhering to these guidelines not only meets governmental expectations, but also positions providers as reputable entities capable of safeguarding digital communications. Comprehensive compliance measures serve as a cornerstone for secure and reliable electronic signature services within the digital economy.

Rights and responsibilities

Electronic signature service providers and users have clearly defined rights and responsibilities. Providers can request renewals or changes, but must also suspend services if users violate regulations. They are obligated to keep user information confidential unless mandated by law. Meanwhile, users are entitled to quality and secure services, with the right to inquire and litigate in case of service discrepancies. Users are also responsible for paying service fees and adhering to regulations. This balance of rights ensures both parties operate within a secure and equitable framework, fostering a trustworthy environment for digital transactions.

Prohibitions and consequences

Strict prohibitions are laid out to prevent unauthorized actions in the domain of electronic signatures. This includes falsifying certificates, obstructing services or impersonating service providers. Violations can lead to significant fines and potential legal action, emphasizing the importance of compliance. Service managers are also prohibited from unauthorized access or disclosure of confidential information. The decision sets clear consequences to maintain the integrity of the electronic signature system, acting as a deterrent against potential abuses. This ensures the system's reliability and integrity, vital for safeguarding digital communications against misuse.

Management and enforcement

The MTC, alongside provincial departments, oversees the management and enforcement of electronic signature regulations. The Ministry's duties include approving, monitoring and inspecting service providers to ensure they comply with established standards. They are also responsible for educating stakeholders about relevant laws. In cases of violations, the MTC can impose disciplinary measures, educate offenders or enforce fines, depending on the severity of the breach. This regulatory oversight is crucial to uphold the credibility and functionality of the electronic signature framework, ensuring it continually meets the nation's digital security expectations.

► Annex 4. Commentary on the Law on Social Security

Marked by a commitment to improvement, the Law on Social Security reflects the Lao Government's vision for a more secure future for its citizens. By replacing the previous Law on Social Security, No. 34/NA (2013), the amended Law (No. 54/NA, promulgated in 2018) identifies evolved responsibilities and opportunities. It aims to offer a comprehensive package of social security benefits addressing various lifecycle risks, including healthcare, unemployment benefits, pensions and others. The 2013 amendment expanded mandatory social security coverage to all enterprises having at least one employee and voluntary coverage to the self-employed and anyone wishing to enrol, thus ensuring that there is no legal barrier for any Lao resident to become a social security member. The Law clearly articulates effective management of the social security system, anchored by principles like equity and transparency. As the Lao People's Democratic Republic navigates socio-economic changes, this legal framework hopes to evolve with the times, becoming a backbone for the welfare of its citizens.

Inclusivity across public and private sectors

The applicability of the Law extends to both the public and private sectors, including the informal sector. The latter can choose to enrol voluntarily, thus widening the reach of social security to those in non-standard forms of employment. Members have access to a comprehensive set of benefits, with the exception of unemployment and occupational disease and employment injury benefits for voluntary members. This approach is designed to protect workers' rights and ensure that they achieve a basic standard of living, regardless of their sector of employment. The benefits and qualifying conditions are designed to address the diverse needs of different categories of workers.

Contribution dynamics and economic alignment

Acknowledging the linkage between the economy and social security, the Law sets contribution rates that reflect the country's socio-economic status and people's income levels, while meeting NSSF sustainability requirements. Contributions are paid by the government, employers, and employees, ensuring that each group shares the responsibility equitably. As socioeconomic conditions evolve over time, these rates are expected to be adjusted, keeping the system viable without overburdening contributors. Furthermore, procedures for claims and benefit payments are clearly delineated to ensure smooth operations.

Proactive measures through inspections

To ensure compliance with these frameworks, the Law stipulates enforcement through inspection measures and sanctions on non-compliant enterprises. These inspections should be carried out regularly, with some being scheduled in advance, while others may happen without prior notice. Inspected entities have the right to verify the inspectors' credentials and petition against dubious procedures, safeguarding their interests too. In practice, inspections are not yet being implemented, though information visits and campaigns at enterprises are conducted occasionally.

Consequences for violations

The Law spells out clear consequences for violations related to social security duties. Entities found guilty could face educational interventions, fines, disciplinary actions, or even criminal charges depending on the severity of the infraction. This deterrence model aims to ensure that stakeholders adhere to the provisions. By aligning punishments with the nature of violations, it seeks to uphold the Law's integrity while promoting remediation and prevention.

Rewards for compliance and performance

Interestingly, this legal framework includes incentives for those exemplifying outstanding compliance and performance. Rewards are designed to motivate stakeholders, showcasing the positive impacts of adhering to the Law. By recognizing excellence, the government not only lays down a carrot-and-stick approach but also encourages proactive participation from all segments of society. This holistic strategy aims to achieve a balance between enforcement and encouragement. However, efforts are still required to put all provisions in the Law into practice.



► Annex 5. Laws and decrees that establish the legal and operational framework of the LSSO

The table below summarizes the related laws and decrees that collectively establish the legal and operational framework for the LSSO, guiding its efforts to provide social security coverage across different sectors in the Lao People's Democratic Republic.

► Annex Table 2. Key laws and regulations that govern the functions and responsibilities of the LSSO

Prime Minister's Decree No. 207/PM (1999)	This decree established the social security scheme for employees in the private sector, which was a significant expansion from the earlier focus, which was solely on public sector employees.
Prime Minister's Decree No. 70/PM (2006)	This revised decree further developed the framework for social security, leading to the establishment of the State Authority for Social Security (SASS) for public sector employees in 2008.
Law on Labour (Amended 2013)	This law complements the social security legislation by defining labour rights, working conditions and employer responsibilities, which include compulsory registration with the LSSO for units employing at least one paid worker.
Law on Social Security (2013, amended in 2018)	This law merged the private and public sector schemes. It is the primary legislation that specifies the obligations of employers and employees regarding contributions, benefits that members are entitled to, as well as qualifying conditions. The 2018 amendment established the Lao Social Security Organisation as the administering body.
MoLSW Decision No. 4139 on Social Security Inspection (2021)	This decision outlines the roles and responsibilities of social security inspectors and the procedures for inspections to ensure compliance with social security laws.



