TRANSFORMATION OF PUBLIC SECTOR PROCUREMENT

THE ROLE OF TECHNOLOGY IN PUBLIC PROCUREMENT

In 2013, Forbes reported that governments all over the world were under significant economic pressure, compelling them to undertake austerity measures, improve efficiency of processes and policies, and embrace new technologies. Notwithstanding, we have seen how delayed investment in innovative technology by governments is, because they are indeed stewards of taxpayers' money. Public sector organisations need to perform comprehensive risk assessments, maintain high levels of transparency and accountability to the public and they also need to be compliant with legislative mandates before adopting any technology or investing in innovation (TeckUK, 2017).

The catch 22 though, is that the adoption of technological advancements in public procurement, will facilitate this drive towards accountability and transparency! And I will provide you, a little later in my presentation with a case study of the derivative benefits.

In 2010, the European Bank for Reconstruction and Development (EBRD) through its Legal Transition Programme, conducted an assessment of public procurement regulatory frameworks in the EBRD countries of operations. The assessment highlighted that much of the recorded "success stories" in public procurement reforms were linked to the implementation of electronic procurement and that since the 2008 financial crisis governments' interest in electronic procurement has increased.

This is further corroborated in a study conducted by McKinsey & Company, where they sought to determine the factors that allowed states to have a successful procurement transformation. Here, they found that the adoption of technology which particularly incorporated, as it were, a single "source of truth" for procurement data and procurement information supported by an infrastructure of common data and reporting standards, made the list (although not limited to) towards achieving procurement excellence!

Luckily, or perhaps wisely, Trinidad and Tobago is heading in that direction. Because, I can tell you with alacrity and certitude, The Office of Procurement Regulation has no intention of being left behind. And of course not, because we have been so mandated: *to promote the use of technology in public procurement and the retention and disposal of public property* according to section 13(f) of the Public Procurement and Disposal of Public Property Act.

And even if we were not so mandated, why not do it anyway?

THE EVOLUTION OF E-PROCUREMENT: BENEFITS AND DRAWBACKS

Haven't we all, at some point, experienced the negative impact of public procurement malpractice:

- Long timelines. End-to-end timelines are too long or increasing under the weight of complex processes and compliance needs.

- Poor requirements definition. The type of procured goods and services is evolving into areas where the government has limited in-house experience (for example, artificial intelligence) and therefore has difficulty articulating its need and assessing performance and cost trade-off decisions.
- Supplier performance management. Public-sector organisations lag behind the private sector in applying outcome-based performance measures and establishing effective performance assessment and reward systems for their vendors.
- Difficulty adapting to customer needs. Highly variable internal "customer" populations have similarly variable needs in terms of cost, speed, quality, and compliance—a one-size-fits-all procurement system rarely satisfies all of these needs.
- Lack of transparency. Spend is diffused across government components, with limited central visibility into data necessary for a consolidated procurement-management approach.
- Talent shortages. Demand for procurement support outstrips capacity, worsened by an impending loss of expertise from retirements and lagging recruitment and knowledge-transfer efforts.

Public procurement will continue to grapple with these challenges as they attempt to balance their performance against four attributes—speed, cost, quality, and compliance and, it will be particularly hard if they do not incorporate eProcurement systems and best practices.

So, let's dive a bit into what exactly is e-procurement and its benefits and/or drawbacks. I cannot stress enough the importance of having a balanced view of e-procurement technology because the reality is, security breaches and data privacy violations are real issues!

According to The Chartered Institute of Procurement and Supply (CIPS) website, e-procurement is:

> *"The combined use of electronic information and communications technology (ICT) in order to enhance the links between customer and supplier, and with other value chain partners, and thereby to improve external and internal processes. E-Procurement is a key component of e-business and e-commerce."*

In other words: e-procurement, because of its technological foundation, improves both customer/supplier relationships and business processes, and could also offer significant cost savings. But how did all of this start?

The origins of e-procurement or "electronic procurement" began in the 1980s, with the development of electronic data interchange (EDI). This development, while ancient by today's standards, was ground breaking for the time. EDI allowed customers and suppliers to send and receive purchase orders (and invoices as well) using call-forward networks, and eventually email.

In the 1990s, technology, as it tends to do, improved and software companies began to develop online catalogues specifically for use by vendors. Since then, e-procurement software has become an amalgam of the two: a platform for sending and receiving electronic orders and various catalogues, as well as myriad other functions such as developing e-procurement plans,

e-tendering, e-evaluation, contract management and vendor management. Marketplaces have also proven to be a popular addition to e-procurement software. Marketplaces, to borrow CIPS' definition, are: virtual marketplaces for partners, suppliers, distributors, agents and customers."

New procurement policies however, such as those promulgated in the last few years have seen key international instruments for public procurement updated: the 2011 UNCITRAL Model Law on Public Procurement has replaced the 1994 version; the 2012 World Trade Organization revision of the Government Procurement Agreement enters into force in 2014, and the European Union adopted new directives on public procurement on 15 January 2014.

According to EBRD, all of these amendments are aimed at making public procurement deliver better value for money and providing tools for economic development, while safeguarding transparency of public contracts at the same time. This new approach to regulating procurement is based on introducing eProcurement for default mandatory use in the public sector.

But what makes e-procurement so beneficial?

- The automatic processing and auctioning of orders and of related trading documents and data, thereby enhancing the speed and certainty of doing business at a lower total cost.
- Improved workflow of the internal procurement process – this enables end-user self-service and decentralisation with centralised control through company-specific catalogues.
- New functionality – such as eRequests For Quotations (RFQs) and on-line bidding in e-auctions (both conventional and Dutch).
- Better pricing opportunities – using reverse auction.
- Greater transparency into the process.
- Use of potentially more efficient and cheaper connectivity methods – such as the internet and XML (a computer language for coding content and delivery) however, these may result in a lack of security.
- Connectivity to external sources of information – e.g. databases, catalogues and portals such as eHubs and e-marketplaces.
- Connectivity to internal systems and sources of information – these include inventory management, maintenance management and Materials Resource Planning (MRP), Enterprise Resource Planning (MRP & MPRII) systems amongst others.
- Payment systems – e.g. links to banks, credit card companies and purchasing cards.
- Improvements in supply chain mechanisms and consortia etc. leading to mutual benefits.

But what good are these benefits on paper if we don't have real-life success stories to glean from. A great example of an e-procurement implementation success comes from a UN survey assessing the e-Government progress of one of its member states, Korea.

Korea, is literally in a group reaching the high level of e-Government realisation, where users can actually pay for services and other transactions online through KONEPS i.e. Korea On-line E-Procurement System. Just to provide a little background on KONEPS.

KONEPS is a single window for comprehensive information on procurement of all public organisations, providing one-click online service for government procurement.

Its main aim was to establish a nationwide web-based procurement system, dealing with whole procurement process including acquisition of all the information on the national procurement projects, procurement request, bids, contracting and payment for 52,395 public organizations and 373,833 private firms in 2017 registered with the system in 2017.

It was used to expand the expertise and efficiency of Public Procurement Service (PPS) to all other public organisations. Now PPS, Korea's Central Government Procurement Agency, has accumulated the expertise and KONEPS is one of the most sophisticated e-Procurement solutions in the world, covering everything from provision of information and electronic tendering service to actual online payments.

Through KONEPS' implementation, and these are just a few of their quantifiable benefits, KONEPS has:

- Grown into one of the world's largest government e-Marketplaces. As at the end of December 2015 KONEPS accounted for 67% (USD 74.56 billion) of the Korean public procurement market (USD111.9 billion).
- By enabling 5 times more suppliers to participate in governmental procurement than before KONEPS was implemented (65 thousand suppliers), SMEs were given more opportunities to participate in public procurement.
- The greatest achievement of implementing KONEPS is the enhanced efficiency of government procurement by enabling the whole process to be digitialised and reducing time and money spent by suppliers and public entities. According to a study conducted in 2008 by Hanyang University in Korea, KONEP's electronic procurement services saved about 8 billion dollars annually. Among the 8 billion dollars, the 6.6 billion was the amount saved from the private sector and the remaining 1.4 billion dollars from the public sector. The saving effect from the private sector was mainly due to a reduction in time and money spent through personal visits, while the saving effect from the public sector was owning to a reduction in administrative costs from enhanced work efficiency, the reduced amount of paper documents used, etc.

(Unit: Million USD)

Classification		National agencies	Local government	Public enterprises	PPS	Subtotal
Public/Private Sector	Public sector	146	129	196	69	1,440
	Private sector	975	4,807	815	13	6,610
	Subtotal	1,121	5,836	1,011	82	8,050
Procurement Category	Goods	155	963	190	57	1,365
	Facility/ Service	967	4,874	822	25	6,688
	Subtotal	1,121	58,36	1,011	82	8,050

Source: Republic of Korea Public Procurement Service: (Saving effect of KONEPS by Public/Private Sector Procurement Category)

- In the past, suppliers had to apply for a bid published by a public entity and then later visit the entity to submit their bids. Now, however, they are able to check tender notices on the KONEPS system and simply electronically submit their bids in time, which will not take more than a minute.
- In the case of public entities, it used to take more than 30 hours to review bidding documents to select a winning bidder. However, using KONEPS, the same process takes them less than 2 hours.
- Despite the reduction in the number of employees at PPS, PPS achieved enhanced procurement efficiency as the number of purchases made and processed had increased greatly.

Source: Republic of Korea Public Procurement Service (Number of Transactions Processed Per Employee at PPS)

- With all the information including bidding and its opening results disclosed in real time, the integrity of Public Procurement Service has increased annually, proving that the government procurement process has become much more transparent after

implementing KONEPS. In fact, the Korean Independent Commission Against Corruption announced that the integrity of PPS increased by 27.2% from 2002 to 2005.

As a result, KONEPS was selected as the best practice of having significantly increased transparency in procurement through digitization and was introduced by Transparency International, UN Anti-Corruption Forum, OECD Global Forum on Integrity in Public Procurement.

The benefits of KONEPS's success with e-procurement goes on and on, and you are free to research more of that in your spare time. Unfortunately, however, not all countries are quantifying the benefits of implemented e-procurement systems.

OECD reports only 33% of their member countries are actively doing so, as seen in this chart.
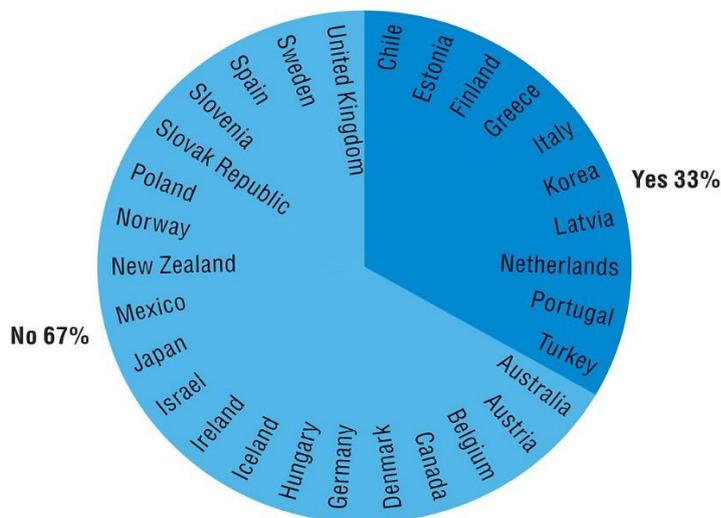
Source: OECD (2016), Survey on Public Procurement, OECD, Paris.

IMPLEMENTING EPROCUREMENT IN T&T

We as a nation, should really aspire to not fall into the "No" category here, because for Trinidad and Tobago it can cost a public body anywhere between 150K to 200K for one prequal exercise alone.

With the implementation of e-procurement, let's say we have about 250 public bodies who at some point will engage in this exercise. You are talking about saving at least 50million dollars, on a conservative basis!

Today, I can proudly share that The OPR is currently developing a public procurement database in keeping with best practice, according to section 13(a) of the Act which states: *Establish a comprehensive database of information on public procurement, including information on tenders received, the award and value of contracts, and such other information of public interest as the Office thinks fit.*

In this vein, The OPR will establish:

1. A Procurement Depository where all Suppliers, wishing to conduct business with Public Bodies in Trinidad & Tobago, will be required to register in the system and provide all the necessary information that is necessary to determine their suitability to transact with Public Bodies. This will be beneficial to suppliers as they will no longer need to resubmit the same information to each public body, thus reducing bid preparation time and their overall cost of doing business with the Government of Trinidad & Tobago.

2. A database of Pre-Qualified Suppliers identifying the category of goods/services for a given dollar value where suppliers have been pre-qualified and can provide the needed service. This will be beneficial to the Government of Trinidad & Tobago as costly pre-qualification exercises need not be repeated by each public body.

3. Suppliers who are ineligible to transact with Public Bodies will be added to an ineligibility list which will be visible to all Public Bodies.

4. Public Bodies will publish Tender notices, the number of bids received, the name of the supplier the contract was awarded to and the value of the award. Information of this nature will be available to the public leading towards greater transparency into the award of contracts.

5. Performance Metrics on awarded Contracts such as "Contract Variation", "Value of Work Completed", "Value of Work Paid" and "% Work Completed" will be captured quarterly. This will lead to greater transparency in the management of contract, insight into successful/unsuccessful contracts, potential warning signals for cost overruns, to name a few.

6. Disposal of real and personal property identifying the method of disposal, disposal value and recipient of property. Again this leads into greater transparency in to property disposal process.

Moreover e-procurement, properly implemented, will allow us to uphold the objects of our Act.

- **E-procurement enables Accountability:** i.e. governance and compliance issues, lost documents, etc. that will be solved, the valuable data that becomes visible for reporting and strategic procurement, including the digitisation of handbooks and guidelines for easy access.

- **E-procurement enables Value for Money:** i.e. Procurement operations will be far more efficient, no more manual filing systems, suppliers will be able to update their own information, so no clerical work required and manual data capture, improved internal controls through segregation of duties, contracts can be standardised, and drafted on procurements terms, turn-around times are improved, so goods and services become available quicker. Additionally, reverse auction and the online receipt of documents associated with costs/persons outside our country can be easily facilitate thereby opening the market place for both suppliers and buyers.

- **E-procurement enables Integrity and Transparency:** i.e. Full visibility into the procurement spend, payments only made against a contract, so no more maverick spending. Suppliers can be authenticated once, with prequalification, evaluation processes and delisting being made public, all of which can be changed with simply updating their information when required. And even while being public, e-

procurement systems can still enable compliance to protection of personal information and regulations while data can be passed through to other systems, for example financial for payments processing.

I am not by any means however, saying that the implementation of eProcurement will be without its challenges. There are major issues to overcome when implementing e-Procurement systems such as

- Ensuring, that by developing e-Procurement, organisations are not simply passing costs or process inefficiencies onto another part of the organisation or onto suppliers.
- Culture profile within organisations (e.g. resistance to change).
- Security of data in eProcurement systems is critical. The system must contain robust mechanisms for identifying and authenticating the user so that the supplier knows that he can fulfil any orders placed. Both parties must have complete confidence in the security infrastructure of any system.
- The details in bids are not properly read which can render supplier submissions null and void, leading to time and cost wastage.

Additionally, and more specific to governmental responsibility, the advantages of eProcurement can only be realised where there is a genuine desire to reform existing procurement practice. It will require strong political backing, effective leadership and procurement expertise and skills building. You will find also that where the introduction of eProcurement technology is not accompanied by the reengineering of work practices then expected benefits will not be achieved.

CONCLUSION: THE FUTURE OF E-PROCUREMENT

So, by now we know that eProcurement, has been around for some time now and as technology changes, the demands on our existing procurement systems and our resources will follow. Existing eProcurement systems as we know them now are constantly put through changes in order to be improved and to maximize their efficiency in terms of saving time, money, and resources. But how will eProcurement systems evolve in the future? Like everything else technologically impacted, they will not remain static and new trends and challenges are starting to emerge.

Cloud-Based eProcurement Platforms

Experts forecasts are almost unanimous in reporting that, within the next 18 months, more than 50% of all business communication, Internet of Things (IoT) and networking infrastructure will be stored and operated through some type of cloud system. eProcurement technology vendors are shifting from large complex ERP-built technology in favour of simpler platforms that are user-ready and far more efficient than the previous setups. The latest wave of developments in cloud computing eProcurement is more app-driven with simpler interfaces and analytics that are stored in the cloud rather than onboard external drives or mega-computers. Cloud-based automation will also be more cost-effective and requires little to no maintenance.

One of the concerns of buyers and suppliers on both ends of the supply chain is that cloud-based eProcurement platforms may also contain fewer essential components found in conventional software programs. Now, developers have condensed all the same features into a more compact, low-cost system without eliminating the necessary elements such as spend analysis, reverse auction, PO and invoice automation etc.

Cloud based systems also solve the problem of getting different systems to share data directly within the supply chain, as it allows for the centralising of all data and documents. They can allow different procurement systems to communicate more efficiently using cloud connectivity and increase data visibility, sharing and compliance.

Finally cloud computing will improve buyer-seller relationships by creating a non-disruptive supply chain as well as a more efficient flow of payments. What good news this will be for suppliers who do business with public entities.

Big Data Is Changing the Game

Big data, as a concept has been around in the last decade, yet in the last few years its importance has become highly emphasized. Big data has its uses in a lot of spheres and now it is becoming part of the eProcurement system. The usefulness of big data can't be stressed enough in B2B, G2B, and B2G relations and the purchasing processes.

A lot can be achieved by integrating big data into an eProcurement system, such as forecasting the demand of certain items, identifying other businesses who can become your suppliers or customers, finding the best deals and making the purchasing processes automatic based on pre-set parameters. Big data application paired with one such automated eProcurement system and machine learning can raise the productivity levels to a new high. A result I am sure our nation would love to see in public entities.

Blockchain is on the Rise

Blockchain was in the spotlight throughout 2018, and it seems like this trend is not going away any time soon. The main benefit of a blockchain is security, and eProcurement systems can definitely benefit from that. You might associate blockchain with Bitcoin, yet blockchain technology grew much bigger than the cryptocurrency and found its uses in a number of different fields.

A quick word about blockchain in case you are not familiar with it: It is a system or a ledger where all stored information is encrypted. The system stores virtually every action carried out, making all transactions traceable. Information on the blockchain can only be accessed if you are granted access to it. In that sense, blockchain is probably the most secure means of information storage out there. To access information on the blockchain apart from the grant

access, you normally need a 2FA (two-factor verification). Additionally, all information on the blockchain can be tokenized, meaning that it is owned by an individual or a company and the data can't be accessed, altered or replicated by anyone.

That being said, the use of a blockchain in relation to eProcurement systems is more than evident. Blockchain offers the most secure way of storing information at the moment. All transactions are transparent, which is of great importance in public procurement.

Artificial Intelligence

AI uses algorithms in computer systems that are able to perform tasks normally requiring human intelligence. Chatbots have started to be used to help businesses articulate their needs with procurement, instead of completing lengthy requests on enterprise resource planning (ERP) systems. This echoes the voice experience consumers get through the likes of Amazon Alexa and Google Assistant.

Turkish telecoms company Turkcell has implemented a procurement chatbot, which learns continuously and simulates interactive procurement professionals' conversations with business partners and vendors by using key pre-calculated user phrases and auditory or text-based signals. The chatbot interfaces with the company's ERP system and it has enabled procurement professionals to cut out non-value-added activities and allocate their time to more strategic topics.

At an IDB Conference recently held in Washington this was said by WEF representatives "The forecast value of AI to the global economy is being recognised by the World Economic Forum (WEF). In September, the WEF's Centre for the Fourth Industrial Revolution unveiled a plan to develop the first AI procurement policy. The work is being done in conjunction with the UK government's Department for Digital, Culture, Media and Sport. A pilot starts in July and it is hoped it will be rolled out in December. This will include high-level guidelines as well as an explanatory workbook for procurement professionals. A further eight countries have expressed interest in extending the pilot globally. The reason for putting together a policy now is that "regulation tends to be too slow" so says Kay Firth-Butterfield, WEF's head of AI.

So, while saying we live in a technologically connected world is an easy way to enter – and potentially win – a contest for crafting the world's most obvious sentence, it is the truth! We can no longer procure in silos or with manual systems using dinosaur age processes further maligned with out-dated thinking patterns. Rest assured however, even while e-Procurement is constantly evolving –its foundation of improving customer/supplier relationships and internal business processes will remain intact.

Thank you so much for the opportunity to share, I would be happy to take any questions.

Thank you once again and do enjoy the rest of the day's proceedings.