

Fulfilling Public Procurement Expectations in India: Need of Legislative Intervention

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ABSTRACT

Research by Clausen et al [8] underscored that in order to operate effectively, public institutions must inspire confidence in those they serve. The low level of confidence of Indians and world community in the transparency and efficacy of the government machinery is reflected in the Transparency [46] and competitive rankings [49] which preclude effective utilization of public funds [33]. Research by Kimberley [24] underscores the importance of e-Governance mechanisms to free and fair trade, particularly through Information and Communication Technologies (ICT) interoperability and interconnectivity, data sharing through international standards and process transparency. In view of these issues and other tangible and intangible benefits, Government of India launched National e-Governance Plan (NeGP) in 2006 to promote e-Gov services within the country. E-Procurement was included in NeGP as an Integrated Mission Mode Project (MMP) [36]. However, in the absence of enabling legal framework, e-procurement implementations in India have not been able to fully realize the potential of the system like greater transparency, cost-effectiveness etc. The emerging issues of public procurement like balancing Social, Environmental and Economic considerations are also difficult to address in the prevailing legal environment governing government purchases. Based on the experience gained through qualitative case studies and semi structured interviews of the stakeholders, in this paper we briefly cover legal and policy frameworks related prerequisites for sustainable public procurement in India. Finally we suggest a model national procurement law which could help fulfilling e-procurement expectations in Indian context. The paper extends the existing body of knowledge on e-procurement by comparing legal imperatives of a statute vis-à-vis Critical Success Factors (CSF) in relation to sustainable procurement.

Categories and Subject Descriptors

J.1 [Computer Applications]: Administrative Data Processing: Business, Government; K.4.1 [Public Policy Issues]: Ethics, Regulation, Transborder data flow, Use/abuse of power; K.4.3 [Computers and Society]: Organizational Impacts: Automation, Computer-supported collaborative work, Reengineering

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General Terms

Economics, Human Factors, Legal Aspects, Management, Performance, Standardization, Theory

Keywords

Public Procurement; E-procurement; Legal Framework; Procurement Law; Government Orders

1. INTRODUCTION

Kaliannan et al. [23] brought out that the improvement of public service delivery mechanism is becoming an important agenda for Governments world over and ICT is playing a key role in this. In addition, Moon [30] brought out that there have been great deals of criticism and negative perception that public procurement management is neither efficient nor effective at present. As IT has become a possible solution for many administrative problems in the public sector, Electronic Government Procurement (e-GP) has emerged as an emerging alternative to achieve better, more transparent and cost-efficient system. Adebisi et al [1] define e-GP as online application of information technology and infrastructure to the management, processing, evaluation and reporting of government procurement. The paper briefly covers the research methodology followed; thereafter theoretical foundations for e-procurement are covered in section 3. Section 4 gives the readers a perspective on public procurement process of India while subsequent sections cover correlation of e-procurement CSFs with bearing of legislative intervention would have on them and discussions & findings respectively.

2. RESEARCH METHODOLOGY

The objective of the study is to analyse and report legal and policy frameworks related prerequisites for sustainable public procurement in India. The fieldwork for the research entailed template analysis (which permits hierarchical analysis of qualitative data with sub-themes emerging within themes) [9, 18, 25] of selective case studies in India and semi structured interview of stakeholders. Interested readers could refer to Panda et al [34] for detailed description and findings of the case study. The paper also aims to suggest a model national procurement law which could help fulfilling e-procurement expectations in Indian context. The research structure followed for the study is covered in Figure 1 below:

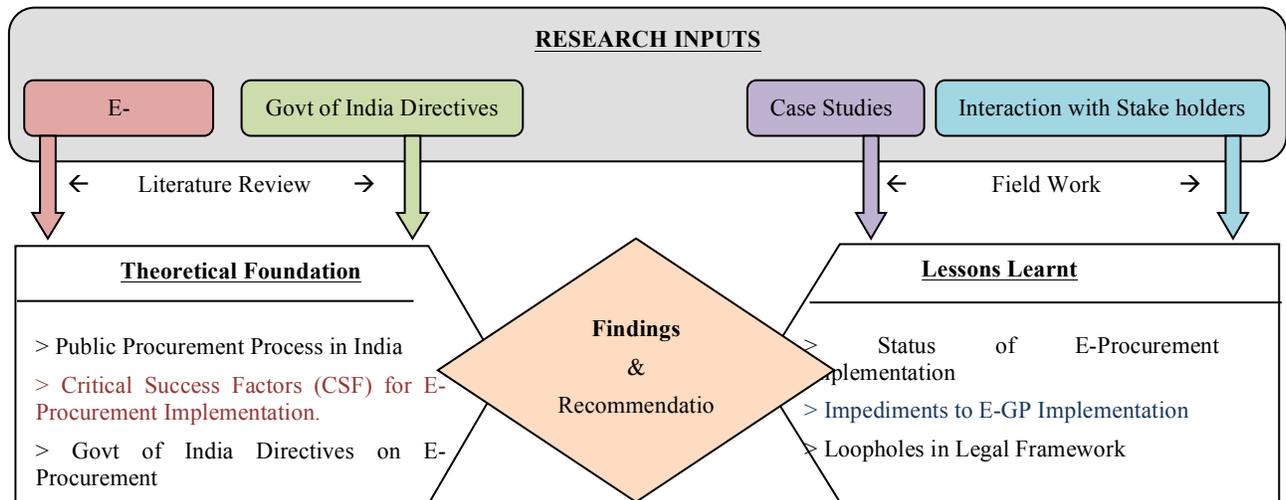


Figure 1: Research Structure

3. LITERATURE REVIEW

E-Procurement has been classified and defined by many authors from differing perspectives. In basic terms, e-procurement can be defined as “using Internet technology in the purchasing process” [4]. Some of the terms and perspectives used in literature are covered in table 1 below:

Table 1: Dimensions of e-Procurement in Literature (source: Panda et al [35])

	Classification Based on	Dimensions
(a)	B2B marketplace activities	(a) MRO Hubs (b) Yield Managers (c) Exchanges. (d) Catalog Hubs
(b)	Methods and importance of procurement	(a) Direct & Indirect procurement (b) Strategic & Transactional procurement
(c)	Type and focus of procurement	(a) Type of transaction, i.e., Sourcing vs. Buying; (b) Main focus of the procurement, i.e., product cost, process costs.
(d)	Focus and source of procurement	(a) Indirect Procurement: Non-production goods. (b) Direct Procurement: Raw materials, parts and assemblies. (c) Sourcing: Identification, evaluation, negotiation of products and supplies for both indirect and direct supply chain.
(e)	B2B e-market functions	(a) Aggregation (e-catalogs). (b) Matching (exchanges, e-auctions, e-reverse auctions).

		(c) Facilitation (MRO hubs).
(f)	Relationship and degree of formality in procurement functions	(a) Type of relationship (many-to-many, 1-to-many, 1-to-1). (b) Degree of inter-organizational integration (tight vs. loose). (c) Uniqueness of processes (standardized vs. customized).
(g)	Adoption of Technology	(a) E-procurement software. (b) Internet market exchanges (central virtual market). (c) Internet B2B auctions. (d) Internet Purchasing Consortia
(h)	From end users' perspective	(a) Buy-side desktop requisitioning (b) Buy-side centralized procurement management (c) Sell-side applications
(j)	E Commerce	(a) Pre-procurement (sourcing) (b) Procurement (quotation, negotiation, order placement, and transaction) (c) Post-procurement (delivery).

The E-Procurement model suggested by Parida et al. [38] has been reproduced below in Figure 2 for providing theoretical perspective to readers about various dimensions of E-Procurement.

E-Procurement Environment

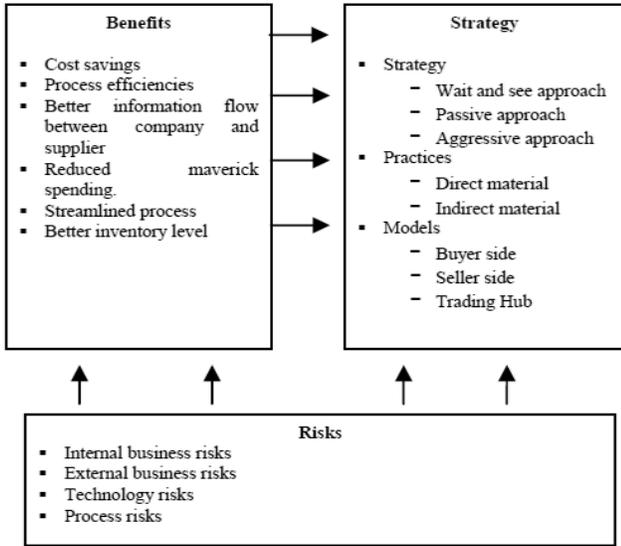


Figure 2: E-Procurement Model (Source:Parida et al [38])

3.1 E-Procurement: Cost Effective, Efficient and Corruption Free Procurement

Potential points of corruption in any public procurement process include biased design of technical specifications (with a view to favour a particular bidder), selective publication of tender enquiries (to reduce competition), selective sale of tender documents, substitution of tender papers (with malicious intent), scrapping of procurement process without sufficient cause and delays in payments to genuine bidders (with a view to extort money). Therefore, major challenge to public procurement remains in providing a level playing field between competitors. It is often achieved by use of the sealed competitive bidding and awarding contract to the lowest bidder meeting specification (in case of purchase) or highest bidder (in case of auction). Therefore e-procurement solution is expected to bring in quantum improvement in the procurement cycle without upsetting the government policies and procedures.

E-Gov researchers hail e-procurement solution due reduction in procurement cost, improved efficiency (for both the supplier and the government), improvement in G2B collaborative relationships and increased accountability and transparency [3, 10, 13, 16] However, the studies fail to underline masking of hidden costs of the e-procurement system such as cost associated with Digital Signatures, ICT infrastructure, costs of digitization and training of stakeholders. In addition, the issues related to absolute reliance of government departments on Application Service Providers and possibility of technology acting as a barrier for illiterate supplier to participate in government bidding also exist in e-procurement system. Moreover, e-procurement system cannot address points of corruption such as biased design of technical specifications, scrapping of procurement process and delayed release of payment to genuine bidders with malicious intent.

3.2 E-Procurement in Public Sector

Government procurement represents roughly twenty percent of the world GDP. It is used by government agencies and other actors of procurement community in conducting all activities of the government procurement process cycle (GPPC) for the acquisition of goods, works, and consultancy services with

enhanced efficiency in procurement management. The e-GP system can lead to improve management of government procurement processes, thereby ensuring transparency, monitoring, control, fair selection of bidders, reduced cost of transactions and increased efficiency. Bof et al [5] brought out that in public sector, e-Procurement is a collective term for a range of different technologies that can be used to automate the internal and external processes associated with the sourcing and ordering process of goods and services. The dimensions of e-GP could diagrammatically be represented as:

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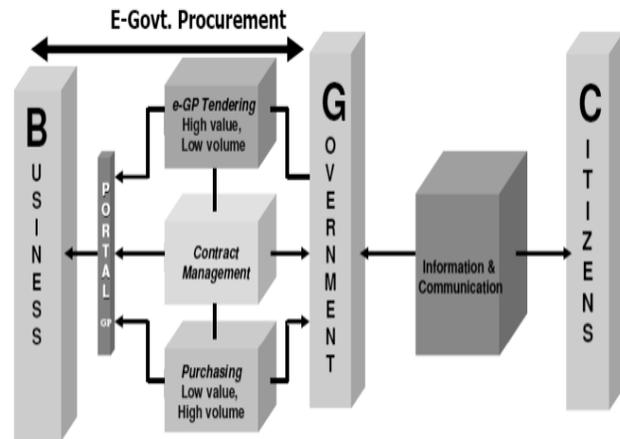


Figure 3: Functional E-Government Procurement (Source: National Institute of Smart Governance, India)

While procurement as a function exists both in public and corporate sectors, the considerations and the approaches for the procurement in these two differ significantly. Purchasing and procurement have more of a strategic character in the private sector than in the public sector. Studies underline four traditional procurement principles governing public spending which are not applicable to corporate sector e.g. degree of involvement of managers in organizational activities which is more in enterprises than is prevalent in public sector, procurement decisions in corporate are on multiple factors like strategic partnership avenues, shared vision, total cost of ownership etc., while public sector must ensure level playing field for all vendors; and non monetary factors such as equity, competition, transparency limit the discretion of public procurement officials, thus inhibiting their abilities to operate at strategic levels [21, 27, 43]. The public procurement managers are also guided by government rules that may strive to promote a particular sector (like Small Scale Industries etc.) which further limit flexibility of their sourcing decisions.

3.3 E-GP and Critical Success Factors

Rockart [42] first used critical success factors (CSF) in the context of information systems and project management. CSFs are the Key Result Areas, if taken care of, would ensure the successful completion of the project. Pinto et al [40] defined a model of a project implementation success as $S = f(x_1, x_2, \dots, x_n)$ where S is project success and x_i the critical success factor i . While Thai [45] brought out that project environment also affects project outcome, Joo et al [22] brought out that Innovation, environment, and organization characteristics are determinants of the adoption of an e-Marketplace. A number of structured researches have been

conducted for identification of CSF for various types of projects. Some of the projects where CSFs have been reported upon are Supply Chain Management, E-Commerce, ERP, E-Procurement etc.

4. PUBLIC PROCUREMENT IN INDIA

Procurement as a subject does not figure in Union List, State List, and the Concurrent List that govern legislative functions in India. Therefore, the Union Parliament has jurisdiction to make any laws on the subject of procurement which would be applicable to entire country. However, successive governments at Centre has steered clear of a topic which is likely to be met with stiff opposition from state governments [37]. In the absence of dedicated laws, the public procurement is regulated by means of administrative orders and ancillary legislations. Some of these are administrative guidelines are contained in Government Accounting Rules 1990, General Financial Rules (GFR) 2005 [17] and Delegation of Financial Powers Rules (DFPR) 1978, Manual on Policies and Procedures for Purchase of Goods [26] and Office Memorandums (OM) issued by Ministry of Finance, Central Vigilance Commission (CVC) guidelines etc. Some of the ancillary provisions governing public procurement are contained in Article 299 of constitution of India, Indian Contract Act 1872, Sale of Goods Act 1930, Competition Act 2002, Comptroller and Auditor General (CAG) [Duties, Powers and Conditions of Service] Act 1971, Information Technology Act 2000 [19], Right to Information Act 2005 etc. In the absence of procurement law, the public procurement process across India is regulated using the following basic guiding principles [29]:

- (a) Maximizing economy, efficiency and effectiveness in procurement. This would mean purchasing of goods/ services of required specifications for the intended purpose in a required time frame at the most economical price.
- (b) Fairness, i.e. providing fair and equitable treatment to all prospective suppliers / bidders.
- (c) Competitions among suppliers for supply of goods/ services to be procured so that efficiency can be rewarded and procurement can be made at the most economical price.
- (d) Achieving transparency in the procedures relating to procurement.

4.1 Legal Issues Affecting Sustainable Public Procurement in India

Though above basic tenets (of public procurement) are also followed by State government, the principles do not have statutory force therefore are subject to varied interpretations and manipulations. In addition, emerging issues of procurement such as balancing Social, Environmental and Economic considerations are often ignored due primacy of cost effectiveness, ensuring higher participation in bidding and timeliness of supply. In succeeding paragraphs we briefly discuss these issues.

(a) Economic Considerations. The procurement policies in India are centered on maximizing economy. Therefore, in two bid system (Technical bid and Commercial bid), the vendor with lowest bid price is declared “winning bidder” (L1). Deciding L1 solely on the basis of upfront capital value of acquisition defies the sustainability imperatives in procurement. Other lifetime costs associated with an acquisition such as carbon footprint, operating costs related to energy consumption etc, maintenance and final

environmentally safe disposal are often ignored in bid formulation and evaluation. However, lifetime costing has been seen in some of the mega ticket defence procurements by India.

(b) Social Sustainability. Social sustainability though does not find explicit mention in public procurement policies in India, but it is indeed a pervasive factor guiding public policies. Social sustainability in procurement is practiced in various forms like waiver from earnest money deposit, preferences in price, reservation of items etc. to labour intensive but low tech small scale / indigenous companies. These policies of Government of India are aimed at providing level playing field for the smaller companies to compete with big corporations. Sectoral Purchase Preference Policy (Rule 144 of GFR 2005) incorporates social sustainability objectives into the procurement process. However, the policy was challenged in Supreme Court of India. Consequent to Judgment of the Supreme Court of India, the policy is under review [11]. However, policy of social preferences in employing services of people adversely affected by implementation of mega-projects has found favour with the courts in India.

(c) Environmental Footprint/ Sustainability. Though environmental footprint related issues do not affect procurement decisions, the elements of environmental sustainability such as energy efficiency, waste reduction and safe disposal of waste are considered as fringe issue. The objective of Energy Conservation Act 2001 (enacted by Indian parliament) was to foster country’s transition to a more energy efficient and sustainable future. For this purpose Bureau of Energy Efficiency (BEE) was set up as a statutory body. Section 14(c) of the Act empowers the central government (in consultation with the BEE), to prohibit manufacture or sale or purchase or import of equipment or appliance specified under clause (b) unless such equipment or appliances conforms to energy consumption standards. However, till today only Rule 160 of GFR and recent guidelines (OM No. 26/6/12-PPD dated 21 Jan 13) [28] on procurement of energy efficient electrical appliances (Air conditioners, Refrigerators, Fan and Water Heaters) are the cornerstone of this noble objective. State governments are not bound to follow the guidelines the issued by central government in this regard.

In India, a large number of institutions like Ministry of Finance, CVC, CAG, BEE, Bureau of Indian Standards (BIS) etc control various aspects of public procurement. Obscurity in their regulatory roles results in overlapping functions and jurisdictions. In addition, the stipulations contained in various rules, guidelines and directions are not always in harmony with each other. These instructions restrict operational freedom of Competent Financial Authorities to affect sustainable public procurement.

4.2 Review of E-Procurement Implementation in India

It’s shortcomings notwithstanding, there is no denying the fact that e-procurement has indeed few benefits which could prove to be crucial in achieving efficiency in government spending [43]. Therefore, Government of India has issued a number of guidelines aimed at promoting e-procurement within the country. In addition, CVC has directed mandatory vetting of all e-Procurement solutions by DIT [12]. However, review of progress on 29 Jun 2010, indicated that there is an urgent need to accelerate the

implementation of the e-Procurement MMP through regulatory interventions in the form of directions from the Ministry of Finance by laying down thresholds and timelines for mandatory adoption of e-Procurement system for government procurements. Accordingly, the e-GP MMP strategy has been further refined involving a three pronged implementation approach, wherein, all Ministries/ Departments/ Organizations/ State Governments will have the choice to either of the following [14]:

(a) **Use the Government e-Procurement Solution developed by National Informatics Corporation (GePNIC).** The Government of India undertaking has developed its own e-Procurement software solution namely GePNIC to cater to the procurement/tendering requirements of the Government Departments and Organizations. The functional model developed by NIC is generic in nature and covers activities relating to e-tendering but not those pertaining to pre-tendering or post award of tender. The GePNIC solution has been implemented by NIC in 7 States (Haryana, Tamil Nadu, Uttar Pradesh, Orissa, West Bengal, Punjab and Himachal Pradesh) and 3 other Government organizations, for the past two and half years.

(b) **Use DGS&D's e-Procurement Portal** for procurement of common use items through Rate Contracts. DGS&D is also enhancing the system to make available an end to end e-Procurement platform which will be available to other Ministries/Departments/ Organizations/ State Governments on their requests. DGS&D has developed an end-to-end e-Procurement Portal for procurement of common user items through Rate Contracts.

(c) **Use any other third party e-Procurement solution preferably on a Public Private Partnership (PPP) model** as has been done by Karnataka and Andhra Pradesh subject to certification by DIT regarding security and transparency.

During the study of mode of implementation of e-procurement by the authors (consequent to above Government of India directive), it emerged that barring initial implementations (like State Governments of Andhra Pradesh Chhattisgarh) through PPP route, most of implementations have been through GePNIC software. Since the GePNIC software is still evolving (undergoing a series of developmental iterations), the migration to e-procurement has been only a notional one. The present state of E-GP implementation by state governments in India is summarized in the table below:

Table 2. Status of e-GP Implementation in India

State/ UT	Year of e-GP Implementation	URL of e-GP Portal
Andaman & Nicobar	N/A	Not Implemented
Andhra Pradesh	2003	eprocurement.gov.in

Arunachal Pradesh	N/A	Not Implemented
Assam	2011	assam.etenders.in
Bihar	2009	eproc.bihar.gov.in
Chandigarh	2010	etenders.chd.nic.in
Chhattisgarh	2007	cgeprocurement.gov.in
Dadra & Nagar Haveli	2011	nprocure.com
Daman and Diu	2011	nprocure.com
Delhi	2011	govtprocurement.delhi.gov.in
Goa	2011	etender.goa.gov.in
Gujarat	2007	cspegujarat.gov.in
Haryana	2009	etenders.hry.nic.in
Himachal Pradesh	N/A	Not Implemented
Jammu & Kashmir	2011	pmsgytendersjk.gov.in
Jharkhand	2010	jharkhandtenders.gov.in
Karnataka	2007	eproc.karnataka.gov.in
Kerala	2008	etenders.kerala.gov.in
Lakshadweep	N/A	Not Implemented
Madhya Pradesh	2007	mpeprocurement.gov.in
Maharashtra	2010	maharashtra.etenders.in
Manipur	N/A	Not Implemented
Meghalaya	N/A	Not Implemented
Mizoram	N/A	Not Implemented
Nagaland	N/A	Not Implemented
Orissa	2009	tenders.ori.nic.in
Puducherry	N/A	Not Implemented
Punjab	2010	etender.punjabgovt.gov.in
Rajasthan	2011	eproc.rajasthan.gov.in
Sikkim	N/A	Not Implemented
Tamil Nadu	2007	tenders.tn.gov.in
Tripura	2011	tripuratenders.gov.in
Uttarakhand	2011	uktenders.gov.in
Uttar Pradesh	2008	etender.up.nic.in
West Bengal	2011	etender.wb.nic.in

5. CRITICAL SUCCESS FACTORS FOR E-PROCUREMENT IMPLEMENTATION

During the field work (qualitative study and semi-structured interview), the endeavour was to understand and capture the impediments posed by current legal environment in successful implementation of E-GP in the country. For the purpose of this study we have used critical success factors propounded by Vaidya et al. [48]. The tabulation of the findings of the study (focusing on prevailing public procurement scenario) vis-à-vis E-GP CSF is summarized in Table 3 below. The table below also sums up the findings of the qualitative study as to how a Central e-Procurement Act would help in addressing E-GP CSFs.

Table 3. Legislative Intervention viz-a-viz CSF

	CSF	Status	How Legislative interventions would be beneficial
1.	Security and Authentication	To ensure interoperability among e-Gov applications, GoI has setup an institutional mechanism for formulation of standards (http://www.egovstandards.gov.in/). In addition, audit of e-procurement solutions	The institutional mechanisms would have their specific role and authority legally defined. They would have authority to enforce standards even in case of PPP projects. The legal stipulations with respect to security of data and authentication would be able to withstand legal
2.	Technological Standards		

		by Standardisation Testing and Quality Certification (STQC) has been made mandatory by CVC. (http://www.stqc.gov.in/).	scrutiny by courts in India and abroad. The standardization would ensure interoperability and standardized security of various e-procurement solutions.
3.	Performance Measurement	This normally forms part of the project evaluation. The PPP partner is given a target to be met with specific timelines. However, this has been an issue with the implementations using GePNIC route.	An independent body could be established to audit the performance and utilization of e-procurement solutions. Alternatively, C&AG could be tasked to audit these systems and render status report to the parliament.
4	e-Procurement Implementation Strategy	Baring initial implementations through PPP route, most of implementations have been through GePNIC software. The government agencies using PPP route have normally taken a evolutionary route, starting with a pilot project and few departments and gradually progressing in both functionalities and coverage.	For the PPP route, roles, responsibilities and compensation modal for PPP partner could be well defined in the Act. This would bring in much needed transparency in the outsourced deployment of e-procurement solutions. This would also provide a level playing field to all prospective PPP partners by way of eliminating subjectivity in the whole process of outsourcing. In case of GePNIC, the model for costing of the project operations by NIC could be included in the Act which would be binding on the adopting state governments.
5.	System Integration	The respective state/ government department takes care of these issues by way of notification / policy directive. Normally, a government agency is nominated for undertaking the e-procurement implementation. Some of the state governments have formed/ empowered a special purpose vehicle (SPV) company to handle project management.	The roles and responsibility of implementation agency (i.e. NIC/ DGS&D/ PPP Partner) and Sponsoring dept (Government Agency) would be clearly laid down.
6.	Project Management		
7.	User Uptake and Training		
8.	Top Management Support		
9.	Supplier Adoption	This independent agency is responsible for formulation of project requirement, floating of tenders for e-procurement implementation, inter-departmental coordination, Procurement Process Re-engineering (PPR) (optimization/ scrapping of existing processes for e-adotion). Supplier adoption and change management has been achieved through government orders.	Since by way of legislation, the central government could make registration of suppliers a centrally facilitated activity. This would preclude not only the entry barriers but also would ensure that each supplier is required to complete the formality of registration only once. This streamlining of procedures and attendant ease would definitely improve supplier uptake of e-procurement solutions.
10.	Change Management	In case of GePNIC, the PPR has already been coded in the system. The adopting government agency is required to notify the already hard-coded in the software.	Since the e-procurement would be made mandatory by law, this would minimize resistance to change. The act would ensure that adoption of e-procurement solutions is not stalled due ulterior motives of some stakeholders.
11.	Procurement Process Re-engineering		The changes in procurement processes hitherto undertaken by state governments by way issue of Government Orders, would get streamlined. Issues like EMD deposit, Payment gateway etc could be solved in a go thereby eliminating avoidable delays encountered in each e-procurement system implementation.

Recognizing that government procurement constitutes a vital area of public policy programming and intervention, the issue of transparency in public procurement needs to be flagged to tackle corruption. It predicates the need for an overarching framework that will provide government agencies with a yardstick to review procurement norms. A public procurement law, therefore, is required to be promulgated by the government to cover the objectives of government procurement, substantive procedural

requirements to achieve them, debriefing of unsuccessful bidders, publication of contract awards, an appeal or challenge mechanism and post-award contract execution such as bid security, performance security, maintenance contract, advance payment, etc. This could, then, be complemented by a set of national regulations enshrining the five fundamental principles, namely, open tendering through effective advertisement; non-discriminatory tender conditions and technical specifications;

public tender opening; bid evaluation based on pre-disclosed criteria and methodology; and selection of the most advantageous bidder without any negotiation on price or any other term.

6. DISCUSSIONS AND FINDINGS

The issues related to enabling environment, legal issues peculiar to digital domain, management of change over to e-procurement solution procurement process re-engineering and implementation strategy have been highlighted in studies [5, 6, 7, 31, 32]. Studies also underline that the success of e-government initiatives and processes are highly dependent on government's role in ensuring a proper legal framework for their operation [2]. The introduction and uptake of e-government services and processes will remain minimal without a legal equivalence between digital and paper processes [20, 39]. Clearly, e-government will affect the existing legal framework. But to what extent and does it necessarily imply that the applicable rules have to be changed because they are not fit for the new technological developments in the public sector?

E-Gov experts recommend evolving uniform technology supported by uniform legal framework and procedural format and a unified approach [41, 44]. The WTO Government Procurement Agreement (GPA) is broadly consistent with and reinforces the values and objectives of other important international instruments and work in this area such as the United Nations Convention Against Corruption, UNCITRAL Model Law on Procurement [47], relevant guidelines of the World Bank and the OECD's work on prevention of corruption. Lack of technical interoperability and legal harmonization, complicates cross-state border e-procurement especially where the states (to which supplier belongs and the state where procurer is located) have different and divergent procurement laws. To overcome these issues many countries have implemented national procurement law like Uganda (Public Procurement and Disposal of Public Assets Act 2003), Paraguay (Public Procurement Act [2051] 2003) etc.

After critical analysis of prevalent socio-political scenario in India which affects implementation of e-procurement solutions in India, we conclude that implementation of a national procurement act would enable faster and smoother roll out of e-procurement solution for public purchases. At the same time, it would provide thrust for sustainable public procurement in India by providing all pervasive legal force to social and environmental considerations. The suggested "National (e) Procurement Act" should aim to create a single, modern legal framework for all procurement processes conducted by government entities through e-procurement portal. The Act should streamline and simplify procurement laws. It should additionally lay down a cut-off date by which the procurement processes should be migrated to online portal. The law should include detailed procedural rules for:

- (a) Centralized registration of suppliers/vendors, process for verification of their credentials, issue of digital signature etc. The payment should be mandatorily through national payment gateway operated by RBI. This would make payment transparent and the income of the suppliers could be taxed appropriately at source. The grounds and process of blacklisting a supplier should also be laid down in the Act.
- (b) The technological and security framework to be used for development of e-procurement systems should be

clearly laid down. The interfaces for lateral, upward and downward flow of information from the individual portals to national portals should be specified in the form of Service Oriented Architecture. A national procurement repository should be established under the aegis of NIC which would receive procurement information from various e-procurement portals and make the data available for data mining functions. This database should be made available (through appropriate interfaces) to all e-procurement systems for querying for last purchase price, supplier details for a particular item etc.

(c) The reformed process for implementation in e-procurement solutions for various stages like pre-tender, advertising and public display of bid opportunities, notices of best evaluated bidder and contract award should be clearly laid down in the Act. The procedure for bid challenge supported by an enforcement system that allows dissatisfied suppliers to seek administrative review and provides for suspension of providers for offences and disciplinary measures to be taken against public officers who commit malpractices.

(d) The ends of sustainable public procurement can be met only if the decision parameter in procurements is changed from upfront capital cost of acquisition to life cycle cost. The act should incorporate provisions for calculation of life cycle cost of a product. This would play an important role in sustainable procurement as lifetime cost analysis justifies the selection of more energy efficient products. In laymen terms, life cycle cost could be described as sum total of present value of capital cost, repair, operation and maintenance cost, cost of energy used and cost likely to be incurred in safe disposal of the product once useful life is over.

The Act could define the role and functions of each agency related with public expenditure like:

- (a) The Bureau of Indian Standards could be suitably involved in certifying the products for government purchases. Similarly the role of inspecting agency like DGAQA should be clearly defined.
- (b) The role and responsibility of Ministry of Environment and Forests could be involved in environmental clearance for the products to be purchased by Government entities.
- (c) The role of DGS&D in finalization of rate contracted items. More and more number of items could be brought within the ambit of rate contracts by virtue of data regarding consumption patterns being available through national procurement repository.
- (d) Central Vigilance Commission could look after bid-challenge in the modified scheme
- (e) Competitions Commission could investigate suspected cases of cartelization in a deal in terms of Competitions Act 2002.
- (f) Comptroller and Auditor General could look after post audit and invoke penal provisions pertaining to transparency declaration of a deal in case kickbacks are uncovered during post audit.

- (g) Police / CBI should take to initiate legal proceedings against corrupt officials without requiring prior permission of central/state government. The Lokpal, as and when it comes through, should look into the all allegations of corruptions at various echelons in government.
- (h) The government should invoke provisions of Energy Conservation Act 2001 [15] for making sustainable public procurement by government departments. BEE should be asked to expand its basket of rating and providing BEE labels for other type of appliances also.

7. CONCLUDING REMARKS

The challenges like PPR, resistance to change, ulterior motives has stalled the progress of e-procurement implementation in India. The lack of an enabling national legal procurement framework has allowed interpretation of government policies by corrupt officials for vitiating public procurement process. The number cases reported by media regarding Commonwealth games, 2G spectrum allocation etc underline the ease with which corrupt officials bend the rules to benefit themselves at the cost of national progress and pride. These issues could be addressed to a large extent by promulgating a central statute standardizing procurement process across the country. The statute could cement the roles and responsibilities of various agencies and enabling acts like CVC Act, Prevention of Corruption Act, Competitions Act etc. The availability of such an act would also facilitate standardization of e-procurement solutions to be implemented by various government entities and would enable data sharing. The National e-Procurement Act should incorporate salient provisions of WTO GPA, OECD EU and World Bank guidelines.

8. REFERENCES

- [1] Adebisi, A.A. et al. 2010. Development of Electronic Government Procurement (e-GP) System for Nigeria Public Sector. *International Journal of Electrical & Computer Sciences (IJECS-IJENS)*. 10, 6, 74-84.
- [2] Akampurira, E., Root, D. and Shakantu W. 2009. Stakeholder perceptions in the factors constraining the development and implementation of public private partnerships in the Ugandan electricity sector. *Journal of Energy in Southern Africa*. 20, 2, 2009. (16)
- [3] Bikshapathi, K et al. 2006. e-Procurement in Government of Andhra Pradesh, India. Available at: <http://siteresources.worldbank.org/INTEGOVERNMENT/Resources/APeProcurement.doc>. Accessed: 2012-02-13.
- [4] Boer, L. De., Harink, J., and Heijboer, G. 2002. A model for assessing the impact of electronic procurement forms. *European Journal of Purchasing & Supply Management*. 8, 25-33.
- [5] Bof F and Previtali P. 2007. Organisational Pre-Conditions for e-Procurement in Governments: The Italian Experience in the Public Health Care Sector. *The Electronic Journal of e-Government*. 5, 1, 1-10.
- [6] Bof, F., and Previtali, P. 2010. National models of public e-procurement in Europe. *Journal of e-Government Studies and Best Practices*. 2010, Article ID 315295, DOI: 10.5171/2010.315295.
- [7] Cimander, R., Hansen, M., and Kubicek, H. 2009. Electronic Signatures as Obstacle for Cross-Border E-Procurement in Europe: Lessons from the PROCURE-project. *Institute for Informations Management Bremen GmbH (ifib)*.
- [8] Clausen, B., Kraay, A., and Nyiri, Z. 2009. Corruption and Confidence in Public Institutions Evidence from a Global Survey. *Policy Research Working Paper 5157*. <http://econ.worldbank.org>. Accessed: 2012-12-19.
- [9] Crabtree, B.F., and Miller, W.L. 1999. Using codes and code manuals: a template organizing style of interpretation. In B.F. Crabtree & W.L. Miller (Eds.), *Doing Qualitative Research, 2nd Edition*. Thousand Oaks, California: Sage Publications.
- [10] Croom, S. and Brandon-Jones, A. 2007. Impact of e-procurement: Experiences from implementation in the UK public sector. *Journal of Purchasing and Supply Management*. 13, 4, 294-303.
- [11] CVC circular No. 009/VGL/055 dated 09 November 2009. <http://cvc.nic.in/>. Accessed: 2012-10-01.
- [12] CVC Circular No. 23/06/010 dated 23 Jun 2010. <http://cvc.nic.in/>. Accessed: 2012-12-24.
- [13] Datar, M., Panikar, A. and Farooqui, J. 2008. Emerging Trends in E-Government. In Bhattacharya, J. (Eds.), *Critical Thinking in E-Governance*. 37-46. ICEG 2008: New Delhi
- [14] DIT 2011. *Saraansh: A compendium of Mission Mode Projects under NeGP*. <http://www.mit.gov.in>. Accessed: 2012-12-10.
- [15] Energy Conservation Act 2001. http://www.powermin.nic.in/acts_notification/pdf/ecact2001.pdf. Accessed: 2013-01-24.
- [16] Engström, A., Wallström, A., and Salehi-Sangari, E. 2009. Implementation of Public e-Procurement in Swedish Government Entities. *International Multi-conference on Computer Science and Information Technology* (Mragowo, Poland), Polish Information Processing Society.
- [17] General Financial Rules 2005. <http://finmin.nic.in/>. Accessed: 2012-11-13.
- [18] Gibbs, G. 2007. *Analyzing Qualitative Data*. Sage Publications, London.
- [19] Information Technology Act 2000. <http://www.mit.gov.in/>.
- [20] Jha, H. M., Srivastava, A.K., Bokad, P.V., and Kuchar, P.M. 2010. Endangering Equation For E-Governance. *7th International Conference on E-Governance, 2010* (IIM Bangalore, INDIA) (17)
- [21] Johnson, P.J., Leenders, M.R. and McCue, C. 2003. A Comparison of Purchasing Organizational Roles and Responsibilities in the Public and Private Sector. *Journal of Public Procurement*. 3, 1, 57-74.
- [22] Joo, Y. B. and Kim, Young-Gul. 2004. Determinants of corporate adoption of e-Marketplace: an innovation theory perspective. *Journal of Purchasing & Supply Management*. 10, 89-101.
- [23] Kaliannan, M., Awang, H. and Raman, M. 2009. Electronic Procurement: A Case Study of Malaysia's e-Perolehan (e-procurement) Initiative. *International Journal of Electronic Governance*. 2, 2-3 / 2009, 103 – 117.
- [24] Kimberley, P. 2007. E-governance in Trade Facilitation: Transparency and ICT as prerequisites for free and fair trade. *ICEGOV2007* (Macao, December 10-13, 2007).

- [25] King, N. 1998. Template Analysis. in G Symon and C Cassell (Eds.), *Qualitative Methods and Analysis in Organizational Research*. Sage Publications, London.
- [26] Manual on Policies and Procedures for Purchase of Goods. <http://finmin.nic.in/>.
- [27] Matthews, D. 2005. Strategic Procurement in the Public Sector: A Mask for Financial and Administrative Policy. *Journal of Public Procurement*. 5, 3, 388-399.
- [28] Ministry of Finance, Office Memorandum No. 26/6/12-PPD dated 21 Jan 13. <http://finmin.nic.in/>.
- [29] Ministry of Finance, Office Memorandum No. 8(3)-E.II (A) 0-02. <http://finmin.nic.in/>.
- [30] Moon, M.J. 2005. E-Procurement Management in State Governments: Diffusion of e-Procurement Practices and its Determinants. *Journal of Public Procurement*. 5, 1, 55-72.
- [31] Ndou, V. 2004. E-government for developing countries: opportunities and challenges. *Electronic Journal for Information Systems in Developing Countries*. 18, 1, 1-24.
- [32] Neef, D. 2001. *E-Procurement: From strategy to Implementation*. Upper Saddle River, NJ: Prentice Hall.
- [33] OECD Report 2010. Collusion and Corruption in Public Procurement in India. <http://www.oecd.org/dataoecd/19/20/44530808.pdf>
- [34] Panda, P., and Sahu, G.P. 2011. E-Procurement Implementation: Comparative Study of Governments of Andhra Pradesh and Chhattisgarh. *IUP Journal of Supply Chain Management*. 8, 2, 34-67.
- [35] Panda, P., and Sahu, G.P. 2012. e-Procurement Implementation: Critical Analysis of the Impact of Success Factors on Project. *IUP Journal of Supply Chain Management*. 9, 1.
- [36] Panda, P., Sahu, G.P., and Gupta, P.K. 2010. Promoting transparency and efficiency in Public Procurements: e-Procurement Initiatives by Government of India. *7th International Conference on E-Government (IIM Bangalore, India, 22-24 Apr 2010)*.
- [37] Panda, P., Sahu, G.P., and Gupta, P.K. 2011. E-Government Procurement Implementation: Necessity of National Procurement Law. In Nityesh Bhatt and Akshai Aggarwal (Eds.), *E-Governance: Policies and Practices*. New Delhi, India: Excel India Publishers. ISBN: 93-81361-42-8.
- [38] Parida, V., Sophonthummapharn, K., and Parida, U. 2006. Understanding E-procurement: Qualitative Case Studies. *Paper presented at EBRC Conference 2006 (Sweden)*.
- [39] Pastor, R., Gautam, O.P., Gaur, D. and Singh, S. 2010. Legal and Regulatory issues in E-Governance & M-Governance. *7th International Conference on E-Governance (IIM Bangalore, India, 22-24 Apr 2010)*. (18)
- [40] Pinto J. and Slevin, D. 1987. Critical Factors in Successful Project Implementation. *IEEE Transactions on Engineering Management*. 34, 1, 22-27.
- [41] Roca, M. E., Feliciángeli, E., Engelhard, S., Faria, T.M., Sánchez, M.E., and Arbeláez, J. 2008. *Support for Consolidation of the Government Procurement System - Republic of Paraguay*. Inter-American Development Bank Report (PR-T1062), Paraguay. (20)
- [42] Rockart, J.F. 1982. The Changing Role of Information System Executive: a Critical Success Factors Perspective. *Sloan Management Review*. 24, 1, 3-13.
- [43] Smeltzer, L.R. 1998. Executive and Purchasing Leadership in Purchasing Change Initiatives. *International Journal of Purchasing and Materials Management*. 43, 4, 12-20.
- [44] Somasundaram, R. and Damsgaard, J. 2005. Policy Recommendations for Electronic Public Procurement. *The Electronic Journal of e-Government*. 3, 3, 147-156. (19)
- [45] Thai, K. V. 2001. Public Procurement Re-examined. *Journal of Public Procurement*. 1, 1, 9-50.
- [46] Transparency International. 2012. *Global Corruption Report 2012*. <http://www.transparency.org/>.
- [47] UNCITRAL. 2005. *Model Law on Procurement of Goods, Construction and Services with Guide to Enactment*. UN Commission on International Trade Law: 101. (21)
- [48] Vaidya, K., Sajeev A.S.M., and Callender, G. 2004. e-Procurement Initiatives in the Public Sector: An Investigation into the Critical Success. *13th Annual International Purchasing & Supply Education & Research Association (IPSERA) Conference (Catania, Italy, April 4-7)*.
- [49] World Economic Forum. 2010. *Global Competitiveness Report 2010*. http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf.