East Asia Pacific (EAP) Procurement Analysis

Recommendations for eGP Strategy for Pacific Island Countries to Ensure Wide Adoption Including a Sustainable Business Model

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Common Abbreviations and Defined Terms

This section explains the common terms and abbreviations used in this document.

Abbreviation / Term	Full Terminology / Definition
ADB	Asian Development Bank
AI	Artificial Intelligence
API	Application Programming Interface
BPR	Business Process Re-Engineering
COTS	Commercial-Off-the-Shelf
DPL	Development Policy Loan
EAP	East Asia and Pacific
eGP	Electronic Government Procurement
GUI	Graphical User Interface
ICT	Information and Communication Technology
IFMIS	Integrated Financial Management Information Systems
KONEPS	Korean ON-line E-Procurement System
KPI	Key Performance Indicator
MDB	Multilateral Development Bank
NAP	National Adaptation Plans
PFM	Public Financial Management
PIC	Pacific Island Country
PMO	Project Management Office
PPS	Korean Public Procurement Service
RFI	Request for Information
RFP	Request for Proposal
SaaS	Software-as-a-Service
SIASG	Brazil's Integrated General Services Administration System
SME	Small and Medium Enterprise
SPP	Sustainable Public Procurement
WOB	Women Owned Business

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1 Executive Summary

This report provides a recommended electronic government procurement (eGP) strategy for consideration by Pacific Island Countries (PICs). This recommendation is part of a broader effort to strengthen procurement across PICs and leverage public procurement to generate economic and sustainability benefits, building on collective efforts over the past two decades by the World Bank and Asian Development Bank (ADB) to leverage procurement policies to strengthen public institutions and national economies. By fostering competitive conditions for local suppliers, contractors, and consultants, the World Bank and ADB seek to maximize the participation in and success of financed projects. Additionally, the World Bank and ADB seek to leverage procurement to promote environmental, social, and economic sustainability.

The strategy is based on findings from desk research on the current state of eGP in PICs, the need to integrate sustainable public procurement (SPP) into the procurement process, a review of best-in-class eGP systems, and input collected during stakeholder engagement discussions. PICs have embraced the use of eGP at various levels, ranging from the use of advertisement websites to the implementation of eGP systems (e.g. TenderLink and In-tend). While these systems provide basic eGP functionalities such as eAdvertisement, eTendering, and supplier registration, they are missing other commonly used eGP modules and the functionality that is required for implementation of Sustainable Public Procurement (SPP).

Three (3) options were identified for the strategic path forward for eGP in PICs:

- Option 1 – Continue with current individual systems across the PICs with increased investment;
- Option 2 – Implement new / updated eGP systems for each country which are feature rich and support new functionalities and technologies; and
- Option 3 – Develop a regional eGP platform, consisting of a single use system with multiple instances for PICs, each conforming to individual requirements.

Each option was scored across nine (9) parameters, with the development of a regional eGP platform (Option 3) scoring the highest. A detailed 3-year implementation roadmap was developed for Option 3 that highlights the timing of pre-procurement, system procurement, and post-procurement activities. An estimated cost model shows that the total cost of implementing Option 3 is $1.625 million over a 5-year period.

Key findings and takeaways from the recommended eGP strategy for the PICs are listed below.

- PICs have embraced the use of eGP at various levels, ranging from the use of advertisement websites to the implementation of eGP systems (TenderLink and In-tend). These systems do not provide a full suite of eGP functionality (e.g., SPP functionality).
- Market analysis shows that there is sufficient activity to support various eGP system requirements, ranging from a simple, straightforward system to a complex system that includes advanced functionalities.
- Given the critical importance of spend analysis, it is essential that eGP systems capture and export data in a format that is suitable for analysis and visualization. Interoperability with IFMIS and other systems is critical.
- PICs can implement updates to their legal and regulatory frameworks to facilitate eGP expansion and the use of SPP tagging by taking advantage of ongoing updates to procurement regulations.

- Stakeholders from select PICs expressed interest in learning more about a potential regional eGP system.
- The results of an options analysis showed that Option 3, development of a regional eGP platform consisting of a single use system with multiple instances for PICs, is the recommended path forward. Pooling of resources across PICs for O&M and other associated activities / costs is a key attribute of Option 3.
- The detailed 3-year implementation roadmap consists of 10 high-level activities that should be coordinated by a PMO.
- It is imperative to have a governance structure or legal entity in place to coordinate system maintenance and facilitate other system-related matters. An example of an existing organization that could perform this function is the Pacific Island Forum, which currently runs the Regional Tender Portal.[1]
- The estimated total cost of implementing Option 3 is $1.625 million over a 5-year period.
- The results of requirements and budget development processes will aid in the selection of an appropriate system for implementation.

2 Introduction and Objectives

PICs are currently in different stages when it comes to embracing procurement technology. Some PICs have integrated the use of eGP platforms into their procurement process while others only utilize websites to advertise tenders. A small number of PICs do not use any procurement technology to facilitate their procurement process. The World Bank and Asian Development Bank (ADB) recognize an opportunity to standardize the use of eGP across PICs and have commissioned the preparation of this eGP strategy for consideration by PICs.

The overall objective of this eGP strategy is to develop and recommend a path forward to PICs that maximizes eGP implementation and usage across PICs. Considerations that are used to formulate the strategy include market research and options analysis, followed by the development of an implementation plan and a preliminary implementation cost estimate. The recommended path forward is part of a broader effort to strengthen procurement across PICs and leverage public procurement to generate economic and sustainability benefits.

PICs stand to reap substantial benefits from scaling up their use of eGP and adopting more advanced functionalities. Key benefits are listed below.

- eGP can increase the visibility of contracting opportunities;
- Online advertisement can attract more vendors to bid on tenders from a broader geographic area with a regional eGP system potentially attracting the highest number of vendors;
- A larger pool of potential vendors may also help address supply chain challenges in the region;
- A regional eGP system can create economies of scale both in the cost and management of the system;
- eGP system design can support inclusion of tailored templates, for example green specifications, for commonly used items related to disaster risk management;

[1] For more information see https://regionaltenders.forumsec.org

- New functionalities can include data and analytics, which can identify areas for cooperation such as the use of Framework Agreements;
- Functionalities can support sustainable procurement initiatives that are critical to PICs;
- Increased use of eGP translates into increased transparency and can potentially facilitate access to procurement opportunities for disadvantaged businesses; and
- Greater efficiency and cost savings through increased use of eGP systems.

This eGP strategy follows up on two technical background papers, "Summary of Existing PIC e-Procurement System Deployment and Functionality" and "Recommendations for Integrating SME and Gender Tags in PIC e-Procurement and in Annual Reporting," that were prepared as part of the EAP Procurement Analysis project. The project was led by the World Bank in collaboration with ADB.

3 Review of Primary Research

3.1 Assessment of Current eGP System Usage in Pacific Island Countries[2]

An assessment of current eGP system usage in PICs was conducted by creating an inventory of all systems and observing each eGP system individually. The following table provides a high-level summary of findings (World Bank 2024a).

Country	eGP System	Observed Modules / eGP Functionality		
		ePublishing / Notification	eTendering / eQuotation	Vendor Management / Supplier Registration
Cook Islands	In-tend + Separate Advertisement Website	✓	✓	✓
Federated States of Micronesia	No System	X	X	X
Fiji	TenderLink	✓	✓	✓
Kiribati	TenderLink	✓	✓	✓
Nauru	TenderLink	✓	✓	✓
Niue	No System	X	X	X
Palau	Advertisement Website	✓	X	X
Republic of the Marshall Islands	No system	X	X	X
Samoa	TenderLink	✓	✓	✓
Solomon Islands	TenderLink	✓	✓	✓
Tonga	Advertisement Website[3]	✓	X	X
Tuvalu	TenderLink	✓	✓	✓
Vanuatu	In-tend + Separate Advertisement website	✓	✓	✓

Table I. Inventory of Pacific Island Country eGP Systems

Key observations include:

[2] This content is referenced from the background paper, "Summary of Existing PIC e-Procurement System Deployment and Functionality."

[3] This website is currently not accessible (404 Error).

- Out of the thirteen (13) PIC eGP systems reviewed, six (6) countries use TenderLink while two (2) countries use In-tend.[4] Three (3) countries use government-provided advertisement websites, either in conjunction with a procurement system or as a stand-alone platform. Federated States of Micronesia, Republic of the Marshall Islands, and Niue do not currently use any procurement-related systems.
- Both TenderLink and In-tend provide the basic functionalities of eAdvertisement, eTendering, and the ability for suppliers to register within the system.
- Outside of ePublishing / Notification, eTendering / eQuotation, and Vendor Management / Supplier Registration, other eGP system modules / functionalities such as eProcurement Plan, eComplaints, ePurchasing, eEvaluation, and eSignature were not observed.
- A limited number of tenders was observed on each eGP system, with either zero (0), one (1), or two (2) tenders being active at any point in time. Many tenders that were observed on the individual government advertisement websites were not observed in the corresponding eGP systems.

3.2 eGP System Market Landscape[5]

The market for eGP platforms is international in scope and relatively robust. Market participants are based in many countries with most being based in the United States, Australia, and Europe. The following table captures information for key market participants including headquarters or nearby sales office location, company website, annual revenue, and identified public sector customers. It should be noted that not all captured market participants are suitable for implementation in PICs due to factors such as implementation costs, operations and maintenance requirements and costs, and system complexity. As with any procurement process, the results of requirements and budget development processes will aid in the selection of an appropriate system for implementation.

[4] Access to In-tend is provided to PICs by ADB at no cost; while not listed in the table, Tuvalu may also use In-tend in addition to TenderLink.

[5] This content is referenced from the background paper, "Summary of Existing e-Procurement System Deployment and Functionality."

Company Name	Office[6]	Website	Revenue ($ million)	Public Sector Experience / Customers
Atexo	France	http://www.atexo.com/	13.3	French National Government
Basware	*Australia*	https://www.basware.com/en/	378	UK Department for Work and Pensions
BiP Solutions	United Kingdom	https://www.bipsolutions.com/	47.1	UK Ministry of Defense, Crown Commercial Service, Department of Health; Government of Lebanon; Government of Bahamas
Bonfire	Canada	https://gobonfire.com	7.8	Government of Cayman Islands
Corcentric	United States	https://www.corcentric.com/	110	N/A
Coupa	*Singapore*	https://www.coupa.com	725	N/A
EASibuy	United States	https://easibuy.com	---	Government of Cayman Islands; City of Los Angeles
European Dynamics	Greece	https://www.eurodyn.com	85	Zambia Procurement Authority; Tanzania Procurement Authority
FreeBalance	*Philippines*	https://freebalance.com/en/	44	Kiribati (IFMIS[7] only)
GEP	*Shanghai*	https://www.gep.com	1,300	N/A
Guadaltel	Spain	https://www.guadaltel.com/	11.8	Spanish Federation of Municipalities
In-tend	United Kingdom	https://www.in-tend.co.uk/	5	St. Lucia Dept. of Finance, ADB (Cook Islands, Vanuatu)
Ivalua	*Singapore*	https://www.ivalua.com	200	City of New York, USA
Market Dojo	United Kingdom	https://marketdojo.com/	1.65	Shropshire Council, UK; Kent County Council, UK
Marketplanet	Poland	https://www.marketplanet.pl/en/	---	N/A
Nextenders	India	https://www.nextenders.com	18.6	Botswana Procurement Authority; Philippines Dept. of Budget and Management
Oracle	United States	https://www.oracle.com	50,000	Government of New Brunswick, Canada; Maldives Ports; City of Tampa, Florida; State of Oklahoma, USA; Jamaica Port Authority
ProcurementExpress.com	Ireland	https://www.procurementexpress.com	1.5	N/A
ProcureTiger	India	https://www.procuretiger.com/	65	Poland National Health Fund
SAP	United States	https://www.sap.com/	33,200	N/A
Synertrade	*Shanghai*	https://synertrade.com/en	2,500	World Bank
TenderLink	Australia	https://illion.tenderlink.com/	28	Fiji; Kiribati; Nauru; Samoa; Solomon Islands; Tuvalu
uStudio	Ukraine	http://www.ustudio.company	---	Ukraine Ministry of Economic Development
Zycus	*Singapore*	https://www.zycus.com/	285.7	ASC Pty Ltd.

Table II. e-Procurement Market Participants

[6] Headquarters are listed in standard font; nearby offices are italicized.

The figure below charts market participants according to their public sector maturity interest against their solutions' functional coverage (World Bank 2021).[8]

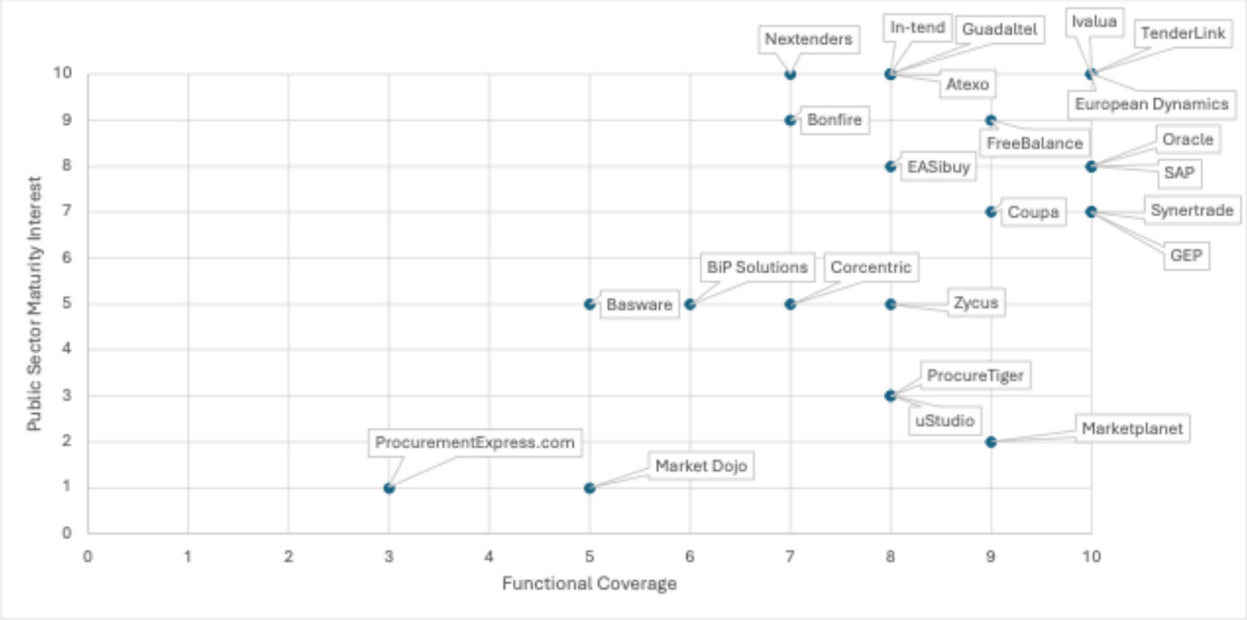

Figure I. Market Participants Mapping

The lack of strong, internally developed or pre-existing eGP systems in the EAP region suggests that there is a market opportunity for the identified market participants. The wide range of company revenue values indicates that there is sufficient market activity to support various eGP system requirements, ranging from a simple, straightforward system to a complex system that includes advanced functionalities.

3.3 Stakeholder Engagement Sessions

Valent conducted virtual engagement sessions with procurement staff from select PICs to gain a better understanding of eGP and procurement practices within each country and to confirm and supplement learnings from desk research. The discussions were held during the month of August 2024 with representatives from Fiji, Kiribati, and Cook Islands. A complete list of individual participants can be found in Annex II. The agenda that was covered during each meeting is listed below.

- Overview of the project and expected deliverables.
- Discussion of current eGP system(s) and procurement practices including:
    - Limitations and challenges;
    - System functionality and cost; and
    - eGP adoption within the local government.

[7] IFMIS stands for Integrated Financial Management Information Systems.

[8] Functional coverage corresponds to the percentage coverage of the eGP features. For each company, the percentage is based on the company's response to a market survey questionnaire, converted into a 1-10 score. The company's maturity / interest regarding the public sector was also assessed from a questionnaire and is based on the number of the company's projects that are carried out in the public sector, the percentage of revenues generated from public organizations, and the strategic importance that is given to specific public procurement functionalities.

- Discussion of desired functionality for an eGP system.
- Discussion of benefits and challenges to implementing a common eGP system across PICs.
- Review of any eGP systems that are currently being considered for future implementation.

Meetings minutes from each engagement session were compiled and analyzed, revealing several themes and considerations around eGP use in the PICs. A summary of the key takeaways and considerations is presented below.

- Positive impacts of the use of eGP included (i) the ability to automate and manage supplier notifications, (ii) gaining access to larger supplier networks, and (iii) a reduction in paper usage.
- Only one (1) of the engaged PICs uses In-tend, a free option supplied by ADB, as their procurement system. The others are either currently using or migrating to TenderLink.
    - Current system costs are wide ranging – one (1) PIC spends ~$34,000 on eGP per annum[9] while another spends ~$1,700 per annum.
    - Support and maintenance hours for In-tend, which is based in the United Kingdom, do not align with working hours in some PICs, resulting in system outages and general frustration for users.
    - Scheduled maintenance times are also a problem with TenderLink particularly when the scheduled downtime occurs during procurement submission deadlines.
- Procurement across governments is generally not centralized; individual ministries or departments may manage their own procurement activities. In one case, multiple instances of an eGP system are used to support procurement activities across ministries.
- The top challenges faced in eGP adoption include the inability of suppliers to use systems due to a lack of training and general distrust for digital solutions (e.g., concerns over cybersecurity and preference to continue to use paper-based processes).
- Outside of increased access to system modules (e.g., bid evaluation, spend analytics, contract management, etc.), other desirable attributes in a new eGP system include:
    - Compatibility and integration with existing Integrated Financial Management Information Systems (IFMIS);
    - Ability for tenders to reach a large number of suppliers;
    - Helpdesk support that is available 24 hours a day / 7 days a week; and
    - Access to a mobile application.
- Participants from all engaged PICs expressed interest in learning more about a potential regional eGP system.

As the PIC eGP strategy development process moves forward, it is expected that additional stakeholder engagement will be conducted to ensure that all PICs are able to provide input and feedback.

[9] Includes costs for Folio which is used for contract management. For more information see https://www.usefolio.com.

3.4 Integration of eGP Systems with Integrated Financial Management Information Systems

Integration of eGP systems with IFMIS is a growing focus in public sector reform. Both systems aim to improve efficiency, transparency, and accountability in government operations. When combined, they create a more streamlined and coherent approach to public sector management.

Key benefits to integrating eGP systems with IFMIS include:

- Improved financial control: By linking procurement directly to financial management systems, governments can ensure that funds allocated for procurement are properly accounted for and used efficiently.
- Increased transparency: Integration allows for real-time tracking of procurement processes alongside financial reporting, reducing opportunities for corruption or misuse of funds.
- Better budget planning and execution: Integration facilitates better alignment between procurement activities and national budgets, ensuring that funds are available and committed before procurement processes are initiated.
- Streamlined reporting: Financial data from procurement processes can be automatically incorporated into budget and financial reporting systems, reducing errors and saving time.

Notable challenges to integrating eGP systems with IFMIS include:

- Technical complexity: Integrating eGP and IFMIS requires advanced Information and Communications Technology (ICT) infrastructure and expertise. The systems need to be compatible, which can be difficult, particularly in countries with legacy systems or where there is a lack of technical capacity.
- Data security: With the handling of sensitive financial and procurement data, cybersecurity is a major concern. Ensuring that the integration does not expose the systems to data breaches is crucial.
- Resistance to change: Public sector officials and suppliers may resist the change to integrated systems due to lack of familiarity or concerns about increased accountability and oversight.

From a technical standpoint, the functionality of systems sending and receiving data – how systems connect with each other to exchange information – has greatly improved over the last 10 years, particularly via the use of standardized Application Programming Interfaces (APIs). However, data structures in the integrated systems must be monitored as modifications within the eGP system or IFMIS may lead to increased data complexity (World Bank 2021).

3.5 Importance of Spend Analysis

Spend analysis is crucial for promoting transparency, accountability, and efficiency in public financial management. Spend analysis enables informed decision-making, helping policymakers allocate funds more strategically and prioritize key initiatives. By analyzing spending patterns, governments can identify areas where resources are being used effectively, detect inefficiencies or potential waste, and develop sourcing strategies (e.g. Framework Agreements). Moreover, analyzing government spend data can reveal trends and opportunities for cost savings, such as through bulk purchasing or renegotiating contracts. Spend analysis also supports efforts to combat corruption by providing a clear audit trail and ensuring that public funds are being spent in line with legal and ethical standards. Ultimately, effective spend analysis fosters trust between the government and the public, as it demonstrates a commitment to managing taxpayer money responsibly.

Some of the key benefits of spend analysis include:[10]

- Achievement of full visibility into all government spend;
- Identification of savings opportunities and realization of incremental savings;
- Identification of areas to streamline and centralize the procurement process and gain other administrative efficiencies;
- Management of risk and unchecked spending to ensure compliance;
- Evaluation of supplier performance for better relationship management;
- Benchmarking of procurement performance internally across ministries and procuring entities; and
- Ability to use the data for improved strategic planning.

Given the critical importance of spend analysis, it is essential that eGP systems capture and export data in a format that is suitable for analysis. Interoperability with IFMIS and other systems is also critical. Data should be exchanged among systems via API when possible but manual data extraction processes such as extract, transform, and load (ETL) may also be suitable.[11] Additionally, data should be available in a format that facilitates data visualization via tools such as PowerBI.[12]

3.6 eGP and Sustainable Public Procurement[13]

Sustainable Public Procurement (SPP) tagging generally refers to a process to help identify tenders that include sustainability attributes. The critical question is what counts as sustainable, be it environmental, economic or social. Thus, tagging builds on a country's sustainability priorities contained in national planning documents, strategies, or National Adaptation Plans (NAPs).[14] Legal and regulatory frameworks help to integrate sustainability priorities into public procurement. Examples for environmental sustainability are:

- Decrees on the definition, development, and application of green technical criteria;
- Decrees allowing for the application of ecolabels and eco certifications in public procurement;
- Establishing a system of environmental criteria where vendors need to become certified as meeting those criteria by a relevant ministry; and
- Amendments to procurement regulations to define what tagging consists of in the eGP system and how it is applied.

For social sustainability, legal and regulatory support may include:

- Regulations that (i) define what a Women Owned Business (WOB) is, (ii) establish a WOB certification process, and (iii) implement a WOB certification process;
- Procurement regulations or laws establishing set asides and quotas for tenders to be awarded to WOB;

[10] Source: sievo.com
[11] For more information on ETL see https://www.ibm.com/topics/etl
[12] For more information see https://www.microsoft.com/en-us/power-platform/products/power-bi
[13] This content is referenced from the background paper, "Recommendations for Integrating SME and Gender Tags in e-Procurement and in Annual Reporting."
[14] For more information see https://unfccc.int/topics/adaptation-and-resilience/workstreams/national-adaptation-plans

- Regulations or decrees defining which groups are identified as socially disadvantaged; and
- Establishment of a national registry / unique identification systems that can be cross-referenced to determine the gender of the individual registered as the business owner.

Economic sustainability often targets small and medium enterprises (SMEs), domestic enterprises, and the use of local materials and / or content. Relevant regulatory support and complementary tools may include:

- Procurement regulations that establish domestic preferencing and / or SME preferencing that awards additional points during tender evaluations;
- Setting a quota for the number of contracts to be awarded to SMEs;
- Establishing and using SME databases to identify and verify suppliers that are SMEs;
- SME certifications; and
- Using a tax database to confirm SME status.

With these references for sustainability attributes, tagging can be built into i) vendor registration on an eGP platform and (ii) tenders (based on sustainability attributes being included in specifications / requirements).

3.6.1 Legal and Regulatory Context in Pacific Island Countries

Most PICs lack explicit references to SPP in their legal and regulatory frameworks. In all but one PIC, procurement laws and regulations make no reference to SPP. Thus, there is no definition for sustainable public procurement, or what counts as environmental, social, or economic sustainability. SMEs and domestic firms are considered in procurement regulations, as many PICS include domestic preference schemes that can also benefit SMEs, but regulations rarely reference environmental and social sustainability and lack definitions for these concepts. With this gap, it also becomes more challenging to establish environmental or social criterion for tagging.

Few PICs have procurement regulations that reference electronic methods or eGP systems. Adopting more advanced eGP functionalities may require PICS to recognize digital signatures, the legal equivalence of electronic documents, and potentially root this in broader digital legislations.

More generally, social sustainability is a challenge across PICs and public procurement systems minimally consider gender. PICS need to determine how social risk is addressed through public procurement, and how to translate those factors into relevant criterion to facilitate social sustainability tagging. At the same time, PICs do not articulate clear priorities on engaging WOBs in public procurement. In response, PICs could begin to address social and gender inclusion by developing gender responsive procurement strategies. The latter could also help establish references for social risk, WOB, and facilitate tagging.

3.6.2 Recommendations for Sustainable Public Procurement in Pacific Island Countries

With the previously states challenges in mind, PICs can implement updates to their legal and regulatory frameworks to facilitate eGP expansion and the use of SPP tagging. PICs are advised to take advantage of ongoing updates to procurement regulations to:

- Establish a definition of SPP, including the definitions for environmental, social, and economic sustainability;
- Establish complementary guidelines that explain how to implement sustainability in public procurement, such as the use of rated criteria, establishing green technical specifications, recognition of eco labels, or adopting gender responsive procurement; SPP definitions and

corresponding guidelines can then help establish the reference criteria for environmental and social, and economic tagging;

- Recognize eGP as being on par with manual procurement;
- Amend bid document conditions wherever required to suit eGP; and
- Mandate online vendor registration for all bidders, which is a critical process for collecting data SME and social tagging.

3.7 Review of Best-in-Class eGP Systems

A review of best-in-class eGP systems across the world was conducted to gain a better understanding of the latest offerings and what is on the horizon for eGP systems in terms of functionality. Three (3) eGP systems were reviewed: (i) Korean ON-line E-Procurement System (KONEPS) (South Korea), (ii) ProZorro (Ukraine), and (iii) Comprasnet (Brazil). Each system has received international recognition for innovation and effectiveness, having evolved significantly since their inception with ongoing updates to integrate new technologies and enhance functionality. Key achievements and the outlook for each eGP system are summarized below. Additional details for each eGP system can be found in Annex I.

KONEPS (South Korea)

The Korean ON-line E-Procurement System (KONEPS), which processes approximately two-thirds of all public procurement in South Korea, is considered a truly comprehensive e-procurement system, enabling administrative costs savings of approximately $8 billion annually.[15] Since its establishment, KONEPS has been lauded by the international community for its innovation and effectiveness. In 2003, the United Nations awarded the Korean Public Procurement Service (PPS) with the Public Service Award, in recognition of KONEPS' innovativeness, transparency, and efficiency. In 2004, the United Nations selected KONEPS as an exemplar of best practices in e-procurement systems. KONEPS has been used as a benchmark or foundation for e-procurement systems in countries around the world.

KONEPS continually incorporates new technologies and functionalities to improve service. For example, KONEPS has integrated the following functionality over the past 15 years:[16]

- Fingerprint recognition system in 2010;
- Corruption activity analysis system in 2014;
- Cloud security system in 2015;
- Integration of Open APIs in 2017; and
- Big data-based decision-making systems in 2018.

PPS is currently working on "Next Generation KONEPS". This update is focused on building a user-friendly interface and boosting user convenience and system stability. PPS also plans to leverage artificial intelligence (AI) and blockchain technologies to improve the platform. The AI pilot aims to establish an

[15] For more information see https://www.oecd-ilibrary.org/docserver/9789264249431-en.pdf?expires=1720528315&id=id&accname=guest&checksum=D2A0CF6F1F6D16D52F6492B2F2A155A1

[16] For more information see https://unctad.org/system/files/non-official-document/dtl_eWeek2018p77_HeehoonKang_en.pdf

integrated analysis platform and improve process and user convenience. The project was first initiated in 2021, piloted in 2022, and is expected to be completed in 2024.[17]

ProZorro (Ukraine)

ProZorro (which means "transparency" in Ukrainian) is Ukraine's public procurement system and is a collaboration between the government, business community, and civil society. ProZorro's foundation is based on the following principles:

1. Everyone sees everything: The entire procurement process is visible and transparent on the Prozorro portal;
2. Competition is above all: Prozorro increases the number of bidders, boosting competition and saving taxpayer funds; and
3. Golden triangle of partnership: (i) The Ministry of Economic Development and Trade is responsible for compliance, procurement service professionalization, and data storage, (ii) Transparency International Ukraine, a civil society entity, monitors procurement, and (iii) commercial platforms enable access for bidders and procuring entities.

ProZorro has been globally recognized as an innovative public procurement system. Its collaborative approach earned it a 2017 World Procurement Award for Cross Functional Collaboration. In 2019, ProZorro received a Global Public Service Award for having an outsized impact from minimal investment in terms of human and capital resources. In support of increased transparency, ProZorro's code is found on GitHub, a platform that allows developers to create, store, manage, and share code. ProZorro's automatic screening function helps to identify tenders that are particularly vulnerable to corruption, thus minimizing fraud and saving the government money. While future technological updates for ProZorro are uncertain due to the Russian invasion of Ukraine, the World Bank has noted its position that, going forward, ProZorro should be used for all reconstruction projects that it finances.[18]

Comprasnet (Brazil)

Brazil's e-procurement system is currently at the tail end of a significant overhaul, resulting from a 2021 statute that sought to modernize and streamline public procurement in the country. Information in Comprasnet is available for public access through APIs, which further supports the goal of achieving transparency in public procurement.[19] Comprasnet's website contains manuals for both procurement officials and bidders/suppliers to familiarize themselves with the platform.[20] The immediate future of public procurement and Comprasnet will involve building capacity and ensuring compliance on the part of all public entities to whom the 2021 statute applies.

Public procurement entities across the world are attempting to integrate AI into their platforms. Brazil has been a leader in this space, and has applied AI, or machine learning, to several procurement process components. For example, AI has been used to analyze submitted documents to identify signs of contract

[17] For more information see https://events.development.asia/system/files/materials/2023/10/202310-ai/data-analytics-project.pdf

[18] For more information see https://www.me.gov.ua/News/Detail?lang=en-GB&id=dbbeab9c-6de8-428d-b974-48f2b46f8cd8&title=TheWorldBankRecommendedUsingProzorroForAllPurchasesForTheReconstructionOfUkraine

[19] For more information see https://www.gov.br/pncp/pt-br/acesso-a-informacao/dados-abertos and https://www.gov.br/pncp/pt-br/acesso-a-informacao/painel-pncp-em-numeros

[20] For more information see https://www.gov.br/compras/pt-br/acesso-a-informacao/manuais/

deviation and fraud.[21] AI is also used to analyze data produced by the procurement process to gain insights into trends and support changes in the pursuit of greater transparency, efficiency, and cost savings.

4 Key eGP Considerations for Pacific Island Countries

Current eGP system usage within PICs is fairly limited with PICs using standard modules / functionalities such as eAdvertisement, eTendering, and supplier registration capabilities. eGP system modules / functionalities such as eProcurement Plan, eComplaints, ePurchasing, eEvaluation, and eSignature were not observed as currently being used. Also, a limited number of tenders was observed on each eGP system, with either zero (0), one (1), or two (2) tenders being active at any point in time. This signals that any replacement eGP system does not necessarily need to support more complex functionalities such as the use of AI and others that are present in best-in-class systems, although advanced functionalities may be of interest to PICs. Most current commercially available eGP systems should be able to satisfy the needs of PICs.

It is critical for PICs to have access to a robust supplier network, which typically leads to improved procurement outcomes as tenders are more likely to reach a qualified pool of potential suppliers, leading to increased competition and competitive pricing. During stakeholder engagement sessions, a representative from one of the PICs that uses TenderLink pointed to the system's existing supplier network as a significant reason for using that system. To reach a broader audience of suppliers, PICs may also access solutions such as the Regional Tender Portal, which is a regional repository of public tenders that is hosted by the Pacific Islands Forum.[22] PICs can benefit from having a similar shared platform that is facilitated by a common regional eGP system.

To meet the current global push for implementing SPP, including the integration of tagging, PICs will require an eGP system that can accommodate customization. If this implies a new or enhanced platform, most SPP tagging recommendations can be implemented in the medium term. PICs should consider designing eGP systems that are more accessible to SMEs and WOBs. Recommendations include:

- Keeping the registration process simple;
- Instituting low fee or free access to eGP systems and tender opportunities; and
- Conducting market / supplier outreach to disseminate information about the system and train underrepresented groups.

5 Options Analysis for eGP for Pacific Island Countries

This options analysis is designed to identify and evaluate various options for an approach to eGP in PICs. The findings of this options analysis will be useful to inform subsequent market research that will need to be undertaken as part of the path forward, including a robust requirements analysis process. This options analysis is vendor-agnostic. The following three (3) options were considered as part of the analysis.

[21] For more information see https://justen.com.br/wp-content/uploads/2024/06/Nott-Rafael-Licitacoes-e-Contratacoes-Eletronicas-no-Brasil-paper.pdf.
[22] For more information see https://regionaltenders.forumsec.org

Option	Description
Option 1 – Continue with individual systems across the PICs with increased investment.	• PICs continue to use the systems that are currently implemented including TenderLink, In-tend, etc. • Development partners provide procurement and Information and Communication Technology (ICT) support as necessary. • Robust training programs are implemented to increase and optimize utilization across the government within each PIC.
Option 2 – Implement new / updated eGP systems for each country which are feature rich and support new functionalities and technologies.	• Each PIC implements an eGP system that is tailored to its own requirements. • Systems may support new functionalities and technologies such as SPP, AI, etc.
Option 3 – Develop a regional eGP platform.	• Implement a single system across the PICs with instances to conform to individual country requirements. • System may support new functionalities and technologies such as SPP, AI, etc. • Development partners facilitate requirements generation, sourcing, implementation, and training activities.

Table III. Options for Analysis

The parameters for the options analysis are included in the table below. These nine (9) parameters have been selected based on desk research and functional experiences in managing ICT transformation projects of similar size and scale.

No.	Parameter	Description
1	Delivery Schedule	Time to deliver full business value of the system, including pre-procurement, procurement, and post-procurement activities.
2	Business Process Change	Impact to procurement operations post-implementation.
3	Access to Supplier Network	Maximization of the reach of contract opportunities to the vendor base.
4	Sustainable Public Procurement	Integration of SPP including the ability to tag (e.g. gender tagging).
5	System Complexity	The degree of difficulty or complexity that the option is likely to impose on system users.
6	Customization	Ability for system to be customized to meet requirements.
7	Estimated Implementation Cost	Estimated costs of implementation including pre-procurement, procurement, and post-procurement activities.
8	Operations & Maintenance (O&M)	Ongoing post-implementation operations and maintenance level of effort and anticipated costs including technical support.
9	Capacity Considerations	General considerations around staffing levels, financial implications, and the eGP implementation and operational capabilities of PICs.

Table IV. Parameters for Options Analysis

Each parameter has been assessed across all parameters on a scale of 1 – 3 as described in the table below. A score of 3 indicates the most desirable option for that parameter.

Legend: Parameter Scoring		
Assessment Score: Low (Value = 1)	**Assessment Score: Medium (Value = 2)**	**Assessment Score: High (Value = 3)**
		
Low Alignment / Benefit, High Risk, or Low Capability	**Moderate Alignment / Benefit, Risk, or Capability**	**High Alignment / Benefit, Low Risk, or High Capability**

Table V. Legend for Parameter Scoring

The table below contains scoring for each parameter across all options and accompanying comments.

Parameter	Option 1	Option 2	Option 3	Comments
1. Delivery Schedule 1 = Longer Schedule 3 = Shorter Schedule				Option 1 has the shortest delivery schedule since existing systems will remain in place with the allocation of additional resources. Options 2 and 3 require additional time to complete the system procurement process.
2. Business Process Change 1 = High Impact 3 = Low Impact				Option 1 will least impact business processes since existing systems will remain in place with the allocation of additional resources. Options 2 and 3 would likely result in business process changes but tailoring system functionality to country requirements may lessen impacts.
3. Access to Supplier Network 1 = Low Reach 3 = High Reach				A regional system can provide a consolidated view of all PIC tenders to potential suppliers. The extent of the supplier network can be assessed for each potential system and a solution that maximizes the supplier network can be selected for implementation.
4. Sustainable Public Procurement 1 = Difficult to Implement 3 = Easy to Implement				Current eGP systems (In-tend, TenderLink) do not offer robust technologies that address SPP. Acquisition of a new eGP system allows for the integration of SPP.
5. System Complexity 1 = High Complexity 3 = Low Complexity				Acquisition of a new eGP system is not likely to any additional complexity compared to currently used eGP systems and procurement processes. The ability to develop requirements for a new system may minimize the complexity of procurement processes.
6. Customization 1 = Not Easily Customizable 3 = Highly Customizable				Option 1 offers limited customization options. Options 2 and 3 offer the ability to develop requirements and build a system from the ground up to meet those requirements.
7. Estimated Implementation Cost 1 = High Cost 3 = Low Cost				Option 1 has the lowest estimated implementation cost since existing systems will remain in place with the allocation of additional resources. While Options 2 and 3 result in additional costs due to the need to complete the procurement process for an eGP system, cost sharing considerations across the PICs make Option 3 more economical.
8. Operations & Maintenance (O&M) 1 = High Level of Effort and Cost 3 = Low Level of Effort and Cost				Operations and maintence costs may not necessarily be higher for a regional system as compared to the sum of what individual PICs pay. For Options 2 and 3, Service Level Agreements can be negotiated with the system provider to minize service disruptions. For Option 3, pooling of O&M resources from each PIC can lead to the shared responsibility of administering the system as a whole.
9. Capacity Considerations 1 = Requires Increased Capacity 3 = Does Not Impact Capacity				Implementation of Option 1 minimally impacts current procurement operations. Options 2 and 3 will impact current operations and may stretch capacity limits within PICs. Impacts of Option 3 may be more manageable due to the sharing of costs and system administration across the PICs.
Total Score	**20**	**17**	**21**	

Table VI. Parameter Scoring for Each Option

Based on this options analysis, **Option 3 – Develop a regional eGP system, is the suggested option for implementation**. This option provides the greatest flexibility to address standard and country-specific requirements and allows PICs to feel a sense of ownership in the solution. TenderLink and In-tend may be viewed as potential solutions, but there are notable shortcomings of both systems, some of which were

discussed during stakeholder engagement sessions. ADB previously assessed TenderLink and concluded that the system meets functional, technical, and capacity requirements for an eTendering system, but it does not offer a complete suite of solutions that are present in a comprehensive eGP system. TenderLink could provide a modern, user-friendly platform on which to build an end-to-end eGP system, but changes would have to be made to the system, including the incorporation of functions that currently are not available (Asian Development Bank 2020).

Prior to moving forward with any option, a formal study should be completed that includes stakeholder engagement with all PICs, a comprehensive view of desired functionality, initial system requirements, and a list of potential suppliers.

6 eGP Implementation Plan

6.1 Implementation Approach

The three primary implementation approaches for an eGP system are Software-as-a-Service (SaaS), Commercial-Off-The-Shelf (COTS), or custom-built software. SaaS refers to software that is provided as a shared service made available over the web and that can be used as-is or with the addition of configuration without any specific coding. COTS refers to software acquired from a software developer or open source that is used as-is or with configuration, or that can be tailored with a layer of specific code layered on top of it while custom-build software is developed specifically for the needs of a given organization and is not packaged for resale. The table below presents a summary of the key attributes of each implementation approach (adapted from World Bank 2020).

Attribute	SaaS	COTS	Custom-Built
Quality	• System based on an already tested and used eGP platform. • Vendor has know-how on analyzing, configuring, and rolling out eGP systems. • Mature product as a foundation for a system that can be maintained virtually. • Lower risk of technological obsolescence. • Limited customization because of the other users of the platform. • System may impose functional constraints as it is already pre-built. • System may adopt standards that may be incompatible with existing government systems and / or infrastructure. • Risk of lock-in by module vendors, mitigated by simplicity and serviceability of module.	• System based on an already tested and used eGP platform. • Vendor has know-how on analyzing, configuring, and rolling out eGP systems. • Mature product as a foundation for a system that can be maintained locally. • Lower risk of technological obsolescence. • System may impose functional constraints as it is already pre-built. • System may adopt standards that may be incompatible with existing government systems and / or infrastructure. • Risk of lock-in by module vendors, mitigated by simplicity and serviceability of modules.	• Software is owned by Government. • Software is built for purpose. • System development know-how would be accumulated. • Government may have difficulties in retaining ICT experts in its team since the private sector can offer more competitive salaries. • The possibility of risks to the success of system development. • Lack of proven skills (offset by including foreign specialists). • Potential of fragmented developments between agencies unless carefully managed by the steering committee. • Moderate risk of lock-in by local developers (mitigated by systems portability). • If government has proven, internal ICT capacity, high-quality product can be achieved; otherwise, in-house development may be risky.
Time	• Core system functions are already available in the vendor's eGP platform. • Very short period required for relevant and practical functionality to be operational. • Vendor may require more time than in-house staff to understand the country-specific requirements.	• Core system functions are already available in the vendor's eGP platform. • Relatively short period required for relevant and practical functionality to be operational. • Vendor may require more time than in-house staff to understand the country-specific requirements.	• Time required for the development of from-scratch implementation can be expected to be more than for a COTS-based system. • If government has proven internal ICT capacity, analysis, development, and rollout of the system can be achieved in reasonable time; otherwise, excessive time may be required.

Attribute	SaaS	COTS	Custom-Built
Cost	• Economies of scale created by a shared service often make it a very cost-effective choice. • Purchase would only be for the functionality for which there is capacity to utilize. • Low initial implementation costs. • Low-risk system development and maintenance costs. • Government will be contractually bound to the vendor and system; if a clear financial arrangement is not defined right from the start, maintenance / evolution cost may be large. • At the end of the contractual term with the vendor, process for contracting and migrating to a new eGP system may be costly.	• Purchase would only be for the functionality for which there is capacity to utilize. • Low initial implementation costs. • Low-risk system development and maintenance costs. • Government will be contractually bound to the vendor and system; if a clear financial arrangement is not defined right from the start, maintenance / evolution cost may be large. • At the end of the contractual term with the vendor, process for contracting and migrating to a new eGP system may be costly.	• Maintenance / evolution of the system will be cost efficient, since all required expertise related to the system architecture will already exist. • Government may need to make special financial arrangements for retaining experts for the development and maintenance / support of the system. •
Security and Access	• Solution must be hosted in vendor's information technology environment, which often resides outside of client country's geographical borders, which may violate security or data privacy laws.	• Solution can be hosted on-premises or in domestic cloud to control access and conform to national data privacy laws.	• Solution can be hosted on-premises or in domestic cloud to control access and conform to national data privacy laws.

Table VII. SaaS / COTS / Custom Built eGP System Acquisition Considerations

Each implementation approach in the above table has pros and cons that are dependent on a country's environment and technical and financial capacity. SaaS models present the most efficient time-to-market option if the implementing country can accept configurations versus customizations to meet technical and functional requirements. Existing system training materials can also quickly be adapted to increase the pace of implementation and roll-out. A competitive procurement action can result in market-based pricing for an initial period in production, which should keep costs reasonable. COTS models can also be quick to implement but allow for greater individual customization. This can be beneficial as the system can be adapted to specific functional requirements and business process needs, but there is both a cost and implementation delay associated with this practice. O&M costs may increase significantly over time as the number of customizations increases. Custom build will take the longest period to time to implement but is the most flexible model to conform the system to specific functional and technical requirements. Cost may also be relatively efficient if local ICT labor markets are robust, and labor rates are low. The use of external system development consultants could drive costs up significantly during the custom build and over the lifecycle of the system (World Bank 2020).

The figure below presents a visual comparison of implementation approaches, taking into consideration the benefits, costs, and risk of failure for each approach (World Bank 2021).

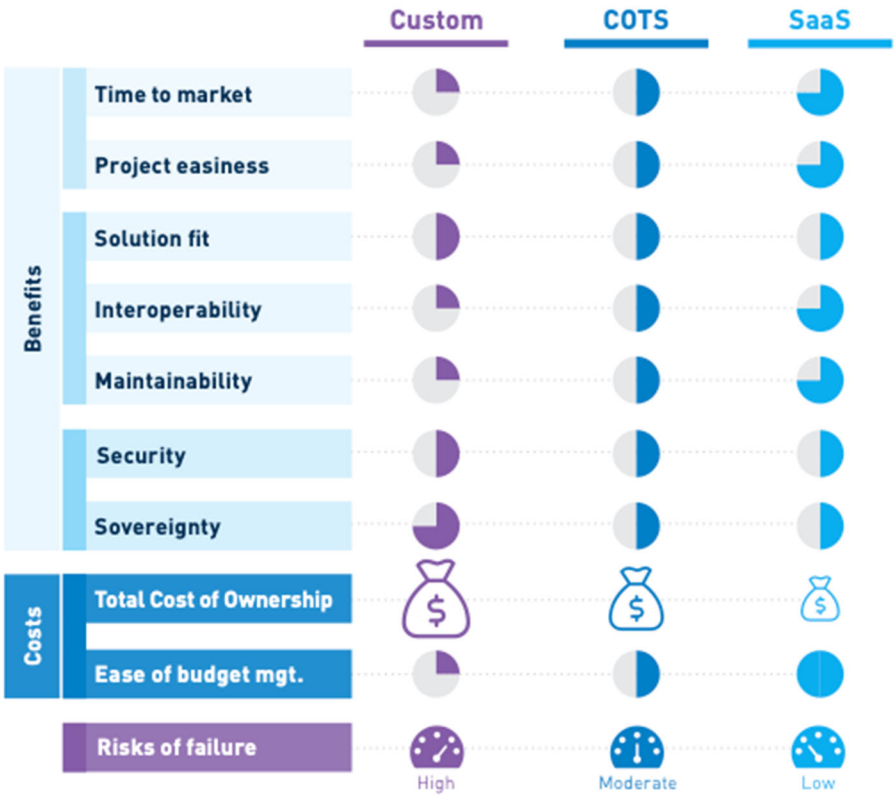

Figure II. Benefits, Costs, and Risk of Failure for Implementation of SaaS / COTS/ Custom Built eGP Systems

Considering the information presented in the figure above, acquisition of a SaaS eGP solution is advised. SaaS systems are the easiest to manage over time as much of the system intellectual property and support requirements reside with the system provider or a 3rd party service provider. COTS systems may require more in-country ITC expertise to manage the system and any customizations. Custom-built systems require the most internal ITC capacity as the systems must be maintained by the implementing country and meet operational standards such as continuous uptime, which requires both technical expertise and personnel resources (World Bank 2020).

6.2 Implementation Roadmap

The figure below depicts a potential roadmap with key activities and estimated timing for the implementation of a regional eGP system. The activities are segmented into pre-procurement activities (activities #1-4), system procurement activities (activities #5-6), and post-procurement activities (activities #7-10).

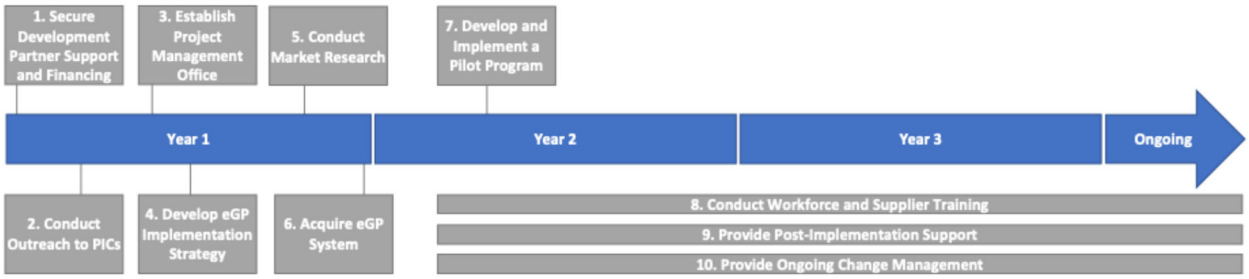

Figure III. Roadmap for the Implementation of a Regional eGP System

The actual sequence, timing, and duration of each activity will be determined in collaboration with the system vendor and leadership of the implementing PICs. Brief descriptions of each activity are provided in the subsections below.

6.2.1 Pre-Procurement Activities

1. Secure Development Partner Support and Financing

Multilateral development banks (MDBs) should gauge their interest in investing in a regional system and develop a preliminary resource commitment. Funding strategies must focus on acquisition and O&M costs over the full lifecycle of the system. With this initial step, MDBs would also benefit from clarifying the roles and support modalities for a regional system, including discussions on (i) how to further engagement across the region, (ii) actions to take to ensure effective buy in, and (iii) setting up a regional support facility for eGP.

2. Conduct Outreach to PICs

With MDBs committed to investing in a regional system alongside the PICs, outreach to procurement stakeholders in the PICs should be conducted to secure preliminary commitments to use a regional eGP system. The potential benefits of transitioning to a regional system should be highlighted (e.g., a regional system can be tailored to country requirements and allow for greater flexibility to meet procurement needs). Accordingly, adequate commitment from each PIC should be secured for the purposes of stakeholder engagement on developing system requirements and participating in the procurement process as needed. In addition, this strategy proposes establishing a regional eGP facility to facilitate the procurement process and system rollout, as described below.

3. Establish Project Management Office (PMO)

Upon confirming the commitment of PICs to use a regional system, a PMO should be established. The responsibilities of the PMO will include but are not limited to:

- Developing a governance approach for the eGP system;
- Developing a detailed regional eGP implementation strategy;
- Reaching out to each PIC to acquire detailed input on the regional eGP system design;
- Finalizing system requirements;
- Managing the procurement process; and
- Undertaking change management and coordination as needed for system roll out, including promoting, marketing, and increasing eGP adoption through effective communication with the various stakeholder groups. A key component of any change management plan is the development of strategies to address implementation risks and overcome workforce resistance to change. Key stakeholders should be identified and regularly engaged.

The PMO should be positioned to ensure maximum country ownership of a regional system. Practically speaking, the PMO would seek to involve PIC stakeholders in the future management of the system and the development of corresponding change management activities. The terms of reference for the PMO should reflect this approach and timeline.

4. Develop eGP Implementation Strategy

The absence of a clear-cut strategy can lead to low eGP adoption and use. The PMO should lead the development a regional implementation strategy that reflects the input from PICs stakeholders. To develop the strategy, the PMO should consult with each PIC individually to get their input on system design aspects, along with clarifying roles and responsibilities with respect to the system use and governance. In addition, each PIC should also be encouraged to nominate a representative for an oversight committee to be established to oversee eGP implementation activities (while the PMO is undertaking the technical aspects).

The regional implementation strategy should also highlight enabling factors and actions that each PIC should undertake to enhance eGP adoption and use. These may include:

- Providing legal and regulatory support;
- Leveraging complementary investments and projects to support eGP uptake and training (e.g., IFMIS projects, Public Financial Management (PFM) Reform Programs, Development Policy Loans (DPLs), etc.); and
- Developing a change management plan that proposes incentives and ways to leverage increased system use by PICS (e.g., communication campaigns, training, etc.).

6.2.2 System Procurement Activities

5. Conduct Market Research

Primary activities involved in completing market research, which should be conducted by the PMO, include developing a product profile, researching suppliers, and identifying key market indicators. Conducting market research also involves gaining an understanding of industry trends and analyzing industry forces. In 2016, the World Bank issued a strategy paper entitled, “Guidelines for Conducting Market Analysis for e-Procurement Systems” (World Bank 2016), which contains a process and templates for market research for eGP systems. There are several methods available for market research as summarized in the table below. The method that is selected should depend on factors such as the availability of information, the amount of time a buyer has to accomplish the task, and the availability of financial and personnel resources to complete research activities. Although completing a single approach may provide enough information for decision-making purposes, completing multiple approaches will provide the most comprehensive insight into a market (World Bank 2020).

Method	Description
Desk-Based Research	Involves investigation and analysis of information that is readily available and easily accessible, mainly through the internet. Published reports, industry / government / supplier websites, interviews with industry experts, and discussions with institutional representatives in other countries are among the sources of information that can be used. This method is both time and cost effective.
Surveys / Questionnaires	Surveys and questionnaires are effective means to collect information when other methods (e.g., desk-based research) do not yield the required information. Surveys and questionnaires allow for quantitative measurements for processing (such as the number of potential local vendors that support a specific requirement). Also, web-based surveys are easily distributed, and respondents can reply via e-mail.
System Demonstration	System demonstrations allow vendors to present the functionality of their system to the potential buyer in an interactive manner. Demonstrations may be performed in face-to-face meetings or remotely. Demonstrations also help buyers understand a systems graphical user interface (GUI), usability, translation capabilities, and help features.
Communication Methods with Vendors	Direct communication with vendors is a powerful technique in performing market research. Several processes and tools can be used to formally or informally communicate with vendors, as outlined below: • **Formal communication methods** include issuing a request for an expression of interest and a request for information (RFI) to collect information on the vendors and their ability to deliver a desired solution. Issuing a request may also stimulate interest in potential vendors. • **Informal communication methods** include e-mail communications, advertisements in publications, and social media (e.g., Twitter, Facebook, LinkedIn), which can be used to leverage any interest in and familiarization with potential vendors regarding the advertised project. In this context, potential vendors are informed about a country's intention to procure a product or service and can closely follow any future announcements related to the project.
Involvement and / or Full Assignment to External Consultant / Specialist	External consultants and specialists can typically complete some or all market research activities in a timely and accurate manner. Use of consultants and specialists may not be as cost effective as completing market research activities with internal resources.

Table VIII. Methods for Conducting Market Research

6. Acquire eGP System

The eGP system acquisition process begins with the preparation of tender documents and ends with the integration of the system. After the acquisition is executed, the focus shifts to vendor performance monitoring. Note that the implementation and execution process is applicable whether using a standing tendering process or implementing a Framework Agreement. Key activities and deliverables related to the process are illustrated in the figure below (adapted from World Bank 2020).

Develop Tender Documents	Execute Sourcing Event	Conduct Negotiations and Select Vendors	Integrate and Embed Vendors
Activities			
• Identify purchase commitments / contracts and assess impact • Identify sourcing levers o Manage vendors o Reduce total cost o Improve process o Optimize demand • Select & document commodity sourcing strategy • Refine savings estimates • Develop and issue RFI (optional) • Select vendors for Request for Proposal (RFP)	• Develop negotiation strategy • Develop vendor evaluation criteria • Develop & issue RFP • Perform RFP analysis • Conduct reverse auction (optional) • Develop total cost of ownership • Define target price, payment terms, and service levels	• Select vendors for negotiations • Establish pricing model as baseline • Conduct final negotiations • Evaluate final offers • Assess vendor switching costs and risks • Complete total cost analysis • Select vendor	• Pilot of new supply plan • Implement supply ramp-up plan • Develop vendor-balanced scorecards • Implement vendor performance review process • Execute call-off contracts (if using framework agreement) • Monitor vendor for continuous improvement • Periodically re-evaluate category and vendor performance
Deliverables			
• Sourcing strategies including o Key levers o Approach o Future state model	• Vendor short list • RFI / RFP • RFP analysis • Auction analysis • Total cost analysis • Sensitivity analysis	• Preferred vendor list • Final savings calculation • Final terms and conditions • Framework agreement (if necessary)	• Executed call-off contracts (if using framework agreement) • Key Performance Indicators (KPIs) and continuous improvement measurements • Savings realized

Figure IV. Key Activities and Deliverables for eGP System Acquisition

6.2.3 Post-Procurement Activities

7. Develop and Implement a Pilot Program

Development and implementation of a small-scale pilot program should be a strong consideration. In the pilot program, the eGP system is rolled out in a controlled environment for a subset of PICs who can test the system and provide feedback that can be addressed prior to wider release of the system. Outside of the use and functionality of the eGP system, a pilot program is ideal for testing training materials and crafting effective communications and messaging campaigns. Complete rollout of a typical eGP system takes at least six (6) months, so it is imperative that a realistic timeline be set for implementation that includes contingencies for activities that may run longer than planned based on the pilot program.

8. Conduct Workforce and Supplier Training

Proper training of the user base will lead to greater adoption of an eGP system. Training should be tailored to user groups (e.g., procurement officers, suppliers, auditors) based on their anticipated system usage and responsibilities. While the system vendor is typically responsible for design and delivery of user training, the PMO and procurement personnel within the PICs should support the process. This support can help address the logistical complications of delivering training across all PICs.

Similarly, a detailed supplier training strategy needs to complement the regional eGP system rollout. The latter should seek to identify current suppliers and potential suppliers, conduct outreach to apprise them of the new system and training opportunities, and seek to maximize participation in supplier training. In addition, PICs may seek to expand their use of eGP by including smaller tenders that are accessible to SMEs. In this case, the supplier training strategy should also target SMEs who may have limited familiarity with eGP systems and may have lesser degree of digital literacy. Bringing SMEs into the eGP process may

be a longer-term undertaking, requiring coordination with local capacity building partners and digital literacy initiatives.

9. Provide Post-Implementation Support

A technical support team should be established (or an organization contracted) to provide continuous help desk support and training for internal users and suppliers and to conduct eGP system workshops for all user populations. The lack of adequate technical support may lead to lower adoption and usage rates among the target user population.

10. Provide Ongoing Change Management

Once the eGP system is fully rolled out, the PMO should transition the system governance to the user base or an appropriate organization (e.g., Pacific Island Forum). This transition involves continued training and support to ensure that procurement stakeholders within the PICs can fulfill their roles and responsibilities. Each PIC will benefit from identifying a local, high-level champion who encourages expanded eGP system use which may lead to an increased number of tenders that are facilitated via the eGP system.

6.3 Cost Estimate

The following table provides indicative activities / roles and representative estimated costs for the implementation of an eGP system but is highly dependent on the agreed upon scope of implementation and number of PICs participating.

#	Activity / Role[23]	Description	Type	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1	Procurement Specialist	Assists with bidding process including bidding document preparation.	Individual Consultant	$50,000	$---	$---	$---	$---	$50,000
2	Project Management Office (PMO)	Validate scope, define project framework (reporting, quality assurance), manages steering committee, develops risk management framework, manages change control mechanism and plan, conducts key stakeholder meetings, develops and tracks metrics.	Firm	$200,000	$200,000	$---	$---	$---	$400,000
3	Change Management and Communications	Communications planning, stakeholder mapping, engagement workshops, seminars, knowledge transfer, and sustainability.	Individual Consultant	$50,000	$50,000	$---	$---	$---	$100,000
4	Capacity Building and Training – eGP	Training and education through seminars, workshops, experience, model offices and pilot sites, coaching and mentoring.	Firm	$50,000	$100,000	$---	$---	$---	$150,000
5	Business Process Re-Engineering (BPR)	Documentation review, gap analysis, business architecture review, business and system requirements review, eGP guidelines, Terms of Reference creation, test strategy development.	Individual Consultant	$50,000	$50,000	$---	$---	$---	$100,000
6	eGP System Acquisition – Vendor Implementation Costs (e.g. Software Development)[24]	System supply and installation costs.	Firm	$100,000	$100,000	$---	$---	$---	$200,000
7	eGP System Acquisition – Ongoing Vendor License Fees[25]	Typically includes software usage, cloud hosting and infrastructure, security and compliance, customer support and help resources, data storage, APIs, and data backup / recovery solutions.	Firm	$50,000	$100,000	$100,000	$100,000	$100,000	$450,000
8	eGP System Acquisition – Vendor Training Costs[26]	Vendor training costs.	Firm	$50,000	$50,000	$25,000	$25,000	$25,000	$175,000
			Total	**$600,000**	**$650,000**	**$125,000**	**$125,000**	**$125,000**	**$1,625,000**

Table IX. eGP System Cost Estimate

[23] Sources: World Bank eGP Implementation Type Report and Valent project experience.

[24] Implementation costs are highly dependent on the number and type of modules that are deployed, and the degree of customization required to meet the requirements of individual PICs.

[25] License fees are recurrent costs that are paid annually for as long as the system is used. The fee amount is highly dependent on the total number of users and vary from vendor to vendor.

[26] Training costs are highly dependent on the total number of users and the training topics to be covered.

Final funding requirements for the eGP system will be dependent on several factors, including final system requirements, selected implementation approach, results of the bidding process, final selection of the vendor for the eGP system, the degree of system customizations, and the number of users. Development partners should expect to have to supplement ongoing license fees and vendor training costs as current annual eGP budgets for some PICs are modest.[27]

7 Key Findings and Takeaways

Key findings and takeaways from the recommended eGP strategy for the PICs are listed below.

- PICs have embraced the use of eGP at various levels, ranging from the use of advertisement websites to the implementation of eGP systems (TenderLink and In-tend). These systems do not provide a full suite of eGP functionality (e.g., SPP functionality).
- Market analysis shows that there is sufficient activity to support various eGP system requirements, ranging from a simple, straightforward system to a complex system that includes advanced functionalities.
- Given the critical importance of spend analysis, it is essential that eGP systems capture and export data in a format that is suitable for analysis and visualization. Interoperability with IFMIS and other systems is critical.
- PICs can implement updates to their legal and regulatory frameworks to facilitate eGP expansion and the use of SPP tagging by taking advantage of ongoing updates to procurement regulations.
- Stakeholders from select PICs expressed interest in learning more about a potential regional eGP system.
- The results of an options analysis showed that Option 3, development of a regional eGP platform consisting of a single use system with multiple instances for PICs, is the recommended path forward. Pooling of resources across PICs for O&M and other associated activities / costs is a key attribute of Option 3.
- The detailed 3-year implementation roadmap consists of 10 high-level activities that should be coordinated by a PMO.
- It is imperative to have a governance structure or legal entity in place to coordinate system maintenance and facilitate other system-related matters. An example of an existing organization that could perform this function is the Pacific Island Forum, which currently runs the Regional Tender Portal.[28]
- The estimated total cost of implementing Option 3 is $1.625 million over a 5-year period.
- The results of requirements and budget development processes will aid in the selection of an appropriate system for implementation.

PICs currently have limited budgets to spend on eGP systems, with annual spend amounts ranging from ~$1,700 to ~$34,000 per stakeholder discussions. This signifies that any change to current eGP operations within PICs will require development partner funding. The estimated cost of implementing a regional has

[27] Per stakeholder engagement sessions, one PIC spends ~$34,000 on eGP per annum while another spends ~$1,700 per annum. PICs that use In-tend as their eGP system do not incur any expenses as this system is supplied by ADB.

[28] For more information see https://regionaltenders.forumsec.org

been estimated to be $1.625 million over a 5-year period, but with further refinement of the strategy, costs can be reassessed which may lead to a lower estimate.

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ANNEX I: Additional Information on Best-in-Class eGP Systems

KONEPS (South Korea)

Beginning in the early 1990s, separate public entities with significant procurement demands, including the PPS and the Korea Electric Power Corporation, established individual e-procurement systems. While the individual systems resulted in entity-specific gains in efficiency, the multiple systems were not standardized and created redundancies. In response, PPS established a central platform and e-procurement master plan in 1996. The platform, Procurement Electronic Data Interchange (Procurement EDI), was completed and piloted in 1999. Additional modules for e-bidding and e-payments were piloted and launched from 2000 to 2001. In response to the continued absence of consistent, government-wide standards, KONEPS was launched in September 2002. Since then, KONEPS has been regularly updated with new functionalities.[29]

KONEPS is used by over 57,000 public organizations and 434,000 suppliers.[30] The platform also enables information sharing between public organizations and suppliers and validates data from 191 external systems, including industrial associations, banks, credit rating authorities, and e-signature authorities. The system's external interfaces are captured in the figure below.[31]

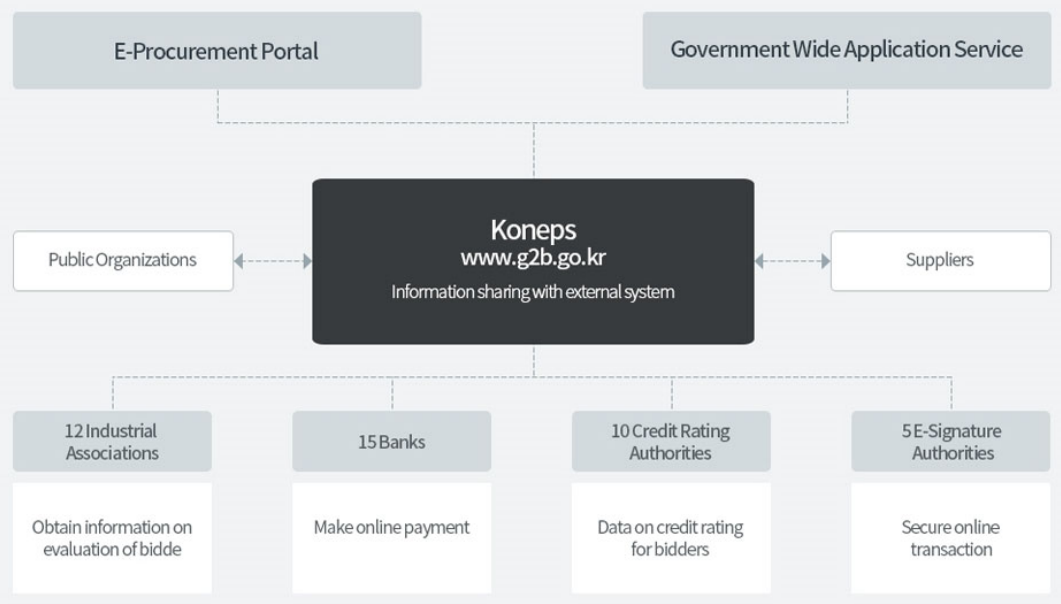

Figure AI. KONEPS External Interfaces

KONEPS covers the entire procurement cycle through a variety of functions, as laid out in the table below.[32]

[29] For more information see https://www.oecd-ilibrary.org/docserver/9789264249431-en.pdf?expires=1720528315&id=id&accname=guest&checksum=D2A0CF6F1F6D16D52F6492B2F2A155A1
[30] For more information see https://www.effectivecooperation.org/system/files/2021-10/DN_KONEPS_v2a.pdf
[31] For more information see https://www.pps.go.kr/eng/content.do?key=00775
[32] For more information see https://www.oecd-ilibrary.org/docserver/9789264249431-en.pdf?expires=1720528315&id=id&accname=guest&checksum=D2A0CF6F1F6D16D52F6492B2F2A155A1

Function	Description
e-procurement portal	• Comprehensive user guide • Consolidated tender information
User management system	• Registration and approval of master user information • Registration of e-certificates • Secure logon using e-certificate
Product catalogue system	• Product search by classification, name, or specification
E-surety system	• Receipt of e-surety through data interchange with surety companies, used for bid bond, performance e-bond, payment guarantee, and guarantee against defects
Supplier information management system	• Collection of bidder information including financial standing, past experiences, and possession of technology- or quality-related certificates • Checking information on licensed individuals, through data interchange with industry associations
E-bidding system	• Publication of advance notice for preliminary specifications • Feedback from private firms • Online negotiation for direct contracts • Opening of e-bids and determination of order of priority for contract awarding • Determination of contract awardee and real-time publication of bidding details and results
E-contracting system	• Drafting of e-contract and transmission to contract awardee • Electronic signing of e-contract
E-payment system	• Contract information review • Request for upfront payment • Submission of payment request • Payment approval
Online Shopping Mall	• Product search by category, name, and other properties • Generation and transmission of online order form
E-document distribution and external data interchange system	• Authenticity check for issued documents • Management of data interchange with external data systems • Security module management for e-certificate

Table AI. KONEPS Functions

ProZorro (Ukraine)

Prior to the establishment of ProZorro, it is estimated that corruption and limited competition resulted in an annual loss of $2 billion.[33] Public procurement in Ukraine faced three main problems as captured below:[34]

- An overly complex legal environment, with many loopholes and exemptions;

[33] For more information see https://oecd-opsi.org/innovations/eprocurement-system-prozorro/#:~:text=ProZorro%20is%20a%20hybrid%20electronic,fair%20and%20low%2Dcost%20way

[34] For more information see https://images.transparencycdn.org/images/2017_ProzorroCaseStudy_EN.pdf

- A non-transparent, paper-based procurement process; and
- Unsuccessful attempts at reform had dissuaded businesses from participating in public procurement.

The modern effort to reform public procurement in Ukraine began in March 2014, when a team of civil society advocates and experts worked to amend the "On Government Procurement" law. The law contained numerous provisions and exceptions that facilitated corruption. Despite managing to amend the law and close loopholes, it was acknowledged that the creation of a comprehensive e-procurement system would improve access to and integrity of public contracting.

ProZorro was developed out of cooperation between Transparency International Ukraine, the Ministry of Economic Development and Trade, and an IT company named Quintagroup. In 2016, control of the system was transferred to the government. In its first two years of operation, ProZorro saved an estimated $1.9 billion. Beginning in August 2016, all Ukrainian government agencies were mandated to use ProZorro for their procurement needs. In 2023, it is estimated that approximately 72% of public procurements were routed through ProZorro.[35] Approximately 80% of ProZorro's users are SMEs.[36]

The ProZorro platform consists of an API, central databased, website, and business intelligence module as shown in the figure below. The main interface is a commercial marketplace accessed by either a bidder or procuring entity. The commercial marketplace writes to and reads from the central database, which stores all public procurement data and contains an auction module. The business intelligence module also uses the API to retrieve and analyze procurement data.[37]

[35] For more information see https://prozorro.gov.ua/about

[36] For more information see https://ec.europa.eu/futurium/en/system/files/ged/researchreport2019_thenextgenerationofanti-corruptiontools_bigdataopendataartificialintelligence.pdf

[37] For more information see https://images.transparencycdn.org/images/2017_ProzorroCaseStudy_EN.pdf

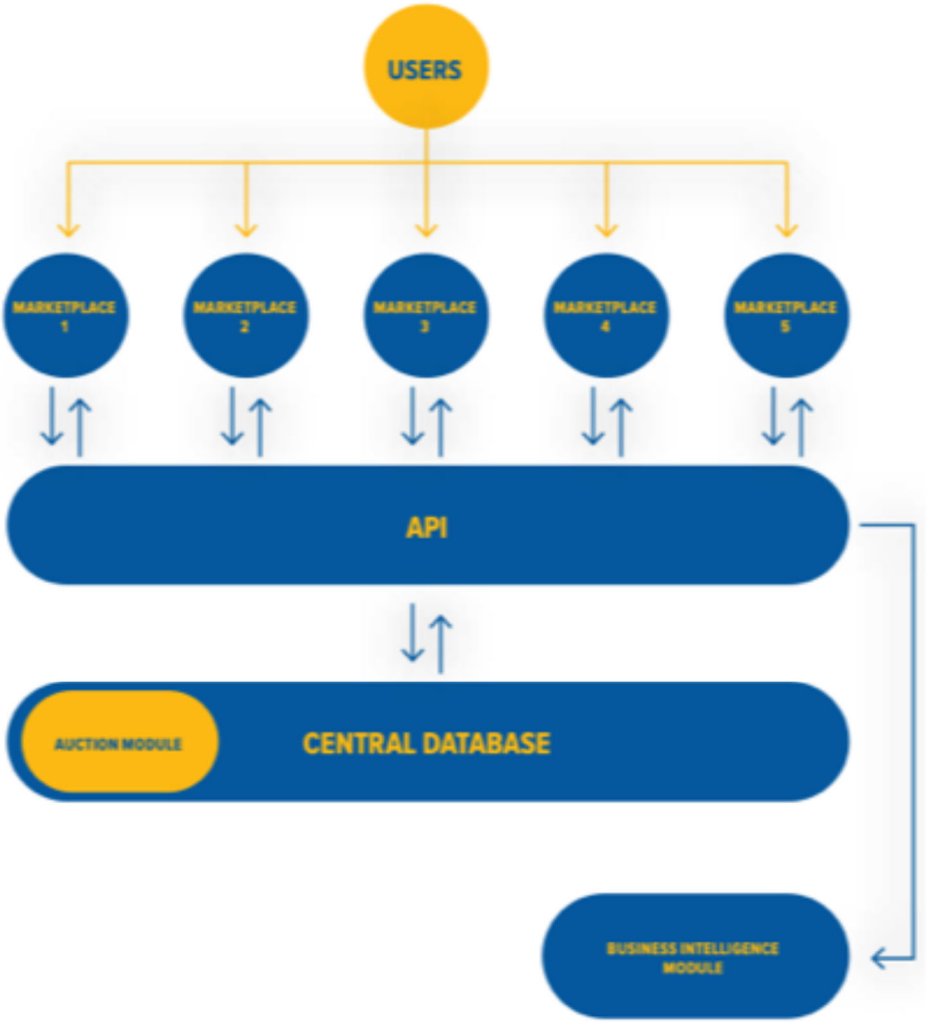

Figure AII. ProZorro System Architecture

Soon after ProZorro became mandatory, the Eurasia Foundation and Transparency International Ukraine developed Dozorro, an anti-corruption network and procurement monitoring portal.[38] In support of increased transparency, ProZorro's code is available on GitHub. The functions of the system are captured in the table below.[39]

[38] For more information see https://www.usaid.gov/sites/default/files/2023-06/2020_Digital_Booklet.pdf
[39] For more information see https://thedocs.worldbank.org/en/doc/828301490813177880-0310022017/original/UseofeGPforopenDataOlexandr.pdf

Function	Status
Web portal	Complete
ePlanning	
eRegistration	
eAuthentication	
eNotification	
eNotices	
eAccess	
eSubmission/eTendering	
eEvaluation	
eAuction	
eAwarding	
eContract Management	In development
ePayments	In development

Table AII. ProZorro Functions

ProZorro's automatic screening function helps to identify tenders that are particularly vulnerable to corruption. The screenshot below shows a ProZorro dashboard listing tenders.

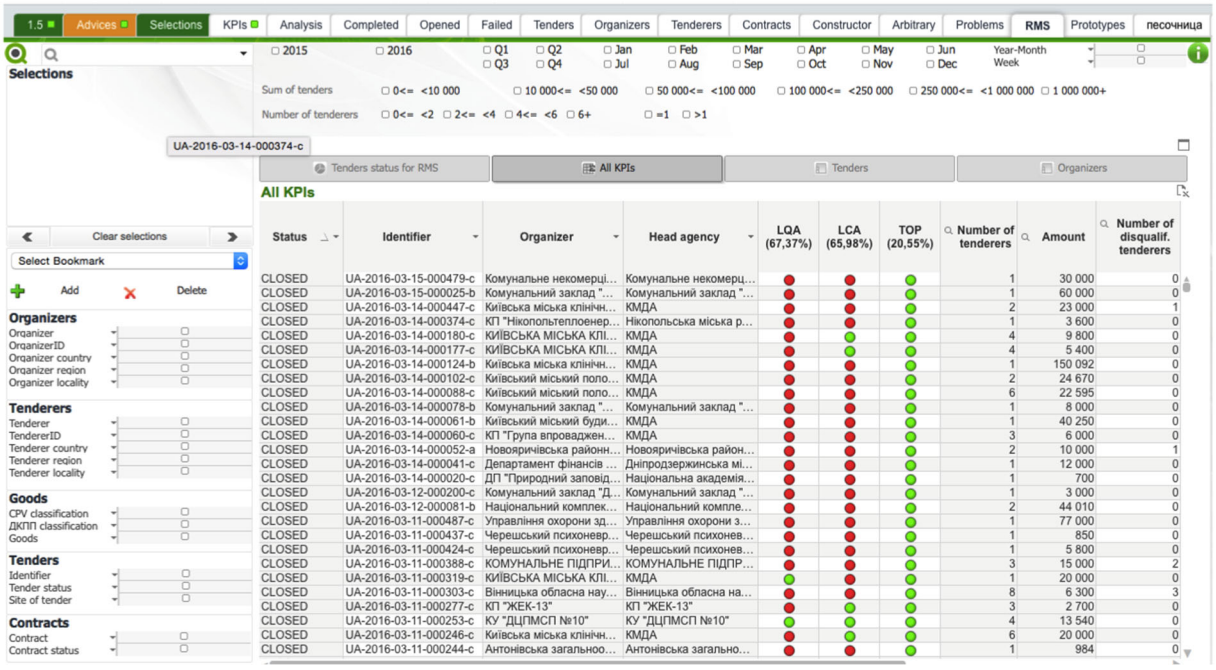

Figure AIII. ProZorro Dashboard

Comprasnet (Brazil)

Historically, Brazil's national public procurement process was complicated and rigid. In 1993, the establishment of a procurement statute was intended to fight corruption by prescribing an extremely detailed procurement procedure. As a result of the statute, bids required in-depth documentation, detailed project design, and certification of compliance before they could be considered. Incidental

improvements were made over the following two decades; in particular, the 2014 FIFA World Cup and 2016 Olympics spurred efforts to establish a more agile procurement process.

Recent developments have been more significant. A 2020 statute imposed limits and conditions for administrative or judicial decisions that seek to render contracts null and void. More significantly, a 2021 statute overhauled the entire national public procurement process. The statute came into effect in 2023.[40]

The platform underlying public procurement in Brazil is called the Integrated General Services Administration System (SIASG). SIASG was established by statute in 1994 and supports and houses Compras, also called Comprasnet 4.0, which is the integrated public procurement platform for federal and state governments. Information in Comprasnet is available for public access through APIs, which further supports the goal of achieving transparency in public procurement.[41] Comprasnet's website contains manuals for both procurement officials and bidders / suppliers to familiarize themselves with the platform.[42]

Additionally, the National Public Procurement Portal provides publicly available data on procurements. For example, the website keeps a regularly updated portal on public procurements across the country. A screenshot of the portal is captured in the figure below.[43]

Figure AIV. Brazil National Public Procurement Portal Screenshot

The functions of the system are captured in the table below.[44]

[40] For more information see https://www.ibanet.org/clint-september-2022-feature-1

[41] For more information see https://www.gov.br/pncp/pt-br/acesso-a-informacao/dados-abertos and https://www.gov.br/pncp/pt-br/acesso-a-informacao/painel-pncp-em-numeros.

[42] For more information see https://www.gov.br/compras/pt-br/acesso-a-informacao/manuais/

[43] For more information see https://www.gov.br/pncp/pt-br/acesso-a-informacao/painel-pncp-em-numeros

[44] For more information see https://www.gov.br/compras/pt-br/sistemas/conheca-o-compras/conheca-o-compras

Function	Description
SICAF	This component is the Unified Supplier Registration System. All bidders and suppliers must register and demonstrate legal and tax compliance and the required financial and economic capacity.
Digital ETP	This component analyses the technical feasibility of a potential tender and requires that the procuring entity demonstrate a real need for the goods or services proposed for tender.
Catalog	This component is a comprehensive record of materials (CatMat) and services (CatSer) of the SISAG and includes all goods tender and acquired and services contracted for.
AntecipaGov	This component permits suppliers who have active contracts to request credit advances up to 70% of what they are still owed. AntecipaGov is the federal government's receivables anticipation system.
PGC	This component is an electronic tool that consolidates all contracts that a procuring entity plans to carry out in the next fiscal year. This supports a more transparent public procurement process.
Risk Management	This component is an overarching system that monitors for and identifies risks in each phase of procurement and contract management.
Bidding Room	This component is an electronic bidding system that facilitates wider participation by small- and medium-sized enterprises.
Contracts	This component automates contract management and connects procurement officials with contractors.
Supplier Selection	This component is a unified system that allows a procurement official to access all functions of the Compras system and quickly and directly purchase goods/services.

Table AIII. Comprasnet Functions

While the 2021 procurement law that covers both the federal and state governments had a 2024 deadline for full compliance and enforcement, it is unlikely that all state governments and public entities will meet this deadline. The immediate future of public procurement and Comprasnet will involve building capacity and ensuring the compliance of public entities to whom the 2021 law applies.

ANNEX II: Stakeholder Engagement Discussion Participants

Meeting Date	Name	Country	Title
August 20, 2024	Saimoni Veramu	Fiji	Chief Procurement Officer, Ministry of Finance
August 21, 2024	Baauea Tamueru	Kiribati	Office in Charge (OIC) for Central Procurement Unit (CPU)
August 22, 2024	Taina Iro	Cook Islands	Procurement Manager for Major Project and Procurement Support Division, Ministry of Finance and Economic Management


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