

Chapter 9

Electronic Government Procurement in Latin America and the Caribbean

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ABSTRACT

The chapter explores the topic of electronic government procurement (e-GP) in Latin America and the Caribbean (LAC), the factors that affected the development of such systems, how they evolved differently across the region and the challenges going forward. The information included in this chapter will provide insight on how e-GP implementation has been a key element in public procurement reform in LAC as well as important lessons from the region.

INTRODUCTION

Since the mid-1990s when e-GP systems first began to emerge in Latin America and the Caribbean (LAC), the region has made considerable progress both in terms of degree of interaction/transaction of the systems and in having advanced modules. While the approach has differed greatly amongst countries and sub-regions,

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the overall tendency has been a notable shift towards more widespread use and adoption of such systems. This chapter will explore how such factors such as the establishment of public procurement entities, new business models and political buy-in influenced the adoption of e-GP. It will also cover the key differences that characterize the development of e-GP in the Caribbean and discuss some of the pending issues that e-GP systems still face in the region, such as the challenges of shifting from a control to an efficiency perspective in public procurement and its effect on e-GP and continued impact of legacy systems. Finally, the chapter will conclude with areas for future research.

BACKGROUND

History of e-GP in Latin America and the Caribbean

Latin America and the Caribbean (LAC) is a region characterized by three main waves of e-GP implementation. The first wave focused on the development of incipient procurement informational portals that began to appear in the late 1990s to early 2000s, an era when countries in LAC didn't have the political or budgetary support that is commonly found today for procurement modernization and implementation of sophisticated e-GP systems. Additionally, there was limited institutional capacity, organizational structure and human resources with the expertise to support such an undertaking. This environment influenced heavily the future of e-GP implementations and countries that pioneered development had to rely on and leverage other initiatives that had the support and resources necessary, in the case of LAC, the e-government and anti-corruption initiatives (Concha, 2011).

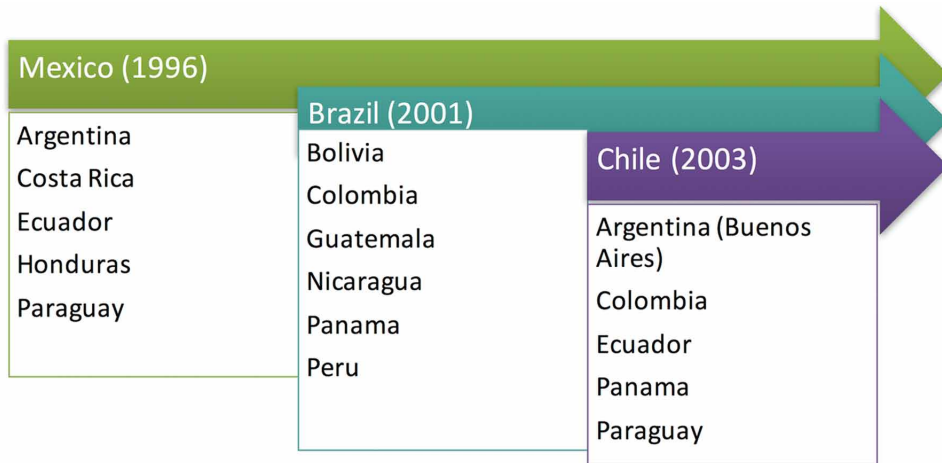
At the time, newly created e-government agencies were occupied by disseminating and publishing government information online and focused on creating standards and tools to create, manage and populate websites and informational portals for the central government. E-government agencies were eager to further their impact by converting analog services to digital and create platforms that went beyond the simple provision of vertical information online (Concha, 2011) Helping in the development of e-GP was the fact that it is one of the few government functions that has both back office and front office transactions, so it was a natural fit as the partnership would help both up and coming areas of government to gain notoriety and highlight their importance and potential.

Furthermore, high-profile corruption scandals of the late 90s generated an outcry among the population and government officials were blamed for not having proper controls in place. This created the political environment conducive to implement measures to increase transparency and ensure greater accountability in public

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Figure 1.

Source: INGP Survey (2013)



expenditure. As budgetary and financial management functions were more politically sensitive, entailed more complex interventions and required longer periods for overhaul, e-GP became the tool of choice to fulfill the demands and highlight progress in gaining more transparency, control and accountability in the use of public resources (Volosin, 2010).

The first wave was typified by early adopters that began the process of digitalization with information portals and in some cases interactive features including countries such as Brazil, Chile and Mexico (Volosin, 2010). These pioneers not only started the wave of e-GP implementations in the region, but influenced and assisted developments in a number of countries (see Figure 1).

INTERACTIVITY AND THE SEARCH FOR EFFICIENCY

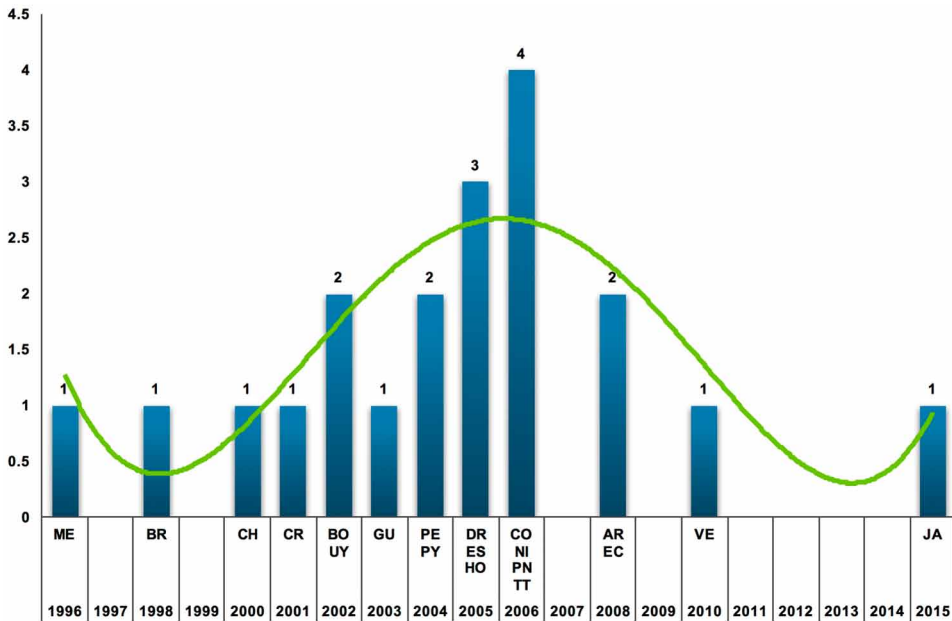
The second wave of e-GP implementation took place between the mid to late 2000s. It consisted of the development of systems with early interactive and transactional functionalities.

Specialized procurement agencies and units were created in most countries of the region and with them a new focus occurred. The new entities had to worry not only about control, but also providing services to other government agencies as they now gave back-office support to the central government and front-office services to private sector suppliers. As the focus shifted towards having more efficient services, e-GP became the tool chosen to streamline procedures for posting bids to procure

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Figure 2. e-GP Timeline

Source: Authors' analysis with information from e-GP Map (2011)



goods and services and to simplify and avoid duplication of paperwork and requirements for private sector firms.

With the exception of the Caribbean, during this period most LAC countries developed e-GP systems with varying degrees of interactivity, and in many cases such as Chile, Mexico, Brazil, Paraguay, Ecuador and Panama one can see the first iterations of transactional platforms (e-GP Map, 2011).

TRANSACTIONAL PLATFORMS

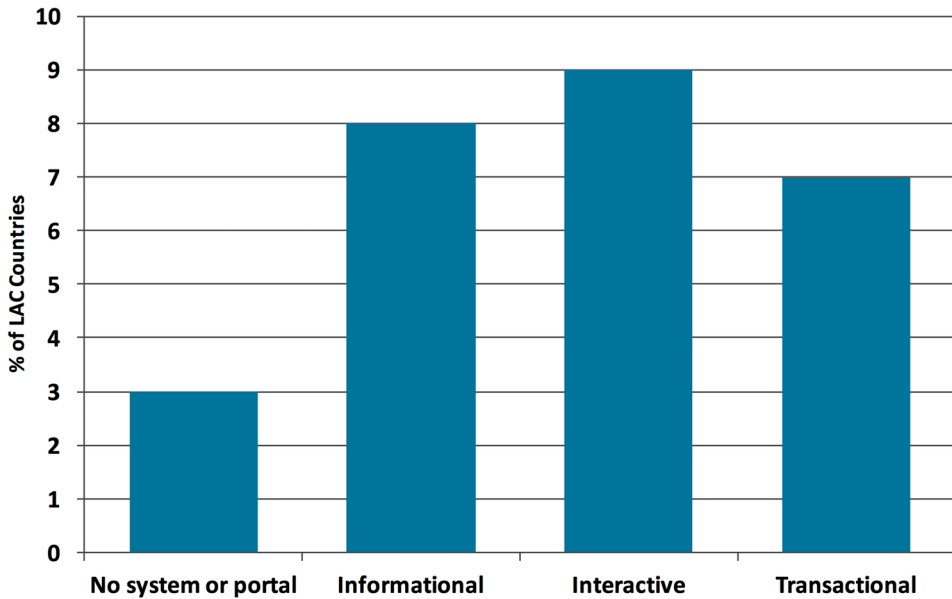
The third wave of modernization is characterized by large scale implementations beyond the capacity of in-house IT departments, whereby governments are undertaking adoption of off-the-shelf solutions or customized developments with a mix of in-house and external resources.

There is a wide array in terms of the functionalities of e-GP systems in LAC. While it is difficult to neatly categorize phases for something as complex and multifaceted as e-GP, there are three main stages commonly used: information, interaction and transaction (World Bank, 2004).

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Figure 3. Stages of e-GP Implementation

Source: Authors own analysis with information from (OECD, 2016) and e-GP Map (2011)



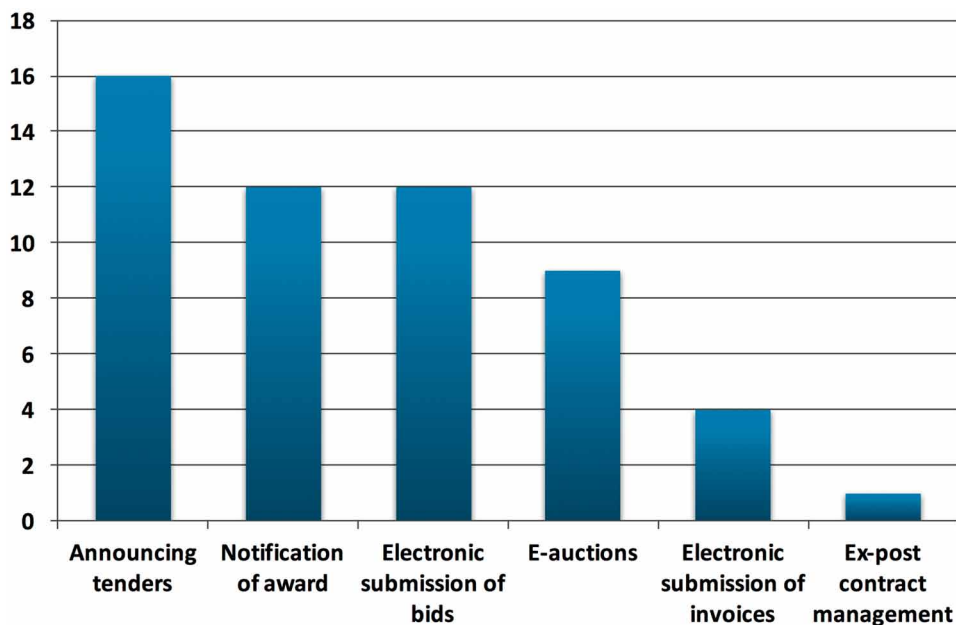
Informational stage includes countries with portals that enable the publication of tender opportunities. The establishment of an information portal is an important first step that enables procurement notices to reach a wider audience, replacing or in addition to the traditional publication of such notices in the local newspaper or gazette. In this grouping you will find most of the Caribbean countries such as Guyana and in Central America, countries such as Guatemala and Honduras. Countries tended to start with publishing notices on the Ministry of Finance website and then gradually moving towards a dedicated information portal for public procurement (World Bank, 2004).

The interaction stage involves the capacity to download bidding documents and register as a supplier. Countries with these types of functionalities include Costa Rica, El Salvador and Nicaragua, the Dominican Republic and Uruguay. Colombia is also in this category, although that will change shortly with the second phase of their e-GP system (SECOPII) expected to be operational in 2017 (OECD, 2016).

Finally, there is the transactional stage, which includes the capacity to carry out online bidding and awarding. (World Bank, 2004). This includes countries such as Brazil, Chile, Ecuador, Jamaica, Mexico, Panama and Paraguay. Few countries as yet have electronic functions related to the contract management aspects of the procurement cycle (OECD, 2016).

Figure 4. e-GP Functionalities in LAC

Source: OECD (2016)



Current Status of e-GP in the Region

By the 2010s almost every country in the region has at least an information portal and many have launched e-tendering and supplier registry modules.

As can be seen from a 2015 OECD-LAC survey of 22 countries in the region, the most common functionalities are announcing tenders (86%), e-auctions (41%), with the smallest category being ex-post contract management (14%) (OECD, 2016).

THE CARIBBEAN

E-GP in the Caribbean has taken a different path than in Latin America. Given the characteristics of expenditure management in the region, these countries started to implement e-GP later, around the late-2000s, which turned out to be beneficial. At this point in time there were enough commercially available tools and expertise to start the development of more advanced platforms and go from basic informational portals straight to transactional platforms developed by external firms and based in COTS solutions. In this manner, the Caribbean region is leapfrogging the traditional roadmap for e-GP development.

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Limitations inherent to small nations made it prohibitively expensive to have large IT departments, which meant that the adoption of off the shelf solutions was the most practical strategy. International firms capable of deploying human and technological resources have been preferred over the in-house development teams favored among their Latin American neighbors. This has resulted in faster development times and fewer government resources used as firms naturally try to be efficient with overhead costs and include cumbersome activities such as training and change management as part of a comprehensive project.

Finally, the particularities of the region have made it possible to take steps towards a regional approach to e-GP. The small size of the individual procurement markets has prompted the countries to start to explore the use of regional platforms for procurement, such as in the OECS with pharmaceuticals and the CARICOM information platform.

The Caribbean countries were the last in the region to implement procurement portals and many continue to rely substantially on their local newspaper or gazette or posting on the general website of the Ministry of Finance. Some have procurement portals under development, but for the most part there is an absence of centralized e-GP systems. In many ways, the slower progress makes sense as the incentives to develop e-GP, such as the savings and efficiency gains commonly associated with e-GP implementation were not as significant as they were in Latin America. One of the arguments for e-GP is increased competition as it is easier for more suppliers to participate in the public procurement process. However, this incentive is not as great as the region has a more limited number of suppliers due to the small size and populations of the countries.

This setup mixed with the surpluses from the tourism and commodities industries characteristic of countries in this region, created little to no incentive to overhaul public expenditure systems, even fewer incentives to develop centralized e-GP solutions. However, the 2008 financial crisis had a negative impact on the Caribbean, which put fiscal pressure on the countries to make better use of limited resources and focus on improving efficiency and effectiveness of their public expenditure (IMF, 2013). At 15-20% of GDP, public procurement is a common target for reform as a means to generate savings. This situation had a positive effect on the development of a new array of systems to streamline and modernize expenditure functions, including public procurement.

Two countries that stand out in the region for e-GP are Jamaica and Barbados. Jamaica launched a new e-GP system in 2015, which includes functions ranging from the publication of opportunities, transactional platform, electronic submission of bids, e-tendering, notification of awards, supplier registry and framework agreements. Barbados also has an advanced e-procurement system, having purchased a COTS which will be integrated into the government's public financial management

system. However, the current legislation does not enable electronic transactions and the e-procurement system while developed has not been activated pending the approval of the new procurement legislation. This is expected to occur in late 2016 (Williams, 2016).

In the case of Trinidad & Tobago, while there is no central procurement platform, starting in 2006 the country built two separate electronic systems as part of a public sector reform program. These systems include an e-Auction platform used in limited instances by state owned enterprises for receiving and tendering quotations on goods and some services (e.g., water, paper goods, etc.); and TT Connect Tender Notices Online dedicated tenders website, which provided a searchable listing of tender notices. The former was developed by the Telecommunications Services of Trinidad & Tobago Limited (TSTT), with customization of an off-the-shelf solution for the Government of Trinidad & Tobago and the latter by iGovTT, a state-owned enterprise, under the Ministry of Science and Technology (Theodate, 2015).

Regional Platform

Another characteristic of the Caribbean region is the geographic, demographic and economic incentives for a regional approach to public procurement. Aggregating demand through a common platform would be beneficial given the small size of the countries.

A good example is the single electronic platform for the procurement of pharmaceuticals that the OECS member states share and use. The OECS countries¹ are small and it was expensive for each country to procure its own pharmaceuticals both in terms of the staff with sufficient technical expertise to develop bids as well as ability to negotiate a lower price given the limited quantities that were needed for each country.

In 1986, the Pharmaceutical Procurement Service (PPS) was created as an agency of the OECS to pool procurement for the Ministries of Health of the nine member states. This proved quite successful, as regional PPS prices were on average 44% lower than prices negotiated by individual governments or found in national markets.

In 2013, the OECS launched the Electronic Government for Regional Integration Project (eGRIP), which involved a variety of e-government solutions, among them the first regional pharmaceutical e-procurement system that built on the success of the PPS. This e-procurement system includes modules for centralized registration, e-tendering, basic contract management, system and security administration and online help (Crane, 2016).

Currently, CARICOM is working on a Regional Integration Electronic Public Procurement System, which will serve as a procurement information portal for the Caribbean. The process in practice has been slow though and the challenge going

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forward will be overcoming issues such as the differences in legislation, national politics and pushback from the private sector (Shillingford, 2014).

As seen above, the Caribbean countries have an opportunity to not only catch up but achieve high levels of functionality in their first implementations as there are no legacy systems to phase out and dismantle as there are in Latin America. In addition, there are cutting-edge IT tools and software solutions that were not available during the first wave of e-GP systems. At the same time, there is an opportunity to increase efficiency and savings by taking advantage of aggregated demand through pooled procurement. It is likely that there will be a wave of e-GP implementations in the Caribbean within the next five years, including advanced efforts towards regional platforms.

MAIN FOCUS

The evolution of e-GP systems in LAC has been very successful in many cases (Brazil, Chile, Mexico, Panama) achieving levels of efficiency and functionality similar to the ones found in high income economies and OECD countries (OECD, 2014).

A particular mix of strategic partnerships, demand for transparency and policy decisions has created a favorable environment in the LAC region to develop e-GP systems accompanied by the institutional and legal frameworks necessary. However, the strategies and policy decisions made can become a liability in the next phase of developing these systems.

Regulatory Framework

Over the past few years, LAC countries have undertaken the task to further existing e-GP systems to a transactional stage. However, this time the task is much more complex than publishing and exchanging procurement information through portals which was governed by existing information disclosure regulations.

New laws and regulations were necessary to enable and govern modern commercial practices and especially electronic transactions for the benefit of public procurement. It is here where the LAC region enters a period of drafting new legislation and regulations.

Besides enabling electronic transactions, the new regulatory frameworks strengthened the public procurement entities and gave them the resources and flexibility necessary to implement new business models that generate savings and aggregate demand, such as reverse auctions and framework agreements. This had a positive effect on e-GP implementation, as in many cases IT departments had to develop the

capacity to manage new systems that had transactional modules, e-reverse auction functionalities and virtual stores attached to framework agreements.

However, many countries delayed their modernization and reform programs as they were waiting on the passage of a new procurement law. This was unfortunate as changing legislation is a time consuming process and many countries, such as Chile, have demonstrated it is possible to undertake significant modernization with just a decree (Volosin, 2010). For example, lack of a dedicated procurement law that provided for electronic transactions was a key factor that delayed modernization in the Caribbean where countries had dispersed financial acts that did not provide a modern vision of public procurement. The move over the last ten years to update legislation and provide the necessary clauses for e-GP has taken time but once in place will be an important step in the right direction² (Shillingford, 2015).

Institutions

Another important factor in the rise of e-GP in LAC has been the establishment of procurement agencies. In contrast to other regions of the world, in LAC these agencies do not purchase on behalf of decentralized procurement offices but rather are responsible for policy and monitoring and have played a major role in pushing reform and modernization in public procurement. By 2016, almost all the countries have entities with such mandate, 64% units under a ministry and 34% as organic government agencies with some degree of budgetary and/or administrative autonomy. These entities have been in charge of setting policies, spearheading efforts to update legislation and designing national training and certification programs. One area where their role has been particularly critical is the implementation, management and expanding adoption of e-GP systems.

Procurement entities have established their importance in their initial years of functioning. However, as many other public agencies; they now have to compete for budgetary resources, relevance, and political support. Therefore, they have the challenge of having to demonstrate value to the public administration and be able to not only improve transparency and controls, but have real quantifiable effects on efficiency, savings and lately in the implementation of public policies aimed to promote strategic economic sectors. One of the most effective tools to achieve this objective has been providing e-GP platforms to procure goods and services and most importantly platforms to implement and manage new business models such as framework agreements and reverse auctions.

Procurement entities with more institutional independence will continue to have a key role in expanding the adoption of e-GP systems to keep on increasing efficiency and generating savings for line ministries and central government agencies. In LAC there seems to be a relationship between independence in this agencies and

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Figure 5. Procurement agencies

Source: OECD (2016)

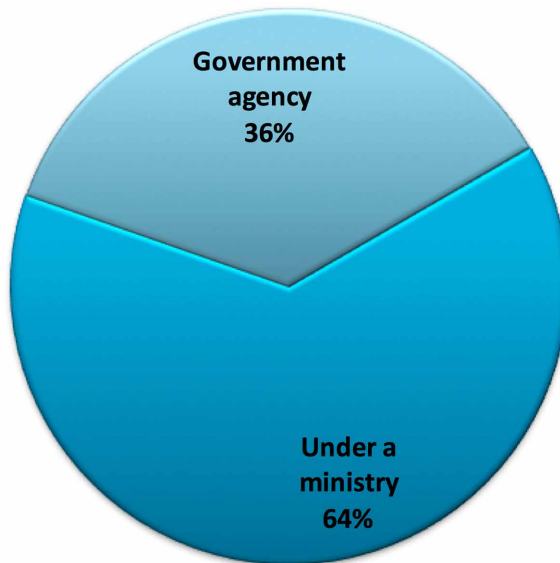
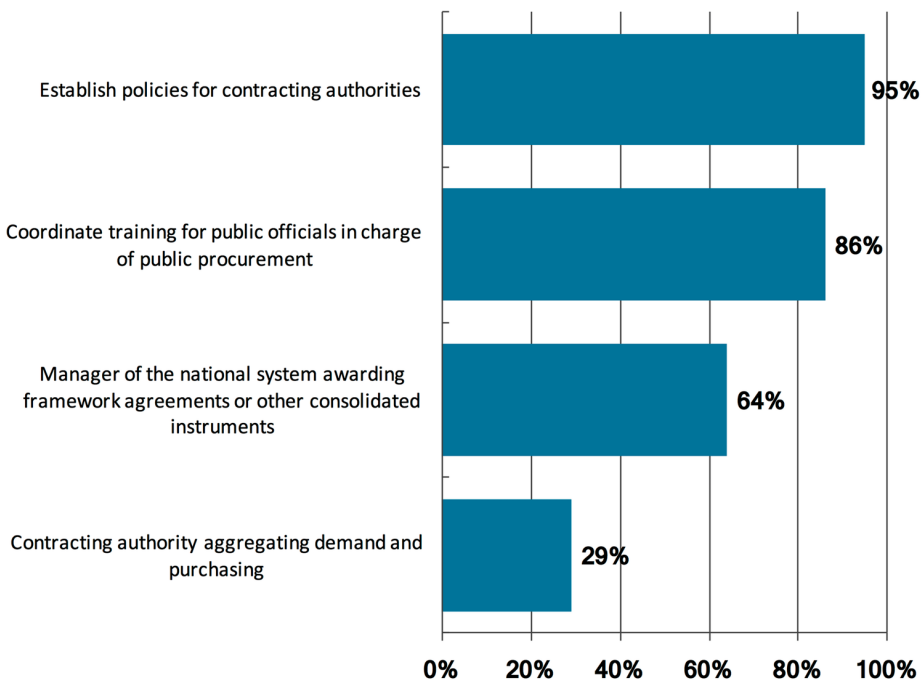


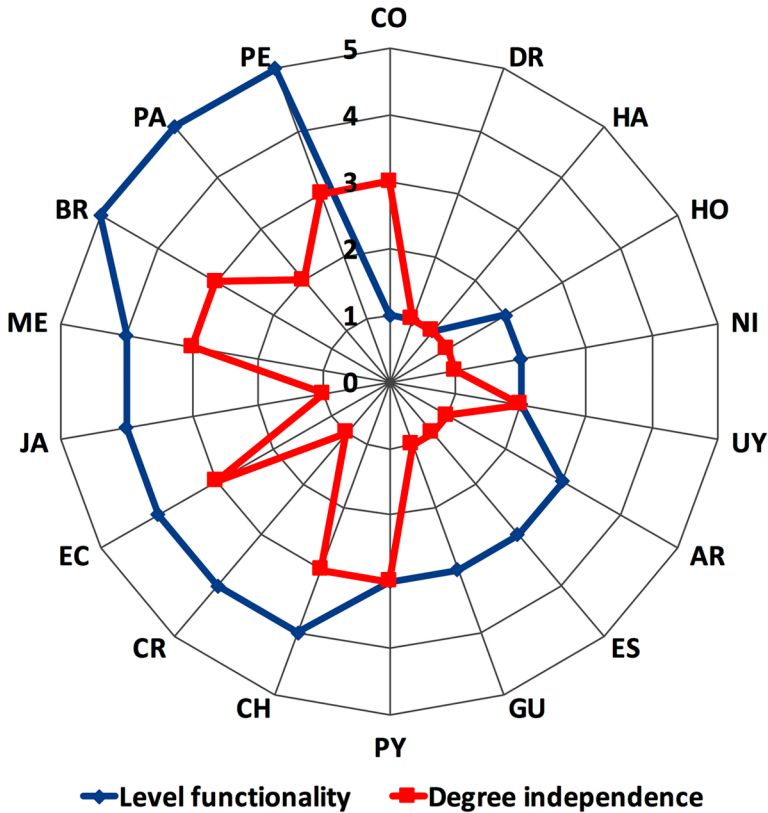
Figure 6. Role of procurement agencies

Source: OECD (2016)



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Figure 7. Institutional independence and level of functionality
 Source: Authors' analysis with information from OECD (2016)



e-GP development and, there is also ample data and experiences from around the world that demonstrate that e-GP can significantly lower transaction costs and entry barriers for suppliers (ADB, 2013). Thus, the strengthening of these entities should be a critical aspect in future e-GP developments.

Development Strategies in LAC: Build Over Buy

In LAC the development strategy selected to implement e-GP systems ended up being its most important catalyzers. Given characteristics of the region, pragmatism was necessary when setting up resources to undertake this project, which had a long term effect on how e-GP systems evolved in this part of the world. The strategic decisions made resulted in modernization projects that led to LAC being one of the regions in the world where e-GP adoption has expanded the fastest in the public

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sector, albeit with some trade-offs in scope and functionality at the initial stages of development.

In the early 2000s, there were virtually no commercial off-the-shelf solutions (COTS) to facilitate the procurement of goods and services in the public sector. Big software firms concentrated their efforts in developing ERM solutions more suited to the supply chain management needs of the manufacturing and industrial sectors. At the time any attempt to adopt COTS platforms to support public procurement operations would have required significant political support across the central government, high level technical capacity and substantial financial investments on the government side. Most countries didn't have these resources and had to partner with (also incipient) e-government agencies for technological expertise, also they had to leverage political support and resources associated to increasing transparency and strengthening controls to address backlash from high profile corruption scandals.

In order to maximize resources, most countries in LAC chose as their development strategy to build public procurement systems in-house on an ongoing basis, with easy deployment and a long term focus for improvement.

This was a good fit as the systems had to reflect the demand of public procurement as a control function. In-house solutions had the benefit of being faster to implement (from a technological standpoint) and cheaper to build (in the short term). One aspect that facilitated their quick implementation was that reengineering processes that are necessary to adapt COTS solutions were an optional step when it came to in-house developments; in many cases this step was postponed or ignored all together.

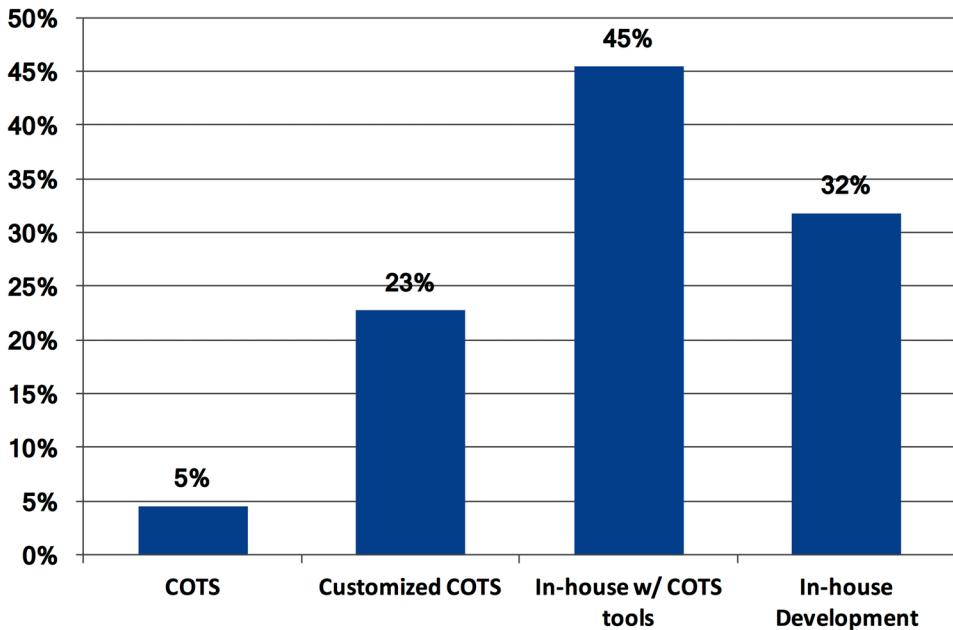
The new systems were effective from a control perspective, quickly addressing demand for transparency and controls, however some compromise had to be achieved as much inefficiency in the procurement cycle was carried over to the electronic platforms and the underlying issues inhibiting efficiency and value for money were not necessarily addressed in the early stages of implementation.

On the other side, this strategy also had a positive effect that many project teams later become IT departments that not only strengthened the procurement agencies as a bureaucratic body, but also gave them a seat at the table of e-government discussions. Even now in 2016, 77% of e-GP systems in LAC can be traced to an in-house development, the percentage goes to over 90% if the Caribbean is not included in the count.

For countries that adopted e-GP later, the strategy has tended towards the selection of in-house developments using COTS tools and licenses rather than purely coding and programming systems in house from scratch. This tendency is a result of a couple of factors. It reflects the better options in the market for the public sector that appeared in the mid to late 2000s as well as the growing realization that large IT departments are expensive and difficult to staff. This was particularly the case in smaller countries that adopted e-GP at a later stage that simply did not have

Figure 8. Types of e-GP solutions

Source: Authors own analysis



either the budget for such IT departments or availability of people in country with sufficient advanced IT skills to staff the departments, particularly at public sector salaries. This is often seen in the Caribbean and to a lesser degree in Central America.

A benefit to off-the-shelf solutions is that as they are usually designed with an optimal public procurement system in mind, countries that adapt their processes to the new system and therefore are more likely to have a more efficient system. However, this takes time to plan and political will to make the changes needed to adapt to the new system. This has become easier for countries that adopted e-GP later as they did not have legacy systems that were difficult to replace as there were already people in place with an interest in maintaining the current system and status quo. Off-the-shelf solutions are of course not a panacea and have their own issues in the beginning they can be cheaper and faster (the technological part) to install, but have higher costs later on in terms of maintenance and upgrade costs.

It is worth mentioning that another strategic decision that worked for LAC countries was to develop their platforms only for goods and services as they tend to be lower in value and higher in volume than works. In many cases, works are not channeled through the national public procurement system, but rather the Ministry of Works does its own procurement. This is significant as works usually involves a

higher percentage of the public budget, given the large infrastructure projects, which can run into the millions of dollars. In Chile for example, works comprises 50% of public expenditures (CPAR, 2008). This means that an important part of the public procurement market does not benefit from the gains in efficiency and competition that can be provided by a modernization of the main e-GP system (Pimenta, 2015). This is starting to change and countries like Chile are looking into ways to further link the two systems. Another area that is often not channeled through the main e-GP system is procurement on the part of State-Owned Enterprises (SOEs). This is of concern as in many cases, public resources are spent outside the budget process without any way of tracking those expenditures.

Tools for Suppliers

Public procurement is not just a back office function and the new technologies have been useful to improve interaction with the private sector especially when lowering their transaction costs. Thus, governments in LAC have increasingly been investing and deploying tools such as supplier registries and Business Intelligence (BI) modules as part of e-GP implementations. As private sector companies had been using these tools for quite a while for business to business transactions, eventually governments caught on to this trend and recognized the benefits of using the new functionalities of electronic procurement to facilitate access and promote competition.

- **Supplier Registries:** Supplier registries as a concept have existed for quite some time in analog form. However, functionalities provided by electronic platforms have made them more effective and easier to use. E-supplier registries within e-GP systems provide the means for private sector companies to register once online, enabling them to be recognized as a provider to the public sector. This is important as it reduces transaction costs and burdensome processes and paperwork that before were needed for each individual procurement process. They are particularly effective when the registry cuts across different government platforms, for example with the tax systems, commerce registry or specialized bodies such as for the provision of industry-specific licenses so that businesses do not have to register multiple times (ADB, 2013).

There is a wide array of degrees of digitalization and automation in supplier registries, in most LAC countries even with the expansion of this tool in its digital form, there are still supplier registration processes that must be done manually, on paper, or that duplicate an electronic procedure. However, in spite of these shortcomings, in LAC supplier registries are particularly important to lower transaction

costs for small and medium sized enterprises (SMEs). Chile for example has an advanced platform ChileProveedores, which has reduced transaction costs by 50% since it was established, particularly key as in Chile 54% of the suppliers to the state are SMEs (ChileProveedores, N.D.)

- **Business Intelligence:** Data from the public sector have traditionally been difficult to obtain and understand in LAC. When processes were fully paper based, information on what the government was buying was buried in files across ministries. The rise of e-GP systems improved this situation. However, the problem remains that the data being generated frequently was not easy to access or analyze.

BI addressed those issues by providing analytic tools that let users know who is buying, what they are buying and where they are buying it, thereby providing useful information on supplier assets and capabilities and their market. These types of tools are beneficial for civil society to monitor information related to the government in the area of procurement, procuring units are better able to develop market studies and analyze demand and prices and procurement officers can know the market and plan better. On the other side, it helps suppliers as they will have better information about where the upcoming opportunities will be. This is of particular use for small and medium sized enterprises as they do not have the same market analysis and development capabilities as larger companies (Guinez, 2013).

Starting in the 2010s, the LAC region began to develop BI modules in their e-GP system. To this regard, a pioneer in the region is Chile. Chile has a platform called Analiza that provides information on the public market that takes the data and presents it in a way that is easy to understand and actionable. It includes a list of all transactions, a tool for analyzing and comparing transactions (for example, by framework agreement or purchase order), trends and complaints ranking by purchasing entity. What each entity is buying, by what categories and by how much. Mexico is another country that has implemented BI. Its Information and Market Intelligence Module for Public Procurement (CompraNet-IM), was created in 2012 with five sections: 1) annual public procurement programs, 2) contracting procedures, 3) contracts, 4) providers and suppliers and 5) performance indicators for contracting procedures (Guinez, 2013).

The rise of electronic platforms has enabled governments in LAC to build tools which are revolutionizing how the governments are interacting with the market, to the benefit of the public sector in terms of greater transparency and efficiency, the private sector in terms of knowing the public sector market and targeting their business development accordingly and citizens in terms of better services as a result of the former as well as greater confidence in government.

New Business Models and Aggregation of Demand

Tools to aggregate demand such as framework agreements and reverse auctions are being implemented across the region with increasing frequency as governments realize their potential for savings, both in terms of reduced transaction costs and in terms of lower prices through increased competition. As countries have increasingly seen the value of such tools (especially given the quantity of such transactions), and the benefits that digitalization can bring to the process, there has been a push to adopt e-GP in LAC.

E-GP brings three main benefits to the bidding process for these types of transactions. The first is that it generates an enormous amount of real time data that can help the central procurement unit make planning and budgeting decisions as well as inventory management. This information about purchasing behavior can also help governments adjust and target their procurement policies to facilitate the increased participation of certain groups such as SMEs, local industry and women-owned businesses.

The second is that online platforms which make all the transactions transparent and removes the operator which can reduce opportunities for corruption. Finally it involves increased competition as it is easier for more suppliers to participate in the bidding process – both from other regions of the country and internationally (in the case where it is allowed) as the supplier does not have to be present. This is particularly beneficial for small and medium sized enterprises, which might not have the resources to travel or take time to participate in a live bid (ADB, 2013).

- **Framework Agreements:** Framework agreements are umbrella agreements whereby the price and quantity of the provision of a certain good or service is determined for a set period, particularly useful in cases where the buyer knows that a particular good or service will be needed but not the quantity and when. They are beneficial to the buyer and the supplier in that the tender only happens once rather than multiple times which is costly in terms of time and transaction costs. They are also useful in terms of leveraging purchasing power and generating economies of scale and sharing costs among different agencies and departments of the state (ADB, 2013)

Framework agreements are not new, however electronic platforms make them easier to implement and more effective. Specifically e-GP can help strengthen the decision-making process, planning, management involved in framework agreements through the data that is produced (ADB, 2013) These types of agreements are becoming common throughout Latin America. Some countries that use them, include, Chile, Colombia, Costa Rica, Jamaica, Mexico, Panama, Paraguay, and

Peru. In the case of Colombia for example, framework agreements have been allowed by law since 2007, but did not take off until the creation of the procurement agency Colombia Compra Eficiente the upgrades to the e-GP platform were made. (OECD, 2016). The “Tienda Virtual del Estado Colombiano” – the virtual store system for the framework agreements will be available in the new version of their e-GP system SECOP II. It is expected that the average time to carry out a procurement process will decrease in Colombia from 6 months to ten days with the use of framework agreements.

Panama is another country that has made progress in this area, with framework agreements for 38 different types of goods and services. An example that is frequently cited with regard to Panama are framework agreements for airline tickets. Starting in 2011, 98 public entities have been using the virtual airline ticket store which allows the entire process to be carried out online, including approval by the Ministry of the Presidency and payment with a credit card, which means a quicker approval for payment resulting in a lower ticket price. This framework agreement has generated monetary savings of \$25-50 dollars per ticket and savings in transaction costs (INGP, 2013)

- **Reverse Auctions:** Another tool to aggregate demand that is of increasing use in Latin America and the Caribbean are reverse auctions. These tools are also facilitated by e-GP, whereby electronic means can safeguard neutrality and fairness. In this case, the buyer sets the base price and suppliers compete to provide the good at the lowest price. When this is carried out electronically, it is completely impersonal as the electronic system automatically selects the winner (Pinto, 2009).

It is not a panacea though as it does not prevent collusion, and is vulnerable to manipulation. It usually only works well in relatively large markets where there are sufficient number of providers to generate competition, otherwise they will not be effective in generating additional savings. For example, reverse auctions are successful in an enormous country like Brazil, but might not be recommendable in a very small country, where to the contrary the price might be higher as there are so few suppliers to participate in the procurement process. In other words, reverse auctions can help the contracting agency take advantage and harness the existing potential for competition, but they cannot generate competition that does not exist (Volosin, 2013).

Countries that have reverse auctions include Brazil, Chile, Colombia, Costa Rica, Ecuador, Jamaica, Mexico, Panama, Peru and Uruguay. Brazil is the leader in the region in this area, which makes sense given its large size and number of potential providers. Brazil established its procurement portal, ComprasNet in 1998, and it

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became fully transactional in 2000, including the capacity for reverse auctions. Over 70% of all procurement transactions are through reverse auctions and by all accounts they have been very successful in Brazil (INGP, 2013). By 2008, 30% of the federal government was using the site, which allows for all levels of government and at the federal level. The time it takes for a procurement procedure was reduced from 60 to 14 days on average. (Pinto, 2009). The original investment was US \$7 million, with savings of 1.5 million in the first two years (Volosin, 2010). Peru has been using reverse auctions since 2006, which are mandatory in the procurement of simple goods and services.

As the focus of public procurement in LAC takes a more strategic approach rather than just one of control and as there is a greater pressure to do more with less, tools that can support those objectives have become more critical. Governments have adopted tools such as framework agreements and reverse auctions as they generate actionable data, greater competition and a better targeting of procurement processes.

Challenges Ahead

While the LAC region has made considerable progress in the development of e-GP, there are still pending challenges that need to be resolved in order for governments to keep on modernizing these systems and make the most of the tools.

- **Control-Efficiency- Public Policies:** As has been mentioned throughout this chapter, there is the age-old problem in public procurement, which is how to balance the need for control and corruption prevention, as public resources are involved, with the need for efficiency and to do public procurement strategically. (Sanchez, 2013). This balancing act has played out and is reflected in the development and implementation of e-GP. Closely linked to that problem is the fact that public procurement is a dry topic that is hard for the average person and politician to understand.

To overcome this, government officials often build political support and momentum for reform and modernization efforts through corruption scandals. And indeed, anti-corruption efforts have created a favorable political environment to embed greater transparency in procurement operations, being e-GP the preferred tool to achieve this goal. However, the ultimate expected impact of a modern procurement system is not to guarantee due process, although that is important also, but to maximize value for money and achieve a more efficient and targeted use of public resources. As seen in previous sections of this chapter, internal control functions and oversight of procurement operations have been major driving forces to modernize public procurement and especially to adopt e-GP systems.

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Nevertheless, this focus on control comes at the expense of efficiency and a cost as it adds more procedures to the procurement cycle and thus increases administrative costs. In addition, it didn't create incentives to overhaul and streamline operational procedures to add efficiency and reduce costs of the procurement cycle. In other words, as e-GP systems were implemented, controls tended to be increased, some inefficiencies remained as they were converted from analog to digital and in many cases efforts were duplicated as paper procedures were difficult to phase out.

In spite of the wide adoption of e-GP systems in the region, it could be argued that there is still considerable potential to be tapped in this tool to gain efficiency and value for money. Over the past ten years, the region has increased its transparency and accountability thanks to the new technology in place. However, there is a real opportunity to make corrections and carryout a thorough exercise to streamline procedures and requirements to maximize value for money and thus the quality of public goods and services provided to the citizens of LAC.

- **Focus of the Reform:** Another challenge that the region that needs to be addressed is the tendency to focus on e-GP as an end rather than a means to greater modernization of procurement as an expression of a country's public policy and development strategy. Considerable human and financial resources have been invested to adopt new technologies in procurement operations and they have been approached as if this were the reform itself.

e-GP systems should be considered a tool among many in an overall reform and not be designed as a stand-alone initiative to solve a particular function, as though purchasing a word processing software or mobile app. Their development must be accompanied by the proper business process analysis (correcting any inefficiencies), regulatory and legal framework (enabling e-transactions), change management strategies, sequencing with the government's overall e-government program, etc. One often hears about successful e-GP systems like ChileCompra, which has been adopted with great results, but its success also responds to a wide set of reforms enabling the modernization of the public administration as a whole and in line with a strong history of public management in Chile.

As much as the LAC region has made important advances in transparency and oversight, there is still work to be done in phasing out unnecessary and redundant paper procedures, as well as carrying out comprehensive assessments, and overhauls to streamline the procurement cycle.

Political, economic and technical context is important, which is why no matter how admired systems like ChileCompra are, simply copying and replicating its functionalities is unlikely to produce the same results and impact as it did in Chile.

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Holistic procurement reforms in line, properly sequenced with e-government and public financial reforms and in accordance with country context are needed.

- **Legacy Systems:** LAC countries have invested considerable political, financial and human resources in the development of e-GP systems. As discussed earlier in this chapter, virtually all LAC countries have some form of e-GP, and out of those, almost half of them have functionalities to electronically submit bids, and as many as half of the countries in the region are in some stage of design or implementation of transactional systems. Additionally, many countries have included advanced modules such as those for business intelligence and supplier registries, as well as platforms to support framework agreements and reverse auctions.

However, information technology moves at an incredibly fast pace and many of the standards, tools and platforms that these e-GP systems rely on are quickly becoming out of date. Maintenance, operating and upgrade costs will only increase as support and technical expertise will become increasingly hard to find, especially in low income countries of the region. In spite of this, it is often difficult to move away from legacy systems, especially if they were successful; and expenses and efforts tend to be misplaced in building additional functionalities on top of the existing platforms, instead of leaning towards commercial off the shelf solutions where maintenance and development is taken care of by the supplier.

- **IT Departments and Legacy Systems:** A by-product of the tremendous effort undertaken by the region to implement e-GP systems has been the emergence of IT departments/units specialized in e-GP, either housed within public procurement entities or as part of bigger IT departments within ministries of finance. This has created bureaucracies with their corresponding incentives to justify their need for human and budgetary resources, as well as their continued existence. These departments or units are usually fully specialized and invested in the maintenance and operation of existing legacy systems.

Procurement reforms in LAC have often been carried out in isolation, which has created e-GP systems and corresponding bureaucracies that participate in wider electronic government efforts but not necessarily integrated with them. Procurement entities have little to no incentive to cede maintenance and operation of e-GP systems to government agencies better equipped to carry those functions. In many cases, e-GP has not been integrated or developed at the same pace as other expenditure systems.

All that was mentioned above illustrates a situation where there are limited incentives to adopt modern procurement technologies based on commercial off

the shelf solutions that are developed and maintained by an external supplier, and there are also no incentives to adopt modern institutional arrangements where an e-government agency provides IT services for all government functions. Virtually eliminating the need of oversized IT departments embedded within the different levels and agencies of the public administration.

Modern Procurement Technologies

The need for streamlined supply chain management and sourcing in the private sector has prompted the development of new technological tools and platforms that could have a great effect in the public sector. Now there is a wide array of procurement platforms and solutions that leverage the technological advancements of the last decade, as opposed to the years when e-GP systems were starting to be developed and few off-the-shelf solutions were available. However, these new platforms could go against many institutional and operational models currently in place along with established legacy systems implemented between the late 1990s and the 2000s. As challenging as it will be, ready-to-deploy solutions seem to be increasingly well-suited to replace platforms currently in place that took a lot of effort and political capital to develop.

In many ways the procurement function is going through a new technological revolution. Heavy emphasis on demand forecasting in the private sector and large amounts of data generated by systems in the public sector has prompted software firms to develop new platforms/systems that can provide functionalities for complex analytics.

The significant investments made on IT infrastructure and software during the 2000s cannot be replicated; however, internet penetration in LAC continues to be high among developing economies. Furthermore, modern IT infrastructure puts suppliers in a privileged position as they need fewer and minimum computer resources to access complex e-GP systems. These factors will likely lead towards cloud-based platforms where infrastructure and software capabilities are contracted as a service permeating the public administration soon rather than later.

These new technologies seem to have the potential to impact procurement operations and results heavily; however, in the process of adopting them legacy systems will have to be phased-out and IT departments will have to face a major restructuring to fit the new needs of the public administration.

FUTURE RESEARCH DIRECTIONS

There are still big gaps in research in this topic for Latin America. While there are many areas that should be considered for future research, some key ones include the role of institutions and e-GP, specifically policy and monitoring units and how they have affected the development of such systems and what are the lessons from those experiences. So many attempts at e-GP around the world have failed and an underlying issue in many of the cases is likely the lack of a strong entity that can have an overall vision for the system that goes way beyond just the purchase of software. This is particularly the case in Latin America where these entities have spearheaded reform and modernization efforts.

There also needs to be more research on the returns of investments in e-GP. While some of the benefits are difficult to quantify such as improved governance, others are easier such as savings. Those numbers are critical for the Heads of Procurement to have to gain political support for deepening the reforms. Along those lines, actionable data is also of growing importance in the region, and how these systems are generating data and the use and impact of BI systems is an area that warrants further study.

Finally, an in-depth look at e-GP and its link to the overall public financial management system, particularly IFMIS could be explored further given the impact of public procurement on the execution of the budget.

CONCLUSION

E-GP over the last twenty years has advanced as governments have realized that it is much more than an administrative function, but rather has strategic value in terms of being a tool for public policy and contributing to overall improved public administration. (Sanchez, 2013). This is reflected in the widespread adoption of e-GP since the late nineties until present day. Countries are still investing in modernizing systems as they continue to seek the gains in transparency, efficiency and savings that these tools provide.

However, there are still pending issues that need to be addressed. The traditional focus on control has not for the most part been overcome. This is reflected in the continued trend of in-house solutions for e-GP systems that allow small and constant modifications to the flow of information and processes. For e-GP systems to fulfill their full potential, their development should have an optimal balance between efficiency, control and public policy.

Additionally, the legacy systems produced under in house development will make it difficult to make a switch towards having systems that keep up to date with

modern trends in technology, which are changing at an ever faster rate. Countries will also face the need to adopt modern IT software standards and platforms if they are going to take advantage of new trends such as cloud computing.

In conclusion, the region has made great strides in terms of the approval of legislation, creation and strengthening of procurement agencies, building in-house capacity, developing tools for suppliers and helping line ministries implement new business models. Given its circumstances, LAC has progressed significantly in terms of creating a conducive environment for future e-GP implementations, by laying out a good foundation. However there is still work to be done in order to adopt new technologies for revamped e-GP systems while maintaining a focus on efficiency and savings.

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ENDNOTES

- ¹ The OECS is a nine member grouping comprising Antigua and Barbuda, Commonwealth of Dominica, Grenada, Montserrat, St Kitts and Nevis, St. Lucia and St Vincent and the Grenadines.
- ² In other regions, this has been done with a decree but in the Caribbean there has been resistance to taking that route.