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# THE SEVEN DEADLY SINS OF PROCUREMENT DIGITIZATION

# (AND SOME PRACTICAL SUGGESTIONS ON

# HOW TO AVOID THEM)

**Gavin HAYMAN, Oscar HERNANDEZ, Lindsey MARCHESSAULT, Camila SALAZAR[1]**

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[1] Open Contracting Partnership, Washington D.C.

## 1. INTRODUCTION

Digitization heralds a transformation of public procurement, whereby a predominantly paper-, legal- and compliance-based approach to public contracting can be radically rethought.[2] New business and process workflows are possible that can significantly reduce transaction costs. Digitizing public procurement offers the promise of saving both time and money while improving integrity and trust in government along the way. Apart from a few cases, that promise has yet to be delivered. In this paper, we explore why and what can be done about it.

We have written this paper from a practitioner's point of view. It draws from our experience as a non-profit, U.S.-based public charity called the Open Contracting Partnership (www.open-contracting.org), working to open up and transform public procurement around the world over the first seven years of our life and based on our engagements with over 50 national authorities.

We explore seven common challenges - the deadly sins of procurement digitization? - and what can be done to mitigate them based on our experience. We also provide some examples of better practices, tools, and approaches that can help mitigate risks.

## 2. FULL OR PARTIAL DIGITIZATION AND EGP REFORMS?

The full public procurement cycle stretches from the early planning of what an authority might buy, or what the problem is that they are trying to solve, all the way through to the completion of a contract. While the basic idea is to plan to buy something (goods, works, or services) successfully using a fair competition to get a good price, there are many

[2] More transformational rethinking of workflow for the digital environment is increasingly described as 'digitalization' as a new term of art.

complex steps, processes, and decisions along the way. These include defining requirements, publishing notices, answering questions, vetting suppliers, submission and evaluation of bids, auctions, and eventually, negotiating a contract with the selected entity and publishing details of the award. Only then does the real work of managing performance of a contract begin, i.e. making sure that vendors deliver the goods or service as expected and that they get paid appropriately and on time. Of course, as this is public money, the whole process needs to be publicly reported and accountable.

Not all these elements will necessarily be transformed at once by digitization. For example, the bid submission may become electronic, but vendor payments may remain manual. That said, the vision of e-procurement is generally a comprehensive, end-to-end, digitized implementation from planning to awarding and implementing public contracts. A full, digitized eGP system will commonly support modules[3] to allow:

- Planning pipelines and project budgeting
- Electronic distribution of bidding documents
- Notification of opportunities
- Supplier and buyer registration (and sometime limited vetting and pre-qualification and business certification)
- Online questions and answers
- Submission of bids

[3] Modified from B. WU CHEBILI, H. LA CASCIA, F. COLLINEAU, A. SALOMON, B. CALVET, Y. MOREAU, *Electronic Government Procurement Implementation Types: Options for Africa. World Bank*, Washington D.C., 2022, see: https://openknowledge.worldbank.org/handle/10986/36891.

- Opening of bids
- Evaluations of bids
- Publication of contract award results
- eAuctions
- Vendor payments
- Data publication including past bid documentation, sharing, analysis, and business intelligence

Most approaches to procurement digitization are modular, in which only some functions are digitized at a time. Fazekas and Blum[4] identify four functionalities as being the most commonly digitized - e-notification, e-access, e-attestations, and e-submission - and less commonly digitized functionalities are e-invoicing, e-payment, e-complaints and e-signatures as well as analytics and business intelligence.

A joint survey for Latin America in 2018, for example, by the Inter-american Development Bank and the OECD found that only two thirds of countries have implemented e-procurement systems. Of those with a system, countries reported having on average five out of the seven functionalities specified in the survey (i.e. announcing tenders or bid opportunities, e-submission of bids, provision of tender documents, online catalogue, e-auctions, notification of award and e-submission of invoices).[5] Only three countries (Colombia, Costa Rica and Ecuador) have them all.

[4] M. FAZEKAS, J.R. BLUM, *Improving Public Procurement Outcomes: Review of Tools and the State of the Evidence Base*, World Bank, Washington D.C., 2021, see: https://doi.org/10.1596/1813-9450-9690.

[5] OECD-IDB, *Surveys on Public Procurement*, Paris, 2018, see: https://doi.org/10.1787/888934093196.

## 3. DIGITIZATION PROMISES SIGNIFICANT BENEFITS AT LOW COST

The figures for adopting a fully digitized eGP are compelling. New research published by the Copenhagen Consensus Center estimates that the return on investment for a smaller economy could be of the order of 8-58 times if done comprehensively.[6] The figures will be even more for a middle-sized or large economy as the size of the investment is not much larger, whilst the reduction in transaction costs is proportionately high.

To give a real world example: Ukraine's Prozorro procurement digitization reforms are estimated to have saved the country over USD$1 billion per year since the reforms went live in 2016 (COP 2016). Prozorro uses a 'reverse auction' method for awarding contracts with open bidding as well as a real-time, open-data dashboard on awards, which means that it is possible to calculate savings on awards as well as on the budgeted price that that government was willing to pay to award the contract. These savings are based on that data from Prozorro's open source business intelligence tool, bi.prozorro.org, in 2022. The initial investment to establish Prozorro was costed in detail at just under USD$5million (EUR4.7m) to develop and USD$2m a year to run[7], meaning a huge return on investment.

Prozorro's open and accessible bidding platforms have also significantly leveled the playing field for smaller businesses, which was one the key objectives of reform. OCP's analysis of the open data from Ukraine's reforms (again using bi.prozorro.org in 2021)

[6] COPENHAGEN CONSENSUS CENTER, *Halftime for SDGs: e-Government Procurement*, 2023, see: https://www.copenhagenconsensus.com/publication/halftime-sdgs-e-government-procurement.

[7] RESULTS FOR DEVELOPMENT, *Open Government Case Study. Costing the ProZorro e-Procurement Program*, R4D, Washington D.C., 2017, see: https://www.r4d.org/wp-content/uploads/R4D_OG-ProZorro-CS_web.pdf.

suggests that a remarkable 97.7% of businesses bidding in Prozorro are small and medium enterprises. In 2021, some 64,801 SMEs won contracts worth a collective USD$16.6 billion, while 1,524 large companies won contracts worth USD$5.99 billion.

In South Korea, introducing e-procurement meant that the duration of the processing of bids, from receipt to the selection of the winning bid, was brought down from an average of 30 hours to just 2 hours[8]. The estimated time savings in aggregate are huge. BAObras, a public transparency platform for the procurement of over 1100 public works projects for a planned USD$3.5 billion facelift for Buenos Aires, Argentina, reduced the time taken for city's authorities to share data by 93%.[9]

An Inter-American Development Bank assessment of Argentina's COMPR.AR procurement digitization project found that "the reform made procurement processes faster, reducing their duration by 11 days. In addition, the reform reduced prices paid in the procurement of off-the-shelf goods by 4%—leading to savings for the Argentinian government of over USD$35 million".[10]

[8] T. LUIJKEN, M. MARTINI, *The Role of Technology in Reducing Corruption in Public Procurement.* Transparency International, Berlin, 2014, see: https://knowledgehub.transparency.org/helpdesk/the-role-of-technology-in-reducing-corruption-in-public-procurement.

[9] OCP, *From Open Data to Joined Up Government: Driving Efficiency with BA Obras.* Washington D.C., 2021, see: https://www.open-contracting.org/2021/07/12/from-open-data-to-joined-up-government-driving-efficiency-with-ba-obras/

[10] R. DE MICHELE, G. PIERRI, *Transparency and Digital Government: The Impact of COMPR.AR in Argentina*, Inter-American Development Bank, May 2020, see: http://dx.doi.org/10.18235/0002335.

So why is the promise of digitization of public procurement unfulfilled?

If both the logic for eGP and procurement digitization is compelling and the figures speak for themselves, why aren't there more good examples? Despite the success stories above, many governments struggle with digitization. eGP projects around the world overspend, under deliver, and fail altogether. For example, in 2016, the Uganda Public Procurement and Disposal of Assets (PPDA) Authority embarked on an USD$5 million e-procurement reform. By 2021, the developed system was abandoned. Uganda had to start over.[11] What went wrong? What are the common challenges these projects face and how can they be overcome?

Done well, digitization should not be about adding additional layers of complexity or simply buying off-the-shelf software: It is about "applying the culture, practices, business models and technology of the internet to respond to people's raised expectations … It is a new way of running organizations. A successful digital transformation makes it possible not only to deliver products and services that are simpler, cheaper and better but for the organisation as whole to operate effectively in the online era.".[12]

Yet as Sanchez-Graells[13] writes: It is easy for decision makers to be captured in a technology hype cycle and by the 'policy irresistibility' of a technical fix to profound

[11] OCP, *Fulfilling the Promise of e-Procurement Reform. Lessons from 5 African Countries*, Open Contracting Partnership, 2022, see: https://www.open-contracting.org/wp-content/uploads/2022/10/OCP22_Africa_eGP.pdf.

[12] A. GREENWAY, B. TERRET, M. BRAKEN, L. LOOSEMORE, *Digital Transformation at Scale: When the Strategy is Delivery.* London Publishing Partnership, London, 2018.

[13] A. SANCHEZ-GRAELLS, *The technological promise of digital governance: procurement as a case study of 'policy irresistibility*, in A. SANCHEZ-GRAELLS, *Digital Technologies and Public Procurement. Gatekeeping and Experimentation in Digital Public Governance.* OUP, forthcoming, see: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4216825.

governance challenges. The hype also tends to overshadow much needed groundwork and preparatory investment, which is further exacerbated by a public sector digital capability gap and the natural tendency for vendors to oversell their solution.

And, of course, procurement is embedded in larger, often antiquated public financial management policies and systems that are a product of the prevailing power structures and information asymmetries in wider society.[14]

In short, there is huge inertia to be overcome, especially if changes are to be radical as opposed to cosmetic. Digitization that favors elites may be supported; innovations which could challenge their dominance may not be.

We contend that to succeed, government digitization projects need to bring together political, institutional, and technical change management. Outcomes will only be as good as the weakest link of these three.

As Mohungoo *et al.*[15] comment "So far, there is a lack of an integrated approach to the synthesis of e-procurement implementation challenges; and when there is an attempt to do so, it is carried out in a rather fragmented manner. Researchers have seldom stepped outside a specific discipline in e-procurement literature review". We offer this as a cross-

[14] See, for examples: P. KLEMPERER, *Auction theory: A Guide to the Literature*, in *SSRN Electronic Journal*, 1999, see: https://doi.org/10.2139/ssrn.172650; C.R. YUKINS, *A Versatile Prism: Assessing Procurement Law Through the Principal-Agent Model*, in *Public Contract Law Journal*, 40(1), 2010, 63; J.A. FOX, *Social accountability: What does the evidence really say?*, in *World Development* 72, 2015, 346–361, see: https://doi.org/10.1016/j.worlddev.2015.03.011.

[15] I. MOHUNGOO, I. BROWN, S. KABANDA, *A Systematic Review of Implementation Challenges in Public E-Procurement*, in M. HATTINGH, M. MATTHEE, H. SMUTS, I. PAPPAS, Y.K. DWIVEDI, M. MÄNTYMÄKI (eds.). *Responsible Design, Implementation and Use of Information and Communication Technology* 12067, Springer International Publishing, 46–58, see: https://doi.org/10.1007/978-3-030-45002-1_5.

disciplinary contribution from a practitioner's point of view, working directly with frontline public procurement reformers.

## 4. THE DEADLY SINS? SEVEN COMMON BARRIERS TO PROCUREMENT DIGITIZATION AND WHAT TO DO ABOUT THEM?

We highlight seven common challenges that we have seen over our seven years as the Open Contracting Partnership working to open up and transform government procurement to a smart, user-centred digital service.

In each case, we state what the common challenge is - framed jokingly as a deadly sin that will undermine an otherwise promising reform - and the good practices to help overcome it.

### 1) No goal, no plan and no team

Technology and digitization of procurement are a means to an end, and not an end in themselves. There will be political, institutional, legal, and technological challenges to overcome as well as vested interests and huge amounts of bureaucratic inertia.

Without a clear plan to manage change and an overarching goal for what you want to achieve, reform energy in procurement soon fizzles. It really pays to start with clear goals for procurement reforms and to work out the changes needed to get there. And then, to lead others through a process to get to those objectives.

As Andrews *et al.*[16] have commented: "Government systems and processes often focus on compliance and must be better designed to track performance goals. When focused solely on adopting formal rules and generic best practices instead of improved government functionality, procurement reforms can lead to capability traps where reforms do not lead to better government performance."

An example of this challenge comes from Lewis-Faupel *et al.*[17], who examined the impact of electronic procurement for road projects in India and Indonesia, taking advantage of a staggered rollout of the program across both jurisdictions. In India, electronic procurement led to a higher quality of roads, as measured by independent central government audits, though not to significantly lower costs. Similarly, e-procurement in Indonesia had little impact on costs (a small negative effect), but significantly reduced delays in completing public works projects. In both cases, the evidence suggests that the quality improvement comes from higher-quality contractors being more likely to win contracts. Yet, the evidence also suggests that officials prioritized low prices over quality, leading to bidders building their profit margins by cutting back on quality.

Our research into give eGP implementation projects in Africa (looking at Ethiopia, two states in Nigeria, Rwanda, Uganda, Zambia) found that projects were less successful where these were driven by international donor demands and availability of financing as opposed to a strongly articulated domestic demand and local needs assessment.[18] Rwanda, which was perhaps the most complete and effective eGP implementation of the five, planned

[16] M. ANDREWS, L. PRITCHETT, M. WOOLCOCK, *Escaping capability traps through problem driven iterative adaptation (PDIA)*, *World Development* 51, 2013, 234–244, see: https://doi.org/10.1016/j.worlddev.2013.05.011.

[17] S. LEWIS-FAUPEL, Y. NEGGERS, B.A. OLKEN, R. PANDE, *Can electronic procurement improve infrastructure provision? Evidence from public works in India and Indonesia*, in *American Economic Journal: Economic Policy* 8(3), 2016, 258–283, see: https://doi.org/10.1257/pol.20140258.

[18] OCP, *Fulfilling the Promise of e-Procurement Reform. Lessons from 5 African Countries*, cit.

its digitization ahead of development partners' funding as part of its National Information and Communications Infrastructure policy plan from 2010 (executing the shift to eGP in 2016).[19]

It also matters who the lead authority driving digitization is and their relative power in the government hierarchy and ability to remove the inevitable roadblocks on the way to reforms. It certainly makes sense, even if they are not leading, that Ministries of Finance and/or Economy be strongly engaged in the project due to their relative institutional strength and influence in every country. Circling back to OCP's Africa case studies, Rwanda's powerful Ministry of Finance was the lead and articulated the goal in terms of economic development as opposed to procurement compliance which is often the focus of procurement agencies.

No one person can handle all the different dimensions of procurement reform by themselves. You need to build a high performing team of reformers who can navigate all different areas such as technology or political engagement *and* who can bring them together into a coherent strategy at the right time.

Our Africa eGP research revealed that where implementing entities had a dedicated team focusing on e-GP implementation alone, the development and testing of the system went much better than where staff had dual roles and had to balance their work on the e-GP project with other substantive responsibilities.[20]

[19] See Rwanda's 2010 National Information and Communication Infrastructure Policy and Plan at www.ist-africa.org/home/files/rwanda_nici2010.pdf

[20] OCP, *Fulfilling the Promise of e-Procurement Reform. Lessons from 5 African Countries*, cit.

Both technical project developers and procurement policy advisors are very valuable and much in demand: it is important that they are able to devote significant time to deliver on the digitization project as opposed to being pulled in many different directions.

Importantly, the research also revealed that these teams need to be in place at the outset, before the contracts are signed with vendors so that they can provide inputs on the requirements and contract terms, and take "ownership" over them. Some e-GP projects delayed recruitment of their project teams and experienced associated challenges as a result.

Much of user-discovery and system design work is front loaded at the start of the project for obvious reasons: If you get that wrong, the rest won't follow. In cases where teams have been recruited at a later stage of implementation, our research suggested that the government team did not have an impact on the final product and ended up receiving a system not fully responding to their desired outcomes.

Retaining a talented team member is also a challenge, but has a huge impact on outcomes. Remember that these skills are in high demand. The brand, prestige, and strong identity that the Prozorro reformers worked on together had a major impact on their retention and buy-in. In the case of Rwanda, the e-GP team's key staff were recruited as consultants with higher salaries than government staff. This allowed them to attract and retain relatively high caliber project staff both in information technology, procurement, and change management.

To summarize, start with the goal for the reform, have a clear plan with an authoritative institutional lead who has the power to deliver the stated goal and build a high performing team with the skills to navigate complicated change management processes in government. This will require political, institutional, and technical skills. And, make sure that team is in place before and not after the planned changes.

Ukraine's Prozorro reforms were a runaway success in procurement digitization thanks to a strong goal, a strong plan, and a strong team.[21] The goal: public procurement should no longer be seen as synonymous with corruption and "everyone needs to see everything". The plan was that a secretariat within TI Ukraine and the Kyiv School of Economic would coordinate a collaboration across Ministries, Stated Owned Enterprises, software developers, and private sector commercial platforms to design, build, pilot, and institutionalize the system. To do this they had legal experts, software developers, politicians, and seasoned bureaucratic navigators working together from the outset.[22]

**2) Lack of stakeholder engagement**

Core to any successful digitization project is the ability to distill user needs in a detailed and accurate manner during a design stage of the project; make sure there is a discovery phrase in a contract with an eGP vendor. As procurement is such an overarching and vital government function, there are many stakeholders spanning government, civic actors, service beneficiaries, and businesses, with unique needs so this step requires particular attention and investment. Be sure to design and build a program of change 'with them' and not 'for them'.

Potential stakeholders could include different ministries, local government and municipalities, control authorities, business communities including smaller vendors and traditionally marginalized members of that community (for example, women-owned

[21] OCP, *Everyone Sees Everything. Overhauling Ukraine's Corrupt Contracting Sector. Open Contracting Partnership*, Washington D.C., 2016, see: https://medium.com/open-contracting-stories/everyone-sees-everything-fa6df0d00335

[22] OCP, *Everyone Sees Everything. Overhauling Ukraine's Corrupt Contracting Sector. Open Contracting Partnership*, cit.

businesses), technology providers, and civic actors including non-profit and community organizations. If the digitization is being supported with external financing from say the World Bank or another development partner, their requirements and rules will also need to be taken into account.

Perhaps one of the biggest misconceptions that governments make when it comes to procurement is that businesses want to do business with them – if they build a procurement website, then businesses will come. This is rarely the case as bureaucracy, transaction costs, late payments, and the sense that the whole process is either corrupt or rigged is in fact a huge deterrent (see Haselmeyer, 2021). So, governments need to think differently about how to implement eGP reforms and design systems alongside users and use cases to simplify, automate, and improve transactions. For example, allowing a vendor to register one time, to establish a digital identity to bid on multiple contracts as opposed to having to fill out a new paperwork for each bid. Potentially that one-time registration could even be used across government jurisdictions. Similarly, complaints and their resolution can be digitized to flag problems that can be fixed during the procurement as opposed to relying on later redress in the courts.

The Association for Project Management (APM) proposes ten principles for achieving this, using an example of stakeholder engagement in a globally distributed software project.[23] Such engagement should be embedded in any overarching procurement digitization or eGP project.

In Mexico, for instance, a Plural Working Group on Public Procurement with members from the public sector, businesses and civil society was established in 2017 with the goal to build consensus on the development and expansion of their e-procurement system

[23] APM, *10 key principles of stakeholder engagement. Association for Project Management*, Princes Risborough, UK, 2023, see: https://www.apm.org.uk/resources/find-a-resource/stakeholder-engagement/stakeholder-engagement-key-principles/.

CompraNet. The engagement process included meetings, surveys, and document reviews that led to a series of recommendations for the improvement of the system[24]. Admittedly, immediate reforms thereafter were slow, but it is generally agreed that the working group was a good example of stakeholder engagement and their recommendations were the point of inflection to make the government develop an improved version of CompraNet, which is now underway.

As well as good user research and project success, there are also more political economic reasons for engagement: overcoming vested interests. Creating public accountability reforms that endure requires building an overarching coalition of winners from the changes who can overcome the vested interests that will seek to block them.[25] This points to the need to work out the incentives for different users to support reforms so that, in total, enough winners accrue from the new system that 'escape velocity' be achieved. For example, this may involve mobilizing a coalition of smaller business and aspirant government contractors who are locked out of the current system to make the case for change and argue for their needs to be taken into consideration.

Our Africa eGP research identified that perhaps the biggest engagement gap in centrally driven eGP reforms was to engage and work with the many different line ministries who would use the new system, especially if they were a major spender and had the power to push back or exempt themselves from the new rules.[26] In Zambia, for example, the Public

[24] OECD, *Mexico's e-Procurement System: Redesigning CompraNet through Stakeholder Engagement*, OECD Public Governance Reviews, Paris, 2018, see: https://doi.org/10.1787/9789264287426-en.

[25] J.A. FOX, *Social accountability: What does the evidence really say?*, cit., 346 ss.; M. KHAN, A. ANDREONI, P. ROY, *Anti-corruption in Adverse Contexts: Strategies for Improving Implementation*, in *Anti-Corruption Evidence Program*, Working Paper 13, School of Oriental and African Studies, London University, 2019, see: https://ace.soas.ac.uk/publication/anti-corruption-in-adverse-contexts-strategies-for-improving-implementation/.

[26] OCP, *Fulfilling the Promise of e-Procurement Reform. Lessons from 5 African Countries*, cit.

Procurement Agency calculates that of the 555 Procuring and Disposal Entities (PDEs), 194 (c. 35%) are using the system. However, only 20% of tenders go through the system and even these are largely the low value ones (pers comm with ZPPA officials, 2023).

How can you identify stakeholders and involve them in the process to identify their needs? This guide from OCP[27] offers step-by-step guidance to identifying challenges, mapping stakeholders and developing a theory of change that can be used as part of your process to define your e-GP requirements.

**3) Not rethinking the business processes and data for the digital environment.**

Reformers should not just take their existing paper based, analog transactional process online. Simply reproducing the paper-based process in software will not yield the desired results for improved outcomes. eGP and procurement digitization are a compelling opportunity to rethink the business logic behind procurement for the digital environment to simplify and improve decision making and to automate routine tasks.

There is an important "transactional" dimension in procurement and in the digitisation of procurement relating to the interaction between buyers and sellers. There is also a very important public reporting and transparency obligations in public procurement. Digitization offers the ability to bring these much closer together, or to have both outcomes served almost simultaneously. Technology offers the opportunity to create new procedure types, efficiencies, and new safeguards as well as improving outcomes through data-driven analysis and monitoring.

[27] OCP, *Liftoff-in-a-Box: OCP reform workshop design kit*, Open Contracting Partnership, Washington D.C., 2022, see: https://docs.google.com/document/d/1WGmBltYsSqjt33JATFiMUVVTHsmaWhHFoiJUlQl-Ads/edit#heading=h.bhcqjb64kyl4.

It is very important to choose the right technology that will help to achieve the requirements (in terms of user experience, functionality, and outcomes) defined by your stakeholders. Although technology is developing rapidly, Sanchez-Graells[28] highlights a clear feasibility boundary emerging for procurement digitization, "whereby the adoption of digital technologies for procurement governance can make contributions in relation to its information intensity, but not easily in relation to its information complexity, at least not in the short to medium term and not in the absence of a significant improvement of the required enabling data architecture". For example, robotic process automation or digitization to carry a unique ID across contracts to enable tagging in different government information systems is possible (and highly desirable). Whereas smart contracts and machine learning recommendation algorithms (information complexity), are still very early and their implications for better government procurement are untested. Nonetheless, the boundary will move forwards: although machine learning is very new, it is already being applied in some of the world's most advanced eGP systems like Prozorro in Ukraine to train 'red flag' indicators to spot abnormal procurement practice. For example, by showing when price, deadline, and descriptions differ wildly from the norm.

You can't manage what you can't measure. When designing your new eGP systems, it is important to define the outcomes you want to achieve through this new system and how these outcomes will be measured via key performance indicators. For example: are you motivated to introduce green, environmental criteria? Award more contracts to women-led or -owned businesses? Bring down prices? Increase the diversity of your supplier base? Defining these metrics and *translating* them into data collection, modeling, publication, and

[28] A. SANCHEZ-GRAELLS, *Revisiting the Promise: A Feasibility Boundary for Digital Procurement Governance*, in A SANCHEZ-GRAELLS, *Digital Technologies and Public Procurement. Gatekeeping and Experimentation in Digital Public Governance*, cit., see: https://ssrn.com/abstract=4232973.

visualization is essential to ensuring that you have data that is usable for measuring your outcomes.

It will not be automatic or a "given" that one can easily get usable data out of an eGP system if systems often focus on transactional interactions as opposed to the public transparency and market level monitoring functions in procurement. It is a common mistake to focus only on the former and not the latter. Tools to assist the latter are rapidly developing. The Open Contracting Data Standard (OCDS) is an open, license-free open source data schema to assist with the collection and publication of data across the entire commercial cycle of planning, tendering, awarding and implementing public contracts. It provides a common structured data model, including a schema, code lists, and common rules and definitions for data fields and contracting processes; guidance and tools to support both implementation and data use.[29] The OCDS also supports an extension mechanism to add fields and data relevant to local use cases or user needs. OCP has also developed guidance on Defining Open Contracting Data Standard Functional Requirements for eGP Systems.

Having procurement data publicly available has been shown to increase competition, vendor diversity efficiency, and reduce prices.[30] It can also allow public buyers to develop indicators to measure performance, effectiveness, and efficiency of the system as a whole as well as can foster engagement with civil society and the private sector to use data to oversee public procurement and develop new tools themselves. For example, in Paraguay, the procurement authority has modeled their data using the Open Contracting Data Standard

[29] OCP, *Open Contracting Data Standard v1.1.5 documentation*, Open Contracting Partnership, Washington D.C., 2023, see: https://standard.open-contracting.org/latest/en/.

[30] R. DUGUAY, T. RAUTER, D. SAMUELS, *The Impact of Open Data on Public Procurement*, in *SSRN Electronic Journal*, 2019, see: https://doi.org/10.2139/ssrn.3483868; M.A. ROSSI, A. VÁZQUEZ, J.C. VIEYRA, *Information Disclosure and the Performance of Public Investment: The Case of Costa Rica*, Inter-American Development Bank, Washington D.C., 2020, see: http://dx.doi.org/10.18235/0002623.

and not only publishes this data, but the data is being used to power a wide variety of analytical and monitoring tools created and maintained by government, civil society, and development partners. This is providing insights to government, business, civic monitors, and academics to monitor the health of the whole contracting ecosystem, help find new opportunities for business, including:

- The DNCP's Statistics and monitoring module which includes multiple dashboards and red flags tools for analyzing public procurement data.

- MSME Microsite, A 'One-Stop' Shopping Portal: launched in May 2023, this portal is designed to be a central hub where Small and Medium enterprises can search for upcoming opportunities, access a 10-module online training course and browse other important documents for participating in the procurement market.

- Rindiendo Cuentas:

    - Public Investment projects: a tool developed by the Inter-American Development Bank to link public investments projects with their public contracts

    - COVID contracts: a tool developed during the pandemic to monitor the public investment made during the crisis, including public contracts

    - Control Ciudadano: a civil society monitoring platform with the aim of making an open data portal available to citizens to control public resources, including public contracts.

- Control Civico Twitter Bot: a Twitter bot that communicates with the citizens anomalies with public procurement processes using artificial intelligence techniques to detect them.

- Zyklo Android App: a tool to monitor the tenders made by the government, to know how public money is spent, or to participate in any of these tenders.

- FOCO: a tool for citizen monitoring of the execution of the National Fund for Public Investment and Development (FONACIDE) and school infrastructure needs.

- Vigia: a civic monitoring community and platform that seeks to improve public procurement processes in Paraguay, with the participation of entrepreneurs, activists, and civil society organizations. This platform makes it possible for vendors to easily search and identify relevant opportunities. It further enables potential suppliers to monitor public procurement processes by streamlining the process to file and follow up on through inquiries and complaints, which help generate greater transparency in tenders.

The use of these tools has further translated into improvements of Paraguay's eGP system and norms. For example, to enable easier monitoring of school infrastructure, Paraguay's procurement agency (DNCP) developed a new module procurement in the eGP system that collects key data fields to track investments in real-time, including what schools are receiving funds, whether prioritization rules are followed, and exactly the type of investment made (to the item level). DNCP also published a decree making the use of the module mandatory. The DNCP also improved the OCDS data publication to include a tag to identify tenders that were suitable to SMEs, which makes it easier for businesses to find relevant opportunities.

The OECD[31] recommends the integration of e-procurement systems with public finance management and other government IT systems, which can translate into efficiency gains. For example, Korea's KONEPS e-procurement system connects to more more than

[31] OECD, *Recommendation of the Council on Public Procurement*, Paris, 2015: https://www.oecd.org/gov/public-procurement/OECD-Recommendation-on-Public-Procurement.pdf

160 digital systems, resulting in increased efficiency and cost savings: 477 document forms used in public procurement were converted to their digital equivalents, bidders no longer need to submit certificates on their experience, since information is available online due to integration and there have been reported annual transaction cost savings of an estimated USD$8 billion.[32]

**4) Bad procurement and contract management for the digital solution itself**

Ironically, procurement of an eGP system or any other procurement digitization solution is often subject to the same problems that stifle innovation in other procurement. Governments that buy a solution off the shelf rather than building it in-house often draft solicitation documents that are either too vague or overly prescriptive (especially when such processes are imposed by donor governments from afar without consideration of the local users of a system). Solicitation processes with too many specifications tend to stifle innovation and limit competition, and eventually create vendor 'lock-in' or dependency.

International donors often compound this problem by supporting a procurement process for eGP systems that emphasize the lowest cost versus best value (not, for example, taking into account local ownership, the need for resilience, maintenance costs etc). A lack of coordination amongst international development partners and their conflicting procurement rules further compounds this problem: some donors, for example, will not support software development, which can hinder tailoring eGP projects to local needs. In contrast, many of the best eGP reforms have involved locally designed and built systems shaped around local user needs that can be continuously customized and upgraded.

[32] OECD, *The Korean Public Procurement Service: Innovating for Effectiveness*, Paris, 2016, see: http://dx.doi.org/10.1787/9789264249431-en.

The solicitation documents for any procurement IT solution should start by articulating a problem statement or needs assessment. This means defining the existing environment and capabilities of the procurement system relative to the preferred organizational capabilities[33]. The solicitation document should articulate a shared vision of the system of internal and external stakeholders. A clear problem statement helps define outcomes-oriented functional requirements and prevents over-emphasizing technology. By prioritizing a problem-based approach over excessive requirements, vendors will be more able to offer solutions that match government needs.

A user-centered approach to drafting a solicitation helps define the best implementation model, for example, when deciding between a commercial off-the-shelf (COTS) solution, software as a service (SaaS), custom build system, or a combination of these. Regardless of the option followed, governments should build safeguards into their bidding documents against vendor lock-in. Including interoperability requirements and standards-based interfaces and APIs enables the system to be more easily integrated with other tools or platforms. This may allow the government to switch to alternative solutions more easily, if necessary. To reduce the risk of vendor lock-in, the government should highly consider solutions based on open standards and open-source technologies. This helps ensure that the solution is transparent, flexible, and interoperable and can be customized or extended as needed. Large and risky IT contracts, like eGP systems, can benefit from a modular approach[34]. This involves selecting and procuring individual modules that can be integrated

[33] T. SZUBA, A. ROGERS, G. MALITZ, *Forum Unified Education Technology Suite*, National Center for Education Statistics, Washington D.C., 2005: http://tinyurl.com/lwq4u5p.

[34] GSA, *De-risking Government Technology. Federal Agency Field Guide*, Washington D.C., 18F and 10x, September 2020, see: https://derisking-guide.18f.gov/assets/federal-field-guide-4dccc06e01cd56773eb140ff6e6b2805cc517a460d6bff6689e7edd0ef349598.pdf.

and scaled as needed, rather than procuring a single, all-in-one solution at one time. Finally, there should be explicit language in the contract with a vendor that the government 'owns' the data and that open data sharing agreements are expected.

During the needs assessment, it is also important to determine if adjustments will need to be made to other systems or contracts. For example, do potential software systems that power the budget or vendor payments to allow for interoperability or new data fields?

An agile project management methodology which is "iterative, incremental, and highly interactive" is recommended, because it focuses on core users of the system and allows flexibility in requirements collection and testing approaches for a minimum viable product[35] as opposed to traditional Software Development Life Cycle models[36] which are more rigid and structured.[37] It is important to establish an agile and performance-driven approach to contract management too. Performance metrics should be included in the contract to ensure that the vendor is held accountable for delivering high-quality services. These metrics should be objective, measurable, and tied to specific deliverables or milestones.

**5) Not investing in change management, training, communications**

"If you build it, they will come" does not work in procurement reform projects. Successful eGP implementation means changing the way that business is done and change is

[35] See, for example an agile methodology for e-GP for Malawi, p. 144: https://drive.google.com/drive/folders/1xi8RVUbt7r40Dl6L5c6gMCft9jBzWqfI.

[36] As per www.techtarget.com/searchsoftwarequality/definition/systems-development-life-cycle.

[37] CIVICACTIONS, *Agile Government Handbook*, Washington D.C., 2016, see: https://handbook.agilegovleaders.org/.

hard. When OCP conducted its research into struggling eGP projects, one of the biggest regrets shared by eGP teams was not having change management plans baked in from the beginning.[38] Deadly sin #2 was about not engaging stakeholders, so deadly sin #5 anticipates that some of those stakeholders will be resistant to change and seeks to anticipate and overcome that. Public procurement is where the money, power, and discretion are in government, so some resistance can be intentional due to the benefits that individuals or groups of people were getting from the absence of the eGP system. A change management strategy can help communicate changes, win over hearts and minds and modify incentives and behaviors, and ensure that systems will be adopted and have a chance at delivering intended results.

A good change management program involves planning for incentives, communications, training and support. First, incentives: Why should I adopt this new system? What do I risk if I don't? Teams need to think (or ask) up front about what incentives their stakeholders will need to use the new system. Then, they need to relentlessly communicate about the coming change and incentives. It is also important to consistently communicate about uptake, usage, and benefits of the new system once it is in place. We recommend the following five steps in any procurement digitization change management plan:

1. Identify the change: Most digitization will change existing workflows (indeed it is probably important that it does). This implies big changes for users and often requires new skills and equipment (computer literacy and even internet connectivity, etc.). Note: Be sure to budget for potential new equipment, training, etc.

2. Identify and map the stakeholders: Who is affected or concerned by this change? This likely involves procuring entities, suppliers and contractors, oversight bodies, and maybe even civil society organizations, unions, development partners, and

[38] OCP, *Fulfilling the Promise of e-Procurement Reform. Lessons from 5 African Countries*, cit.

more. Once identified, stakeholders can be mapped based on their interest and influence to later tailor their engagement and communication.

3. Communicate the change: An awareness and communication plan should reach key stakeholder groups and influence their incentives through an appropriate channel where the message will be best received. This should start well before the launch of the changes. During rollout, it is important to communicate how feedback from users was collected and has been addressed. Be sure to include why things weren't included as well as explaining what was addressed. Depending on the size of the change, this may involve workshops, media, conferences, and even public and social media. All can help to build the buy-in from the stakeholders and mitigate potential resistance.

4. Train, equip, and empower stakeholders: Training is important for successful and sustainable eGP system usage and adoption. A training plan should also be established to define how end-users will be trained and re-trained over time. This should include newly recruited members of staff and new suppliers. Maintaining a helpdesk that supports users of the system is often a smart investment based on our experience at OCP.

5. Monitor and manage resistance: Expect some resistance so plan for monitoring and response to how the rollout is going. How can you tailor incentives to minimize resistance from some stakeholders affected by the change? Recognize that the root cause of the resistance could be fear for job security, need for training, lack of awareness, but can also be due to vested interests etc. And, remember, change takes time and requires trust.

In Ukraine, change management was particularly effective[39]. Because the adoption of the new eGP system was voluntary during the pilot stage, social media was used to widely communicate about which departments were using the system and the benefits that were accruing (in terms of value to the state and fair opportunity to the private sector). Departments and individuals using the system correctly were championed publicly as "heroes". Departments that were not using the new system were indirectly 'named and shamed'. Prozorro was positioned as a public brand associated with the new Ukraine and the Maiden Revolution of Dignity. Behind that public face was a long and sustained outreach to local regions and small businesses as well as long running public information campaigns to build support. Trust and engagement in the reforms really took off once small businesses bid for and won contracts in the new system, which was widely publicized[40].

In Colombia, between October 2018 and January 2023, Open Contracting Partnership and the UK Prosperity FundProgram for Colombia carried out a project involving governments and civil society organizations to transform public procurement processes in nine regions that involved multi stakeholder working groups, institutional strengthening and capacity building and the development of tools. The departments participating in the project experienced an unprecedented increase in the use of the SECOP II transactional e-procurement system from 15.3% in 2018 to 95% in 2022, compared with other departments in the country where the uptake in 2022 only reached 22.8%[41].

[39] OCP, *Everyone Sees Everything. Overhauling Ukraine's Corrupt Contracting Sector. Open Contracting Partnership*, cit.

[40] OCP, *Everyone Sees Everything. Overhauling Ukraine's Corrupt Contracting Sector. Open Contracting Partnership*, cit.

[41] OCP, *Open contracting reforms to boost civic engagement and participation: The experience of nine regions in Colombia*, Washington D.C., 2023, see: https://www.open-contracting.org/wp-content/uploads/2023/04/Colombia-Brochure-en.pdf.

**6) Regulatory dark matter bogs down legislation for eGP**

Much of the international guidance and practice to support procurement reforms dates from almost a decade ago, see for example the UNODC's Good Practices in the Prevention of Corruption in Public Procurement from 2010[42] or its "Use of Information and Communications Technologies to Implement the United Nations Convention against Corruption" in 2016[43], UNCITRAL's Model Law on Public Procurement in 2011 or OECD's "Recommendations of the Council on Public Procurement" from 2015.[44] These all predate many of the best and most impactful eGP reforms and focus on predominantly legal changes, as opposed to digital ones. New standards are emerging including approaches and best practices like the Open Contracting Data Standard to provide comprehensive machine

[42] UNODC, *Good Practices in the Prevention of Corruption in Public Procurement*, Open-ended Intergovernmental Working Group on the Prevention of Corruption Vienna, 13-15 December 2010, UN Office of Drugs and Crime, Vienna, 2010, see: https://www.unodc.org/documents/treaties/UNCAC/WorkingGroups/workinggroup4/2010-December-13-15/V1056970e.pdf.

[43] UNODC, *Use of Information and Communications Technologies to Implement the United Nations Convention against Corruption*. Working Group on the Prevention of Corruption Vienna, 22-24 August 2016, UN Office of Drugs and Crime, Vienna, 2016, see: unodc.org/documents/treaties/UNCAC/WorkingGroups/workinggroup4/2016-August-22-24/V1603242e.pdf.

[44] OECD, *Recommendation of the Council on Public Procurement*, cit.

readable open data across the whole cycle of public procurement, automated analysis of red flags for procurement risks[45], and best practices on eGP procurement from Wu Chebili.[46]

Public procurement legislation is often sprawling and littered with regulatory 'dark matter', such as memos, guidance, circular notes, etc., which are often outside the scope of strict regulation and oversight from any one authority. These need to be tamed: eGP reform, and establishing a primarily digital workflow for procurement, work best when there is clear enabling legislation and a single rulebook supporting consistent harmonization of the approach taken and minimizing the risk of conflict with other laws or regulations. Other government functions, such as the auditor, comptroller, or investor general also need to be able to source and use electronic records from the system in their investigations.

For example, in Zambia, uptake of electronic procurement has stalled due to permissive language in Article 1691 the Public Procurement Act of 2020 stating, *"A procuring entity shall use the electronic government procurement system or any other electronic procurement system that the Minister may, by statutory instrument, prescribe", allowing authorities to choose their own route to procurement*"[47]. In Rwanda, at the beginning of the pilot phase, banks were refusing contracts signed electronically, because in the laws on financial transactions, digital signatures were not envisioned.[48]

[45] See, for example, F. DECAROLIS, C. GIORGIANTONIO, *Corruption red flags in public procurement: new evidence from Italian calls for tenders*, in *EPJ Data Science*, 11, 2022, 16 ss., see: https://doi.org/10.1140/epjds/s13688-022-00325-x

[46] B. WU CHEBILI, H. LA CASCIA, F. COLLINEAU, A. SALOMON, B. CALVET, Y. MOREAU, *Electronic Government Procurement Implementation Types : Options for Africa. World Bank*, cit.

[47] OCP, *Fulfilling the Promise of e-Procurement Reform. Lessons from 5 African Countries*, cit.

[48] OCP, *Fulfilling the Promise of e-Procurement Reform. Lessons from 5 African Countries*, cit.

In 2021, OCP partnered with Thomson Reuters Foundation to review procurement legislation from several countries who have successfully implemented electronic procurement reforms, and where the use of data for procurement monitoring is taking hold, including Chile, Colombia, Paraguay, Portugal, South Korea and Ukraine.[49] We found that legislation best sets digital reforms and eGP adoption up for success if it:

- Sets out clear principles for all procurement procedures in a single piece of overarching legislation with accompanying implementing regulations
- Establishes strong anti-corruption and conflict of interest provisions
- Promotes competition and provides clear safeguards in non-competitive procedures, such as those used in emergency procurement
- Ensures clear requirements to publish information (data and documents) at all stages of the procurement process, and maintain a complete record in one location
- Mandates the use of digital platforms and open data standards
- Enforces publication requirements, deadlines, and clearly manages exemptions
- Creates procedures for public participation and monitoring across the entire procurement cycle
- Supports an accessible and effective complaints procedure; and
- Empowers oversight authorities (a great example here is the U.S. Pandemic Response Accountability Committee established by the Coronavirus Aid, Relief,

[49] OCP, *Guide: How can we legislate for open contracting?*, Washington D.C., 2021, see: https://www.open-contracting.org/wp-content/uploads/2021/10/OCP2021-OCLegislative-Guide.pdf

and Economic Security Act CARES Act in 2020 to support and coordinate independent oversight of pandemic relief spending.)

An agile approach to legislative drafting is recommended, similar to the agile methodology for software development. As new use cases, functionalities, and processes are unlocked (e.g. that a system would only allow a contract to be signed once budget allocation is verified), these "innovations" must be reflected in the legislation.

A good example of legislation and technology innovation going hand in hand can be found in Albania, where the government, led by the Public Procurement Commission (PPC), introduced new legislation and an electronic system concurrently that allowed suppliers to submit complaints online and for the PPC to manage the process digitally and openly. The PPC published new procurement complaints in real-time on its website along with machine-readable open data tracking their progress. It also now publishes PDF copies of decisions dating back to 2010. Nationwide training and outreach campaigns are helping develop the skills of suppliers and contracting authorities to use the system. As a result, fewer PPC decisions are appealed in court, halving from 10% in 2020 to 4-5% as of July 2022.[50] Suppliers who use the e-complaints system save an estimated USD$300 – $1,000. Fewer PPC decisions are late: halving from 2020 to 2022 (22.8% to 9.8%). The electronic system was used for 35% of complaints during the voluntary transition period, including by 12 suppliers who made complaints for the first time. The new online archive of complaints and the openness in PPC's operations is building trust among stakeholders: 74.6% of economic operators think the system is more efficient, while 82.3% say it increases fairness when handling complaints.[51]

[50] OCP, *How Albania's e-complaints system reduces red tape for government suppliers*, Washington D.C., 2022, see: https://www.open-contracting.org/2022/11/22/how-albanias-e-complaints-system-reduces-red-tape-for-government-suppliers/.

[51] OCP, *How Albania's e-complaints system reduces red tape for government suppliers*, cit.

COVID-19 also illustrated the need to be agile with legislation and technology. For example, Ukraine adopted Law #530-IX and Regulation #225-2020-п[2020], which implemented a simplified procurement procedure that still required prompt publication of COVID-19 related contracts.[52] While direct 'offline' awards were permitted, one day after the emergency contract was concluded, the procuring entity was required to submit a structured report to ProZorro detailing the main information about the contract such as the list of items, the price per item, terms, awarded supplier, etc. The procurement business intelligence tool, developed and operated in partnership with Transparency International Ukraine, was also updated to include a separate application for all healthcare procurements in the country. This tool showed all COVID-19-related contracts, allowing any citizen to monitor them, enhancing public oversight, and reducing the risk of malfeasance in emergency contracts.[53]

The legislative process is also an opportunity to mandate the publication of standardized machine readable data from the e-GP and mandate adoption of open data standards to power analytical tools providing insights to government, business, civic monitors and academics to monitor the health of the whole contracting ecosystem, help find new opportunities for business, or to identify savings.

**7) Failure to plan for system sustainability**

Electronic procurement systems require long-term resourcing to maintain and improve over time. Many eGP projects are large with an accompanying large capital budget,

[52] OCP, *How open contracting approaches help Ukraine to tackle COVID-19,* Washington D.C., 2020, see: https://www.open-contracting.org/2020/04/16/how-open-contracting-approaches-help-ukraine-to-tackle-covid-19/.

[53] OCP, *How open contracting approaches help Ukraine to tackle COVID-19*, cit.

but little sustainability or investment, or operating budget for continuous user improvements based on feedback after initial implementation.

In Ukraine, an innovative public-private partnership model was adopted. A new state owned enterprise, Prozorro, was created to maintain the new eGP system. However, they were initially maintaining only a central database and web page. They entered into partnerships with more than a dozen private commercial platforms who would advertise the opportunities and facilitate the bidding process. While all information is available free of charge, a modest fee for bidding was introduced; this is shared between the state owned enterprise and commercial platforms. The multi-marketplace system in Prozorro incentivizes a particular marketplace to serve its community even better in the future so businesses keep coming back to bid.

We were, however, surprised to see that several projects reviewed in our recent Africa eGP research relied on donor funding and only developed plans for sustainability and maintenance as far as piloting the new electronic procurement systems[54]. This leaves several important questions unanswered: Will the system stay dependent on external donors? Will it be sustained by the government budget for paying staff, and buying hardware and software licenses, etc.? Will a cost recovery bidding fee be implemented? Will a public-private model be explored? Who will support the upgrades, maintain the data center, etc?

There will not be a one-size fits all model for sustainability, but at a minimum, you should be able to plan for:

1) A financial model that will assure system continuity;

[54] OCP, *Fulfilling the Promise of e-Procurement Reform. Lessons from 5 African Countries*, cit.

2) A roadmap for system maintenance and improvements after a minimum viable product is delivered, planning how to adapt and scale the system in the shorter term and maintain and develop it over the longer term;

3) Source code ownership and iteration allowing for improvement, customization, and optimization based on user feedback and system analytics; and

4) An external vendor/developer exit strategy covering local capacity to handle the system enhancements, bug fixing, technical and business support once a specific vendor is no longer involved.

## 5. IN CONCLUSION: WALKING THE VIRTUOUS PATH TO BETTER DIGITIZATION IN PROCUREMENT

Having led with the sins, let us conclude with seven clear recommendations or 'virtuous' actions that can help ensure digital transformation yields transformational impact.

**1. Articulate clear, outcome-oriented goals.** This requires setting clear, measurable targets against specific challenges of the public procurement sphere and establishing their evaluation mechanisms.

**2. Set yourself up for success with an effective governance structure and a strong project team.** It is essential to establish a primary government institution responsible to lead the eGP implementation and a coordination mechanism with other institutions. It is equally important to set up a dedicated eGP implementation unit to ensure full focus and ownership, as well as the skills and expertise required to successfully deliver and maintain the new system.

**3. Plan for sustainability (and system maintenance) from the start.** Long-term strategies and roadmaps covering the whole project cycle including system rollout, training and maintenance are vital.

**4. Align the policy and legal framework to enable digital transformation.** Talented and innovative lawyers are needed to propose and make adjustments to laws and regulations that enable the full functionality and use of the eGP systems as intended, including mandates for transparency and publication of open data. To succeed, these laws and regulations must be enacted in a timely manner.

**5. Intentionally design the system and define requirements (including data!) with your stakeholders.** It is essential to incorporate stakeholder needs into system requirements. Requirements should be accurate, detailed, and clear to ensure that what is built will be well received. Requirements should include data and analytics, including use of standards such as the Open Contracting Data Standard and the publication of open data.

**6. Ensure flexibility and collaboration with your vendor through careful contract and relationship management.** Contract and relationship management with eGP vendors is essential to achieve a good outcome. Ideally, vendors will be required to establish a local presence, or plan for regular check-ins, to facilitate communication and coordination.

**7. Develop and execute a robust change management and capacity building strategy.** Change is hard. Successful change management aligns the change with individual values so that stakeholders see themselves in the proposed change. Early outreach and regular communications can help prepare stakeholders and get them "on-board" for the coming change. Ongoing training and support for usage of the new tools are key. It is also important to communicate about uptake of the new system and the changes that using the new system is helping to achieve. Giving everyone involved a sense of pride and accomplishment can do wonders for achieving success.

***Abstract****. Digitization of public procurement promises savings of both time and money, while improving integrity and trust in government. For example, the Prozorro electronic procurement reform in Ukraine cost less than USD$5 million to develop and USD$2 million to maintain, and has generated estimated savings of over USD$1 billion per year since 2016. Yet many governments are struggling to implement electronic procurement reforms, and the promise of digital transformation has gone unfulfilled in most cases. We explore seven common challenges - which we jokingly call the 'seven deadly sins' - of digitization. They are:*

*1) No goal, no strategy, and no team*

*Reforms can go wrong from the very start if they don't have clear goals, champions, and strategy. Successful electronic government procurement (eGP) projects articulate clear, outcome-oriented goals through a strategy at the outset. They are also championed by strong institutions and individuals who are accountable for delivery. Clear governance structures are put in place to facilitate decision making and collaboration across the lead institutions and stakeholder institutions. Finally, there are roles and competencies that are essential to have in place in any eGP project team.*

*2) Lack of stakeholder engagement*

*Digital transformation involves changing the status quo. Public procurement has many stakeholders — procurement officers, project managers, auditors, controllers, civil society, and the business community who should be enlisted as supporters in the change and who are liable to resist if not engaged. The new system should be designed to meet their needs (including their needs for data) and improve the user experience both for internal staff and the external public. Adoption will be an uphill battle otherwise.*

*3) Not rethinking business processes and the use of data for the digital environment.*

*Simply reproducing paper-based processes within software systems will not yield the desired results for improved outcomes. Technology offers the opportunity to create new procedure types, efficiencies, and safeguards. Digitization also opens up the opportunity to move from paper-based information to machine-readable procurement data, which can drive improved government performance and oversight.*

*4) Bad procurement and contract management for the digital solution itself*

*Planning to procure an eGP system necessitates careful consideration of desired type of implementation and related requirements. The solicitation process should prioritize*

*outcomes over compliance and value over cost. Governments should provide flexibility to vendors submitting a proposal, but have clear and well-defined performance standards during the implementation of the contract. This will require careful contract and relationship management throughout implementation.*

*5) Not investing in training, communications, and change management*

*Building or buying a new system is one thing, but getting people to use it requires change management, training, and support. Without the right structures and incentives, digital systems will not reach their full potential.*

*6) Regulatory dark matter bogs down legislation for electronic government procurement (eGP)*

*Legal innovation must accompany technological innovation. eGP projects run into serious problems when legislation prevents or undermines intended functionality and usage of the new system.*

*7) Failure to plan for system sustainability*

*Electronic systems need to be maintained and improved over time. This requires continuous investment in staff, time, and money to ensure sustainability. Oftentimes, reform projects fizzle when the funding expires. Or, funding is only allocated for first year implementation, and not for ongoing maintenance, support, and/or licensing fees. So long-term planning and budgeting is essential for success.*

*Written from a practitioner's point of view, this paper presents lessons learned from our experience at the Open Contracting Partnership, working to open up and transform public procurement in more than 50 countries around the world, over the past seven years. We illustrate the above challenges and mitigation strategies with examples from Latin America., Africa, Europe and Asia.*