

Managing Public Investment- Implementation Strategy model

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Abstract

Infrastructure forms foundation for development of an economy. Creation of infrastructure through large scale investment has been in the domain of public sector activity for most of the developing economies. Public investment occupies critical role in driving growth through its infrastructure building action. Peculiar nature and characteristics of infrastructure drive private participation out of reckoning leaving the responsibility of public investment on public bodies. The challenges of resource scarcity, inefficient allocation of resources due to extraneous forces, inbuilt inefficiencies in implementation machinery render the management of public investment inherently challenging for public bodies. An implementation strategy in place offers solution to such challenges upfront during the process of public investment management. This paper attempts to identify those strategic aspects which need resolution during critical stages of project management. A sound implementation ensures optimization of return on investment.

Key words: Infrastructure, Public Investment, Implementation Strategy, Public Sector

Investment in infrastructure is a key driver of economic activities in any economy. Nations have largely relied on Public investment for building their infrastructure base. Private participation has its presence, but its role is limited in scope and scale. Public investment in large infrastructure projects remains the norm even today in most developing economies. Cambridge dictionary defines public investment as “the money that a government spends on public services like education and health”. The definition can be further extended to include physical infrastructures like Railways, Roads, Ports, Power transmissions etc. Thus, management of public investment is critical for determining the trajectory of economic development. This paper discusses the role of public investment in Infrastructure provisioning and attempts to develop a model of implementation strategy for optimizing return on investment.

1.0 Public investment and Infrastructure

Infrastructure is defined in India Infrastructure Report 1994¹ as “physical framework of facilities through which goods and services are provided to public”. It has multiple linkages to the economy, affects production and consumption directly, creates positive and negative spillover effects and involves large inflow of expenditure. “Good quality infrastructure is the most critical physical requirement for attaining faster growth in a competitive world and also ensuring investment in underdeveloped regions”.² World Bank in its report in 1994 stated that “infrastructure can deliver major benefits in promoting economic growth, poverty alleviation and environmental sustainability but only when it provides services that respond to effective demand and does so efficiently.”³ The cost of inefficient and insufficient infrastructure is enormously high in a developing economy and opportunity cost of every unit of public investment in any sector is equally high.

Public investment holds a key place in provisioning of infrastructure for economic growth due to its peculiar characteristics of long gestation period, large investment, heavy sunk cost, high risk of return on investment, indivisibility of output and lack of exclusion on uses. Public investments in infrastructure projects are long drawn projects with objective of long term returns in their conceptualization.

2.0 Management of public investment: A theoretical framework

The multiplier impact of public investment has been the guiding principle of public investment management in planning process. “The impact of public investment on growth is

well documented and research proven. A number of authors have argued that countries with more efficient public investment also see stronger relationships between investment and economic growth.”⁴ Efficiency of public investment is dependent on its management on project to project basis. High opportunity cost of public investment makes it imminent to ensure optimum returns on investment. “Improved efficiency and effectiveness of public spending not only helps maintain the fiscal discipline, it alleviates budget constraints as it allows achieving the same results at lower levels of spending or increases value for money by achieving better outcome at the same level of spending”⁵ The measurement of efficiency and effectiveness of public investment is an indicator of the quality of management of public resources across the sectors. Public resources are invested in many critical sectors of the economy which have direct as well as indirect multiplier effects on the performance parameters of an economy. The choice of sectors, sub sectors and individual projects attain critical relevance in this context.

“The relationship between government size and economic growth is not expected to be monotonic. On one hand, governments provide public goods and services and correct market failures. On the other hand, policy intervention generates its own distortions, as it requires taxes and distorts incentives. There is thus a trade-off depending on the size-efficiency mix of the public sector.”⁶ A sample of 64 countries to compare the size of the public investment and growth found that in most cases efficiency of public sector is the critical determinant of size-growth relationship. “By efficiency, we mean the ability of the government to transform its revenues into public goods and services that benefit the economy and promote growth. After a critically large size, or a critically low efficiency, the costs of a larger public sector outweigh the benefits.”⁷

Management of public investment is not restricted to the input-output ratio although in some researches input-output ratio is seen as most basic measure of efficiency. “Analysis of efficiency and effectiveness is about the relationship between inputs, outputs and outcomes.”⁸ However the relationship is not as simple as it may appear. There are multiple inputs ploughed in distinctive conditions to achieve a desired result. The relationship among inputs is not uniform in all compositions as well as conditions and hence may result into entirely different outputs if applied simplistically. European Commission’s study has found that “A high degree of technical efficiency achieved at the level of each individual input does

not guarantee an efficient functioning of public sector activities if alternative combinations of inputs would result in higher outputs”⁹

Most of the empirical evidences suggest that size, sector, conditions, policy priorities and objectives play some role in aggregating the gains from public investment activities and their impact on economic growth. The extent of impact and value of multiplier factor of public investment depends on the size of the economy, state of economic growth, choice of sectors, political objectives towards long term or short-term policy. However, the management structure for managing these public investments largely determine returns from individual investments once the above factors are set in place and taken as constant through the project cycle. Management of public investment implies the ways Governments manage their investment expenditure. The essential steps in Public investment management have been defined in a study by ODI¹⁰. They have identified stages in the life cycle of a public investment as following-

- i) **Conceptualization**- set of processes for considering an investment project. This stage is focused on investment appraisal.
- ii) **Selection**-Processes for selecting and approving new projects for financial allocations and budget.
- iii) **Implementation**- Processes of implementing the project through various stages upto final completion of the project.

The study has found that public investment management relates to the ways that Governments manage their investment expenditure i.e. how they select, construct and maintain their public assets. Public investment is distinctive in nature and differs from private investment which is more profit oriented with defined set of objectives and considerations for investment. The canvas of public investment is much wider in scope and can lead to multiple external factors influencing decision making significantly like political priorities over economic priorities. The challenges of public investment management are much greater and unique in each portfolio or even at individual project level. The distinctive characteristics of public investment have been identified in a study by Fainboim et. el.¹¹ as following-

- Spending on public investment projects involves significant cost and can span long time making accurate budgeting inherently challenging.

- It is hard to estimate costs correctly as capital investment is often ‘one off’ and technically complex. Projects are subject to cost overruns leading to fiscal risks.
- Spending on investment is generally ‘Lumpy’ meaning that payments required by Governments are not always regular or predictable.
- There is an imbalance in the timing of costs and benefits because projects usually require up-front financing while benefits accrue over years.
- Spending on investment create lasting assets that need to be maintained. This means decision to go ahead with a project create future financing obligations on operation and maintenance.
- Public investments are also subject to political considerations influencing their financing, allocative and execution mechanisms.

The above characteristics of public investments have bearing on management of public investment at economy level as well as at individual project level. The outcomes from individual projects may vary depending of the weight each of these may apply on a project. A purely economic analysis of public investments for creation of public assets may present severe limitation on conceptualization and selection of projects. Eric G. Too and Patrick Weaver¹² in their paper on a conceptual framework for project governance have found that project governance in a multi project environment has two key functions. The first function is a decision about which projects the organizations should approve, fund and support. The second function of governance system is oversight and assurance. Their conceptual framework focuses on three systems of corporate governance system, management system and project delivery system leading to final outcome in line with corporate objectives of the organization.

Zac Mills et.al. (2011)¹³ in their paper for IMF on ‘Investing in Public Investment: An Index of Public Investment Efficiency’, while developing an index for measuring efficiency of public investment, have observed that scaling up of investment in low income countries, particularly in infrastructure, is central to their development prospects. This necessitates higher levels of public investment to achieve sustained growth. However, they have also argued that historically, weaknesses in public investment management have resulted in inadequate returns to public and private investment in many low-income countries. “Low returns to public investment arise from poor selection and implementation of projects due to limited information, waste and leakage of resources, and weak technical expertise.”¹⁴ A mere volume of investment in public infrastructure does not create public assets if it is not

managed appropriately. In an environment of low efficiency, poorly managed projects coupled with wrong selection of projects, the return on investment from one unit will always be less than one. “A large body of theoretical and empirical evidence recognizes the importance of the quality and efficiency in investment spending in determining the marginal productivity of investment and its growth impact.”¹⁵

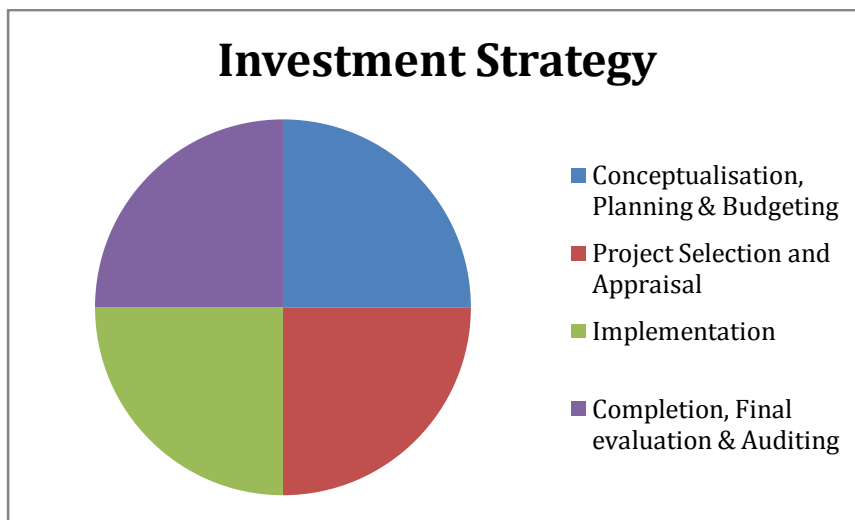
The empirical evidences on public investment suggest that the level and magnitude of public investment to engineer growth is only one dimension of public investment management. Scaling up of investment may yield results in long run but the rate of returns from these investments and their multiplier impact on sustained growth depends critically on the quality and efficiency of public investment. Zac Mils et. el. has examined the quality and efficiency of investment process across four stages: project appraisal, selection, implementation and evaluation. Managing the public resources is always a challenge owing to the very nature of its utilization process. Most of the developing and low-income countries face the paradox of large portfolio of demands for public infrastructure and scarce resources to allocate across the sectors. The opportunity cost of investment tends to be very high due to competing projects vying for limited resources. It is logical to expect high returns from public investments if allocative efficiencies can ensure that resources are put to projects with highest possible returns. However, empirical evidences suggest that public investments are always neither allocated nor managed efficiently. Some of the studies find that the broader institutional context within which investment decisions are undertaken and the quality of project selection, management and implementation play a critical role in determining the return on investment and its growth dividends (Esfahani and Ramirez,2003: Haque and Kneller, 2008).¹⁶ Some of the studies have focused on lack of efficient appraisal mechanisms and post completion evaluations processes as factors affecting efficiencies in public investments.

A more broad-based approach to public investment needs to be followed in any low-income resource scarce and infrastructure deficient economy. Premium has to be placed on the management of public investment along with choice of sectors, projects and absolute quantity of investment. Despite some conflicting views on role of public investment in promoting economic growth, it is commonly held belief that investment in creation of public infrastructure boosts private investment and also creates more economic opportunities in economy across the sectors. S. Straub¹⁷ in his paper for World Bank observes that

Improvements in infrastructure not only directly raise the productivity of human and physical capital (for example roads provide access to remote areas making private investment possible), but also indirectly, through lower transportation costs which increase economies of scale, productivity and thus growth.

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Based on Overseas Development Institute’s steps in Public investment, the process can be expanded into following segments-



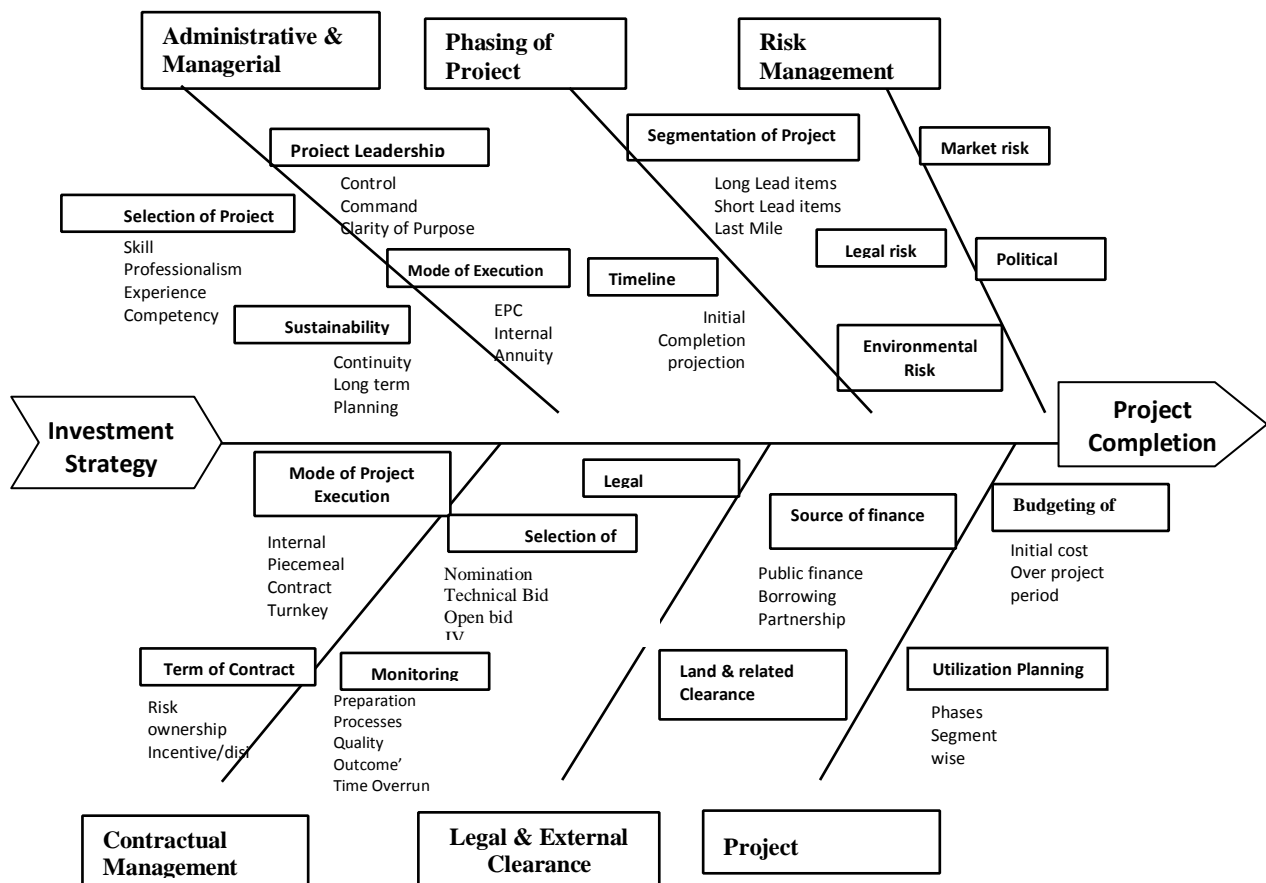
Each segment of the investment planning has critical contribution in success or failure of the investment. A wrongly conceived project can lead to inefficient resource use, execution and outcome. A badly executed project can have similar impact despite thoughtful planning. A careful execution of project, accounting for all variables affecting the execution, may neutralize some flaws in budget allocation or project selection. Public investments involve significant challenges in large cost, long gestation period, difficulties of cost analysis resulting in cost over runs. These complexities render accurate budgeting of large projects inherently challenging. Selection of projects among various alternatives also gets complicated due to difficulties in project evaluation, appraisal and calculation of cost- benefit analysis. Most of the developing economies suffer from resource scarcity and need to prioritize among available alternatives. In this context entire management process of public investment in large infrastructure projects attain significant relevance in these economies.

Public investments are also not solely guided by the economic evaluation of its costs and returns. Returns from such investments extend beyond economic values in the domain of

social returns to society. Because of its locational features and character of immobility, large infrastructure projects are subject of intense political calculations as well. In developing economies, decision making on project selection is a complex set of economic, social and political priorities, sometimes even overlooking economic rate of returns.

Considering the above complexities and large number of factors influencing the complete investment strategy in the creation of infrastructure through public investment, a sound investment planning along with implementation strategy occupy significant place in the public investment management landscape.

Ishikawa Diagram-Implementation Strategy Flow Diagram



* Code source if adopted

The implementation strategy involves a complex set of activities and processes organized in sequential matrix to optimize the resource use. The strategy gets further complicated where public investment is managed by public bodies within the framework of state policies, guidelines and Laws of the land. The strategy involves six set of processes which need to be

considered along with their sub variables. Each segment has critical role at different points of time during the execution process. Success or failure of the project largely depends on how meticulously they are managed by the executing agency. The timing of managing each segment is also critical like having legal and external clearances before starting physical work can reduce time and cost overrun is obtaining such clearances at later stage. Mode of executing the work determines the efficiency in contractual management while phasing of project ensures syncing the progress with budgetary allocations.

Conclusion

Management of Public investment is a challenging exercise in creation of infrastructure base in a developing economy. The process of public investment involves complex processes from conceptualization to selection to appraisal and implementation. The implementation part of the process remains most critical having significant challenges to be resolved. The outcomes from the project are evaluated on its economic and social returns. The implementation strategy encompasses variables which influence the execution as well as the project outcomes. The validation of the model presented here requires testing on projects by identifying and measuring each variable's relative contribution in determining final project outcomes.

References

¹India Infrastructure Report, 1994

²Joshi, Geeta S, “Infrastructure development Strategies for inclusive growth, India’s 11th Plan”, Leadership and Management in Engineering, April 2010

³World Development Report, World Bank, 1994

⁴International Monetary Fund: “Making Public investment more efficient”, Staff report, June 2015

⁵“The effectiveness and efficiency of Public spending”- European Commission- Economic Papers301/ February 2008, P.2

⁶Konstantinos Angelopoulos, “Does Public Sector efficiency matter? Revisiting the relationship between fiscal size and economic growth in a world sample”, University of Glasgow, January 2008. P.1

⁷Konstantinos Angelopoulos, *ibid.* P.1

⁸European Commission- Economic Papers301/ February 2008, *ibid.* P.2

⁹European Commission- Economic Papers301/ February 2008, *ibid.* P.4

¹⁰ Miller, Mark and Mustapha, Shakira: “Public Investment Management”, Overseas Development Institute, London, November 2016

¹¹Fainboim, I, Last,D. and Tandberg,E. (2013)- ‘Managing Public Investment’ in M.Cangiano, T. Curristine and M.Lazare (ed.) Public Financial Management and its emerging Architecture. Washington DC: IMF

¹²Too, Eric. G. and Weaver, Patrick- “The management of project management: A conceptual framework for project governance”, International journal of project management (2014), Vol. 32, Issue 8, November 2014 P. 1382-1394

¹³Zac Mills et.el. (2011)- “Investing in Public Investment: An Index of Public Investment Efficiency” : IMF Working Paper no WP/11/37 February 2011.

¹⁴Zac Mills et.el. (2011)- *ibid.* P.3

¹⁵Zac Mills et.el. (2011)- *ibid.* p. 5

¹⁶Zac Mills et.el. (2011)- *ibid.* p.6

¹⁷Straub, S. 2008, “Infrastructure and growth in Developing countries: Recent Advanced and Research Challenges,” World Bank Policy Research Working Paper No. 4460 (Washington: World Bank)