29th World Congress International Project Management Association (IPMA) 2015, IPMA WC 2015, 28-30 September – 1 October 2015, Westin Playa Bonita, Panama

# National public projects implementation systems: How to Improve public projects delivery from the country level

## Stanisław Gasik*

*Vistula University, Stokłosy 3, 02-787 Warszawa, Poland*

## Abstract

Motto

I do not ask what public project may do for their governments. I ask what governments should do to assure their projects success.

National Public Projects Implementation System (NPPIS) is the whole environment of public projects implementation in given country. It may be perceived as an extension of the concept of Project Management Office for the country level. It consists of six basic areas. The Public Projects Portfolio Management area is responsible for selecting, initiating and modifying the set of public projects in a given country. The Organizational Units area covers units engaged in implementing public project. It ranges from single PM agents through national level PMOs to advisory boards responsible for overseeing and improving the whole systems of public projects implementation. The Processes and Methodologies area covers processes related to project management in given country. Its main components are processes of project implementation and processes for project assurance and governance. The Knowledge Management area is responsible for providing knowledge to public projects actors (trainings, knowledge exchange etc.) and for knowledge exchange with project stakeholders (e.g. communities of citizens). Public projects are implemented by their actors: the most important of them are project managers and vendors. The approach to managing them is covered by the Actors area. The sixth area of NPPIS is the area of development of public projects implementation. It may range from establishing NPPIS in countries where there is no such system to sophisticated NPPIS improvement processes.

* Corresponding author. Tel.: +48 693906030; fax: +48 22 457-23-03.
  *E-mail address:* s.gasik@vistula.edu.pl

## 1. Introduction

A public project is a project executed by a public administration or with the participation of a public administration, or implemented with the involvement of funds from the budget of such an administration. Public administrations spend more and more budget on public projects. There exist a need to build consistent, comprehensive methodology describing how institutions of public administration should support delivery of their public projects.

This paper is a result of an analysis of practices of public projects implementation in four countries (and its component states): the United States, United Kingdom, Australia and Canada. The analysis consisted of three phases: review of internet resources, survey and interviews with selected actors engaged in public projects management. The next chapters describe six areas of practices of public projects management: portfolio management, institutions supporting project management, procedures and processes, knowledge management, actors of public projects and development of project implementation systems. These areas together make National Public Projects Implementation System (NPPIS, Gasik, 2014).

## 2. Public Project Portfolio Management

Public project portfolio management covers the processes of selecting, initiating and modifying the set of public projects in a given country or state. An organization's strategy usually makes up the basis for project portfolio management (e.g., PMI, 2013b). Government agencies must have strategic plans, for example, for periods of no less than five years (White House, 1993), which set out the objectives to be achieved through the implementation of programs. The strategic plan must also include an assessment of ways to achieve these objectives, i.e. the ways to measure the effectiveness of the programs. The annual plan defining a set of programs to be implemented by the agency must be consistent with the strategy of the agency. This approach ensures that only projects aligned with the strategy of government agencies will be selected for execution.

Public projects or programs may be also initiated as a result of occurrence of a specific situation which had not been foreseen by the strategy. This approach is often used in UK (cf. Barker Report (Barker, 2004), Latham Report (Latham, 1994)).

## 3. Organizational Units

There are two basic types of organizational units engaged in and supporting public projects delivery: Public Projects Management Offices (PPMO) and advisory bodies.

PPMOs have been established in many countries. Their objective is always to improve public projects delivery. PPMO's are placed in different locations and at different levels of organization structures. For example, the Major Projects Authority (MPA UK, 2013) in the UK is a part of Cabinet Office, Major Project Facilitation Unit (MPFU Australia, 2013) in Australia is a component of Ministry of Infrastructure and Regional Development. In the United States, the Office of Management and Budget (OMB USA, 2013), reports directly to the president. PPMO may be also located at other organizational levels.

PPMOs perform different functions. Sometimes they are fully responsible for implementation and management of projects (MPA UK, 2013, EPMO New York, 2013). In other countries PPMOs provide staff for major public projects – this is the solution adopted in New South Wales (PS NSW, 2013) .

PPMOs may facilitate project execution like in Australia at the Commonwealth level (MPFU Australia, 2013) or in Western Australia (DSD WA, 2013). Within this function they are responsible, among others, for removing all administrative barriers and obstacles, related, for instance to receiving all needed permits in complicated organizational environment. When public projects implementation involves many government agencies, PPMOs coordinate this involvement (MPMO Canada, 2013, OPMP Alaska, 2013, MPA UK, 2013).

PPMOs may also perform separate project management services for government units. They provide general advisory services to project management teams. They develop the business case and feasibility studies (e.g., PM Missouri, 2013), provide services in the area of determining project governance rules (POCD California, 2013;

MPV Victoria, 2013). They define project scope (e.g., POCD, California 2013), define schedules (e.g., PMS Arizona, 2013) or support project teams in other ways.

In the period of project implementation PPMO's provide various services, such as document management (PM Missouri, 2013), management of time, resources, and quality, and independent risk management (QAT Texas, 2013). They collect information about project progress (e.g., EPMO Vermont, 2013, MPMO Canada, 2013) and analyze these information (MDoT Montana, 2013).

PPMO's check whether projects and programs are implemented according to guidelines of the authorized bodies. They perform audits, reviews and project evaluations (e.g., MPMO Canada, 2013, MPA UK, 2013, EPMO Vermont, 2013, PQ Queensland, 2013). In order to control and monitor the projects, a special organizational unit may be created. In Maryland there is a team of Project Management Oversight (PMO Maryland, 2013), in Texas, the Quality Assurance Team (QAT Texas, 2013).

PPMO's define and uphold policies and methodologies related to the projectized approach to management. POCD California (POCD California, 2013), PQ Queensland (PQ Queensland, 2013), or PMSC Missouri (PMSC Missouri, 2013) deal with definition and maintenance of project management policies, guidelines and methodologies.

PPMO's perform functions related to the maintenance and utilization of project management software applications. This is the case of DIT Michigan (DIT Michigan, 2000), MPV Victoria (MPV Victoria, 2013), or VITA Virginia (VITA Virginia, 2013).

Another type of a body engaged in public projects management is advisory group. They generally advise on public project management and public PM systems. They promote project management as a profession (e.g. PMAC Tasmania, 2013). They remove obstacles to project management (PMAG North Carolina, 2013). They review applications for major projects (ITAC Arizona, 2013). They suggest improvements to public projects implementation systems (EPMO North Carolina , 2013, EPMO Kansas, 2008, p. 18).

## 4. Processes and Methodologies

Projects are implemented through activities that are grouped into processes. In this chapter, I describe the processes and the groups to which they are assigned: the governance processes and management processes.

Governance processes are sequences of operations, usually conducted at planned intervals, checking project status and taking on this basis the key decisions, in particular regarding their initiation, and checking during their implementation the reasonableness of continuing to implement the project.

Public projects are subject to business supervision during their implementation. The compatibility of the project with its business case, and viability of expected business results are the main areas of interest during such verification. The verifications are performed at certain points of the project (or program) life cycle, called "gates".

The ordered set of such verifications is called the "gateway review process." This process has been defined by the British Office of Government Commerce (OGC, 2007) and has been implemented, among other places, in Australia at the federal level (DoF Australia, 2013), or in Texas (DIR Texas, 2013).

Major projects and programs must pass through six gates (OGC, 2007):

0.  Strategic Assessment - The gate for programs only. Verification that the program is needed and that is likely to achieve its objectives.
1.  Business Justification - Verification that business requirements can be satisfied. Is it possible to finance the project? Determination of the effects which will be gained for invested money.
2.  Delivery strategy -Verification that the production or purchasing strategy planned for the project is appropriate for achieving project results. Verification of implementation plans or of tender documentation.
3.  Investment decision - Another verification whether the project is still needed, the funds exist, the implementation plans are appropriate, and the investment decision is appropriate to the current situation.
4.  Readiness for service - Verification that the organization is ready to implement project products.
5.  Operations review and benefits realization -Verification that the project products are used properly and the business results have been achieved.

Project management methodology is a structured collection of guidelines describing the ways of project management. Methodologies may be associated with the governance processes. From this point of view, the methodology describes activities that must be performed in order to effectively pass the governance process gates. In Texas, for each of the gates of the Texas Project Delivery Framework process (DIR Texas, 2013) the processes necessary for passing these gates have been developed, together with the techniques, tools and applicable forms. With this approach, the methodology is complementary to the process of governance.

The set of methodology phases (together called "project life cycle") may cover, for example, the preliminary evaluation phase, business case development phase, sourcing suppliers phase, establishment of service capability phase, and services delivery phase (QTF Queensland, 2013). The life cycle of the project, according to the PMBOK ® Guide, can be divided into initiation, planning, execution (with monitoring and control) and closure of the project (CDOT California, 2013). Transportation project management methodology (WSDOT Washington, 2013) describes the project's life cycle, consisting of five phases: initiation and alignment to business objectives, planning the work, endorsement of the plan by engaged agencies, implementing the plan, transition of the product to operations, and closing the project.

The scope of methodology application may be defined in different ways. It can be recommended for all public projects implemented by the government and its agencies (OEG Tasmania, 2011). It may be applied more broadly, so as to include both government agencies and suppliers implementing public projects (CDOT California, 2013).

## 5. Knowledge and Stakeholders

Knowledge is the basic resource necessary for the implementation of public projects (as for other types of projects, too). This knowledge may have codified form (as, for example, in project management standards) and can also be distributed through contacts of members of communities involved in the implementation of public projects.

Project management standards may be treated as a source of knowledge about project management. Standards in the area of project management are not used directly as methodologies. Public institutions use the standards as sources of knowledge needed to develop their project management methodologies. National standards usually deal with knowledge needed for the management of individual projects (e.g., PMBOK ® Guide, PMI, 2013, Prince 2 ®, OGC, 2009).

Knowledge about project management is being promoted in various ways by public institutions. The group of techniques based on a social approach to project management include meetings (PSPMF, 2013) and conferences (Expotrade, 2013) for project managers of the public sector, in which they can establish contacts and exchange knowledge. Such events also provide a forum for the exchange of knowledge between the public and private sectors.

The techniques based on knowledge codification include running web portals that enable exchange of knowledge between the managers of public projects (e.g., NYS Forum, 2013) and web portals containing best practices and knowledge gained from the projects (VITA Virginia, 2013b). Websites describing methods of public projects management oriented specifically at project managers, owners, sponsors or public project team members (DTMB Michigan, 2013) are maintained. Public institutions run mailing lists devoted to public projects management (OEG Tasmania, 2013).

Increasing the level of knowledge on public projects management among people involved in such projects is a form of knowledge management. At the most advanced level of education, studies of public projects management are conducted (University of Oxford, 2012). Public institutions provide training in public projects management (e.g., ITSD Missouri, 2013, DTMB Michigan, 2013, WSDOT Washington, 2013b).

Public projects typically have multiple stakeholders: administration, contractors and, above all, communities of administrative units for which they are implemented. Due to the large number of stakeholders, it is important to provide efficient, easily accessible channels of information transfer between actors implementing projects and other stakeholders. In order to gather such information, repositories of information on public projects are maintained (e.g., EPMO Vermont, 2013). Internet tools, like projects registers or portals are used as communication tools (e.g., DTPR Alaska, 2013, MPA UK, 2013).

## 6. Actors

The main actors involved in public projects implementation, in addition to institutions mentioned above, are external companies implementing projects and project managers. Public institutions incorporate such entities into projects in various ways. Relationships with companies engaged in public projects execution is regulated by law.

The requirements to be met by companies implementing public projects are defined in order to facilitate the management of contracts by contracting their execution only to qualified companies. Such requirements concern the experience and the characteristics of the company – in which case we are dealing with the direct qualification – or they specify certifications required from the companies implementing public projects – an approach I call the indirect qualification (e.g. DoFD Australia, 2012). Based on directly or indirectly defined requirements, registers of qualified public project contractors are maintained (PM Missouri, 2013, DoFD Australia, 2012).

In addition to companies, project managers have significant influence on public projects. For them too, as for companies, the pertinent requirements are formulated. In some countries, only people who meet these requirements may manage public projects. Requirements for public project managers usually focus on three areas: general project management skills, specific skills needed to manage public projects (e.g., knowledge of the applicable regulations) and knowledge of local realities. Having a certificate issued by a recognized body may be the basis for recognition as a qualified project manager (e.g. PMO Maine, 2013). Other criteria which must be satisfied by public project managers (like the ability to identify project products and services, or the ability to develop and implement a project plan) are too formulated (VITA Virginia, 2011).

## 7. Development of Public Projects Management Systems

What is the desired target state of public projects management? The countries that want to optimize the benefits gained from public projects, clearly define their strategic goals in this area and prepare plans pursuant to achieving these goals.

The following development prospects for public projects management systems may be defined: general goals, business goals, management goals, and operational goals.

The general goals may include, for example, a recommendation that a public projects management strategy be developed (ANAO, 2011), strengthening the national path of public projects and program management (Brewer, Smith, & Sandeen, 2013), or developing and streamlining processes and guidelines for public projects management (TBCS, 2010).

In the group of business goals I include the goal of public projects management planning in a way that guarantees the highest possible return values (WSDOT Washington, 2013c). This group of goals may also include achieving the desired outcome of projects and programs while limiting their risk to stakeholders and taxpayers (TBCS, 2010).

The largest group of public projects management goals relate to the methods of project implementation. Improvements should target the various phases, such as planning (ANAO, 2011, EPMO Kansas, 2008b) and closing projects (EPMO Kansas, 2008b).

In the group of operational goals I include those goals that require the implementation of specific organizational solutions, such as the establishment of an academic institution that educates public project managers (University of Oxford, 2012) or the plan for defining the major projects portfolio, the implementation of which will be reported directly to the government (Cabinet Office, 2013).

## 8. Summary and Conclusions

There are two basic groups of factors contributing to successes of public projects. The first, much better analyzed in professional and academic literature, consists of processes and activities performed by project managers and their teams. But public projects are executed in the environment established by public administrations. This environment constitutes the second main group of factors influencing project success. Such an environment is called National Public Projects Implementation System (NPPIS, Gasik, 2014) and consists of six

basic areas: public projects portfolio management, institutions, processes and methodologies, knowledge management, actors and development of NPPIS. Establishing such an environment conductive to public project delivery should be one of the most important tasks of each government. There is no economical development without strong NPPIS.

## Acknowledgements

## References

ANAO (2011). Management of the Implementation of New Policy Initiatives. Audit Report No.29 2010-11. Canberra, Australia: Australian National Audit Office.

Barker, K. (2004) Delivering stability: securing our future housing needs. Barker Review of Housing Supply – Final Report – Recommendations. London: HM Treasury. http://www.barkerreview.org.uk (accessed May, 2015).

Brewer, J. K., Smith, S. A., Sandeen, A. V. (2013) 2013 Statewide IT Strategic Plan. A Plan for The Future. Phoenix, USA: Arizona Strategic Enterprise Technology. http://aset.azdoa.gov/sites/default/files/media/pdfs/120301_FINAL_int.pdf (accessed September, 2013).

Cabinet Office (2013) Policy Managing Major Projects More Effectively. London, UK: Cabinet Office, https://www.gov.uk/government/policies/managing-major-projects-more-effectively. (accessed May, 2015).

CDOT California (2013) California Project Management Methodology. Sacramento, USA: California Department of Technology.. http://www.cio.ca.gov/Government/IT_Policy/SIMM_17/index.html (accessed May, 2015).

DIR Texas (2013) Texas Project Delivery Framework. Austin, USA: Department of Information Resources. . http://www2.dir.state.tx.us/management/projectdelivery/projectframework/Pages/Framework.aspx. (accessed May, 2015).

DIT Michigan (2000) Project Management Tool Standard. Lansing, USA: Department Information Technology Solutions. http://www.michigan.gov/documents/138001_36352_7.pdf (accessed May, 2015).

DoF Australia (2013) Gateway Review Process. Canberra, Australia: Department of Finance. http://www.finance.gov.au/gateway/review-process.html (accessed May, 2013).

DoFD Australia (2012) Organizational Project Management Maturity Assessment. 2012. Canberra, Australia: Department of Finance and Deregulation.

DSD WA (2013) Lead Agency Framework. Perth, Australia: Department of State Development. http://www.dsd.wa.gov.au/7633.aspx (accessed September, 2013).

DTMB Michigan (2013) I have a new project. Lansing, USA: Department of Technology Management and Budget. http://www.michigan.gov/dtmb/0,5552,7-150-56355_56581_31294---,00.html. (accessed October, 2013).

DTPR Alaska (2013) Alaska DOT & PF Statewide Project Information. Juneau, USA: Alaska Department of Transportation and Public Facilities. http://dot.alaska.gov/project_info/index.shtml (accessed May, 2015).

EPMO Kansas (2008) Project Management Methodology - On-Line Manual Documentation. Topeka, USA: Enterprise Project Management Office. http://oits.ks.gov/kito/epmo/project-management-methodology (accessed May, 2015).

EPMO Kansas (2008b) Project Management Methodology. Appendix E. Information Technology Policy 2530 - Project Management. Topeka, USA: Enterprise Project Management Office. http://oits.ks.gov/kito/Rel23/E_appendix.pdf (accessed October, 2013).

EPMO New York (2013) Enterprise Program Management Office. Albany, USA. http://www.its.ny.gov/enterprise-program-management-office-epmo. (accessed May, 2015).

EPMO North Carolina (2013) Enterprise Project Management Office. Raleigh, USA: Enterprise Program Management Office. http://www.epmo.scio.nc.gov/services/default.aspx (accessed May, 2015).

EPMO Vermont (2013) Enterprise Project Management Office Charter. Montpelier, USA: Enterprise Program Management Office. http://dii.vermont.gov/sites/dii/files/pdfs/EPMO-Charter.pdf (accessed September, 2013).

Expotrade (2013). 4th Annual WA Major Projects Conference. Peeth. Australia: Expotrade. http://www.waconference.com.au/ (accessed October, 2013).

Gasik, S. (2014). P-government – a Framework for Public Projects Management. PM World Journal. III, 1-26

ITAC Arizona (2013) Information Technology Authorization Committee. Phoenix: USA. http://aset.azdoa.gov/content/information-technology-authorization-committee-itac (accessed May, 2015).

ITSD Missouri (2013) Project Management & Oversight. Jefferson City, USA: Information Technology Service Division. http://content.oa.mo.gov/information-technology-itsd/it-governance/project-management-oversight/ (accessed May, 2015).

Latham, M. (1994) *Constructing the Team*. London, UK: HMSO.

MDoT Montana (2013) Rail, Transit and Planning Division. Helena, USA: Montana Department of Transportation. http://www.mdt.mt.gov/mdt/organization/railtran.shtml. (accessed May, 2015).

MPA UK (2013) Major Projects Authority. London, UK. https://www.gov.uk/government/policy-teams/126 (accessed May, 2015).

MPFU Australia (2013) Major Projects Facilitation Unit. Canberra, Australia: Department of Infrastructure and Regional Development. http://www.majorprojectfacilitation.gov.au/  (accessed May, 2015).

MPMO Canada (2013) Major Project Management Office. Ottawa, Canada: Government of Canada. http://mpmo.gc.ca/home  (accessed May, 2015).

MPV Victoria (2013) Major Projects Victoria. Melbourne, Victoria, Australia. http://www.majorprojects.vic.gov.au/. (accessed May, 2015).

NYS Forum (2013) Project Management Working Group. Albany, USA. http://www.nysforum.org/committees/projectmanagement/. (accessed May, 2015).

OEG Tasmania (2011) Tasmanian Government Project Management Guidelines. Hobart, Australia: Office of eGovernment. http://www.egovernment.tas.gov.au/__data/assets/pdf_file/0019/147511/Tasmanian_Government_Project_Management_Guidelines_V7_0_July_2011_2.pdf  (accessed May, 2015).

OGC (2007) The OGC Gateway ™ Process. A manager's checklist. London, UK: Office of Government Commerce.

OGC (2009) Managing Successful Projects with Prince 2 ®. London, UK: Office of Government Commerce.

OMB USA (2013) Office of Management and Budget. Washington, DC, USA. http://www.whitehouse.gov/omb  (accessed May, 2015).

OPMP Alaska (2013) Office of Project Management and Permitting. Juenau, USA: Office of Project Management and Permitting. http://dnr.alaska.gov/commis/opmp/. (accessed May, 2015).

PM Missouri (2013) Project Management. Jefferson City, USA: Office of Administration. http://oa.mo.gov/fmdc/dc/ (accessed September, 2013).

PMI (2013)  A Guide to the Project Management Body of Knowledge (PMBOK ® Guide) – Fifth Edition. Newton Square USA: Project Management Institute.

PMI (2013b) The Standard for Portfolio Management-Third Edition. Newton Square, USA: Project Management Institute.

PMO Maine (2013) Cross Functional Work Flow Document. Augusta, USA: Office of Information Technology. http://www.maine.gov/oit/project_management/CrossFunctionalWorkFlowforallOITWorkandProjectRequestsFinal_V1%200.htm (accessed October, 2013).

PMS Arizona (2013) Project Management Services. Phoenix, USA: Arizona Department of Transportation. http://www.azdot.gov/business/ManagementServices (accessed May, 2015).

PMSC Missouri (2013) Project Management Standing Committee. Jefferson City, USA: Office of Administration. http://oa.mo.gov/itsd/cio/projectmgmt/PDF/PMSC-Charter102605.pdf (accessed September, 2013).

POCD California (2013) IT Project Oversight and Consulting Division. Sacramento, USA: California Department of Technology. http://www.cio.ca.gov/ppmo/  (accessed May, 2015).

PQ Queensland (2013) Projects Queensland. Brisbane, Australia: Queensland Treasury and Trade. http://www.treasury.qld.gov.au/projects-queensland/about/index.shtml. (accessed September, 2013).

PS NSW (2013) Project Services. Sydney, Australia: Public Works. http://www.publicworks.nsw.gov.au/about-nsw-public-works/project-management (accessed May, 2015).

PSPMF (2013) Public Sector Project Management Forum. Durham, Canada. http://www.pspmf.ca/default.htm.  (accessed October, 2013).

QAT Texas (2013) Quality Assurance Team. Austin, Texas, USA. http://qat.state.tx.us/  (accessed May, 2015).

QTF Queensland (2013) Project Assurance Framework. Queensland, Australia: Queensland Treasury and Trade. Brisbane. http://www.treasury.qld.gov.au/projects-queensland/policy-framework/project-assurance-framework/index.shtml (accessed October, 2013).

TBCS (2010) Policy on the Management of Projects. Ottawa, Canada: Treasury Board of Canada Secretariat. http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=18229&section=text  (accessed May, 2015).

University of Oxford (2012)  Oxford teams up with Cabinet Office to teach leadership. Oxford, UK: University of Oxford. http://www.ox.ac.uk/media/news_stories/2012/120107.html (accessed October, 2013).

VITA Virginia (2011) Project Manager Selection And Training Standard. Richmond, USA: Virginia Information Technologies Agency. http://www.vita.virginia.gov/uploadedFiles/VITA_Main_Public/Library/PSGs/Project_Management_Selection_Training_Standard_CPM11102.pdf  (accessed May, 2015).

VITA Virginia (2013) Oracle Primavera Portfolio Management (OPPM). Richmond, USA: Virginia Information Technologies Agency. http://www.vita.virginia.gov/oversight/projects/default.aspx?id=505  (accessed May, 2015).

VITA Virginia (2013b) Best Practices and Lessons Learned. Richmond, USA: Virginia Information Technologies Agency. http://vita2.virginia.gov/itTrain/pmDev/bpll/BPLL.cfm (accessed May, 2015).

White House (1993) Government Performance Results Act. Washington, USA: White House. http://www.whitehouse.gov/omb/mgmt-gpra/gplaw2m, modified: http://www.whitehouse.gov/omb/performance/gprm-act (accessed May, 2015).

WSDOT Washington (2013) Project Management Online Guide. Olympia, USA: Washington State Department of Transportation. http://www.wsdot.wa.gov/Projects/ProjectMgmt/PMOG.htm  (accessed May, 2015).

WSDOT Washington (2013b) Project Management - Delivering the Capital Construction Programs at the Project Level. Olympia, USA: Washington State Department of Transportation. http://www.wsdot.wa.gov/Projects/ProjectMgmt/ (accessed May, 2015).

WSDOT Washington (2013c) Washington State Department of Transportation Management Principles. Olympia, USA: Washington State Department of Transportation. http://www.wsdot.wa.gov/accountability/mgmtprinciples.htm  (accessed October, 2013).

WSDOT Washington (2013) Project Management Online Guide. Olympia, USA: Washington State Department of Transportation. http://www.wsdot.wa.gov/Projects/ProjectMgmt/PMOG.htm  (accessed May, 2015).