

Although the degree of sophistication varies from one system to another, functionalities typically provided include: supplier/buyer registers; information services (access to government procurement-related information such as news and publications); e-bidding systems, which facilitate the transmission of electronic bidding documents and allow sellers to submit their bids; e-auctions and e-reverse auctions (i.e. price competitions carried out online in a dynamic manner); e-purchasing tools (for low-value and high-volume transactions); catalogue-based ordering systems; purchasing cards; and an e-payments and e-receipt systems (Asian Development Bank, 2013).

In parallel, new regulatory frameworks have been developed that allow procuring entities to take advantage of electronic means, such as the 2011 UNCITRAL Model Law on Public Procurement and the revised WTO Agreement on Government Procurement (GPA).<sup>67</sup>

The revised GPA, which entered into force in April 2014, recognizes the importance of using, and encouraging the use of, electronic means. The GPA explicitly states that procuring entities can accept tenders by electronic means – thereby opening potential avenues for the use of blockchain technology – but that the relevant IT systems and software must be “generally available and interoperable with other generally available information technology systems and software”<sup>68</sup> – which in the current state of the technology remains a challenge (see Section 4.2(a)). A second interesting feature of the GPA is the inclusion of an explicit reference to corruption in its preamble: parties to the GPA are required to conduct their procurement activities in a “transparent and impartial manner” and in a way that “avoid[s] conflicts of interest and prevents corrupt practices” – a first in a WTO agreement.<sup>69</sup>

Can Blockchain be leveraged to further improve government procurement processes? Can it add anything to already sophisticated e-GP systems? Various key features of the technology make it an interesting tool to use in public procurement, but it is essential to weigh up the trade-offs carefully.

First, Blockchain provides for a highly secure electronic environment, in which data are time-stamped and stored in a near immutable way. One of the most important elements of e-GP is security. Commercial quotes submitted by bidders need to be stored in a safe and secure manner, and because tendering forms the basis for a legal contract, all data need to be kept secured, complete and auditable. The question of data security and fraud, although probably less common than in a paper-based environment, is reported as one of the deterrents to e-GP (Asian Development Bank, 2013).