

PUBLIC PRIVATE PARTNERSHIPS

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Public Private Partnerships

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Preface

Introduction

Private Public Partnership (PPP) has already reached the stage of rhetoric globally. It ranks along with frameworks like Reinvention in Government, Marketization, and Privatization in terms of potential panacea for the failures of state and governance. The literature on PPP is primarily focused on practice and is scarce in conceptual issues and frameworks. It was thus decided to focus on the conceptual issues of PPP at the outset in the Third International Conference on Public Policy and Management conducted in 2008 at the Indian Institute of Management Bangalore. The conference brought forth rich conceptual frameworks and research issues in PPP in terms of its structure, governance, global practices, and financing. One section was devoted to PPP issues in services and utilities while others discussed PPPs mainly with reference to infrastructure. It also emerges from the papers on services and utilities that issues of PPP in these sectors are characteristically different from infrastructure, and needs a different treatment.

Broad Contexts

It was observed, from the literature, that the PPP label is assigned to anything from partnership to outsourcing to works and service contracts. The UK Commission on PPP defines PPP as “a risk sharing relationship between the public and private sectors based upon a shared aspiration to bring about a desired public policy outcome”. So, quintessence of PPP is risk sharing, shared aspirations, and desired public outcome. Thus, it was decided to restrict the conference to partnership type of relationship. The debate on PPP boils down to the discussion on the core competency of public and private systems and what each brings to the partnership. Public thrust helps getting legitimacy, ensuring public ownership, minimizing downside risk and realization of social goals. Private participation helps in making it return focused, amenable to risk taking, and realizing corporate goals through better management.

In the final analysis one can view PPPs as another attempt to minimize transaction cost through institutional interventions. PPP is a sequel to the attempts to corporatize public undertakings and fear of wholesale privatization.

Brief Contours

The paper by Ojha provides the structural context to PPP. It starts with the proposition that as more goods evolve into mixed goods in nature, with both private and public properties; PPPs are more likely to be selected vehicles to deliver goods and services. It adopts the transaction cost perspective and argues that network form of government with government organization as the focal point and non-government organizations as nodes is likely to emerge as the efficient form. Extending the information processing and agency perspectives, it says that network form improves decision making by co-locating relevant knowledge and authority.

The paper by Anil and Ramesh discusses PPP structure at micro level. Its focus is on Special Purpose Vehicle (SPV) which is the common form of organization under PPP. The study is based on Delhi Metro Rail Corporation (DMRC) which helps to bring out the challenges and best practices under PPP in project management structure in infrastructure – an area in which the government has a dismal record. It discusses it through the framework of management control system and brings out critical dimensions of project management structure. This also contrasts SPV project management structure with departmental structure and addresses the often repeated question of why the existing structure is not conducive for efficient project management.

The paper by Dar focuses on the Governance aspects of PPP. It is seen that public and corporate governance become more complex when they get intertwined under PPP. This paper addresses how and what of PPP governance, dimensions of its regulatory governance and substance. It evaluates the governance structure in India and contrasts it with Brazil which is recognized for its comprehensive and successful reforms in infrastructure regulation. The paper by Sagagi brings out the critical aspect of public-private dialogue as a

critical mechanism of governance and policy making. It makes the proposition that neither public nor private parties can independently formulate policies. It takes the evolution of PPP in Nigeria as the case and attributes its slow pace to distrust and distance exhibited by the Business Member Organizations and how the indigenous private sector was unable to engage the government. Dialogue and trust are overlooked aspects in studies on PPP and governance and this paper makes an important contribution by highlighting it. The paper by Valkama and Anttiroiko discusses innovations in public service delivery system from within, through instruments of competition and corporatization. It projects this as half way house for privatization and public private partnership. Taking reforms in Finland as the case, it discusses fostering competition in terms of corporatization, outsourcing, competitive tendering, vouchers, etc. This and the earlier papers are important in specifying pre-conditions for success of PPP.

The paper by Bhatia traces the growth of PPP in infrastructure in developing countries, especially during pre and post meltdown period. This is an interesting study as the assumptions of PPP during boom time do not hold good during recession. It observes that the rate of project closure showed a decline, with transport and water being the main losers. Meltdown has been a learning experience and it is helpful in understanding the downside risk and challenges of PPP. The paper by Rahe and Najles brings out complexities of PPP in a different domain, i.e. collaborative research between academia and industry wherein the local government of Catalonia (Spain), plays a catalytic role. Applying the conceptual model of the Triple Helix, it says is an organic instrument that ensures concerted action of public and private institutions and takes into account the scarcity of resources. In this collaboration, several problems crop up due to differences in cultures and backgrounds of the universities and companies. To make Triple Helix work, both cultures have to converge.

Jayadev discusses the aspects of financing and risk management of PPP projects. Project financing, especially infrastructure financing, entails different set of structure and risks compared to corporate

finance. This paper takes a look at the typical financial institution perspective in terms of its structure, characteristics, and barriers to project financing in India. It finally ties up project financing with risk management.

The next set of papers deal with PPP in services and utilities. Raghavendra's paper is based on a study of the project of health information system in primary health centers in Andhra Pradesh. This study is based on a PPP project between University of Oslo and Commissionerate of Health and Family Welfare and has adopted the ethnographic approach. This study observes that for sustainability, involvement of both the principals and end users are important from the inception stage of a program and that the programme designers should conceive all aspects of political, technological and funding for a project to be successful. The paper by Ramanayya and Nagadevara discusses Bus Rapid Transit Systems in terms of financing, operations and management. The technology of bus transport makes possible the coordination among agencies and affords operational flexibility, which high cost and high end technologies like metro make it difficult. This is a case of a PPP model made successful by the choice of technology.

This paper by Naik, Basavarajappa, Sultana, and Prasanna focuses on value creation through private partnership in public service delivery. It stresses synergistic aspects of PPP and highlights value creating processes through the case of two major e-governance initiatives of Government of Karnataka. The direct and indirect value creating outcomes are financial benefits, time efficiency, better quality, and integration of more services. The paper by Siddiki, Ramaswami and Martell stresses the criticality of evaluation to the management of PPP. This paper suggests a common framework of quantifiable metrics to address equity, environment, and economic dimensions to ensure sustainability to PPPs. This addresses the important link of sustainability, performance and metrics which is a complex relationship but generally overlooked. Koppa views water users' cooperatives as one form of PPP which is divergent from usually PPPs. This is a study of PPP in a politically sensitive and engagement intensive domain like irrigation management. The

paper observes, based on a study of cooperatives in Gujarat and Karnataka, that involvement of third party professional agencies help ensure effectiveness of these cooperatives. Mukhopadhyay looks at PPP in primary education which is another service intensive sector. It studies the current conceptualization in education and material and discursive dimensions of work structures of PPPs. This paper reconceptualizes PPP as emerging from a process of negotiation rather than from institutions arising from MOUs.

Conclusion

The collection of papers brings out the complexities in PPP in terms of types, conceptualization, structure, institutions, and financing. It covers a broad sweep ranging from infrastructure to services and utilities; and from global to Indian states. The methodology is primarily empirical but the thrust is on conceptualization of PPP in its various forms and frameworks. PPP is still a practitioner's field but is growing in size and significance; and as a solution to failures of public system and the consequent privatization. It is a major attraction to policy makers and funding agencies, given its middle of the road approach. It is likely to gain currency, but it is important that we get deeper understandings of this form before we place more faith in this. This collection of papers is a step towards that process as these raise several important conceptual issues and seek to address some of them. Definitely more research and evidences are required.

Public-Private Partnerships: Analysing the Network Form of Organization

Abhoy K. Ojha

Public goods and services have traditionally been in the domain of the government because markets do not offer the private players incentives to provide them. However, it is evident that the bureaucratic form of organization in the government impedes its ability to deliver these goods and services effectively and efficiently. Public-private partnerships are mechanisms by which governments seek the participation of non-government organizations to deliver public goods and services to overcome some of these impediments. In this paper, the transaction cost perspective has been adopted to argue that the network form of organization, with the government organization as the focal point and the non-government organizations as the nodes of the network, is most efficient for a range of public-private partnerships. Further, information processing and agency perspectives have been used to argue that the adoption of a network form of organization results in decentralization, which improves decision-making by co-locating relevant knowledge, both general and specific, and decision authority while also reducing agency costs.

Introduction

Public-private partnerships (PPPs), that is commercial relationships between government entities and private organizations, whether for profit or not for profit, in order to pursue certain desirable objectives is not something new. Even when governments were the sole providers of public goods and services, private organizations were always involved, directly or indirectly. However, many of these relationships were not described as PPPs; they were described as contract relationships because the transactions were simple¹. Transactions are simple when competition is robust, performance

criteria are easy to specify and measure; and contractors can be replaced if they do not perform effectively. The recent interest in PPPs emerges from the context in which governments are constrained to involve private players even when transactions are complex, i.e., when competition is weak, performance criteria are difficult to specify and measure, and contractors are difficult to replace once they have been awarded a long-term contract. In this paper, the term PPP refers to the contractual relationships wherein the transactions are complex.

The debate regarding the utility of PPPs is greatly polarized². Proponents of private participation in the delivery of public goods in general, and PPPs in particular, argue that the government should concentrate on establishing a framework within which private organizations deliver the services³. On the other hand, opponents criticize PPPs on various grounds. One group, that is largely sympathetic to PPPs in the delivery of public goods and services, focuses on the improper implementation of PPPs⁴. The second group is vehemently opposed to the entry of private organizations in the domain of government and public organizations. They argue that the general public will lose control over the public good when it is handed over to private organizations⁵.

This paper does not attempt to resolve the above-mentioned ideological differences; instead, it views PPPs as phenomena that are observable and are likely to continue for some time in the future, despite the existing differences. The next section examines the evolution of the concepts related to public and private goods in an attempt to understand the role of public and private organizations in their delivery, after which the network form of organization as a means of facilitating the functioning of PPPs is analysed. First, the transaction-cost framework has been applied to suggest that the network form is superior to both the government bureaucracy and competitive markets for the delivery of a range of public services. Second, the information-processing perspective has been applied to suggest that the network form is better than the government bureaucracy in co-locating relevant knowledge along with decision-making authority, which leads to improved

effectiveness and efficiency. Third, this paper argues that the network form of organization allows the government to overcome its obsession with agency issues and thus allows for the delegation of the decision-making authority to a level that improves the level of responsiveness and flexibility without necessarily incurring agency costs. The conclusion provides implications for the structuring of PPPs in particular, and government organizations in general.

Public and Private Goods and Public Private Partnerships

At the heart of the role of PPPs is the understanding of public and private goods. Traditionally, public goods were delivered by public organizations and private goods were delivered by private organizations. At a simple level, the difference between public and private goods is based on two attributes: rivalry in consumption and excludability of benefits. Rivalry in consumption refers to whether consumption of a particular good by someone diminishes the availability of that good for others. Excludability of benefits refers to whether someone can exclude others from consuming a particular good. Private goods are high on rivalry of consumption and excludability of benefits; while public goods, also variously referred to as collective or social goods, are non-rival in consumption and have non-excludable benefits. These goods are such that consumption by one neither reduces the consumption by others, nor are others excluded from consuming them. As a result, public goods do not meet the requirements for efficient market-based transactions. Based on this logic, economists argue that the government should subsidize firms when there are positive externalities⁶ and should tax or regulate the firms when there are negative externalities. In cases of extreme positive or negative externalities, the government should provide those goods and services on its own.

In real life, the distinction between private and public goods is not very neat⁷. Block showed that even bread, an apparent neat example of a private goods, has attributes of a public goods, and Hoppe showed that national security, an apparent clear example

of a public goods, has attributes of a private goods. With changes in context since the idea was introduced in the 1950s, the definition of public and private goods is 'contested' and 'embattled'⁸. Further, whether a particular good is public or private is ultimately a social construct, which is an outcome of government policy and other collective human initiatives⁹. As in the rest of the world, in India too, since 1991, several goods that were considered public and expected to be provided by the State, are now being categorized as private to be provided by private organizations, and often where clear demarcations have ceased to exist, such goods are deemed mixed, and hence to be provided by public-private collaboration, of which PPPs are one example. Thus, there is a need to examine the way in which public-private partnerships can be implemented.

Coase¹⁰ examined the treatment of private and public goods in the context of negative externalities. He argued that proper allocation of costs and benefits make the markets more efficient than the State in dealing with externalities. In short, other than providing a framework, there is no role for government organizations in the delivery of public goods and services. This statement has come to be known as the Coase Theorem. However, Chari and Jones¹¹ showed that when public goods are local, i.e., where all affected parties are identifiable and property rights can be allocated and enforced, the markets are likely to work well, but when there are global externalities, the markets work very poorly. Hence, there are contexts in which coordination between the markets and the state is good for society—and it is in these contexts that the PPPs play an important role.

The State and the markets are two of society's mechanisms for coordinating economic activity¹², wherein each plays a role in providing private as well as public goods. Depending on the attributes of the goods, one mechanism works better than the other. Rangan, Samii and Wassenhove¹³ provided a framework to understand the context in which an activity should be either in the domain of private actors or public actors. When public actor resource costs are higher than those of private actors and public benefits do not exceed private actor benefits, then private actors can undertake the activity. On the other hand, when public benefits

significantly exceed private benefits and the public actor resource costs are not higher than the private actor costs, then such activities can be in the public domain. Most activities that fall in between these two extremes can benefit from a collaboration between public and private actors. Public actors will collaborate because of the positive externalities, but would not want to do it alone because of poor internal efficiencies. Private actors will be reluctant to undertake these activities on their own because they might not give them sufficient private benefits. They would, however, collaborate with a public actor for an activity if they are able to obtain the necessary returns. The arguments are reversed in the context of negative externalities.

In short, there are a range of goods and services that are neither purely public nor private, and there is a need for collaboration between public and private organizations in their delivery. The delivery of health services is one such context. Take the case of providing health care to a rural community. There are significant positive externalities of a successful program but the private benefits for a private hospital are often limited. However, the ability of the government to provide such health care effectively on its own is also limited. We know that there are several public private partnership programs across the country, delivering health services to remote areas where the incentives for private hospitals are absent, but then the pure government system has been ineffective. Hence, the provision of health services provides a good context to analyse the suitability of public-private partnerships¹⁴.

Network Form of Organization for Public-Private Partnerships

The vehicle that implements the objectives of a PPP can range from a simple contract or a vendor relationship in cases when externalities are low, to a joint venture when externalities are high. This paper argues that when externalities are modest, the network form of organization is the most appropriate form. Koch and Buser¹⁵ suggested that PPPs should be understood as networks,

since normally a range of public, hybrid and private players are involved in the delivery of a public good. According to them, networks are a means to transcend competition and hierarchy and to recognize interdependence and complementarities. Noble and Jones¹⁶ describe the network organization of a PPP as a unique form of inter-organizational relationship. Ysa¹⁷ described PPPs as institutional arrangements capable of mobilizing resources by the creation of complex cross-organizational networks in which both the public and private players participate. Similarly, El-Gohary, Osman and El-Diraby¹⁸ emphasized the role of the network organization in involving the various stakeholders, including the beneficiaries, to ensure the success of PPPs.

1. Transaction Cost Perspective

According to the transaction-cost perspective, organizations have to deal with two kinds of adaptation, namely autonomous and co-operative adaptation¹⁹. Markets support autonomous adaptation by combining high-powered incentives with little administrative control in an environment that provides a dispute-settlement mechanism to enforce contracts. On the other hand, hierarchy supports cooperative adaptation within the organization with low-powered incentives, extensive administrative control and internal mechanisms to resolve disputes. The network form of organization that combines features of the market and hierarchy is located in the middle on all three dimensions.

Williamson expanded this framework to explain the existence of the bureaucratic form of organization in the government. He was particularly concerned with how the public bureaucracy that is so widely used in the government is believed to be inefficient. He suggested that, in comparison with the private sector organizations, there were additional hazards, labeled hazards of probity, faced by transactions organized in the public sector. By probity he meant 'the loyalty and rectitude with which the transaction is discharged' and the uprightness and honesty of the person discharging the transactions. He then argued that the public bureaucracy was the most efficient form for this context, and it is impossible for a

private organization to replicate some of the features that make a public bureaucracy successful.

Table 1 shows a comparison of governance features if a service is offered by the private sector on contract from the government, by the private sector under regulation, and by a public bureaucracy. The three forms have different performance attributes. Private organizations have a high ability to be adaptive to outside changes while the public organization has a limited ability to adapt externally. On the other hand, private organizations have very little ability to maintain consistency or internal integrity while public organizations have a very strong ability to maintain adaptive integrity. The difference in performance attributes is a result of different governance instruments. Relative to a public agency, there are very strong incentives for decision makers under privatization and moderate incentives under regulation. On the other hand, there is very high administrative control in a public organization while there is no administrative control in the case of private sector organizations and limited control in the case of regulation. While market incentives facilitate adaptivity, bureaucratization facilitates

Table 1: Comparing attributes of private sector, regulation and public organizations

	<i>Governance Structure</i>		
	<i>Privatization</i>	<i>Regulation</i>	<i>Public Agency</i>
Instruments	++0	++	0++
Incentive Intensity			
Bureaucratization			
Performance Attributes	++0	++	0++
Adaptive Autonomy			
Adaptive Integrity			
Employment Relations	++0	++	0++
Executive Autonomy			
Staff Security			
Legalistic Dispute Settlement	++	+	0

++ = strong, + = semi-strong, and 0 = weak

Adapted from Williamson (1999)

integrity in the responses. In terms of employment relations, private organizations provide high executive autonomy but little security, and public organizations offer little executive autonomy but very high staff security. Also, in terms of dispute settlement, a private organization provides a legal recourse while in the public organization, there is little or no option for legal action.

In the case of a 'sovereign function', for example Foreign Affairs, adaptive integrity is far more important than adaptive autonomy. In other words, there is a need for consistency in perspective and action, no matter who acts on behalf of the State. In order to ensure that, bureaucratization as an instrument of control is far superior to incentives, because while incentives may lead to local optimal actions, they might also lead to undesirable inconsistencies. Once bureaucratization is adopted and there is little scope for executive autonomy, the staff has to be provided employment security because they cannot be held individually responsible for the effectiveness/ineffectiveness of their actions. As a result, quite clearly the public agency is superior to a private organization or a private agency under regulation to perform a 'sovereign function'.

Using the expanded framework, Williamson suggested a schema, shown in Table 2. When there are no contractual and probity hazards, the transactions are conducted most efficiently in the market; when there is some contractual hazard, transactions are still conducted efficiently in the market, but the suppliers may charge a risk premium. In case the contractual hazards increase beyond a

**Table 2: Schema representing range of transactions
by a public agency**

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
Free Market	Market with premium	Hybrid Contracting	Private Firm	Private Firm with regulation	Public Agency
No contractual hazards or probity hazards	Limited contractual hazards but no probity hazards	Some contracting hazards but no probity hazards	Significant contracting hazards but no probity hazards	Significant contracting hazards and some probity hazards	Significant contracting and probity hazards

point, the organization has to implement contractual safeguards, and transactions are conducted by hybrid contracting; and when contractual hazards are quite high but the hazard of probity is low, the transactions are conducted through a private firm. When the hazard of probity increases further, the transactions are conducted through private organizations but under strong regulation and supervision by a public organization. When the hazard of probity is very high, then the transactions are conducted most effectively by the public organization, as in the case of sovereign transactions like foreign affairs.

The transaction cost perspective has already been applied to examine PPPs²⁰. In line with Williamson, this paper argues that there are a range of public goods that have modest contractual and probity hazards, for which the network form of organization, with the government organization as the focal point and the private organization as nodes of the network, is the most efficient. To some extent, an organization (or group of organizations) offering a particular good which has the characteristics of both private and public goods, requires adaptive integrity, and therefore has to rely on bureaucratization. Further, when market-based incentives are not feasible, the organization has to offer its employees employment security. These features are best provided by the public bureaucracy, and hence it should be at the core of any PPP network. The public agency will act to ensure that the public service is delivered consistently to all beneficiaries independent of the market-based incentives. However, in the delivery of goods and services, there are activities that require adaptive autonomy which can be facilitated by executive autonomy and market incentives. These features are best provided by private organizations, and hence they should form the nodes of the PPP network that interface with the end-users of the goods and services.

Providing health care facilities is a public service in which the incentives for a private provider may be poor or may vary across regions. However, private providers might be more effective than a government agency in providing that service. In such contexts, PPPs can best be implemented as a network of organizations.

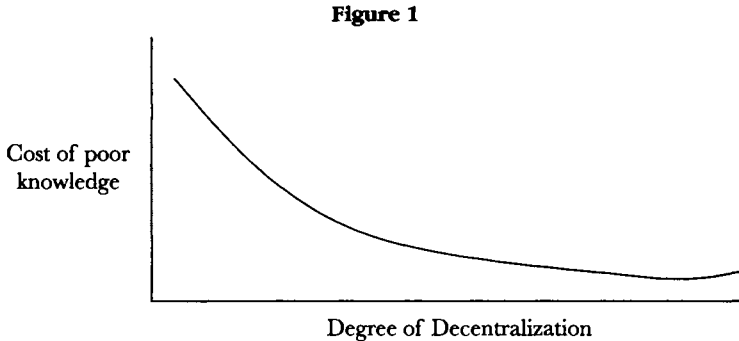
The government agency at the core of the network will rely on adaptive integrity to ensure that adequate quality of health services are provided even in the absence of market incentives. A combination of regulation and subsidies may be used to compensate for the lack of incentives. The private organizations, both for profit and not-for-profit, will utilize the limited autonomy available within the frame to be responsive to the specific needs of the community to which it provides services.

2. Knowledge-Processing Perspective

Knowledge in an organization can be categorized in many ways. For the purposes of this paper, it is useful to differentiate between tacit and explicit knowledge. Tacit knowledge refers to knowledge that is often used but cannot be articulated or externalized, and hence cannot be easily diffused to others; whereas explicit knowledge is that which can be codified and easily transferred to others. However, possessing knowledge is not enough; more importantly, it has to be applied when required. In other words, there is a need to ensure that knowledge is available with the people who have the authority to make decisions.

Jensen & Meckling²¹ applied this concept to organizations. They referred to the scientific and organized knowledge as general knowledge. General knowledge is similar to what is defined as explicit knowledge. Once it is acquired and consolidated, it can be transmitted to those who may want to use it quite inexpensively. Specific knowledge refers to knowledge that may be easy to acquire but difficult to consolidate in a form that allows for inexpensive transmission, just like local knowledge as defined by Hayek²². Specific knowledge has a strong overlap with tacit knowledge, although it can mean more than tacit knowledge. Specific knowledge is available to only those who are close to or have experience of the context. Jensen & Meckling argued for collocation of the decision-making authority with the knowledge important to those decisions. Knowledge that is relevant for a decision can be moved to those with the decision-making authority. Alternatively, decision-making authority can be moved to those with the

relevant knowledge. Figure 1 shows the cost of poor information or knowledge as a function of the degree of decentralization in a decision-making authority.



Using this perspective, it can be said that the network form of organization facilitates the collocation of relevant knowledge and the decision-making authority. Public policies are based on general knowledge that can be acquired from the field and transmitted to a centralized authority. In the case of goods with a predominant public good characteristic, the central agency of the government is quite likely the entity which should be provided with the general knowledge and the authority to decide, in order to make policy decisions. Using the arguments of public goods, it can be stated that normally there are no returns for a private entity to acquire and transmit the general knowledge. Taking this argument a step further, it can be said that since policy decisions related to public goods are largely based on general knowledge, they should only be made by the public agency, which is at the core of a network of organizations. Hence, in the health sector also, the policy decisions should be made and driven by a public organization.

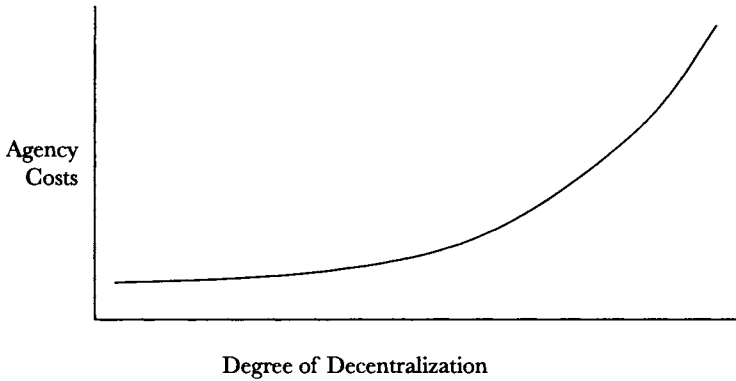
Specific knowledge is significant in the implementation of the policies in the field. Theoretically, it is feasible for a public agency to be located in the field so that its employees acquire and possess the specific knowledge to make correct decisions. However, lack of resources with the government often prevent it from having a presence in all areas and further, bureaucratic norms and procedures

prevent the agency from possessing or sometime acting on the specific knowledge that it might possess. It is in this context that the involvement of non-government agencies, including private firms and not-for-profit civil society organizations, is an advantage. Bertels and Vredenburg²³, in the context of municipal water supply in Canada, argued for decentralization to accommodate domain-specific issues. Hence, this paper argues that since implementation decisions related to public goods are based on specific data, they should be made largely by private organizations—whether for-profit or not-for-profit—that are more likely to have the specific knowledge to be responsive to local needs. Again, in the health sector, local non-government organizations have far superior specific knowledge and are more efficient at delivering services. However, decentralization also comes at a cost, which is examined next.

3. Agency Cost Perspective

A network of organizations can be viewed as a set of inter-organizational relationships between the public organization as the principal and the private organization as the agency. According to the agency perspective, there are two sources of uncertainty in a principal-agent relationship: (i) adverse selection and (ii) moral hazard²⁴. Adverse selection refers to a situation in which there is misrepresentation by a partner in a relationship. Moral hazard refers to the problem of lack of effort on the part of one party to work towards the goals of the relationship. Agency costs are incurred when an agent to whom a decision-making authority has been delegated, does not behave as expected because of lack of capability (adverse selection) or is shirking (moral hazard). It is quite obvious that the greater the delegation of decision-making authority, the greater the risk of agency. Figure 2 shows the agency costs as a function of degree of decentralization of decision-making authority.

Adams et al.²⁵ suggested that bureaucrats are responsible for much of the agency costs. According to them, agency problems occur because (i) bureaucrats distort information flow in both directions so that politicians and citizens are not fully informed,

Figure 2

(ii) information is leaked to outsiders such as pressure groups to influence public initiatives, and (iii) bureaucrats slow the pace of implementation of initiatives they do not favor, and fast track initiatives they favor. They suggest that PPPs have not been very successful in China as both public and private sector stakeholders do not yet share the confidence that will allow them to address agency issues. The concept underlying the agency theory, although known to us through Western literature, has its origins in the *Arthashastra* of Kautilya. In the context of government, with the king as the principal and government official as agents, he wrote:

Just as it is impossible not to taste honey or poison that one may find at the tip of one's tongue, so it is impossible for one dealing with government funds not to taste, at least a little bit, of the King's wealth²⁶.

Just as it is impossible to know when a fish moving in water is drinking it, so it is impossible to find out when government servants in charge of undertakings misappropriate money²⁷.

Among other prescriptions, he suggested

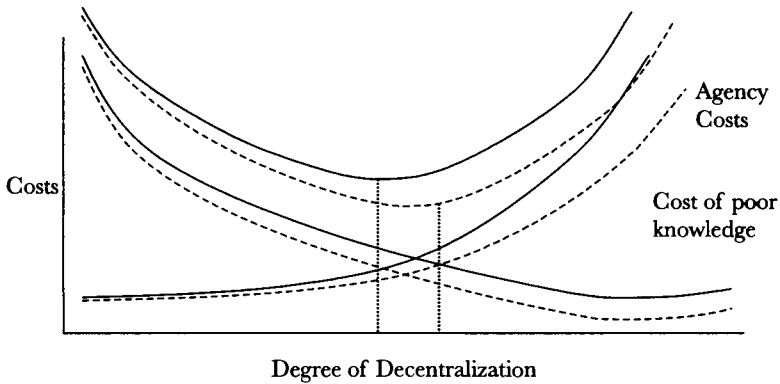
The King shall have the work of Heads of Departments inspected daily, for men are, by nature, fickle and, like horses, change after being put to work *Arthashastra* (2.9.2-4)²⁸

Ironically, while there is some evidence to believe that there are agency problems in the government, there seems to be an obsession with addressing issues of agency in the government sector in India. The bureaucratic processes are geared to deal with agency issues even to the extent of making officials unable to take action when they have the necessary knowledge. As suggested by Figure 2, the agency cost due to decentralization is quite modest initially and only gets very high after the degree of decentralization is very high. However, it appears that the government systems are designed to eliminate agency costs and as a result of it they incur very high costs due to poor specific knowledge (Figure 1). This paper reiterates that even in the health sector in India, for the reasons articulated above, a network form will improve the provision of health services.

It is this same obsession that has curtailed the participation of private players in the delivery of public services. The procurement processes of government organizations are so much focused on reducing agency problems that it is next to impossible for honest private sector organizations to participate. This paper argues that the network form of organization will always be weaker than the bureaucratic system in terms of addressing agency issues, but the inclusion of other stakeholders, including consumers and society in the network will change the slope of the curve in Figure 2 such that agency costs are within manageable limits.

Combining the Information Processing and Agency Perspectives

As Jensen and Meckling²⁹ suggest, the appropriate level of decentralization can be assessed by combining the information processing and agency perspectives. Figure 3 shows the total organizational costs as a function of the degree of decentralization with and without use of the private players in a PPP. The slopes for PPPs are shown as dashed lines. It can be argued that with the involvement of private players in a PPP, the cost of information reduces, as these players bring an understanding of specific knowledge that may

Figure 3: Total Organizational Costs

not be available to a government organization. Further, the use of market incentives for private players in a PPP reduces agency costs. As a result, the network form allows a government agency to obtain substantive gains in terms of knowledge costs, while incurring modest agency costs.

Again, in the health sector, if a PPP is implemented using a network of organizations with the public agency at the core, it will provide the right balance in terms of co-locating knowledge and decision-authority without incurring substantive agency costs. A health system based entirely on the private sector actors, will deprive significant segments of the society from accessing adequate health care as it has happened in the United States. On the other hand, a health system based entirely on the government sector will also lead to large-scale failures, as can be observed in India. A health system based on the concept of having a government agency at the hub that formulates policies, and private organizations as spokes that implement the policies in the field with full responsiveness to local needs, is probably the solution for the future.

Conclusion

Public goods and services have traditionally been in the domain of the government, because markets do not offer the incentives for private

players to provide them. The bureaucratic form of organization in the government impedes its ability to deliver these goods and services effectively and efficiently. Public-private partnerships are mechanisms by which governments seek the participation of non-government organizations, both profit and non-profit, to deliver public goods and services to overcome some of these impediments. This paper argues that the network form of organization provides the best option to deliver mixed goods using the transaction cost, knowledge management, and agency perspectives.

In conclusion, it can be stated that as the Indian economy moves towards further liberalization, there is a need to re-visit the traditional definitions of public and private goods in the country. Government agencies need to re-evaluate whether some of the goods and services they provide can still be considered public goods. If not, there should be efforts by the government to exit those activities and leave their provision to private players, or to involve private players in the delivery of such services. Some services, such as telecommunications, have been re-defined as private services. The country has benefited from that. However, there are a significant number of goods and services that would be categorized as mixed goods, and hence there will be a greater need for PPPs. The organizational form chosen to deliver the goods or services will impact the performance. This paper suggests that the network form of organization will be the most suitable form of organization for a wide range of mixed goods and services. In situations that are inherently important for society, where the requirements for adaptive autonomy are high in the actual delivery of services while maintaining adaptive integrity also, most traditional forms of organizing are unsuitable. The network organization, with the government agency at the core ensuring adaptive integrity and functioning as the principal, and private entities as nodes ensuring adaptive autonomy, is the most desirable. As discussed in the paper, the argument for network organizations as a vehicle for PPPs is definitely applicable to the context of health care services.

This analysis has implications for organization systems in the government sector, which are obsessed with adaptive integrity,

centralized decisions based on general knowledge, and the need to contain agency costs. As a result, the decision-making authority is far more centralized than is desirable. There is a need to increase the levels of decentralization in government-owned and supported organizations and also in government departments. This will make them more adaptive to external contexts, facilitate better decision-making by co-locating relevant knowledge and decision-making authority, and would also contain agency costs.

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Project Management Control System of Infrastructure SPVs: DMRC-A Case Study

Anil K Gupta and G Ramesh

Project Management (PM) challenges in Infrastructure, especially in public systems, are enormous, given the abysmal record of the government. The Indian Railways (IR), with massive plans for modernization and expansion is under constant and severe pressure to expedite project execution. This paper examines the project management experiences of the Delhi Metro Rail Corporation (DMRC) as a Special Purpose Vehicle (SPV). Indian Railways has been experimenting with dedicated construction units under zonal railways and SPVs for specific project or group of projects. The Project Management (PM) of DMRC is explained through the Metro Corridor 1A (MC1A) project covering 4.5 km underground corridor. This was commissioned seven months in advance of the target and set new benchmarks for standards in safety, quality, environmental and public utility management. The PM Control System is discussed in terms of key dimensions such as: Leader, Organizational Structure, Work Culture, Responsibility Triangles, Contracting Framework, Project Management Consultant, Monitoring System, Buffer Management and System Review. It is also contrasted with existing systems within IR.

Introduction

Contexts

India needs about US\$ 500 billion to be invested in infrastructure during the next five years if it has to achieve ten percent growth rate in Gross Domestic Product (GDP)¹. This poses a major challenge in Project Management, even if the Government succeeds in mobilising the requisite funds. According to a Government of India (GOI) report that monitored 877 major projects estimated over

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Rs. 4,42,000 crore covering 16 different sectors, 299 projects suffered an average cost overrun of 49.3% with Railways contributing a major chunk (186 projects with 117.6% cost overrun) in it with 131 railway projects not even having the anticipated date of completion.

Within the infrastructure sector, the experience of execution of mega urban infrastructure projects in cities hasn't been encouraging either. In Kolkata, it took 23 years to complete 16 km underground metro line. The city experienced massive disruption of traffic and routine city life when the underground construction work was going on. The experience was such that it had created a question mark about the feasibility of construction of another underground Metro line in any other city in India.

Delhi Metro Railway Corporation's Project Management has been a contrary experience and it created new benchmarks in completing works before target, ensuring smooth traffic management, achieving international standards of safety and quality management, creating a brand building platform for contractors and designers, and utilizing latest technology in the most cost effective manner. The Phase-I of the project, which is the focus of this paper, was completed in a record time of seven years, as against the target time frame of 10 years set in the detailed feasibility report in 1995.

The successful PM of DMRC raises interesting questions, such as: What is utility for creating new SPVs for executing such projects? What are the success factors of PM of DMRC? How does DMRC contrast with construction units of Indian Railways? What PM Control Framework emerges out of this experience?

Project Management in IR

In terms of Projects execution, Indian Railways (IR) has a dismal track record. During the year 2008–09 IR planned to invest about Rs. 37,500 crore out of which more than Rs. 11,000 crore was meant for construction of new railway lines, including doubling and gauge conversion projects^{1a}. The GOI report cited above has stated

that 66 railway projects have suffered time overruns ranging from 1–161 months. The number of projects on the shelf of IR is increasing every year and with that the time and cost overruns are also increasing. There are various reasons for this and one major reason is rationing of fund allotment. For example, the Udhampur–Katra new railway line project was sanctioned in 1995 at Rs. 189 crore which was revised to Rs. 540 crore in 2006 and the project is still ongoing.

IR has separate construction units headed by a Chief Administrative Officer (CAO) under each General Manager (GM) for carrying out large construction projects. The CAO is generally from the civil engineering department, which is a multidisciplinary unit including Signalling and Telecommunication (S&T) and Electrical Engineering Officers, with dedicated finance and personal services working independent of the line departments. All these organizational units are extensions of the departmental set up of the IR.

In order to overcome the departmental limitations in expeditious project execution, Ministry of Railways (MOR) has created dedicated project companies, also known as Special Purpose Vehicles, under the Indian Companies Act 1956. The first of such SPVs was the Konkan Railway Corporation Limited (KRCL), which was created in 1990 for executing and operating a 760 km coastal railway line connecting Mangalore to Mumbai. KRCL succeeded in completing a technologically complex project in a record seven years time, which was the first of its kind in independent India. Since then, a number of SPVs have been created for executing various railway projects, such as the Mumbai Rail Vikas Corporation (MRVC), the Rail Vikas Nigam Limited (RVNL), and the Dedicated Freight Corridor Corporation of India Limited (DFCCIL).

RVNL was created in January 2003 for executing National Rail Vikas Yojana costing Rs. 15,000 crores in a period of five-year time. This comprised 34 projects at Rs. 8000 crores for the strengthening of Golden Quadrilateral and its diagonals, 22 port-connectivity projects at Rs. 3000 crores and 4 mega bridges at Rs. 3500 crores. Subsequently, several projects were changed and as on March 2008²