



# Technical Assistance Consultant's Report

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October 2017

## Regional: Consolidated View and Analysis of Survey Responses on e-Government Procurement System (2017)

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India

For the Asian Development Bank

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This report is prepared as per survey responses submitted by country representatives in 2014. Hence, developments subsequent to that time period are not reflected in this report.

## **ABOUT THE AUTHOR**

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## ABBREVIATIONS

ADB	–	Asian Development Bank
CWRD	–	Central and West Asia Department
CPV	–	Common Procurement Vocabulary
EARD	–	East Asia Department
DMC	–	Developing member country
IT	–	Information technology
PARD	–	Pacific Department
PPD	–	Public Procurement Department
SARD	–	South Asia Department
SERD	–	Southeast Asia Department
TA	–	technical assistance
UNSPSC	–	United Nations Standard Products and Services Code

## NOTE

In this report, "\$" refers to US dollars

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## I. INTRODUCTION

1. The Asian Development Bank (ADB) commissioned a survey in 2017 to learn about the current status of e-Government Procurement (e-GP) implementation in its Developing Member Countries (DMC). A survey questionnaire was sent out to a total of 40 countries of which 33 responded. This survey is designed as a follow-up to the surveys ADB had earlier conducted in 2014 and 2011. The survey respondents were broadly classified as under:

- (i) Countries did not participate in the 2014 survey
- (ii) Countries participated in 2014 survey and had not implemented e-GP system &
- (iii) Countries participated in 2014 survey and had implemented e-GP system

2. The survey ADB conducted in 2014 sought data under 4 sections viz.:

- (i) Eco-system readiness
- (ii) e-GP implementation plan
- (iii) e-GP implementation experience &
- (iv) e-GP on Software As A Service (SAAS) model

3. The 2017 survey sought to obtain detailed information about the following key subject areas:

- (i) e-GP implementation status
- (ii) Authentication framework
- (iii) Use of e-Reverse Auction
- (iv) System malfunction &
- (v) Post-tendering implementation

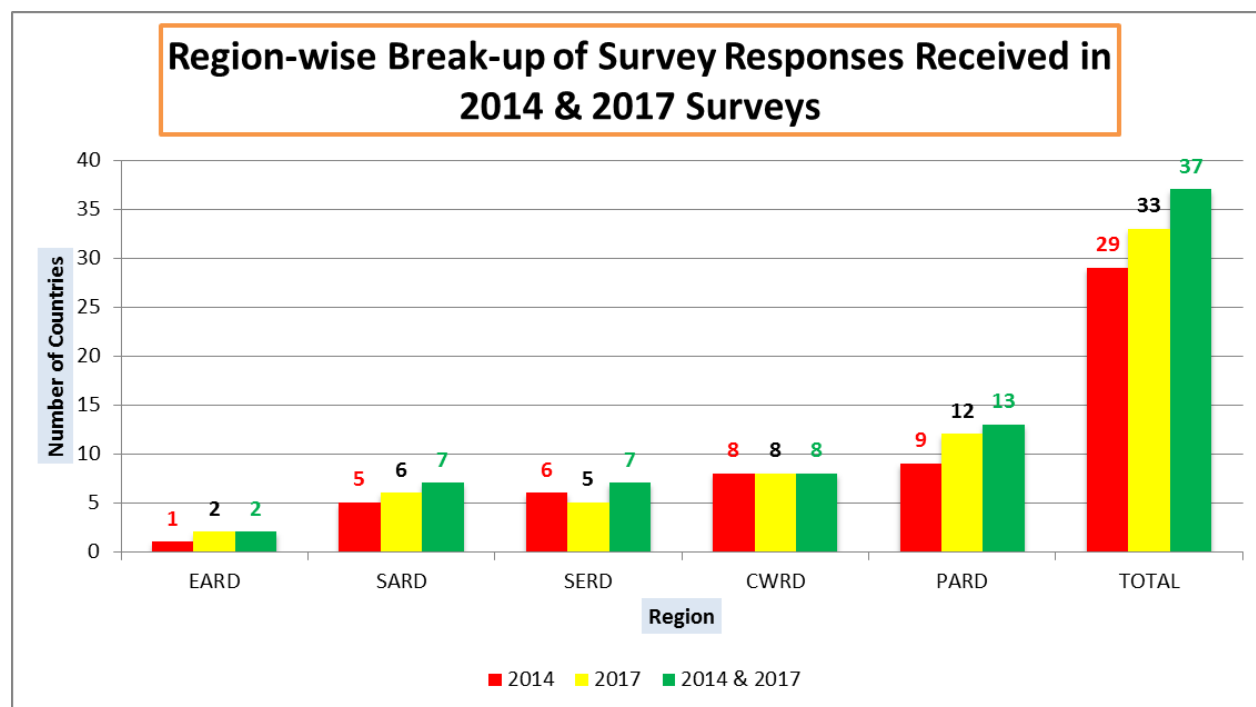
4. Of the 29 countries which had responded to the 2014 survey, 16 had implemented e-GP. Since these 16 countries had already shared information about Eco-system readiness, e-GP implementation plan, e-GP implementation experience and their interest in SAAS, they were asked to provide data about only the 5 key subject areas listed above. The remaining 13 countries which did not implement e-GP as on 2014 had already provided information about Eco-system readiness. Hence, they were sent a version of the survey questionnaire without the Eco-system readiness questions. A consolidated version of the survey questionnaire was sent to countries which did not respond to the 2014 survey.

5. The 2014 and 2017 e-GP surveys were responded to by 29 and 33 countries respectively. Few countries which responded in 2014 did not respond in 2017 viz. Bangladesh, Indonesia, Lao PDR and Tonga. The following countries responded to the 2017 survey and not the 2014 survey viz. Pakistan, Maldives, Nauru, Palau, Marshall Islands, Kiribati and China. These 2 surveys compiled together have provided data on e-GP status implementation about 37 countries. Refer Annexures A and B for the list of countries which responded to the survey in 2014 and 2017, segregated region-wise.

6. The survey responses are analysed such that certain key output requirements of the TA are addressed as given below:

- (i) Comparative view of the different approaches adopted for implementation of e-GP system is provided
- (ii) Discussion points on key aspects of e-GP implementation are identified such as the adoption of e-Reverse Auction, use of Digital Signature, System malfunction policy and challenges in implementation of post tendering module. Public procurement professionals could discuss these issues in an online web forum &

- (iii) Potential for knowledge exchange amongst the surveyed countries is identified. Public procurement specialists and e-GP specialists could share certain details about their implementation such as a draft of the e-GP legal provisions, system malfunction policy and transition management plan in an online-wiki type of knowledge base. e-GP implementing agencies could re-use the material available in this wiki knowledge base instead of reinventing / recreating this knowledge afresh. This wiki-site would be an excellent knowledge base for e-GP specialists, researchers, students and other interested stakeholders. Refer <https://e-gp.adb.org/wiki/> for wiki site already established by ADB.



**Figure 1: Region-wise break-up of survey responses received in 2014 & 2017 surveys**

7. The analysis and reporting of the survey responses is done subject-wise. The responses pertaining to a subject are analysed to learn about the status quo and view of the respondents. Key findings from this analysis are interpreted where required. The results of the 2017 Survey are correlated and consolidated with that of 2014 survey where possible.

## II. IMPLEMENTATION STATUS

8. The 3 surveys conducted in 2011, 2014 and 2017 sought to know the Go-live date of e-GP system in a country. The graph below depicts the earliest launch date of e-GP in a country. In many countries, an established e-GP system is transitioned out to a new e-GP system. Refer the report “*Architecture and Transition Management*” for a detailed analysis about the reasons provided by users for transitioning out e-GP.

9. Besides the system launch date, the survey sought to learn about the recent developments

- (i) Recent developments in e-GP system implementation viz. whether existing e-GP system is transitioned out, expanded adoption of e-GP system, establishment of Disaster Recovery and enactment of procurement related legislation
- (ii) New functional modules launched
- (iii) External IT systems integrated with e-GP since 2014
- (iv) Whether e-GP system has been assessed and cleared by the ADB or World Bank for its usage in the Bank funded projects

10. The launch of e-GP systems got initiated in 2000, wherein China, Malaysia and Philippines pioneered its implementation. There was a lull in introduction of e-GP systems for a decade. During 2010-2011, many countries in the SARD (South Asia Department), CWRD (Central West Asian Department) and SERD (Southeast Asia Department) regions initiated implementation of e-GP. In recent years (i.e.) since 2016, many countries in the (PARD) Pacific department region initiated implementation of e-GP. Bhutan initiated pilot implementation of e-GP in 4 Purchasing agencies. Kazakhstan plans to transition out to a new e-GP system in 2018 and Malaysia is in the process of implementing a new e-GP system. The 3 timeline graphs published below depicts the start of e-GP implementation in the Asia Pacific region as learned from the survey responses in 2011, 2014 and 2017.

### Timeline Depicting the Start of e-GP Implementation in 11 Countries (2011 Survey)

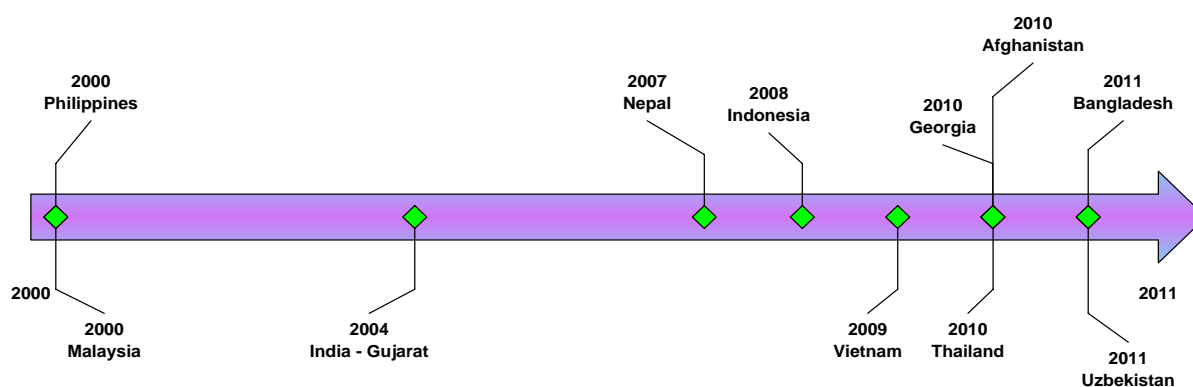


Figure 2: Timeline depicting the start of e-GP implementation in 11 Countries



### Timeline Depicting the Start of e-GP Implementation in 16 Countries (2014 Survey)

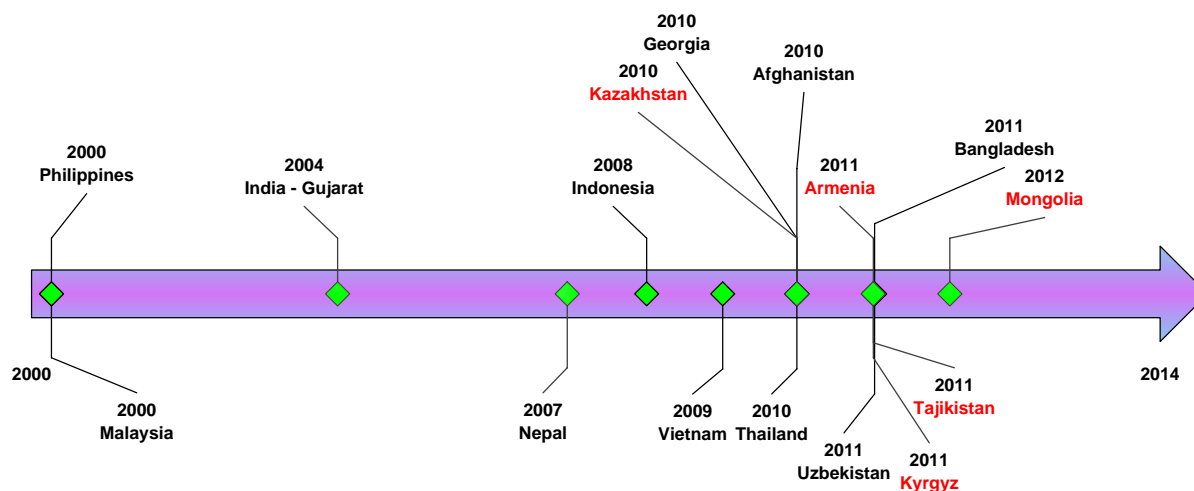


Figure 3: Timeline depicting the start of e-GP implementation in 16 Countries

### Timeline Depicting the Start of e-GP Implementation in 22 Countries (2017 Survey)

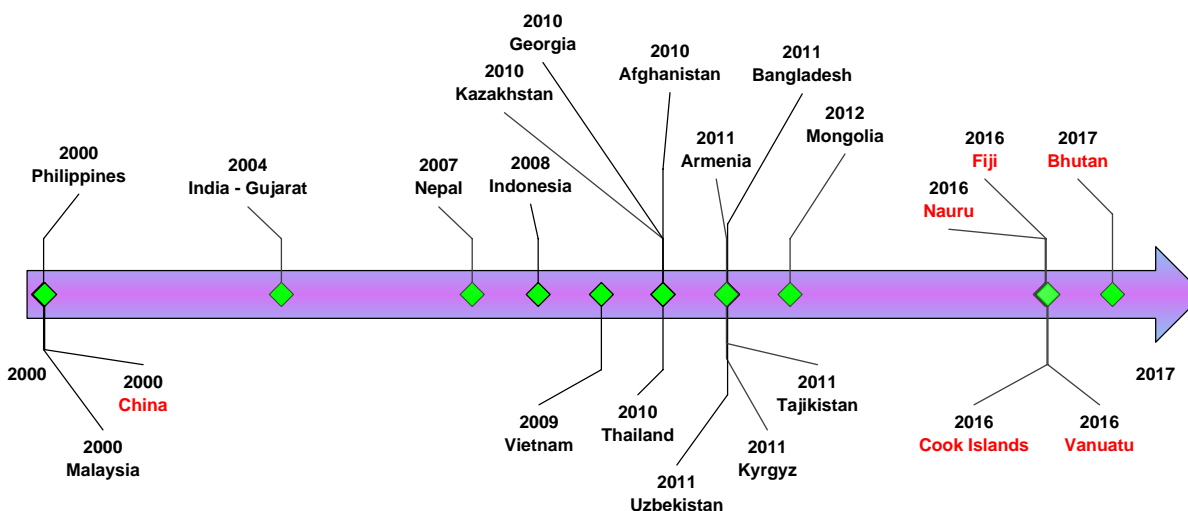
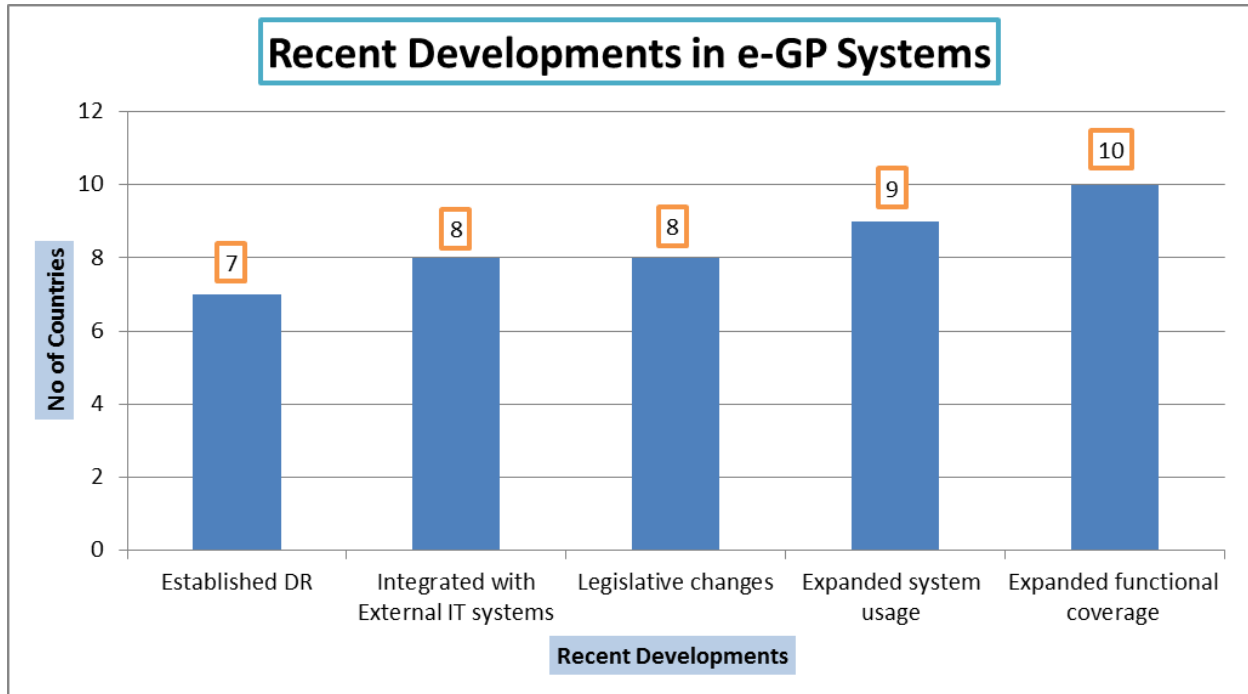


Figure 4: Timeline depicting the start of e-GP implementation in 22 countries (2017 survey)

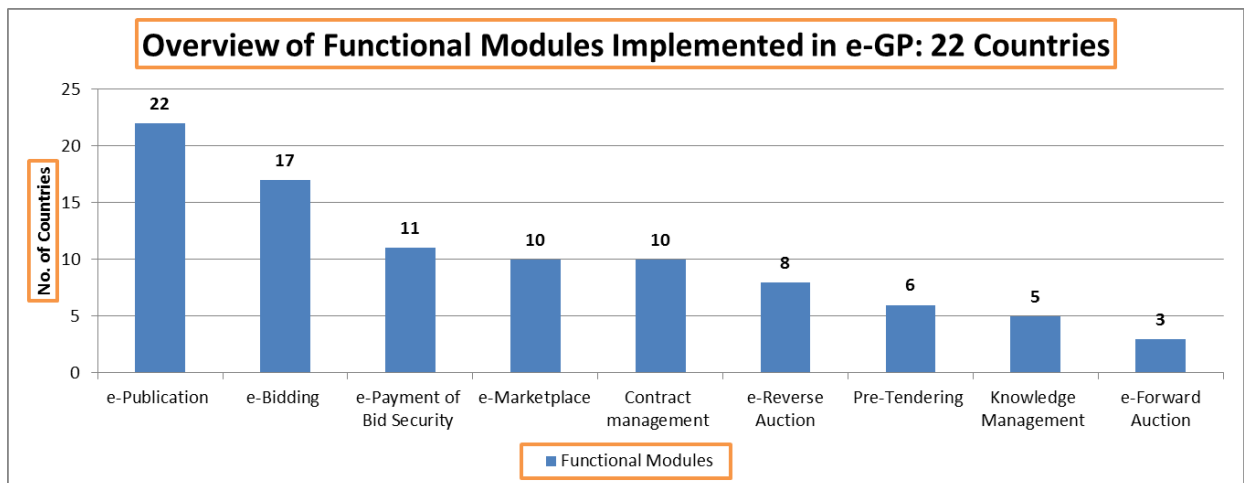
11. Out of the 16 countries which had implemented e-GP as per 2014 survey, 3 countries transitioned out their old e-GP system with a newly launched e-GP system since 2014 viz. Nepal, Uzbekistan and Mongolia.

12. Most of the 16 countries had expanded functional coverage and usage of the system within the last 2 years. One half of the respondents had integrated e-GP with external IT systems and 7 out of the 16 countries had enacted e-GP related legislation. Refer to the Figure below for pictorial representation of the recent changes in e-GP systems operational as per 2014 survey.



**Figure 5: Recent developments in e-GP Systems**

13. The 2014 and 2017 survey responses were consolidated to identify the functional modules implemented by the 22 countries. e-Publication was implemented the most, followed by e-Bidding and then the post tendering modules viz. e-Marketplace and Contract Management. e-Reverse Auction is implemented by 8 countries. The least adopted functional module is e-Forward Auction. Refer to the Figure below for an overview of the functional modules implemented in e-GP. Refer to Annexure for the list of countries which implemented the 9 modules listed below.



**Figure 6: Overview of Functional Modules Implemented in e-GP: 22 Countries**

14. The Multi-lateral Development Banks viz. ADB and the World Bank have assessed e-GP systems in 10 countries to evaluate whether the systems can be used to process procurement in projects funded by them. The 2 Banks have cleared e-GP systems in 8 countries and assessment is on-going in 2 countries. Both ADB and WB have either independently or jointly (not known) assessed e-GP systems in 4 countries viz. Nepal, India, Vietnam and Philippines. ADB has cleared e-GP systems in Georgia and Kyrgyz Republic, which WB is yet to assess. The e-GP systems in Armenia, Kazakhstan and Uzbekistan are cleared by the World Bank, which ADB is yet to assess. There is potential for the World Bank and ADB to synergize their assessment efforts, so the adoption of e-GP in Bank funded projects can be expedited.

<b>Assessment of e-GP Systems by the World Bank and ADB</b>					
<b>S.no.</b>	<b>Country</b>	<b>Year</b>	<b>Status</b>	<b>WB</b>	<b>ADB</b>
1	Nepal	2014 & 2016	Cleared	Yes	Yes
2	India	2011-12	Cleared	Yes	Yes
3	Uzbekistan	NA	Cleared	Yes	
4	Kazakhstan	2016	Cleared	Yes	
5	Vietnam		Cleared	Yes	Yes
6	Georgia	2017	Cleared		Yes
7	Kyrgyz Republic	2015	Cleared		Yes
8	Tajikistan		Assessed	Yes	
9	Armenia	2016	Cleared	Yes	
10	Philippines		Assessed	Yes	Yes

**Figure 7: List of e-GP systems assessed for use in Bank funded projects**

### III. INTEGRATION WITH EXTERNAL IT SYSTEMS

15. The survey responses received in 2014 and 2017 are consolidated to identify the extent to which e-GP is integrated with external IT systems. e-GP is integrated the most with Business Registration and Banking systems, followed by Treasury, Tax, Contractors Association and Judiciary. Refer Annexure for the list of countries where the 6 external IT systems are integrated with e-GP.

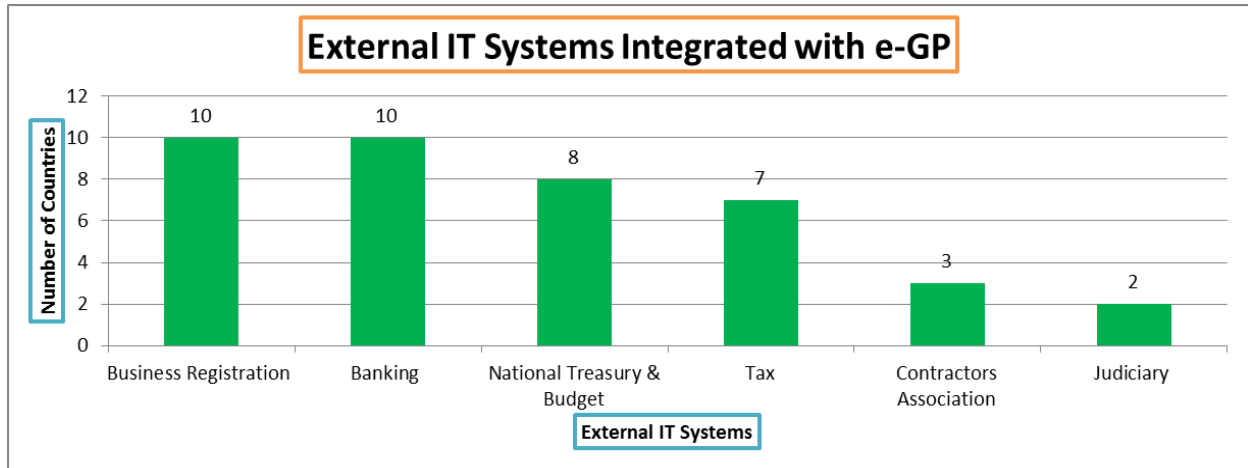


Figure 8: External IT Systems Integrated with e-GP

#### IV. USE OF E-REVERSE AUCTION

16. Of the 6 countries which provided detailed response about the e-Reverse Auction (e-RA) implementation practices, Kazakhstan and Uzbekistan have made adoption of e-RA mandatory. The most common pattern is to use e-RA for procurement of standardized items (4 out of 6 countries) and retain bidder anonymity until close of the e-RA process (5 out of 6 countries). Kazakhstan does not retain bidder anonymity until close of the e-RA process and is the only country to use e-RA for all its procurement. The practice of conducting e-Tendering followed by e-RA is being followed by India and Kazakhstan.

<b>Details about the use of e-Reverse Auction (e-RA)</b>						
<b>No.</b>	<b>Country</b>	<b>Compulsory</b>	<b>Anonymity</b>	<b>e-Tendering &amp; e-RA</b>	<b>Participants</b>	<b>Opinion</b>
1	India	No	Yes	Yes	Shortlist	Depends
2	Malaysia	No	Yes	No	All bidders	Standard items
3	Uzbekistan	Yes	Yes	No	No response	Standard items
4	Kazakhstan	Yes	No	Yes	All bidders	All procurement
5	Georgia	No	Yes	No	All bidders	Standard items
6	China	No	Yes	No reply	No reply	Standard items

Note: Shortlist = Shortlist of top ranked bidders selected based on e-Tendering process

**Figure 9: Details about the use of e-Reverse Auction (e-RA)**

## V. AUTHENTICATION FRAMEWORK

17. The agencies implementing e-GP system seek to authenticate identity of users mainly for the following reasons:

- (i) Development of a reliable supplier / contractor database. If same user gets registered in duplicate, the supplier performance reports generated in e-GP system will be faulty;
- (ii) Reliably associate a user registered online with a confirmedly existing legal entity. Else, there is a risk of fraudulent or fictitious users registered in the System; and
- (iii) Reliably attribute action taken in e-GP system to a user registered in the system. The user on a later date shall not repudiate its action registered in the system. For example, if Company A claims that it did not submit bid or it quoted a much higher amount than what is recorded in the system, there must be a mechanism to prove in a water tight manner what Company A actually did in the system.

18. Electronic Signature is defined in the UNCITRAL Model Law on Electronic Signatures (MLEs) as “... *data in electronic form in, affixed to or logically associated with, a data message, which may be used to identify the signatory in relation to the data message and to indicate the signatory’s approval of the information contained in the data message*”. e-Signature is a broadly defined and technology agnostic legal concept which captures intent and consent. Whereas, “*Digital Signature*” is a type of e-Signature wherein Public Key Infrastructure (PKI) infrastructure is used to reliably authenticate user identity and strongly associate a user with actions taken online. The principles underlying e-Signature and Digital Signature are not different. However there are differences in the manner of implementation.

19. Digital signatures require establishment of PKI infrastructure at the National level. A Certification Authority (CA) authorized under provisions of the e-Signature legislation verifies identity of a person and then issues a Digital Signature Certificate (DSC) tagging a unique private-public key pair to the person. Digital signatures are unfriendly for international trade because a foreign user needs to prove its identity to the concerned National CA to obtain a DSC valid in the bidding country. Such identity verification creates procedural hurdles especially for foreign bidders.

20. In e-Signature based e-GP systems, a user can sign a document using password or such Non-PKI based identity verification tool. e-Signature is user friendly as compared to Digital Signatures. However, PKI when implemented properly can rigorously associate a user to action taken by the user in the system.

21. It is a matter of choice for e-GP system designers whether to adopt e-Signature or digital signature based authentication framework. Refer the report “*Cross-Border Trade in e-GP Era: Challenges & Way Forward*” annexed with this report for a detailed discussion on Digital Signatures and e-Signatures.

22. The Survey of 2014 sought to know whether Electronic signature or Digital Signature was used to authenticate user actions in e-GP system. Further details on Digital signature implementation were sought in the 2017 survey viz.: the process adopted to generate the public-private key pair and whether respondents were aware about the recent discontinuation of support for NPAPI plug-in in latest versions of Google Chrome and Mozilla Firefox.

23. The survey responses of 2014 and 2017 were consolidated to learn about the extent to which Digital signature is adopted vis-à-vis electronic signature. In these 2 surveys clubbed together, 18 countries had provided information regarding the authentication framework adopted. Electronic signature is used as the authentication framework in 13 out of the 18 countries. The 5 countries adopting Digital signature are India, Malaysia, Vietnam, Mongolia and Kazakhstan. The adoption of e-Signature is absolute in the PERD region and all countries in CWRD region except Kazakhstan use e-Signature. Out of the 4 responses received from SERD region, Vietnam and Malaysia had adopted Digital Signature and the other 2 countries adopting electronic signature are Thailand and Philippines. Refer to Annexure for the full list of countries adopting electronic signature and digital signature.

24. Among the countries using Digital Signature, India and Malaysia store the key pair in e-Token. Vietnam, Kazakhstan and Mongolia generate the key-pair using a PKI server implemented in e-GP.

25. Google Chrome and Mozilla Firefox recently announced discontinuation of support for NPAPI plug-in, which is required for loading client side signing and encryption utilities directly in the browser. The 2017 survey sought to know whether countries are aware of NPAPI plug-in support and the work-arounds being developed to handle the NPAPI plug-in end of support. Vietnam and Mongolia which use Digital Signature were unaware about the NPAPI plug-in end of support. India, Mongolia and Kazakhstan have proposed the adoption of client side utility as an alternative for signing documents. Besides, India and Kazakhstan are evaluating the adoption of e-Signature alternatives.

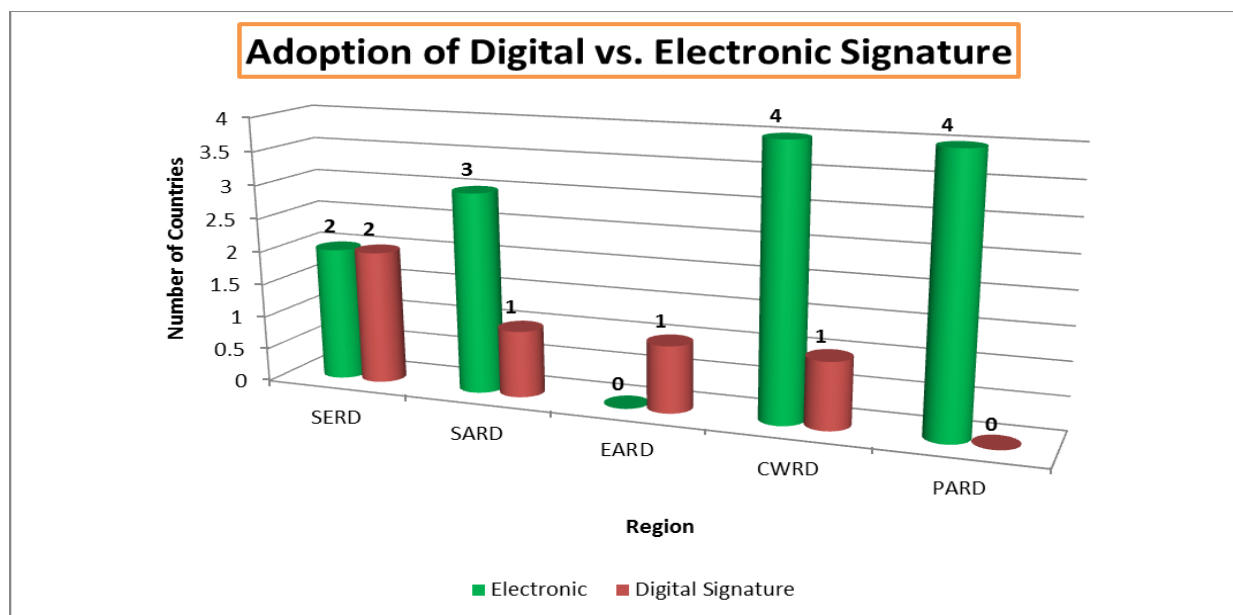


Figure 10: Regional Analysis on Adoption of Digital vs. Electronic Signature

<b>Process Adopted for Key Pair Generation</b>						
<b>S.no.</b>	<b>Description</b>	<b>India</b>	<b>Malaysia</b>	<b>Kazakhstan</b>	<b>Mongolia</b>	<b>Vietnam</b>
1	Key pair stored in e-Token	Yes	Yes	Yes	Yes	
2	New Key pair generated from e-GP server			Yes	Yes	Yes

**Figure 11: Process adopted for key pair generation**

<b>End of Support to NPAPI Plug-in Support</b>				
<b>S.no.</b>	<b>Country</b>	<b>Not aware about NPAPI Plug-in</b>	<b>Signing will be done using utility software</b>	<b>Evaluating e-Signature alternatives</b>
1	India		Yes	Yes
2	Malaysia			
3	Kazakhstan		Yes	Yes
4	Vietnam	Yes		
5	Mongolia	Yes	Yes	
6	Tajikistan	Yes		
7	China	Yes		

**Figure 12: End of Support to NPAPI Plugin**



## VI. SYSTEM MALFUNCTION

26. A total of 8 countries had reported having System malfunction policy in 2014 survey. This number stood at 14 after the 2017 survey. Refer to the Table below for countries with System malfunction policy:

<b>Countries with System Malfunction Policy</b>				
<b>S.no.</b>	<b>Respondent Details</b>	<b>Region</b>	<b>2014</b>	<b>2017</b>
<b>South Asia (SARD)</b>				
1	India	SARD	Yes	Yes
2	Bangladesh	SARD	Yes	
3	Nepal	SARD		Yes
<b>South East Asia (SERD)</b>				
4	Malaysia	SERD	Yes	Yes
5	Indonesia	SERD	Yes	
6	Vietnam	SERD	Yes	Yes
7	Thailand	SERD	Yes	
8	Philippines	SERD	Yes	Yes
<b>Central &amp; West Asia (CWRD)</b>				
9	Kazakhstan	CWRD	Yes	
10	Uzbekistan	CWRD		Yes
11	Kyrgyz Republic	CWRD		Yes
<b>Pacific (PARD)</b>				
12	Nauru	PARD		Yes
<b>East Asia (EARD)</b>				
13	Mongolia	EARD		Yes
14	China	EARD		Yes

27. The 2017 survey sought to know the following additional details about the system malfunction policy viz. whether:

- (i) The policy is published
- (ii) Whether a definition of affected tenders is provided (e.g.) all tenders which were scheduled to close within 4 hours of the system malfunction &
- (iii) The duration for which the due date for tenders affected by system malfunction will be extended (e.g.) the due date for all affected tenders will be extended by 1 working day

28. Of the 10 countries which had system malfunction policy:

- (i) 5 had published the system malfunction policy for public view (i.e. 50%)
- (ii) The malfunction policy of 4 countries (i.e. 40%) provided definition of affected tenders
- (iii) The duration for which due date of tenders affected by system malfunction will be extended is defined in the policy of 6 countries (i.e. 60%)

<b>Details of System Malfunction Policy Definition</b>				
<b>S.no.</b>	<b>Country</b>	<b>Published</b>	<b>Define affected tenders</b>	<b>Extension defined</b>
1	India	Yes	Yes	Yes
2	Malaysia	Yes	No	Yes
3	Vietnam	No reply	No reply	Yes
4	Philippines	Yes	Yes	Yes
5	Nauru	Yes	Yes	Yes
6	Mongolia	Yes	Yes	Yes

**Figure 13: Detailed Response to System Malfunction Policy Questions**

## VII. POST-TENDERING IMPLEMENTATION

29. The functional modules in e-GP are broadly sub-divided under Pre-tendering, Tendering and Post-Tendering modules. The e-Tendering related modules viz. e-Publication and e-Bidding are implemented and used the most. As per the survey, only 10 out of 22 countries have adopted Post Tendering modules viz. Contract and Shopping mall.

30. The 2017 survey sought to know from agencies whether Post Tendering modules are:
- (i) Fully rolled-out across all purchasing agencies
  - (ii) Piloted by few purchasing agencies, but not rolled out across all purchasing agencies
  - (iii) Software is ready, but not used
  - (iv) Software is not implemented

31. The survey results showed that 6 out of the 15 respondents have fully rolled out Post Tendering modules and 5 are yet to implement the software as of current. Of the remaining 4, 3 countries have piloted the module and 1 country has developed the software but its purchasing agencies are yet to use it. Refer Figure below for a pictorial view of the response summary.

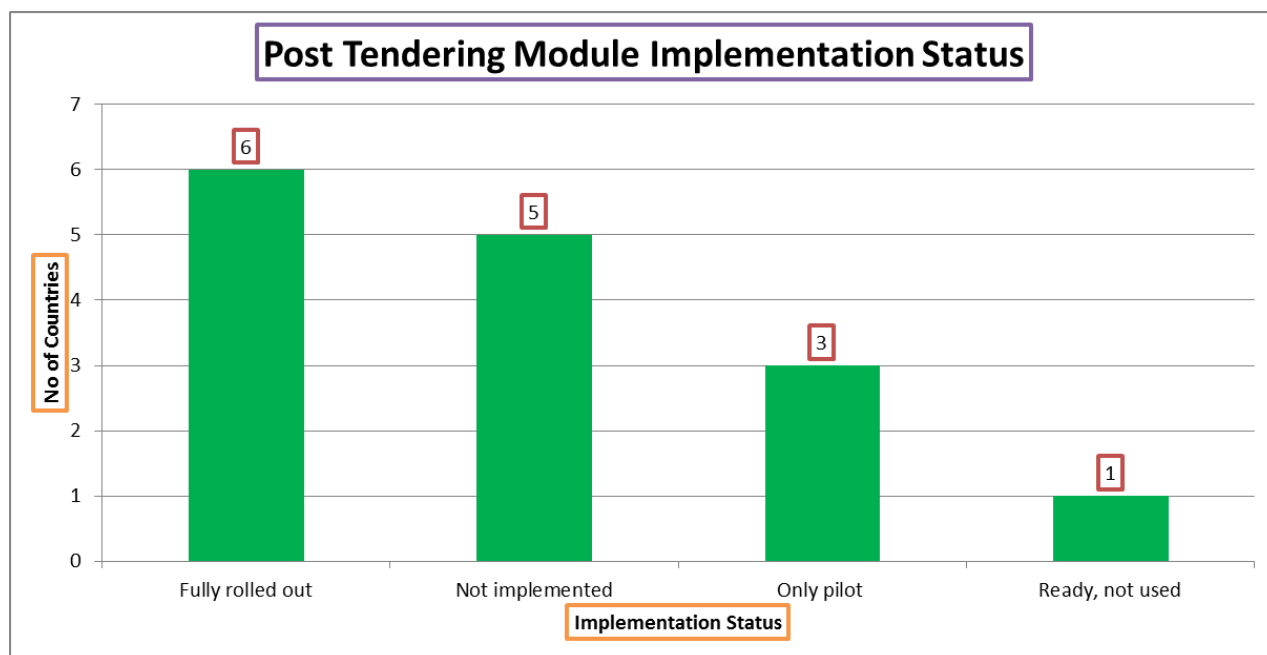


Figure 14: Post-tendering implementation status

32. An effort was made to specifically understand the challenges associated with implementation of Post-tendering modules. “*Change management*” was selected by 11 of the respondents as a key challenge impacting adoption of the Post Tendering module. “*Lack of Standardization*” is selected by 8 of the respondents as a challenge, which is followed by resistance by Government officials for transparency & fiscal discipline (3 respondents) and lack of IT infrastructure (2 respondents).

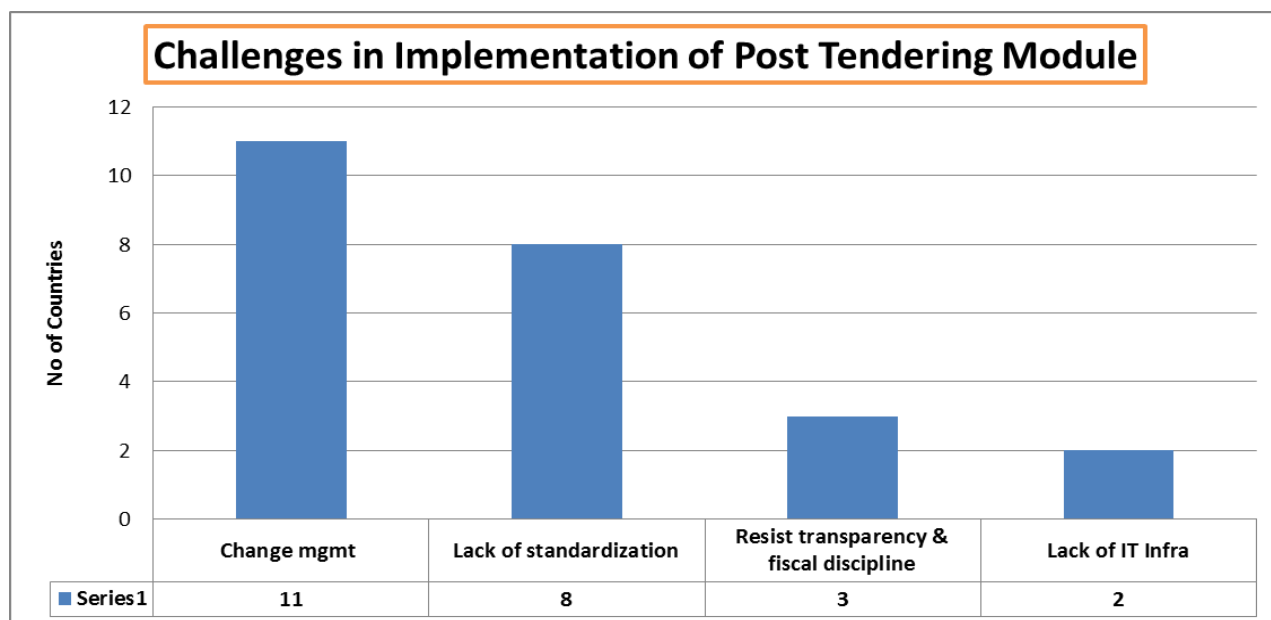


Figure 15: Challenges in implementation of post-tendering module

33. Refer to Annexure for the list of countries corresponding to the two graphs provided in this section.

## VIII. DISCUSSION AREAS

34. The 2017 survey sought to know the discussion areas which are of interest to the participants. A wide range of interests were expressed. Refer below for a summary of the responses received, ordered by the number of interests expressed:

- (i) Forward and Reverse Auction
- (ii) The use of Authentication framework in e-GP system
- (iii) Data security in e-GP system
- (iv) Challenges in implementation of e-Market place & Contract Management module (i.e.) Post-tendering module
- (v) Change management
- (vi) ADB's SAAS initiative (i.e. duration until which the project will be given free of charge, provision of training in SAAS initiative, data ownership, sustainability of SAAS model, customization of SAAS to country specific requirements
- (vii) Integration of e-GP with external IT systems such as budget and tax systems
- (viii) Technology related issues viz. deployment architecture, audit trail, handling of large sized documents, use of open source software, user access management
- (ix) Handling of bid security
- (x) e-GP Analytics, and
- (xi) Open data contracting standard

## IX. ANNEXURE

### 1 Overview of the Responses Received in 2014 & 2017

S.no.	Region	Country Responses		
		2014	2017	2014 & 2017
1	SARD	5	6	7
2	SERD	6	5	7
3	CWRD	8	8	8
4	PARD	9	12	13
5	EARD	1	2	2
6	TOTAL	29	33	37

### 2 List of Respondents

S.no.	Respondent Details	Region	2014	2017
<b>South Asia (SARD)</b>				
1	Nepal	SARD	Yes	Yes
2	Bhutan	SARD	Yes	Yes
3	India	SARD	Yes	Yes
4	Bangladesh	SARD	Yes	DNR
5	Sri Lanka	SARD	Yes	Yes
6	Pakistan	SARD	DNR	Yes
7	Maldives	SARD	DNR	Yes
<b>South East Asia (SERD)</b>				
8	Indonesia	SERD	Yes	DNR
9	Malaysia	SERD	Yes	Yes
10	Vietnam	SERD	Yes	Yes
11	Lao PDR	SERD	Yes	DNR
12	Thailand	SERD	Yes	Yes
13	Philippines	SERD	Yes	Yes
14	Cambodia	SERD	DNR	Yes
<b>Central &amp; West Asia (CWRD)</b>				
15	Uzbekistan	CWRD	Yes	Yes
16	Afghanistan	CWRD	Yes	Yes
17	Kazakhstan	CWRD	Yes	Yes
18	Georgia	CWRD	Yes	Yes
19	Kyrgyz Republic	CWRD	Yes	Yes
20	Tajikistan	CWRD	Yes	Yes
21	Armenia	CWRD	Yes	Yes
22	Azerbaijan	CWRD	Yes	Yes
<b>Pacific (PARD)</b>				

S.no.	Respondent Details	Region	2014	2017
23	Cook Islands	PARD	Yes	Yes
24	Vanuatu	PARD	Yes	Yes
25	Tuvalu	PARD	Yes	Yes
26	Tonga	PARD	Yes	DNR
27	Samoa	PARD	Yes	Yes
28	Papua New Guinea	PARD	Yes	Yes
29	Solomon Islands	PARD	Yes	Yes
30	Timor Lieste	PARD	Yes	Yes
31	Fiji	PARD	Yes	Yes
32	Nauru	PARD	DNR	Yes
33	Palau	PARD	DNR	Yes
34	Marshall Islands	PARD	DNR	Yes
35	Kiribati	PARD	DNR	Yes
<b>East Asia (EARD)</b>				
36	Mongolia	EARD	Yes	Yes
37	China	EARD	DNR	Yes
<b>Notes</b>				
1. DNR = Did Not Respond				

### 3 Go-live of e-GP Systems

S.no.	e-GP System	Region	Go-live Year		
			Survey 2011	Survey 2014	Survey 2017
1	Malaysia	SERD	2000	2000	2000
2	Philippines	SERD	2000	2000	2000
3	China	EARD			2000
4	India – Gujarat	SARD	2004	2004	2004
5	Nepal	SARD	2007	2007	2007
6	Indonesia	SERD	2008	2008	2008
7	Vietnam	SERD	2009	2009	2009
8	Afghanistan	CWRD	2010	2010	2010
9	Kazakhstan	CWRD		2010	2010
10	Georgia	CWRD	2010	2010	2010
11	Thailand	SERD	2010	2010	2010
12	Bangladesh	SARD	2011	2011	2011
13	Uzbekistan	CWRD	2011	2011	2011
14	Kyrgyz Republic	CWRD		2011	2011
15	Tajikistan	CWRD		2011	2011
16	Armenia	CWRD		2011	2011
17	Mongolia	EARD		2012	2012
18	Nauru	PARD			2016
19	Fiji	PARD			2016
20	Cook Islands	PARD			2016
21	Vanuatu	PARD			2016
22	Bhutan	SARD			2017


 Colour coded boxes identify the new responses received





## 5 Country-wise List of IT Systems Integrated with e-GP

S.no.	List of IT Systems Integrated with e-GP					
	National Treasury & Budget	Tax	Business Registration	Banking	Judiciary	Contractors Association
1	India	Nepal	Nepal	Nepal	Kazakhstan	Mongolia
2	Malaysia	Uzbekistan	India	India	Mongolia	Thailand
3	Uzbekistan	Georgia	Malaysia	Malaysia		Nauru
4	Kazakhstan	Kyrgyz Republic	Kazakhstan	Uzbekistan		
5	Georgia	Mongolia	Vietnam	Kazakhstan		
6	Kyrgyz Republic	Tajikistan	Georgia	Vietnam		
7	Mongolia	Thailand	Kyrgyz Republic	Georgia		
8	Tajikistan		Mongolia	Mongolia		
9			Armenia	Tajikistan		
10			Thailand	Thailand		

 Data obtained during the 2017 survey

## 6 Country-wise Listing of Authentication Framework Adopted

<b>Country-wise Listing of Authentication Framework Adopted</b>			
<b>S.no.</b>	<b>Country</b>	<b>Supplier</b>	<b>Govt. Official</b>
1	Nepal	Electronic	Electronic
2	India	Digital Signature	Digital Signature
3	Malaysia	Digital Signature	Digital Signature
4	Bangladesh	Electronic	Electronic
5	Uzbekistan	Electronic	Electronic
6	Kazakhstan	Both	Both
7	Cook Islands	Electronic	Electronic
8	Vanuatu	Electronic	Electronic
9	Tuvalu	Electronic	Electronic
10	Vietnam	Digital Signature	Digital Signature
11	Georgia	Electronic	Electronic
12	Kyrgyz Republic	Electronic	Electronic
13	Mongolia	Digital Signature	Digital Signature
14	Tajikistan	Electronic	Electronic
15	Fiji		Electronic
16	Thailand	Electronic	Electronic
17	Philippines	Electronic	Electronic
18	Bhutan		Electronic

## 7 Roll-out Status of Post Tendering Module

Feedback on Implementation Status of Post Tendering Module						
S.no.	Country	Implementation Status				
		Level of Importance	Not implemented	Ready, not used	Piloted, not fully used	Fully rolled out
1	Nepal				X	
2	India				X	
3	Malaysia					X
4	Uzbekistan		X			
5	Kazakhstan					X
6	Georgia					X
7	Vietnam		X			
8	Kyrgyz Republic	4	X			
9	Mongolia	5				X
10	Tajikistan		X			
11	Armenia	5				X
12	Thailand					X
13	Philippines		X			
14	China	4			X	
15	Nauru	5		X		

Note: Rank is given in the scale of 1-5, where 1 refers to low importance and 5 refers to high importance

Challenges in Implementation of Post Tendering Module					
	Country	Lack of IT Infra	Lack of Standardization	Change Management	Resist Transparency and Fiscal Discipline
1	Nepal			X	
2	India		X	X	
3	Malaysia		X		X
4	Uzbekistan		X	X	
5	Kazakhstan			X	
6	Georgia				
7	Vietnam			X	X
8	Kyrgyz Republic		X		
9	Mongolia			X	X
10	Tajikistan	X		X	
11	Armenia		X	X	
12	Thailand		X	X	
13	Philippines	X	X		
14	China		X	X	
15	Nauru			X	