

Public Value and ROI in the Government Sector

Ahmad N. Al-Raisi, and Ali M. Al-Khourri

Abstract—Assessing the returns of public sector investments in Information Technology (IT) has been the subject of a round of debates between practitioners and the academic researchers. The range and complexity of government Information Technology (IT) investments and broad community of benefit owners makes assessing investment returns a daunting prospect. This paper provides a short review of existing literature on Public Return on Investment (ROI) and the general approaches to measurement of such returns. It also presents some examples of successful Public ROI programs and practices in the United Arab Emirates (UAE). The intention of this paper is to share experience and knowledge with the wider research and practitioner community in different governments.

Keywords—Public Value, ROI, Government Projects.

I. INTRODUCTION

THE substantial scale of expenditure and the scope of government sector investment in IT are receiving increasing scrutiny in many of countries. Governments are criticised for not accurately measuring the full value of their IT investments, and hence wasting government funds on unnecessary technology. It is often repeated in the literature that governments at large are unable to convincingly demonstrate a return on investment that is widely understood or based upon well-grounded measures [1]. This might be linked somehow to the myths regarding the use of ROI in government, which might be preventing many agencies from the development of comprehensive approaches to evaluating their initiatives, such as:

- Government will never require the use of ROI;
- Absences of revenues and profits make the concept of ROI inappropriate;
- Little or no hard data in government organisations;
- ROI methodology inappropriate for essential government services.

The global environment is indeed playing an immense role in changing government organisations practices and acceptance of new concepts that were only limited to private sector organisations. It is understood that every government IT project will have its own unique goals, value propositions, and stakeholders, but assessing these returns remains a core problem in IT planning and decision making [2].

Ahmad N. Al-Raisi is with Abu Dhabi Police GHQ, Ministry of Interior, P.O. Box: 253, Abu Dhabi, UAE (Work: +9712 409 2211, Fax: +971 2 4457006, e-mail: alraisi@adpolice.gov.ae).

Ali M. Al-Khourri is with Emirates Identity Authority, P.O. Box 27126, Abu Dhabi, UAE (Work: +9712 404 6775, Fax: +9712 404 6768, e-mail: ali.alkhourri@emiratesid.ae).

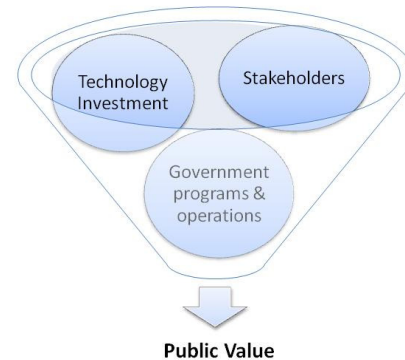


Fig. 1 Project constituents and public value

Traditional ROI approaches concentrated on cost-benefit analysis. These methods can be seen as limited when it comes to measuring risk, indirect benefits and intangible benefits [3]. It is widely argued that government IT initiatives that have been cost-justified by traditional economic and financial return methods are unlikely to achieve their targets. The concept of public value and public ROI are new terms used in the government sector to justify IT investments. The new practices of ROI analysis in public sector encompass all of the direct and indirect effects of government IT spending i.e., "public value of IT". The definition of public value of IT involves the study of value primarily along three dimensions: constituent service, operational efficiency and political return, as the next section will provide further elaboration on this.

II. REVIEW OF THE FIELD

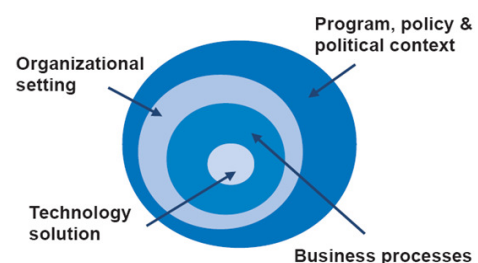


Fig-2: Complexity layers surrounding government IT initiatives

Investment decisions in the public sector, whether they involve IT or not, should necessarily take place in a context of political and policy influences (see also Fig-2). No matter how

solid or technically sophisticated an ROI analysis may be, it is seldom the sole determinant of an investment decision especially in the government sector. Nonetheless, and historically, governments have measured the performance of IT initiatives with quantifiable, financially based outcomes, such as reduced transaction costs or cost avoidance. Of course, financial measures should be used in government, but they seldom represent the full range of returns generated from public investments in IT (see also Fig-3).



Fig-3: Pubic ROI elements

So while important, economic returns are only one dimension of a government’s effectiveness. The social and political impact an IT initiative can have on the daily life of citizens and other stakeholders is also essential. In fact, Public value creation extends beyond financial savings and service evaluation data to actually increasing public service delivery, integrity and transparency of government process and operations.

It should also be recognised that the range, scale and complexity of government information technology (IT) investments makes assessment of their returns using conventional approaches a complex and challenging prospect. The complexity results from shortcomings in the available methods and models for assessing public returns i.e., intangibility of the benefits generated, the time at which benefits can be measured, and the cross-sectional nature of information technology project. Measuring the return on IT investment in general is a complex and requires a thorough understanding and knowledge of both the business process and the context in which it is embedded. It is necessary to understand the relationships between the costs, benefits and risks of IT investments, as well as the different contextual factors including organisational, institutional, and environmental. Traditional approaches to return on investment analysis have been criticised [4, 5] for being:

- a) Based on financial models,
- b) Not being able to accurately predict ROI due to uncertainty and difficult decisions involved in IT investments,

- c) Do not take into consideration the political position of the organisation, and
- d) Have more limitations including the exclusion of social and political returns

Unlike the private sector where the use of ROI is embedded in business decision making, public sector organisations often remain focused on the success of policy initiatives and fulfilling political goals [6, 7]. Existing Public ROI methods and models attempt to develop understanding of the benefits and value of the investment, including political, social and economic. They mostly represent generic models and they vary widely in terms of their overall assessment approach. However, three significant shortcomings have been recognised [8]:

- a) Incomplete analysis of public value, resulting in too narrow a scope of what can be considered returns to the public,
- b) Lack of systematic attention to how government IT investments generate measures of public value, and
- c) Weak or absent methods for tailoring a public ROI assessment to the specific context and goals of a specific government IT investment.

While financial measures would remain important, research emphasises the need for more comprehensive approaches to measure the extent to which government programs impact the world around them [7]. In a response to such need, SAP, the world's largest business software company, developed a holistic approach consisting of three dimensions of performance and public sector entities that can be used to measure public ROI i.e., Financial ROI, Social ROI and Political ROI, as depicted in Fig-4 [9].

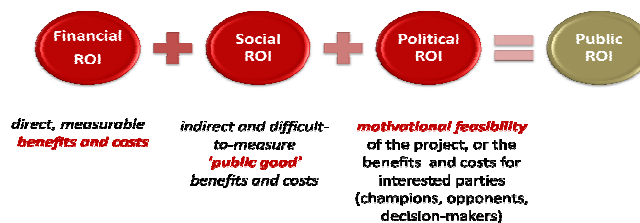


Fig-4: The three dimensions of public ROI

The concept is argued to:

- a) Demonstrate trustworthiness to citizens,
- b) Ensure governance in the value of operations,
- c) Promote positive community programs to business constituents and
- d) Gain an advantage in securing public funds.

Although it considers Financial ROI a key dimension of a government’s effectiveness, it puts much emphasis on the social and political value of public programs. Further details

of the three dimensions are provided in Table -1.

TABLE 1
FINANCIAL, SOCIAL AND POLITICAL ROI

Financial ROI	Social ROI	Political ROI
Traditional, or “classic” measurement of financial gains with quantifiable results.	Impact of government services on a societal level	Political ROI impacts the system of governing and policy decision making.
e.g., are reduced transaction costs (such as in procurement by reducing the cost creating a purchase order from \$28 to \$21) or less steps in the workflow of approving a budget request (12 steps to 7).	e.g., are citizens safer? Are the children in a particular jurisdiction receiving adequate medical services? Are the poor receiving sufficient food and shelter? In short, Social ROI impacts the quality of life in households and communities.	e.g., does the IT environment support and enable us to deliver government programs that are matched to policies, legislation and mandates? Are we delivering on the promises of our politicians?

The SAP concept has gone through further research by the Centre for Technology in Government for assessing public return on investment (ROI) for IT initiatives. This exercise resulted in the development of a Public ROI framework, as depicted in Table-2 [8]. The framework describes public value in terms of six kinds of impacts governments might have on the interests of public stakeholders. It views Public (e.g., citizens, businesses, and community organisations) as the basis for return for IT investment assessment, rather than the technology development and implementation. It identifies two sources of public returns as value to the public that primarily results from: (1) improving the government itself, and value that results from, and (2) delivering specific benefits directly to citizens. The next section will present some insights from the United Arab Emirates related to the concept and application of *public value* in government projects.

TABLE 2
STAKEHOLDER VALUE PROPOSITION

Financial	Can we afford this? Will it pay for itself? Is it based on expected savings and revenue increases compared to the dollar cost of all expenditures on the new system. Impact on income, asset values, liabilities, entitlements, and other kinds of wealth or risks to any of them
Political	Impacts on informed (i.e., the ability to influence) government actions and policy, government actions or policy.
Social	Impacts on family or community relationships, opportunity, status, or identity.
Strategic	Impacts on innovation and planning, economic or political advantage or opportunities for future gain. Focusing on strategic objectives keeps attention on the full range of benefits to be expected from the investment, and how to measure them.
Ideological	Impacts on beliefs, moral or ethical values, or positions in terms of public trust, integrity, and legitimacy.
Stewardship	Impacts on the public’s view of government officials as faithful stewards in terms of public trust, integrity, and legitimacy.

III. REFLECTION FROM THE FIELD – UAE CASE

In common with governments around the world public sector organisations in the UAE are under pressure to improve the efficiency and effectiveness of their processes and delivery of public services. The concept of customer service is being brought into the centre of the value proposition equilibrium in government systems. An important paradigm shift taking place in the UAE public sector organisations in recent years is the shift from an activity-based to a result/outcome-based focus. This is guided by the government’s vision to excel at customer service, promote innovation and creativity in public sector [10] and make a tangible difference to the society that it serves(see also Table-3).

TABLE 3
PARADIGM SHIFT TO A RESULT-BASED APPROACH

Activity-Based	Result/outcome-Based
No business need of the program	Program linked to specific business needs
No assessment of performance issues	Assessment of performance effectiveness
No specific measurable objectives	Specific objectives for behaviour & business impact
No effort to prepare program participants to achieve results	Results expectation communicated to participants
No effort to prepare work environment to support change	Environment prepared to support change
No effort to build partnership with key Managers	Partnership established with key managers and clients
No measurement of results or benefit-cost analysis	Measurement of results and benefit-cost analysis
Planning and reporting is activity focused	Planning and reporting is outcome focused

Practices in the UAE government sector are becoming similar or aligned to those in the private sector. There is great interest in improving performance measurement in the UAE government through the adoption of total quality management (TQM), zero-based budgeting, and employing balanced scorecard methodologies.

It is recognised that these approaches need to be tailored to fit the needs of government. As an example zero-based budgeting is generally an activity-based approach. The UAE government is developing a hybrid methodology of activity and result-based approaches. The UAE government is using the former to control overall government spending and link it with top level strategic goals in each organisation and its programs. The result-based approach provides a broader, more diverse perspective of the value to citizens and/or to the society that IT investments can generate.

The second paradigm shift is observed in the increasing interest of the UAE government of the concept of public private partnerships (PPPs) to finance and deliver various government infrastructure projects and services. Such steps have produced innovation and flexibility in public sector organisations. Private sector involvement has not only provided additional investment funding to government but

also made a significant stimulus to the economy by generating business opportunities and encouraging local and foreign investments. We should also recognise that several forms of partnerships with the private sector are beginning to emerge in the public sector with the objective of making strong Public ROI returns. One example is the increasing number of public private sector consortiums, with government organisations having the majority of equity shares in such establishments. These consortiums work together with government to provide services, without completely transferring public assets to the private sector. Such partnerships are seen to play a fundamental role in achieving growth and create new jobs opportunities.

Another example are the government alliances with private sector companies in promoting the adoption of IT solutions that have been developed for a specific government function through the same supplier to other countries. The government entity shares 20-to-30% of the contract value when signed. This amount is then waived in most cases as a contribution from the UAE government to the country interested in the solution. Such partnership projects are seen as a key element for improving bi-lateral relations with other countries.

On the other hand, the UAE government has implemented many successful Public ROI programs in the recent years.

These programs though may be considered small, they provided the government with a “self-funding” source for larger scale efforts. Table-4 provides an overview of some of the recent projects implemented in the UAE, and considered as most successful ROI stories in the region.

With a remarkable financial income generated from such government initiatives, financial returns are being invested on projects and initiatives benefiting the society and/or in internal organisation development. The exponential revenues generated from auctioning/ selling special numbered car plates , for example, are all donated to charity.

Government programs in the UAE public sector as illustrated from the examples provided above incorporate different dimensions of Public ROI returns. However, from our knowledge, public ROI is often not clearly thought through when government programs are first initiated. For example, many of the government IT projects worldwide when announced or implemented do not meet public expectations, and lead to hot public debates. The challenge of making a clear business case for IT projects is also linked to the limitation of existing knowledge and tools required for delivering complex programs and assessing resultant public value.

TABLE 4
PROJECTS WITH HIGH LEVEL OF ROI ON ALL THREE DIMENSIONS OF PERFORMANCE IN UAE

Project	Desc.	Spending returns
<p>Salik toll system (www.salik.ae)</p> <p>Operated in Dubai</p>	<p>Electronic toll collection system on highway roads (A motorist pays Dh4 each time he drives through the gate)</p> <p>Aimed at reducing congestion at key and arterial/bottleneck points of traffic, encouraging motorists to use alternative routes i.e., other newer roads which have been built to handle such traffic</p>	<p>Sustaining the development of transport Infrastructure Programs</p>
<p>Electronic Number Auction (www.numbers.ae)</p> <p>Abu Dhabi Police GHQ</p>	<p>An electronic auction that provides an easy method of auctioning prime and desirable licence plate numbers to the general public</p> <p>The auction generated world record e.g., sold the Top Ten most expensive license plates in the world, including the Guinness record-breaking world's most expensive Plate “1” which sold for \$14 million in Abu Dhabi in Feb. 2008.</p>	<p>100% of revenues go to charities</p> <p>Building one of the largest hospitals in the region to provide <u>free treatment</u> for those who suffer injuries from car accidents</p>
<p>SA’ED Project</p> <p>An independent company, operated by Abu Dhabi Police GHQ.</p>	<p>Abu Dhabi police outsourced entity</p> <p>1st of its kind in the Middle East to offer a hi-tech integrated vehicle accident management system</p> <p>Electronically: filling of insurance claims, reporting incidents to insurance companies, and issuance of repair permits of damaged vehicles.</p> <p>Equipped with safety protection, 1st aid, advanced electronic communication devices that are connected with the company and police operation rooms.</p>	<p>100% cut in administration and operational cost, as well petrol staff salaries.</p> <p>>60% faster response rate i.e., max 15 minutes for reaching the accident site, and document it.</p> <p>Police Traffic patrols are more focussed on security</p>
<p>Fast Service Counters</p>	<p>Dedicated offices and/or service lines provided at many of the public sector organisations (e.g., visa applications at immigration departments) for additional fees, but faster processing</p> <p>Processed normally instantaneously on spot or within 1hour (Regular and normal processing is more than 3 days).</p>	<p>Funding internal improvement projects and infrastructure.</p>

Though some schools of thought argue for a holistic approach to ROI analysis, our experience suggests government should follow a more simple approach to understanding the value of the project at hand. We say this, because in most of the large government programs that we have participated in, it was difficult to *identify the unit of measure in the public sector*, mainly because the unit of measurement is not always financial, depending on the various levels of government. Social and political returns are often the basis for investment justification and business cases. These returns normally reflect the mandated government performance standards and the multi-dimensional benefits organisations need to deliver to constituents. Such benefits are however often difficult to quantify and measure making comprehensive assessment of ROI difficult.

However, measurement of financial returns is becoming a strategic dimension of evaluation of government IT projects, as large government programs have considerable long or short term revenues and/or reduction of operating cost. It is important to heed that the government sector in the UAE has focused to a large extent on financial measures for fiscal accountability but lacked measures of performance, benefits realisation and operational accountability until recently. Recent government policies promoted more responsible performance management and outcome measurement in the public sector both on operational and financial levels.

In a review of some of the recent government programs in the UAE, the value proposition is observed in two dimensions; improving service delivery and operational effectiveness and efficiency. However the business case and project justifications fail to place clear attention or evaluation effort to these dimensions in project planning through to project implementation. As explained earlier, this can be due to the complexities in quantifying the outcome related benefits of public sector IT projects. The following section provides a generic high level model for realising public value in government IT programs.

A. Public Value Chain – a simple approach



Fig-5: Public value chain

It can be seen that where the public value vision is in place in a government organisation's mission and strategy public value needs to be clearly translated into a comprehensive set of performance measures that should in turn provide the

framework for strategic measurement and management. Operational and technology strategies need to be guided by such strategic performance measures. In fact it should be embedded in the heart of such strategies.

The program design and implementation phases should include a measurement system that focuses on outcome "value" and a modular approach to the delivery of benefits. The impact and value outcome are likely to yield a clearer more compelling measurement of public value and benefits. Clear articulation of outcomes and measures should lay down the foundation for both long-term improvements in program performance, return on investment, public accountability and public service delivery.

IV. CONCLUSION

Government organisations require contemporary approaches for assessing public value that matches their greater scope and complexity; an approach that can build the needed public support and guide development. It is important that governments conduct further research to determine the usability of existing concepts, models and methodologies for developing and measuring returns from IT investment for the public sector. Knowledge about public value will contribute to guide other forms of investment and contribute to longer term government improvement, and provide a foundation for organisational learning and effective public sector management.

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Major General, Ahmad N. Al-Raisi is the Director-General for Central Operations, at Abu Dhabi Police, Ministry of Interior. He has championed many successful strategic government programs in the UAE. His leadership skills have helped develop Abu Dhabi Police as one of the world’s most effective police forces operating in one of the world’ safest countries. He is an active member in many strategic committees driving innovation and revolution in the Public Sector.

He holds a Master Degree in IT, and is currently doing his doctorate in eGovernment in London, UK. His primary interests include leadership and innovation in public sector, change management, and advanced technology experimentation.



Dr. Ali M. Al-Khouri is working for the government of the United Arab Emirates for more than 18 years. He has been involved in many strategic development initiatives in the UAE government, and is currently the Director General of Emirates Identity Authority; a federal government arm tasked to manage the development and implementation of the national ID card program in the country. He holds an engineering doctorate from Warwick University in UK, and is a fellow at many academic and research institutions.

He has published many articles in the past few years that focused on the review of government implementations of projects. He has developed an innovative project management methodology called PROMOTE (Project Management of Technology Endeavours), that has been globally recognised. He is also a recipient of many national and international awards.