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Public Private Partnership Investment to Execute Policies of Port Community System in Central America

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Abstract: This research explores Central America and the current action plan to adopt the use of Port Community Systems (PCS) & Port Single Windows (PSW) commonly applied in the Maritime sector which in general is classified as Port & Logistics. The study also includes an analysis of the existing investment in Infrastructure development, current adoption levels & necessity to use Technology and dissemination of Policies to execute Public Private Partnership projects in this field. The topic remarks essential high level standards needed in Central America regarding a systematic implementation of Informatics Coordination Systems (ICS) commonly utilize to improve port chain logistics operations. As Central America recently denotes awareness to implement a convergence initiative of the Maritime sector, but yet the outputs is nearly poor of results while also present evidence in delays to obtain a better integration and efficiency procedures. The scope embraces a literature review, analysis, current drawbacks, policies and establishment of objectives to integrate a PCS/ SW basis. The main author intends to highlight commitment of adopting a global vision to incorporate PCS/ SW as a top level priority from key policy makers representatives in Central America through their governments, but also a framework proposal to improve the low productivity created when there is not sufficient management of land regards the connectivity in the logistic port chains, operating aspects of in-land interface, customs, freight transportation, land carriers, citizens, conflicts in the port-city relationship, port deficient access and inter-port service (seaport, road and railways), etc. Finally, the authors target to obtain a fortify effect to consider improvements, attractiveness of investments, operations and strategy services in accordance with a future worldwide demand from the Maritime industry where Central America by adopting international standards through such as PCS/ SW technology, innovation plans, training of people and follow-up prerequisites could join to become a leading & strategically region of hub services.

Keywords: Public Private Partnership (PPPs/ PPA), Central American Governments, Port Community Systems & Single Window PCS/ SW, Maritime Transport, Seaport Policy – Central America & El Salvador

1. MOTIVATION OF THE STUDY

In Central America, with regard to the value chain in the maritime industry, projects of infrastructure development and services, there is not a discussion of considering as an exceptional case Panama and its Canal, which even recently has opened an expansion on June 2016 (Camil Martínez *et al.* July 2016). Panama traditionally is a core maritime gate to the world, and lately has confirm its leading pattern through a new and important transcendental expansion infrastructure of the Panama Canal, a promissory mega project to configure Central America by providing world class maritime sector, dynamic networking in shipments, hinterland demand, liner shipping market services, and port operators. This previous announcement not only cites the question on how some downward cases of big players belong to the maritime industry will tend to shape the sector worldwide by bringing as a result, changes to other countries and their economies since a new model of merging companies appears; but also which services or investments will pretend the Panama Port authority to upgrade globally through the Panama Canal as the most innovative & attractive maritime project of the present and medium term future. Panama has included in this expansion several new maritime services of the industry where other Central American countries desire to innovate proposals and development of extra alternatives routes under a systematic plan.

Panama before the expansion had a maximum limit as of 5,000 TEU, while the recent infrastructure project is offering little more than 13,000 TEU; this means, the addition, basically invites for large vessels operating not only the West Coast of South America to Europe but also motivates a tremendous necessity of *transshipment* hubs in Central America and around the main Panama Canal (Jean Rodrigue *et al.* February 2016) by opening reconfiguration of routes, lines shipping, etc. in that sense, the approach leads to consider opportunities for businesses and materialization of the concept “*feeder*” (Gordon Wilmsmeier *et al.* August 2014) to cooperate in the aperture of fresh routes looking to serve the markets in accompaniment to support the increasing maritime global demand.

The new-fangled investment in Panama is bringing also the exacerbate motivation of Asset cooperation, Port Development Infrastructure, Secure & Optimization in customs, Drought and Improvement restrictions, perhaps changes to go over 12 meters depth, longer berths, enhancement of the turning circles in port access as initial concepts as it is getting obsolete since last decade, reshaping master plans (in some cases the only existing paper draft plans) and Information Systems (tools) in the Central American region, etc. In comparison to Panama, the other countries from Central America have low quote of Port's infrastructure investments & development, promotion of maritime services, such situation creates a maturity to rethink, analyze the situation and make efforts in finding mechanism or agreement negotiations related to strengthening more investments to benefit Ports, Infrastructures, Master plans development and Technology utilization.

The North Triangle zone (Guatemala, Honduras and El Salvador) and by the direct assistant of The United States of America (the Alliance for the Prosperity of the Northern Triangle) these three nations and taking as an advantage their geography is sporadically trying to initiate and establish unification efforts to focus on the development of better and bigger investments in the logistics chain; even though currently is just an aisle & small progress. However, in the medium to long term, such integration plan promises to consolidate a *dry canal* which will depends from periodically-international assistant & worldwide co-operation. This study reconnoiter the port governance, international shrewd standards, operational ameliorations based on modern management of logistic port chains, execution of technical guidelines and

the gradual utilization of information technology Port Single Window as an interoperability transoceanic traders platform. The results in this research promptly considers the political level approach and their hearing for furthermore debates of each Government through the Port Authorities in Central America (future work development).

2. PORT & LOGISTICS AND INFRASTRUCTURE DEVELOPMENT IN LATIN AMERICA

There exist certain countries from Central America, which cannot easily find a flourishing moment to apply the concepts of sustainability and green technologies for a better growth of international business (Cole, Rayner & Bates, 1997). It should be the main reason to enhance interest from the national parliaments of each country leading in this region, structure mechanism, plans, promotion, investment and consult innovative technologies in the maritime sector of Central America. The maritime sector in modern years tends to minimize gigantic pressures from the shipping industry where in specific port terminals, logistics chain, third & fourth parties play an important role to speed up operations, but also in balancing between cost, competition, and offer ascend tendency in the form of value-added by applying the smart services notion. While these trends in Central America are still “unknown”, the promotion to create its own demand for local or international trading perspectives is a reality, but considered not exploited.

Not only the business model opportunity is immature, there is other areas such as, necessity of better performance in the investment of port infrastructure and guidelines establishment networking for catching up inland development. Central America needs to reinforce its technology, united efforts to acquire innovation, consider the benefits as the top priority to obtain an immediate output in boosting productivity and performance, while the results of expanding infrastructures could execute tremendous results to value investments from the last 25 years and further years of attractiveness.

A compendium of documents exemplifies how since early 80s, several nations worldwide has decided to participate in the trend of obtaining experience by investing in Research and Development (R&D) of port technology; these few nations had in the past the common vision of seeing a future as well as the feasibility in creating tools known as Intelligent Transport Systems (ITS) (Bekiaris *et al.* July 2004) which are essential to the freight operations, vehicles, port performance, port infrastructure, project development and high infrastructure services. The progress to obtain expertise in the case of these nations is usually through the testing and performance of new technologies (a stage that can take usually longer) but the resulting services worth a wide range of recognition and concerns to motivate the investment of R&D to approach useful applications.

Central America is not yet well aware or cannot obtain full benefits from this R&D strategy used in developed nations mostly. Different studies suggest the idea in Central America of Port Development and Technology Information Systems (SELA *et al.* 2015) as something new and basically a trend of the future which consist in applying the benefits into non-convenience of large-scale projects due the difficulty to set up a high point of international demand but rather make considerable investments in planning ideas of using *transshipments or feeders* as the viable and less complex ones, while it also could provide in return, tremendous impact in each country's economy, local citizens and positively attract foreign investment & businesses (David J. 2010).

However, countless years of operations in the transportation and logistics basis has passed in Central America, but there is not effectively development plans for a better regional continent freight and logistics transport strategy, and it has been yet desire by outsiders, where the understanding in investment in infrastructure and cost reduction is obviously considered as a preliminary framework of port infrastructure development. Even though, Central America not long ago since early 20s (SELA *et al.* 2015), transcend from a rudimentary to “modern” concept of creating a longitudinal route (*dry canal concept*) for a decision to invest in new Container Ports, in contrast at the moment, it is yet a real or practical consideration of long term strategies and credible plan analysis limited only to forecasts hinterland demand across ports, liner shipping market, transport capacity, competition between terminals, capital investment, etc.

3. PORT EVOLUTION AND CONTAINER TERMINALS FROM CENTRAL AMERICA

The United States of America means in Central America a great partner not only in terms of trading but also a highly international cooperator/ donator of diversity of fundings to execute different kind of projects. The closeness of Central America to the current first biggest economy in the world perhaps is the main reason to consider and structure a financial plan from the Government of U.S. to cooperate in the construction of what is called a *dry canal* which consist of logistic development routes while given prosperity to the regional citizens as an output of this plan by including (education, development in infrastructure, basic techniques assistant in agriculture and some other millennium projects in agenda) working all of them with the medium to long term vision capable of satisfying future demands, looking the reduction of cost, time, operations in the logistical industry and maritime sector at all.

The North Triangle of Central America (Guatemala, Honduras and El Salvador) is currently a direct recipient of the called (the Alliance for the Prosperity) as the geographical location to execute this initiative, the peripheral land of undiscovered opportunities is well planning to challenge the current situation belong to high transit of illegal migration, drugs, crimes, trafficking, etc.

The dry canal has the substantial expectation concept to benefit the participant countries in reducing logistics costs, freight movement, transshipment of all goods received between continents, bounded routes transshipment to North America, other Central American nations, the Caribbean, South America and Europe by using the dry Canal from Central America as a bridge of seaport-road connections as stated under the initial ambitious plan in coordination with different Governments and the Private sector.

Figure 1. shows the port system evolution in Latin America (including Central America), the evolve is the result of legal measures in recent years to acquire “a common port development model” with prevailing and sustainable facts in whole Latin America and the Caribbean (LAC), such major reforms were carried out in the 1990s and the lately 2000s.

Despite such significant achievements, the development model shows signs of exhaustion in various quantitative and qualitative aspects; for instance, the high level of congestion in infrastructure of transport services (including road access and cargo inspection areas), the lack of progress in implementing informatics coordination systems in the logistic port chain to cited some.

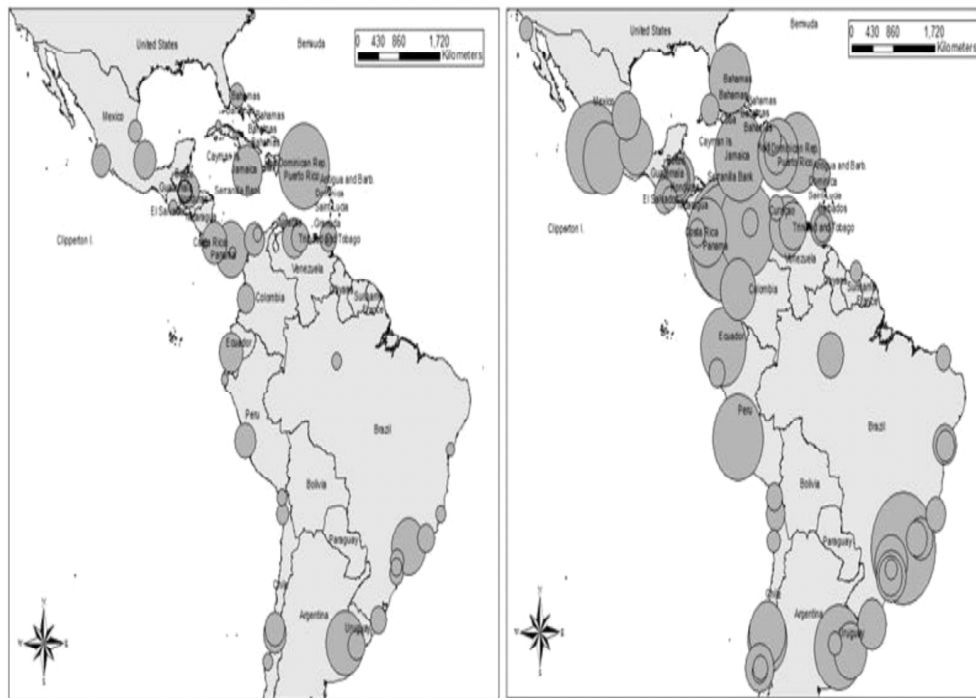


Figure 1: Map of LAC throughput 1997 and 2012 (TEU)

Source: Authors at Journal of Transport Geography (J TRANSP GEOGR), July, 2014

4. PORT INFORMATION SYSTEMS IN CENTRAL AMERICA

Projects such as Port Community Systems (PCS) can contribute to leverage and turn processes more efficiently. A PCS is defined as a neutral and open electronic platform enabling intelligent and secure exchange of information between public and private stakeholders in order to improve the competitive position of the sea and air port's communities (Pinnock, August 3, 2014). In parallel the operatively of Port Single Windows (PSW) is also important for Central America. PSW is basically classified in many cases as a Port Community System (PCS) with the difference of being a community system which is based on integrated series with procedures, rules, standards and ICT solutions to support the automatic exchange of data and documents related to diversify port authorities' clearance activities of ships and cargo upon arrival, stay and departure circles of vessels. PSW is primarily adopted to support the different requirements of governmental agencies, but also the necessities of cargo parties' interests.

PSW covers customs requirements, document handling, and the information exchange dealing with necessary services carry out in ports, the handling of ship and cargo. It is also likely that a PSW will have in the nearest future a stronger focus upon private information and more commercial orientation regarding sales and ordering of port services than traditional ship clearance (IMO/FAL/36/1 2010). The weak public-private coordination to create true port communities; the low productivity of land links in the logistic port chain, particularly those operating the land interface of different chains (e.g. customs agents, freight brokers and land carriers); conflicts in the port-city relationship; and, in general, deficient access to ports and inter-port service areas (road and railways) are currently producing a funnel effect making limitation to improve land interface operations.

4.1. Public Private Partnership and ICT in Central America

The PPPs/ PPAs and ICT investment in Port & Logistics from Central America is an important and futuristic topic which currently has only initial stages, and basically there has not completed development at the present or simply, this modern combination does not exist. In order to achieve a mega logistic hub project covering the entirely Central America region to provide safety, efficiently, lower cost, high road infrastructures, new maritime services, routes, etc. all governments in the region must challenge efforts to execute large infrastructure projects against a backdrop of limited fiscal space to respond. Not only PPPs/ PPAs infrastructure and equipment is required, it is also important finding growth and key services through the connection of businesses where Central America will need to deal with the main concerning of security problems, big investments in this sector won't happen as this situation demands in the region a major cooperation between local & foreign governments and private sectors to set up united policies in pro of improving the basic conditions necessary for the entirely circles of life index performance, industrial processes, supply chain, educational knowledge, efficient Information Systems (ICT) across different borders, etc.

Even though the current situation is complex to fix, to some extent, support exist in the region mostly from the United States of America and the European Union but the fact of focusing to reduce safety issues has not been in the main agenda while only few meetings and agreements promise to be the starting point of changes, otherwise the participation of PPPs/PPAs initiatives won't properly integrate their future plans, integration of economies, border's security, diplomacy relations and information systems (Pinnock, August 3, 2014).

5. PUBLIC PRIVATE PARTNERSHIP/ ASOCIO PÚBLICO PRIVADO (PPAS) IN CENTRAL AMERICA

Some countries from Central America already a medium mature level of expertise in using PPPs/ PPAs, hereafter (PPPs/ PPAs), this know-how is good of applicability under a pro implementation perspective as mutual aid turns more clear and fast to adopt. A PPPs/ PPAs can be defined as 'cooperation between public and private actors with a durable character in which actors develop mutual products, services, risks, costs and benefits are shared' (Klijn *et al.* 2003, p.137). Comparable to the concept of PPPs/ PPAs, recently there is an analysis of participation from people (citizens) Public, Private, People Partnerships (PPPPs) in the execution of activities or development of the PPPs/ PPAs projects as they usually become the users (beneficiaries), this conception is obtained from the progress of PPPs/ PPAs in Latin America in general in the PPPs/ PPAs applicability while a PPPPs mostly surface a relation of the PPPs/ PPAs concept and its transcendence by examining a developmental partnerships in different subfields of (planning, urban redevelopment, housing, and tourism) in cities and countries of Latin America to assess how public, private, and community ("people") agents have interacted with each other and to what effects, and whether the trade-offs among them and their outcomes have shaped equitable and productive partnerships.

Table 1. Indicates the current status of PPPs/ PPAs regarding their country's legislation, the important remark is Nicaragua, Costa Rica and Panama (note that Panama excludes the specific area, or initiative called Panama Pacific, which is mixed-use complex located in the former Howard military base, and recognized as the most important PPPs/PPAs in Panama and the seventh most prominent in Latin America). This table is the analogy of complexity as the facto with Information Communication Technology (ICT).

The data obtained is only used to support the idea of foreign Public Private Partnership projects and the government's willingness to discuss this panoramic situation in order to determine real monetary benefits. The most important in Table 1. is the legislation analysis for a conjunction in developing integral master plans that support in total covering all the areas of PCS, SW, adopted in Port & Logistics (port's infrastructures as well as the roads and rail connections) which can contribute to efficiently link the port's logistics chain with technology & citizens as well as develop information centers focusing the emphasis in security. Central America does not have plenty connections in the logistics routes which is a problematic bottleneck in the future. In addition, there is not highly emphasis to execute Port & Logistics projects under the figure of PPPs/ PPAs.

Table 1
Central America, current PPPs/ PPAs legislation. Source: Main author's structure

<i>No.</i>	<i>Country</i>	<i>Law</i>	<i>Control Unit</i>
1	Guatemala	Law on Partnerships for Economic Infrastructure Development	National Agency Partnerships for Economic Infrastructure Development (ANADIE)
2	Honduras	Law for the Promotion of Public-Private Partnership	Commission for the Promotion of Public-Private Partnership (Coalianza)
3	El Salvador	Public-Private Partnership Law; P3	The Export and Investment Promotion Agency of El Salvador (PROESA)
4	Nicaragua	There is not law, the name may be called Public Private Partnerships	There is not official data, but the most close unit managing the initiative of a PPP law is the Investment Promotion Agency (PRO Nicaragua)
5	Costa Rica	There is not PPP law. However, the Costa Rican Investment Promotion Agency (CINDE) - Private Institution execute public-private promotion projects for Transportation and electricity only.	PPP focuses on transport and electricity sectors, although it has been a most active country in the field of transport and has not carried out a large number of projects. There is also a and National Council Concessions (CNC) Office and an autonomous agency under the Ministry of Works Public and Transport
6	Panama	There is not law, but the National Assembly presented the intention to approve the bill 349 which creates the Regime of Public Private Partnership (PPP) but the law faced a controversy, especially from the health system (doctors), then on December 05th, 2011 the bill was withdrawn. Up to the date of this research, in Panama not more attempts have been done.	There is only a project to be executed in a specific area, the initiative is called Panama Pacific, mixed-use complex located in the former Howard military base, is recognized as the most important APP in Panama and the seventh most prominent in Latin America.

Central America needs to adopt mechanisms of *successful and viable strategies according to the promotion of investment and linking plans for partnerships with the local and international private sectors; it is the most adaptive only factor to become an extension environment region of port's advantages in transportation and infrastructures. PPPs/ PPAs is a realistic or convenient future technology and perhaps under concession terms Central America could increase key components*

in PPPs/PPAs frameworks of this investment process; no policies in Port & Logistics means for Central America stagnation conditions, delays of growth, development of the national economies and low income performance in trading due not adoption projects of port infrastructure & systems.

5.1. PPPs/ PPAs to develop feeder projects & routes in Central America

It is inaudible the discussion on how ports and its infrastructure enhance not only a country's economy, but also the improvement development generated and appreciated by reducing shipping movement time, managing costs, and leverage the route access to a variety of foreign players and domestic markets. As global trade volumes has increase, and create the necessity operation for a better transnational global connectivity mainly emerging in developing countries through the adjustment of policies and other activities of the international shipping market, the demand for focal points in the hinterland and port infrastructure demands boosting tasks.

Table 2. Introduces what is considered the majority the most updated infrastructure and ranking of Ports across Central America. The ranking is based on different resources and includes 6 countries of the region with the exception of Belize. As the table depicts Panama is the only well organized Port Terminal in the region, this is due the core Panama Canal and the different investments registered through the years of operations and structural reforms made in the history of Panama and its Canal. In case of countries like Costa Rica and Honduras there exist a lower TEU performance, but it is basically due the undiscovered necessity to be part of a “**feeder/ feeder routes**” (Gordon Wilmsmeier *et al.* August 2014) situation that in recent years is getting more attention from different government's legislative side.

Table 2
Central America, 2015 Container Port Ranking by TEUs (millions)

Central America, 2015 Container Port Ranking by TEUs						
No.	Port	Country	2015	2014	Absolute Change	Percent Change
1	Balboa	Panama	3,078,101	3,236,355	(158,254)	-4.9%
2	Colon	Panama	2,764,644	2,564,102	200,542	7.8%
3	Limon/Moin	Costa Rica	1,106,267	1,089,507	16,760	1.5%
4	Cristobal	Panama	812,783	712,688	100,095	14%
5	Puerto Cortes	Honduras	624,302	578,561	45,741	7.9%
6	Santo Tomas de Castilla	Guatemala	529,588	525,592	3,996	0.8%
7	Puerto Barrios	Guatemala	432,476	400,423	32,053	8%
8	Puerto Quetzal	Guatemala	389,209	358,348	30,861	8.6%
9	Caldera	Costa Rica	235,268	210,356	24,912	11.8%
10	PSA - Panama International Terminals	Panama	216,012	231,928	(15,916)	-6.9%
11	Acajutla	El Salvador	190,708	179,256	11,452	6.4%
12	Corinto	Nicaragua	138,006	110,102	27,904	25.3%
13	Puerto Castillo	Honduras	103,288	97,636	5,652	5.8%
	TOTAL OF TEU in Central America		10,620,652	10,294,854		

Source: Author's own structure - AAPA Data library and other container data sources

La Union Port is the most recent case where the Executive Port Authority (CEPA) “tried” in 2014 to offer the Terminal, obtaining four companies pre-qualified to participate in the tender for the marine terminal such as Saam Puertos SA, Chile; the Spanish Gruop Maritim TCB, SL; Bolloré Ports and Logistics, France, and International Container Terminal Services INC., Philippines, but finally in 2015 the tender process failed (latinports.org, June 19, 2015). Even though the previous case is a prominent reference of “development” there exist and there is not detailed explanations of the situation in this failure (bureaucracy to access public information), as this not a success case indicates that in general the terminal operators may be the reason to considered a mass and lack of accurate information of the concession process or agreements (minimum or inexistent information at CEPA webpage), not solid clearness definition of role, responsibilities for the execution and operation of La Union Port Container Terminal, diversification of risk allocation basis consider the term as a primary measure of assignment between the project direct participants that is between public and private sector (Jayaseelan, R et. al 2006) whereas the concept is jointly used with risk sharing means the implementation phase of PPP contracts, unexpected events might require renegotiations to mitigate these risks to realign the goals of the project and balance the equities of risk sharing between public and private parties (Khalid A. *et al* 2014).

6. THE CONCEPTUAL DESIGN OF PUBLIC PRIVATE PARTNERSHIP IN CENTRAL AMERICA

PPPs/ PPA are defined as cooperative ventures between public agencies and private enterprise in which both parties share the risks and rewards of delivering a service and/or facility for the benefit of the general public (Linder 1999; Bloomfield 2006; NCPPP 2012). Partnerships and partnering behavior have received significant attention in logistics research. Prior studies examine the characteristics of supply chain partnerships (e.g., Lambert et al. 2004; Golicic and Mentzer 2006; Leuschner et al. 2013; Nyaga et al. 2013), strategic partnerships and alliances (e.g., Ellram 1992; Gentry 1996; Wieland and Wallenburg 2013; Zybell 2013), and the influence of supply chain partnerships on logistics performance (e.g., Stank et al. 2003; Daugherty et al. 2009; Zacharia et al. 2009; Germain et al. 2011; Nyaga and Whipple 2011). This stream of research has produced a wealth of knowledge about partnerships between private sector business entities, but does not consider the nature or role of partnerships across the private and public sectors. Given the interdependence of private enterprise and the public sector in supply chain logistics, the lack of research that examines PPPs/ PPA represents a critical gap in the knowledge base of logistics management.

The importance of PPPs/ PPA in Central America is nowadays an emerging concept and booming opportunity for foreign governments or companies, especially when different projects are identify and profitable is highly measure, at the same time, even though the structural concept of doing execution project operations, cooperation, reward of benefits, etc. is defined mostly by the foreign cooperators due the weakness legislation in effort made it but still not materialize to cover holes in structure and technical interpretations. Central America is leading toward different phases of deeply necessity in the integration information systems facilities, systems deployment, logistics networks, real time tracking & tracing, supply chains with requirements of secure and efficient platforms during the movement of transportation, communication roads in the cross border, management of data centers for data control & quality, development of e-government, internet speed service providers, highway connectivity, etc. even though the objective in this study is Port Community Systems, other factors affect Central America in general

including delays issues, lack of speed, and reliability making the network of chains uncertainty across different borders and therefore a disruption occurs which impact directly the national economic growth and citizens.

7. PPPS/ PPAS, CLASSIFICATION AND MODES OF ENTRY

Central America is not a leading region where the legitimate authority exists to determine their own models of PPPs/ PPAs, basically the criteria is deficient, in somehow due the current economy patterns, education systems, etc. This condition makes investment plans difficult in terms of finding human resources to cope with the situation of executing PPPs/ PPAs, so that external policies of PPPs/ PPAs execution are adopted. Not always but in so many cases, Central America and each Government from this region have to depend of foreign partner perspectives, either in the stages such as, planning, development, financial arrangements, etc. in terms of decision making, a good example to consider while selecting types of PPPs/ PPAs is the basic statements from Hammami et al. (2006) who provides an extensive overview of the characteristics of the different types of PPPs.

As shown in table 3, the models include modes of entry and the public & private obligations regarding (1) operation & maintenance responsibility, (2) investments, (3) ownership, (4) average years of duration/ different PPPs/ PPAs models. The models in this table range from management contracts, build-own-transfer (BOT) or build-own-operate (BOO) or even full privatization agreement. The inclusion of full privatization in the case of PPP concepts still remains as a topic of discussion and diverging opinions. Central America needs to transcend from requesting PPPs/ PPAs projects and superficially policy analysis to a stage where the capability to dictate policies in companion with foreign investors must be a common agreement, otherwise PPPs/ PPAs will remind a risky of selling assets after years of cooperation due a weak discussion of policies.

Table 3, classify a list of PPPs/ PPAs types and its mode of entrance to guarantee best practices from Governments so that each member unit in the state can leverage needs in order to minimize economic uncertainty and mainly political risks. In this table, a mainly risk that governments cannot totally control is the fact of currency fluctuations in the daily world markets of exchange; instead Governments can perfectly minimize political and economic risk vicissitudes to optimize success in the role of obtaining PPPs/ PPAs investment to internal or regional markets. This mode of entry models also motivates Governments also to provide a well-established framework and guarantee the enforcement of particular PPPs/ PPAs policies against a high probability of dishonesty (a common threat in some Latin American countries). Central America need to prioritize the business environment to draft a plan focusing in business deals, operative costs, transformation of a transparent legislative framework system, policies of low and stable exchange rate as fundaments incentives for investors.

The initiative of Port Community Systems in specific is a project that requires not only well structural long term investment of capital and knowledge, but also reforms to achieve such capital indeed demands from governments a homogenous political reorganization capable of ease the introduction and management of transparent projects in PPPs/ PPAs cooperation. A new generation of politicians and fresh knowledge, expertise of situations, the world and synchronized future trends analysis which only education through the years can provide.

Table 3
Type of specific PPPs/ PPAs including Central America

Types of PPPs	Mode of Entry	Operation and Maintenance	Investment	Ultimate Ownership	Duration (years)
Management Contract	Contract	Private	Public	Public	3-5
Leasing	Contract	Private	Public	Public	8-15
Rehabilitate, Operate and Transfer (ROT)	Concession	Private	Private	Public	20-30
Rehabilitate, Lease/Rent and Transfer (RLRT)	Concession	Private	Private	Public	20-30
Merchant	Greenfield	Private	Private	Public	20-30
Build, Rehabilitate, Operate and Transfer	Concession	Private	Private	Public	20-30
Build, Operate and Transfer (BOT)	Greenfield	Private	Private	Semi-private	20-30
Build, Own, Operate and Transfer (BOOT)	Greenfield	Private	Private	Semi-private	30+
Build, Lease and Own (BLO)	Greenfield	Private	Private	Private	30+
Build, Own and Operate (BOO)	Greenfield	Private	Private	Private	30+
Partial Privatization	Divesture	Private	Private	Private	30+
Privatization	Divesture	Private	Private	Private	Indefinite

Source: Hammami et al (2006)

8. PPPS/ PPAS INVESTMENT TO FINANCE ICT, PCS/ SW IN CENTRAL AMERICA

The cooperation of PPPs/ PPAs investment to finance technological Information and Communications Technology (ICT) in Central America requires evaluation and prioritization analysis of Port Community Systems (PCS) internal subprojects (Kabir M *et al* 2015) and investigates risks in Port Community Systems (PCS) implementation, based on cost-benefit analysis, return on management and value added analysis as derivative of single unit in applying information systems of quality in the region and the current progress of using a PPPs/ PPAs model. The North Triangle (Juan O. 2015) in Central America has found a way to try and apply international boundaries of an integration system; this region is launching an initial project where customs and road connectivity is the aim, even though this is just an early stage and more analysis as well as details is necessary, certainly there exist founding cooperation to support Central American countries, for example program's in El Salvador through the investment and design strategy to enhance the country's competitiveness and productivity in international commerce through an integrated set of investments in logistical infrastructure, education and regulatory reform such as, Millennium Challenge Corporation from the U.S. Government (MCC).

8.1. Millennium Challenge Corporation in Central America: El Salvador's plan

The most updated Millennium Challenge Corporation aid (MCC Sept. 2015) is an exceptional model of cooperation between some countries of Central America and the U.S. government, there is not disbelief

of this innovative project. However, a downward factor may be the stability in security and other social issues demanded by the U.S. Government, as well as the long term business relation that this project may create from the U.S. Government and Private sector since Central America accommodate itself to receive foreign aid and do not properly show up leadership to fight against regional and global poverty; this initiative is certainly the best solution of cooperation and diversification to support the economies and future models while it also helps to improve awareness in Central America, but not the greatest option to efficiently optimize results in Central America. While aid is needed, most important is to turn Central American dependency and its lacks of catch up by following an educational plan with inclusion of learning innovation basis; it is the only way to minimize reliance of technology in Central America.

8.2. PCS and SW in El Salvador

In case of El Salvador, is possible to access and obtain some “key information” but not specific one regarding the current level of adoption of PCS and SW, the online information is only general documents as it is sometimes free of access through the websites of transparency data information (Instituto de Acceso a la Información Pública (IAIP, Spanish acronym)). The core projects such as, long term strategies, concessions, master plans of port (container terminals), it is not fully available; this circumstance makes foreign investment complex and delays potential logistics integration, value chain services between regional ports and maritime extra value services, limitations to port activities of the country not only nationally but also in line with the international arena.

La Union Port/ Cutuco hereafter La Union Port (Sept. 2016) is the most remarkable case of secrecy in El Salvador, where even a tender has been classified by CEPA (Comisión Ejecutiva Portuaria Autónoma), an agreement made by the highest board members as “confidential information” according to the ITEM TENTH of the RECORD 2728 dated on June 2, 2015. This situation is extendable within years and even depending on the circumstances, it could accept a renewable period; according with the official information source from the Institute for Access to Public Information (IAIP). This aspect of confidentiality manifests signs of not readiness to adopt a modern master plan where technology and standardized communication for the benefit of the country, citizens and the region becomes the interactive project and national strategy on the economy of El Salvador. There is not either public information related to the consideration in applying a PPPs/ PPAs model for La Union Port, it is unknown if it could be just in early negotiations, if so, it will probably face opposition under the current legislation as it restricts an entirely opening for PPPs/ PPAs and therefore legal frameworks are mandatory to legislate this common form of investments. El Salvador will need to find middle ground or target objectives to approve the congress decision as PPPs/ PPAs traditionally demands such cooperation in general.

La Union Port, it is located in the Fonseca Gulf (El Salvador), a project unofficially classified as a “disharmony” (Internet Archive, REF: A. SECSTATE 11181), where a mega infrastructure valued over \$187 USD millions (Izumi Ohno *et al.* July, 2008), state of the art container port that began its construction in the fiscal year 2001; this port supposed to become the promising engine of economic development, but the high expectations to generate a net investment as of \$600 million USD starting for the next 25 years after finalizing the construction & concession agreement with a private operator is yet a reality, several years has passed already and there is not up to date success to certainly turn this infrastructure into a profitable hub, perhaps neither in the medium or long term while a scarcity of operations exist in La Union

Port, some arguments convey the problem into the wrong law structure given by the Salvadoran legislature since it considers a planning strategy to offer this Port in a private of State-Owned Enterprises (SOEs) leading to the opposition to do not ceding state assets to private sectors and considering the initial basis as a damage for the local port logistics industry through its potential in recent years.

The development of Port Logistics technology in Central America to implement a PCS/ SW initiative is under a main challenge requiring years of properly & commanded training, infrastructure investment, cooperation to understand the importance to connect information & sharing of data with the world. Another matter in Central America is the fact on how to convince all the members states (Kabir M *et al* 2015) of the Central American Integration System (SICA) to adopt a policy to use in the present the other's technology and also in contrast finding partners which could agree to integrate borders, land, systems, people, and the jointly project of self development where Central America could invent, produce & use own technologies to adequate its use and minimize dependency of Information Systems belong to a single PCS/ SW project and synchronization data with the world. Dependency of technology all the time should not become the predominant idea in Central America.

However, polarization to access information, investment in education, some levels of fraud & units, single leadership & tainted autonomous authorities, undisclosed data, poor performance of information systems among other factors is challenging in Central America the initiatives of PCS/ SW investments and technology learning-development independency basis and other type of technologies in general.

9. BEST PRACTICES TO EXECUTE POLICIES ON PORT COMMUNITY SYSTEM IN CENTRAL AMERICA

PCS/ SW in Central America has belonged to the facto of “*transparency in the competitive bidding process*” as well as an undoubtedly framework of regulations based on criteria, participation and selection of groups or capital clusters as this strategy tends to manipulate different bidding process initiatives. There is not key attractiveness to high-class and motivated private investors. The applicability of procedures, law investment and mechanism to obtain a positive tendering & bidding practices should be as simple as possible and not rounded with sentiments of straightforward as it clearly outline negative gestures in the projects and the partner vetting intends to become confuse waiting long and overcoming obstacles to achieve particularly foreign investment, it consecutively bears different risks, and the stages of transparency do not always turns accomplish.

Figure 2. Indicates the structural idea how Central America should introduce the Port Community System project and execute the best practices for the good development of the control and progress of logistics, partnership, external competitors, and other list of players participating from the idea of integration for communication and data availability.

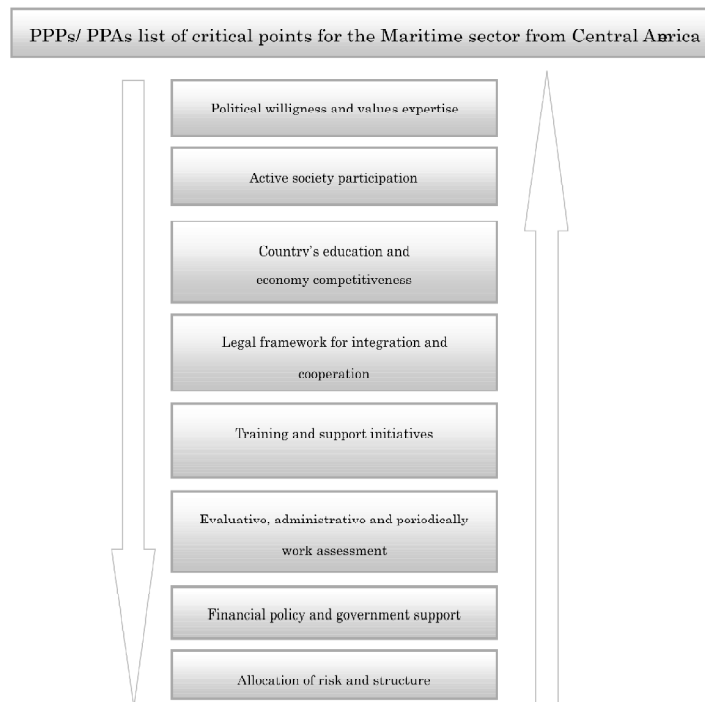
To execute a program of development of Port Community Systems in Central America, first is necessary to structure a list of critical points which constraint the feasibility in this sector of Maritime (the list of points in this framework does not include Panama in terms of technology capability and financial resources to execute, but it does for the some announcements are not always available when the policy may be execute, the figure exclude also the categorization that Panama does not operate projects by applying a PPPs/ PPAs legislature). In Central America the main regulators of the Maritime sector is usually the local

Port Authorities as they serve as the main representative body regulator of services. A recent case to exemplify this case is the Memorandum of Understanding – MOU signed recently between the Ministry of Oceans and Fisheries of South Korea and CEPA (Comisión Ejecutiva Portuaria Autónoma) as representative of the public sectors, where they pretend to create an approaching to determine the feasibility, establishment of partners to agree development and operations in certainly activities at La Union Port and other areas of different areas, this MOU is expected to contribute into the currently poor technology basis.

The PCS/ SW integration is expected to strengthen ties of cooperation through the implementation of projects, exchange of best practices, technological modernization in the fields of operation and port development. The MOU includes joint participation in construction and engineering projects in areas of common interest; strengthening development and capacity building of port control officers. The MOU does not specify a PCS/ SW fields (operation and port development), rather than that, it seems under a focus to operate a concept of “private terminals to be used mostly by countries with big enterprises and high trading worldwide”, this limitation yet turns the ongoing assessments purely administered with low technical activities. The fact of not changing trends in Central America just delay implementation of promptly activities & technological projects such as the (North Triangle Area) which could practically result in losses, technology innovation, leaving in general the logistics system & integration of the region to continue underdeveloped.

Figure 2. Indicates in the list of critical points for the Maritime sector by working *transparency in the competitive bidding process*, as well as an undoubtedly framework of regulations over any other self interest basis, etc.

Figure 2
PPPs/ PPAs list of critical points for the Maritime sector from Central America



Source: author’s own criteria structure – as a reference for 20 years vision plan

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