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AN E-GOVERNANCE TRAINING MODEL FOR PUBLIC MANAGERS: THE CASE OF SELECTED FREE STATE PROVINCIAL DEPARTMENTS

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ABSTRACT

The stellar growth of Internet-related technologies and the emergence of the so-called knowledge society introduced new forms of exchanges and collaboration between citizenry and government. Governments had to respond by optimally utilising technology to facilitate the rise of electronic (e-)governance for improved interactions with society. The availability of a skilled workforce with the capacity for learning is essential for e-governance, along with other factors such as administrative leadership, regulatory frameworks, financial resources, organisational conditions, and information technology infrastructure. In light of this reality, there is a need to introduce appropriate training models to train public managers in e-governance applications. This article reflects on an empirical study undertaken in selected Free State provincial departments to determine the level of e-readiness of public managers with the aim to design an e-governance training model. It outlines contextual perspectives regarding the utilisation of Information and Communication Technology (ICT) in promoting e-governance including an analysis of the seemingly insufficient alignment between government operational demands and the e-readiness of public managers. The main contribution of this article is the presentation of a comprehensive e-Governance Training Model that emanated from this survey.

Key words: Government, e-governance, information and communication technology, training model, public service, provincial government, Free State Province, public managers, e-readiness

INTRODUCTION

Theorists hold contrasting views regarding the consequences of the application of cutting-edge Information, Communication and Technology (ICT) on conventional government operations. There seems to be general consensus though that public managers, as the custodians and administrative leaders of e-governance endeavours, generally lack the skills to adequately cope with these new realities and to adequately adjust departmental operations for ICT imperatives. This criticism has led to the realisation that the design of appropriate training models for ICT and e-governance could significantly improve government functions and the effectiveness and efficiency of service delivery.

In line with international best practice to accommodate the exponential growth of ICT in government operations, the South African Government has established an extensive statutory and regulatory framework to facilitate the e-readiness of public managers. The Public Service Act 103 of 1994 (chapter 2, section 3), for example, deals with the obligations of public

officials in relation to training as well as ICT applications. Section 4 of the Act furthermore implicates the responsibilities of the National School of Government (formerly the South African Management Development Institute) and the Training Fund to facilitate skills development of public managers. Also the Skills Development Act 97 of 1998 (chapter 3, section 10) prescribes the responsibilities of the Sector Education and Training Authorities (SETA) in relation to training and skills development of public officials. Moreover, the Education and Training Quality Assurance (ETQA) body resorting under the South African Qualification Authority (SAQA) has the responsibility to accredit training service providers and to set appropriate unit standards for qualification design. Additionally, Sections 3 and 4 of the Electronic Communication and Transaction Act 25 of 2002 stipulate the utilisation of ICT in Government and the particular responsibilities and obligations of public managers in this respect.

In spite of this extensive framework a preliminary survey among Free State Government departments revealed that they do not have a comprehensive training model in place to fulfil their statutory obligations as far as training in the field of ICT in general and e-governance in particular are concerned. This article reflects on results of an empirical investigation undertaken in selected Free State Provincial Government departments and proposes a comprehensive e-Governance Training Model that emanated from this investigation to facilitate the e-readiness of public managers.

ICT APPLICATIONS AND E-GOVERNMENT PRACTICES IN THE PUBLIC SECTOR

Bertot, Jaeger and Hansen (2012:1) point out that government agencies are increasingly using technologies, including TV, the Internet, and social media (e.g. Twitter, Facebook), to connect with the public whom they serve. Globally, governments introduce electronic governance by connecting ICT for communicating with all stakeholders in society (Yildiz 2007:23). These connections have the potential to extend governmental services, solicit new ideas, and dramatically improve democratic decision-making (Khalo and Hu 2010:5). This has led to the rise of the so-called “knowledge society” in which socio-economic life of communities are largely based on the creation, dissemination and utilisation of information and knowledge (Castelfranchi 2007:1).

Gronlund (in Ambali 2013:4) defines e-governance as the use of information technology (IT) in an attempt to achieve more strategic advantage in all the activities and functions within the public sector. As far as these strategic advantages are concerned, Nkwe (2012:2) views e-governance as an important innovation to provide good governance and strengthen a country’s democratic processes. Nkwe (2012:2) and Ambali (2013:2) further argues that e-governance can facilitate access to information, contribute to freedom of expression, lead to greater equity, efficiency, productivity, growth as well as social inclusion. De Jager and Reijswoud (2013:1) in turn define e-governance as activities at the crossroads between ICT and general government processes. According to them at precisely this crossroads e-governance can be divided into three overlapping domains, namely e-administration, e-services and e-society. As far as e-society is concerned, Tejasvee and Sarangdevot (2003:1), and Shailendra and Sharma (2013:3), perceive e-governance as an instrument in radically transforming the relationship between government and society. E-administration in turn refers to administrative functions processed through electronic resources, while e-service refers to the electronic means to deliver services to society (Morphet 2003:7). On a more operational level, Brown (2005:2) points out that e-governance includes all government roles

and activities that are shaped by ICT, while Kumar, Krishina and Megharaj (2013:3) emphasise the use of ICT in administrative support services.

India is globally renowned as one of the leading countries in e-governance (Shailendra and Sharma 2013:7). It is therefore important to take cognisance of their e-governance training initiatives to facilitate capacity building and to create general awareness of ICT-initiatives. Misra (2011:10) identifies the following initiatives in this regard:

- Capacity-building efforts for organisational capacity building, the upgrading of professional expertise and skills of individuals associated with the implementation of e-governance projects.
- Capacity assessments that forms the basis for e-governance training.
- Establishing training institutions for capacity building in e-governance.
- Operationalising Capacity-Building Roadmaps (CBRMs) under the overall guidance and support of the Department of Indian Training (DIT).
- Incorporating lessons learnt from previous successful e-governance initiatives in training programmes.

Various European countries and some Arab states have also embraced the use of e-governance as a means to achieve the best results in rendering services. According to Al-Khouri (2013:3), the principle Arab e-governance model consists of four phases:

- Cultivation phase: The horizontal and vertical integration within government, limited use of front-end systems for customer services, as well as the adoption and use of Intranet within government.
- Extension phase: The extensive usage of Intranet and the adoption of a personalised web-user interface for customer processes.
- Maturity phase: In this phase, Internet and Intranet applications (*apps*) are merged to lower marginal costs for processing customer's services requests.
- Revolutionary phase: This phase is characterised by data mobility across organisations, mobility of applications across vendors, and ownership of data transferred to customers.

Based on a robust literature survey, table 1 below outlines some of the most significant lessons that could be learned from the international experience as far as e-governance applications in the public sector are concerned.

Table 1: International experiences: key lessons

Country	Lessons to be learned (Success factors)
Australia	<ul style="list-style-type: none"> • Utilise an integrated service delivery approach through the utilisation of ICT • Facilitate collaboration between spheres of government and private sector
Sri Lanka	<ul style="list-style-type: none"> • Address inequality and improve transparency
Italy	<ul style="list-style-type: none"> • Use e-governance to reform and restructure the public service • Improve government's image by means of e-governance
Jordan	<ul style="list-style-type: none"> • Use ICT to implement the Millennium Development Goals
USA	<ul style="list-style-type: none"> • Promote public participation

	<ul style="list-style-type: none"> • Improve government's transparency • Utilise the principles of the World Public Sector Report in promoting e-governance • Use elements for ranking and further improvements
UK	<ul style="list-style-type: none"> • Integrate elements and best practice of various e-governance models
Japan	<ul style="list-style-type: none"> • Focus on local government for e-governance initiatives
New Zealand	<ul style="list-style-type: none"> • Use pilot projects to establish trust in new e-governance applications
India	<ul style="list-style-type: none"> • Use e-portals on a decentralised basis • Establish service-oriented e-governance architecture and infrastructure
China	<ul style="list-style-type: none"> • Collaborate across spheres of government • Appoint experienced and skilled service providers
Singapore	<ul style="list-style-type: none"> • Use ICT as decision-making and policy implementation tool
Spain	<ul style="list-style-type: none"> • Address the digital divide • Address political interference and promote buy-in • Establish adequate ICT infrastructure
Turkey	<ul style="list-style-type: none"> • Increase Internet broadband access to all areas
Namibia	<ul style="list-style-type: none"> • Use public libraries as government-related information access points as well as capacity-building instruments

As far as e-readiness is concerned, table 2 below indicates that South Africa is the country with the highest levels of e-readiness on the African continent with a rating of 0.51%, followed by Lesotho with 0.38%. Furthermore, South Africa's rating for ICT implementations is 0.39%, compared to the world average of 0.45%. This is an indication of the relative high levels of commitment of the South African Government to the applications of ICT for e-governance, although there is still more to be done when compared to the North American region.

Table 2: Comparative analysis of e-readiness in Africa

Region	Rating	Best region (%)
Southern Africa	0.39	South Africa: 0.51 Lesotho: 0.38
Northern Africa	0.31	Egypt: 0.48 Libya:0.36
Eastern Africa	0.28	Mauritius: 0.51 Seychelles:0.49 Kenya: 0.35
Central Africa	0.24	Angola: 0.33 Gabon: 0.32
West Africa	0.19	Cape Verde: 0.41 Nigeria:0.31 Ghana:0.30
World average	0.45	N-American average: 0.84

Source: Hafkin (2009:6)

From the international e-governance practices and applications outlined above it can be deduced that e-governance could facilitate institutional effectiveness, accountability and responsiveness. These benefits can, however, only be realised if public managers have the required knowledge and skills to manage processes associated with ICT applications.

E-GOVERNANCE SKILLS REQUIRED OF PUBLIC MANAGERS

The design and application of electronic resources in governance require a certain amount of skills and competencies (cf. Zouridis and Thaens 2003:161). It becomes increasingly imperative for public managers to train in domains that would enable them to utilise ICT successfully. According to UNPAN (2011:12), UNESCO (2014:14), and NeGP (2014:5), the following types of training are typically provided to cultivate various e-governance skills:

- Type 1: Basic Information and Communication Technologies (ICT) skills for office work, applications for office productivity as well as Internet and e-mail.
- Type 2: Governance-related knowledge and skills to address the competencies required to execute ICT projects. This includes e-governance life cycle, Governance Public Relations (GPR), Business models and Public Private Partnership (PPP), regulatory frameworks, and Contract Management.
- Type 3: Specific e-governance competencies and applications.
- Type 4: The soft skills to develop the right attitudes for e-governance transformation and reforms such as change management, team building, leadership and effective presentation.
- Type 5: The specialised professional skills in the areas of technology and management such as project management, IT Security, and IT Audits.

Table 3 below outlines various generic and broader e-governance-related training competencies and skills as identified by some countries.

Table 3: Generic e-governance management training competencies and skills

Country	Intellectual competencies	Management competencies	Human relations competencies
Australia	<ul style="list-style-type: none"> • Policy adviser • Strategic thinker 	<ul style="list-style-type: none"> • Master public and private management • Adaptive leadership 	<ul style="list-style-type: none"> • Personnel management • Focus on results • Know how to manage contracts and networks • Adapted leadership /global vision • Interpersonal relationships • External relations
Canada	<ul style="list-style-type: none"> • Cognitive ability • Creativity • Ability to shape the future (vision) 	<ul style="list-style-type: none"> • Taking action • Organisational understanding • Teamwork • Management of partnerships 	<ul style="list-style-type: none"> • Interpersonal relationships and communication skills • Personal qualities: vitality, ethical values, personality (perseverance and self-control),

			<ul style="list-style-type: none"> • Flexibility and self-confidence • Personnel management
France	<ul style="list-style-type: none"> • Adaptability • Strategic thinking • Management of knowledge • Management of networks • Communication • Innovation and continuous learning 	<ul style="list-style-type: none"> • Evaluation of performance • Leadership skills • Adapted leadership • Ability to manage projects 	<ul style="list-style-type: none"> • Personnel and Human Resource Management
UK	<ul style="list-style-type: none"> • Learn and improve • Have personal impact • Think strategically 	<ul style="list-style-type: none"> • Emphasise the delivery of services 	<ul style="list-style-type: none"> • Personnel management • Get the best out of people
USA	<ul style="list-style-type: none"> • Strategic thinking • Adaptability • Management of knowledge 	<ul style="list-style-type: none"> • Evaluation and performance of managers • Leadership 	<ul style="list-style-type: none"> • Personnel and Human Resource Management • Management of networks and partnerships

Source: United Nations Department of Economic and Social Affairs (UNDESA) (2007:48)

Some African countries have also embraced e-governance training initiatives. Jayaram (2013:7) explores the e-governance training initiatives taken by sub-Saharan African countries such as Kenya, Uganda, Benin, Burkina Faso and Senegal. He (Jayaram) identifies the skills required in e-governance training (table 4) as cognitive, non-cognitive, specific and technical skills.

Table 4: e-Governance skills required

Cognitive skills	Non-cognitive skills	Specific and technical skills
<ul style="list-style-type: none"> • Basic cognitive skills • Analytical and critical thinking 	<ul style="list-style-type: none"> • Openness to learning • Communication: oral and written • Work habits, i.e. punctuality and professionalism • Teamwork • Personal integrity • Leadership • Entrepreneurship 	<ul style="list-style-type: none"> • Language proficiency • Basic business skills • ICT skills

Source: Jayaram (2013:7)

Ojo et al. (2007:4) further elaborate on the e-governance training needs formulated by the Organisation for Economic Co-operation and Development (OECD), specifically for African

countries. According to Ojo et al. (2007:4) the OECD identified four sets of skills essential for e-governance:

- Information technology skills (e.g. skills necessary to implement e-governance such as IT literacy, hardware, software, communication)
- Information management skills (e.g. deployment of knowledge resources within the public administration and the sharing of knowledge)
- Information society skills (e.g. the ability to use ICT resources to implement an organisation's e-government strategy in accordance with its overall strategy)
- Updated management skills (e.g. traditional managerial skills are insufficient for new organisational ICT needs; hence, managers need skills to manage organisational changes resulting from e-government).

Lessons learned from these international training initiatives and skills could serve as best practice guidelines and assist other countries, like South Africa, to use similar e-governance training programmes.

In South Africa, the National Planning Commission (NPC 2011:70) elaborates on the developments in science and technology as a means of altering the way people live, connect, communicate and transact. According to the NPC (2011:70) access to and application of ICTs in governance is critical. This is because the extent to which developing economies emerge as economic powerhouses depends on their ability to grasp and apply insights from science and technology and use these creatively. This makes training in ICT a prerequisite, especially in government departments where direct services are rendered to the citizens. In an attempt at strengthening the application of e-governance, South Africa has instituted the South African Electronic Communications and Transactions Act 25 of 2002, which pursues inter alia the development of human resources in electronic transactions. Furthermore, the South African Qualification Authority (2012) developed unit standards for ICT training as listed in table 5 below.

Table 5: The South African Qualification ICT Unit Standards

Type	US ID	Unit standard title	NQF level	Credits
Core	115431	Analyse feedback contexts and apply constructive feedback techniques	5	3
Core	114051	Conduct a technical practitioners meeting	5	4
Core	386055	Conduct software inspections and reviews	5	5
Core	114049	Demonstrate an understanding of computer management systems	5	7
Core	386053	Evaluate requirements and requirement-based test design	5	7
Core	386054	Manage the software testing process	5	7
Core	386056	Plan and design software testing activities	5	8
Core	115384	Test a computer program against a given specification	5	6
Core	13099	Contribute to the implementation, post-implementation review and maintenance of information systems	6	16

Core	114044	Demonstrate an understanding of change management for computer systems	6	3
Core	259277	Perform analysis of requirements	6	25
Fundamental	258836	Analyse and apply different ICT systems development and lifecycle (SDLC) models for a given scenario	5	8
Fundamental	115392	Apply principles of creating computer software by developing a complete programme to meet given business specifications	5	12
Fundamental	115790	Write and present for a wide range of purposes, audiences and contexts	5	5
Elective	252026	Apply a systems approach to decision-making	5	6
Elective	115358	Apply information-gathering techniques for the development of computer systems	5	7
Elective	115402	Assist in researching the problem and the solution within a consulting context	5	6
Elective	114059	Demonstrate an understanding of estimating a unit of work and the implications of late delivery	5	5
Elective	115385	Demonstrate an understanding of the principles of implementing and managing an e-commerce website	5	12
Elective	115380	Demonstrate an understanding of the various types of e-commerce applications	5	8
Elective	243816	Develop a project-quality management plan for a simple to moderately complex project	5	6
Elective	243824	Develop an integrated project management plan for a simple to moderately complex project	5	8
Elective	119086	Develop an understanding of systems-security methods	5	8
Elective	117926	Identify and explain ICT risks and recommend security solutions	5	5
Elective	258838	Investigate implementation options for Information Technology (IT) solutions	5	6
Elective	243812	Monitor and control the execution of the project management plan for a simple to moderately complex project	5	12
Elective	115397	Understand and apply the concept of the consulting service as a product	5	5
Elective	115378	Demonstrate an understanding of advanced object-oriented programming	6	14

Source: South African Qualification Authority (2012:16)

The Free State Province, as geographical locus for this study, has also introduced various ICT initiatives to promote e-governance. The Free State Premier, Mr Ace Magashule (2014:2), committed the Provincial Government to align themselves with the Declaration of Access to

the Internet declared as a basic human right by the United Nations in 2011. Hence the Free State Government announced planned advancement of ICT as an instrument for socio-economic development. Launching various ICT projects in the province, Magashule (2014:2) vowed that the Free State Provincial Government would strive to ensure that broadband Internet is accessible, even to people in rural areas. Furthermore, Magashule (2014:2) stated that it was critical for the Free State to achieve the following goal: "... digital inclusion, enabling universal, sustainable and affordable access to ICTs by all, and to provide sustainable connectivity and access to remote and marginalised areas at both provincial and municipal levels."

According to Weidermann (2012:1), the Free State Provincial Government is becoming more proactive in its approach to embrace the Information Age and in becoming a key player in the global ICT market. He asserts that the ICT Strategic Framework (2012) that has been developed by the Free State Provincial Government is intended to achieve its economic, social cohesion, and developmental targets. This Strategic Framework also provides for the development of a Provincial Regional ICT Innovation Strategy. Weidermann (2012:1) further reports that other ICT plans for the Free State include the development of an SMME Incubation Hub with an investment value of approximately R100 million. This Hub is mainly aimed at providing a number of services to new businesses in the Free State.

Mvambi (2014:2) asserts that the Free State Provincial Government remains committed to its Provincial Communication Strategy which aims, among other things, to focus on promoting media diversification and the support of community media in all sectors. On that note, Mvambi (2014:2) indicates that the Provincial Government initiated a project in 2011 to create an integrated on-line presence for the broader provincial and local government sector – by introducing a government portal (website). Mvambi (2014:2) believes that prior to this project, the on-line presence of the Free State Government and municipalities were "fragmented, out dated and cluttered with irrelevant information". The Universal Service and Access Agency of South Africa (USAASA) (2011:2) also launched the Free State Broadband Inter-City Network ICT which includes the following benefits and successes:

- Connect schools and build additional computer centres in Free State.
- Extend training to all educators on ICT's.
- Provide rural/under-serviced areas opportunities to interact with ICTs.
- Reduce the telecoms' cost to the economy and encourage innovative services to communities.
- Enable Municipal Services and Integration.

E-GOVERNANCE TRAINING MODELS

Various advanced countries in e-governance applications worldwide have instituted training models to empower officials in the use of ICT. According to Frigg and Hartman (2012:1), Van der Waldt (2013:45), and Martin (2014:1), a model provides a structure to study phenomena, it generally reflects the interrelationship among variables, and simplifies the presentation of a system.

In the context of e-governance training, El Din (2009:2) confirms that models evolve around four stages. The first stage is *training in cataloguing*, which provides governments with information by creating agency websites. Only limited, one-way communication between the government and society is possible during this first stage. According to El Din (2009:2) the

second stage is *training in transaction*, which can provide online transactions with government agencies. El Din (2009:2) states that this process makes two-way communications between governments and communities possible. The third stage is the *training on the integration* of government operations within functional areas in government. Agencies working in the same functional area integrate their online operations. The final stage is *horizontal integration*. At this stage different functional areas are integrated within the same electronic system and put to use through a central portal. El Din (2009:2) also maintains that the last two stages focus on integrating the provision of e-governance activities within existing governmental structures. Typical e-governance (training) models in the Southern African context are listed in table 6 below.

Table 6: E-Governance models

Models
e-Presence Measurement Model for Africa
Colesca's Ideal e-Governance model for African countries
Bwalya's e-Governance conceptual model for the SADC region
Onyacha e-Governance model for Southern Africa for government, citizens and businesses interaction
Ojhai, Palviaz and Gupta's E-Governance Self-Service Model
Layne and Lee's E-Governance Four-Stage Model
Westholm's Triangular ICT Model between the Actors of E-Governance
Gohel and Upandhyay's E-Governance Model
Islam and Ahmed's E-Service Delivery Model
Teerling and Pieterse's Citizen Multi-Channel Behaviour model

These models provide for the general dimensions, domains, and functions that direct competencies and skills required of public managers to effectively manage all processes associated with e-governance.

This concludes a brief theoretical exposition of the application of ICT in government, the state of e-governance internationally and nationally, skills required of public managers, and the typical e-governance training models that are applied. In the next section, the research methodology utilised for purposes of this study will be highlighted, including sampling procedures, data collection instrumentation, and research findings.

RESEARCH METHODOLOGY

Based on a qualitative research design, this survey utilised case study methodology to determine the e-readiness of public managers in sampled departments in the Free State Province.

Sampling

The sampling strategy had a dual focus: departments and participants as units of analysis. As far as the sampling of departments is concerned, four Free State provincial departments were sampled, namely the Department of Police, Roads and Transport; Department of Health; Department of Public Works and the Department of Social Development. Purposive sampling was used to identify these departments as preliminary surveys indicated that they have

relatively high maturity levels of e-governance applications and utilise ICT extensively in their service-delivery operations in the province.

As far as the sampling of participants is concerned, the total population of participants was 30 across all sampled provincial departments. Purposive sampling was also applied to select participants who have direct responsibilities in the field of ICT management, applications and training. An interview schedule was compiled to facilitate semi-structured interviews with participants. McLaughlin (2003:4) and Trochim (2006:1) define semi-structured interviews as a flexible method to standardise questions.

Training model design

Based on an extensive literature survey and a synopsis of common elements identified in various e-governance models (cf. table 6), the authors drafted a training model for e-governance which was verified and tested by means of interviews with participants. The draft model is a synthesis of the following:

- principles and elements of management training and development;
- principles and elements of ICT in governance;
- principles and elements of e-governance;
- principles and elements abstracted from an analyses of international models for e-governance;
- theory of model-building;
- case-study analysis (i.e. selected Free State Provincial Departments); and
- input obtained from participants (i.e. verification and validation of a preliminary training model).

The preliminary model was layered on three levels, namely –

- a macro (strategic-) level for e-governance in the South African Government as synopsis of international models,
- a meso (tactical-) level model for provincial departments outlining the core elements and dimensions for training, and lastly
- a micro (operational-) level model for internal departmental training.

On a macro level the Government establishes the parameters and broad strategic framework for ICT infrastructure, e-governance policies and applications, as well as the statutory and regulatory framework for managerial training. All the elements of the model are directly linked to Government for monitoring and control. Once Government has established the broad strategic parameters for ICT and e-governance, the next meso-layer entails the tactical orientation of provincial departments to implement their respective mandates provided by national Government. This tactical orientation includes the design of appropriate programs to train public managers in establishing and utilising ICT to foster e-governance. The elements in the model are all interconnected, demonstrating the interrelatedness of the all aspects in which public managers should be trained. The provincial government is at the centre of these aspects, as it oversees the implementation of all elements of e-governance training in each department.

Data collection instrumentation

Semi-structured interviews were conducted with participants and an interview schedule was categorised into five main sections, namely:

- current ICT and e-governance practices and applications in departments;
- e-governance skills required;
- operational considerations;
- managerial considerations; and
- input to the draft (preliminary) training model.

RESEARCH FINDINGS

The findings emanating from the survey are presented by means of the five categories highlighted above.

Current e-governance practices and applications

Table 7 below highlights the responses of participants on the first set of questions, which were designed to establish current e-governance practices and applications of sampled departments. The responses were outlined in the form of values and percentages. Participants' views were recorded in comparative ratios against the total number of those who partook in the research. According to Tukey and Tufte (2015:1), the "part-to-whole" analysis is the categorical subdivisions in research analysis, which measures the ratio to the whole (i.e. a percentage out of 100%). The percentages were calculated on the basis of the following formula:

$$\frac{\text{The participants' views (PV)}}{\text{The total number of participants (30)}} \times \frac{100}{1}$$

This formula indicates the values of participants' views (PV) out of the total number (30) who participated in the research, multiplied by hundred (100) over 1, to determine the percentage in terms of the part-to-whole analysis. The same formula was applied to the analyses of all finding categories.

Table 7: ICT and e-governance practices and applications

Questions on current ICTs and e-governance practices and applications	Participants views (PV)			
	Yes	%	No	%
2.1. (Q1) Do you have any ICT management training schedules in your department? (Yes/No) If 'yes' please briefly elaborate.	8/30	27%	22/30	73%
2.2. (Q2) Do you have any ICT management training programs in your department? (Yes/No) If 'Yes' please briefly explain the nature of these programs.	8/30	27%	22/30	73%
2.3. (Q3) Were you trained in the use of the contemporary departmental IT software or any ICT resources for your departmental services as a manager? (Yes/No). Please elaborate/explain.	8/30	27%	22/30	73%

2.4. (Q4) Are you aware of any rules, regulations or policies about ICT operations in your department/unit/component as a manager? (Yes/No). Can you please provide some examples of such rules, regulations and policies?	7/30	23%	23/30	77%
2.5. (Q5) Were you ever involved in the design of an electronic governance (e-governance) training model? (Yes/No). If “Yes”, please elaborate.	5/30	17%	25/30	83%
2.6. (Q6) Is there a specialized ICT management training unit in your department? (Yes/No)	11/30	37%	19/30	63%
2.7. (Q7) Is there a need for specialized ICT management skills training to improve services rendered by your department? (Yes/No). Please elaborate.	3/30	10%	27/30	90%

Out of the 30 participants interviewed, 73% indicated that there are no ICT (e-governance) management training schedules in their departments. This high percentage highlights the severity of the issue that helped to pose the research problem. Less than a third (27%) of the participants indicated that they have been trained in contemporary departmental ICT software applications. , which means a worrying 73% gave a negative response. This situation may have far-reaching consequences as far as e-readiness is concerned. A scanty 17% of the participants were involved in the design of their e-governance training model. The issue of management buy-in and commitment may be severely hampered if senior levels of management are not involved in the design of the models they are supposed to implement. It is further significant that only 37% indicated that there is a specialised ICT management training unit in their departments. A meagre 10% furthermore agreed that there is a need for specialist ICT management training to improve services rendered by departments.

Skills rating

Table 8 below outlines the skills-rating responses from participants.

Table 8: Skills rating

Skills	Participants' views (PV)			
	Ratings (equal to 10)	%	Ratings (less than 10)	%
Interpersonal skills	30/30	100%	0	0%
Communication skills	30/30	100%	0	0%
Decision-making skills	28/30	93%	2/30	7%
Leadership skills	28/30	93%	2/30	7%
Technical skills	25/30	83%	5/30	17%
Time management	26/30	87%	4/30	13%
Conceptual skills	28/30	93%	2/30	7%
Technical skills (e.g. programme development and design, ICT, presentation)	27/30	90%	3/30	10%

The high rating of skills (1 = insignificant; 10 = very high) confirms that most participants agreed that specialised e-governance skills are required. The main argument raised was that

should managers possess these skills, they would be in a more advantageous position to address their ICT responsibilities and to successfully implement e-governance initiatives.

Operational issues

Table 9 below highlights the operational issues and considerations relating to questions regarding current e-governance practices and applications in the sampled departments.

Table 9: Operational considerations

Questions on operational issues (Q)	Participants' views (PV)			
	Ratings equal to 5	%	Ratings less than 5	%
(Q1) There is a need to develop and revisit a vision and mission for training in e-governance/ICTs.	28/30	93%	2/30	7%
(Q2) An effective e-governance training plan requires regular e-readiness assessments.	27/30	90%	3/30	10%
(Q3) An e-governance training plan should be determined by training goals.	28/30	93%	2/30	7%
(Q4) An e-governance training schedule should include a determination for administrative and political support.	28/30	93%	2/30	7%
(Q5) Identifying appropriate service provider(s) should form part of an e-governance training plan.	29/30	97%	1/30	3%
(Q6) There is a need to identify e-governance management training content before engaging in operational training.	29/30	97%	1/30	3%
(Q7) Establishing monitoring and evaluation procedures are compulsory to oversee e-governance training.	28/30	93%	2/30	7%
(Q8) There is a need for continuous reviews of e-governance training processes and compliance with statutory	28/30	93%	2/30	7%

From the outline of ratings in Table 9 above, it is evident that most participants' ratings are equal to 5, whilst a few ratings are less than 5. The highest rating based on the third question (Q3) (93%) concern *an e-governance training plan [that] should be determined by training goals*. This sets the tone for setting realistic goals aligned with ICT standards and specifications to which the Free State Departments may ascribe when implementing e-governance fully. The input on question 8 (Q8) is about the need for continuous reviews of training processes for e-governance and compliance with statutory and regulatory guidelines.

Managerial considerations

Table 10 below outlines the analysis of the participants' views, highlighted in percentages, of the key managerial considerations that should be taken into account in the design of appropriate e-governance training programmes. The percentages were calculated by means of the following formula:

$$\frac{\text{The total number of participants' views (PV)}}{\text{The total number of participants (30)}} \quad \frac{100}{X \quad 1}$$

Table 10: Managerial considerations

Questions on managerial considerations	Participants' views (PV)
Which levels of management do you think should be exposed to ICT training for e-governance applications? Why do you say so?	PV. 100% (30/30) of participants agreed that all levels of management should be trained in ICTs. These include supervisors, Assistant Directors, Deputy Directors, Directors, Chief Directors and HODs. The aims are: Promote communication, empowerment, continuous capacity building, continuous education, skills empowerment and knowledge sharing.
In your opinion, what are the main obstacles and hindrances to further implement and enhance e-governance endeavours in your department/unit/component?	PV. 80% (24/30) of participants cited the lack of funds and political support as the obstacles hindering the implementation of ICT in their departments. The main obstacles highlighted by the other 20% (6/30) participants are: <ul style="list-style-type: none"> i. lack of political and administrative support within departments; ii. lack of ICT resources, and ignorance; iii. placement, recruitment and selection; iv. inadequate ICT knowledge; and v. cognisance of its importance.
What in your view may be the benefits of Public-Private Partnership in public management ICT training in the Free State Government?	PV. 90% (27/30) of participants agreed that funding can be benefited from public-private partnerships. Furthermore, the other 10% (3/30) highlighted the following benefits of public-private partnerships: <ul style="list-style-type: none"> i. funding from private institutions; ii. improved and advanced ICT programmes provided by the private institutions; iii. public institutions can offer accredited programmes for public managers; iv. transfer of skills; and v. mutual benefits.
What do you think are the main benefits of training public managers in ICT/e-governance? (e.g. benefits for the department, for government as a whole, for the community/customers)	PV. 93% (28/30) of participants indicated that improved service delivery by the government may result from training public managers in ICTs. The other 7% (2/30) highlighted the following benefits for training public managers in ICTs: <ul style="list-style-type: none"> i. improved communication among senior managers and subordinates; ii. improved services by government departments; iii. more effective two-way-communication between the government departments and the community;

	<ul style="list-style-type: none"> iv. less paper wastage (going “green”); and v. keeping abreast with latest technology.
What is your opinion about the state of e-governance in the South African Government in general and in Free State provincial departments in particular?	PV. 100% (30/30) of participants agreed that the state of e-government readiness in the South African Government is still extremely low, as most departments are still utilising “old” communication technology such as faxes instead of emails and social networks. The other reason was that e-governance does not receive the attention it deserves in South Africa.
What is your opinion about the e-readiness of public managers in general and their ICT competencies in particular?	PV. 100% (30/30) participants agreed that most public managers are not academically ready to be trained in ICTs. Therefore, the need is firstly to empower the managers academically and then to introduce ICT training programs. The other input was that e-readiness in South Africa requires “brooding” or “reawakening”. It also became evident that the e-readiness of public managers in South Africa is generally at an extremely low level.
What is your opinion on the development of ICT monitoring and evaluation procedures to monitor whether public managers utilise the ICT skills they have learned after training?	PV. 97% (29/30) participants agreed that there is a need to develop regulations, policies, and guidelines to train, monitor and evaluate public managers’ ICT programs; also to monitor the application and implementation of knowledge learnt from training to avoid wasting government funds. Only 3% (1/30) did not answer the question.
In your opinion, which elements should be considered to be relevant for the development of an ICT training model for your department?	PV. 97% (29/30) of participants supported and encouraged the development of policies and regulations to monitor and evaluate public managers’ ICT practices. They indicated that all ICT elements and programmes are necessary to develop an ICT training model for their departments. Some participants highlighted the following elements to be considered when developing public managers: <ul style="list-style-type: none"> i. Include the process programs in ICT training; ii. Consider citizens’ involvement in Government when developing the ICT content for public managers; and iii. Include web-site (html) training for public managers. Only 3% (1/30) did not answer the question.

When asked to elaborate why all levels of managers should be trained in ICTs, some participants highlighted the following reasons:

- From middle management upwards, managers are expected to champion the implementing of ICTs within the department. A top-down management approach will go a long way in inculcating a culture of ICT adoption.
- All levels of management should be trained in ICTs to improve communication and expand managers' knowledge.
- All levels of management should be trained as that will improve the services rendered by the government.
- All levels of management, including strategic managers, should be trained, in order to improve planning and decision making.

Eighty percent (24/30) of participants cited the lack of funds and political support as the main obstacles hindering the implementing of ICT and e-governance in their departments. Other obstacles highlighted include:

- lack of administrative support within departments;
- vague understanding of e-governance;
- lack of executive support to champion ICT initiatives; and
- insufficient human capacity.

From the analysis above it is evident that participants agree strongly that all levels of management should be trained in ICTs. An area that deserves attention is the positive contribution that public-private partnerships could make to address these and other cited obstacles. Most participants also strongly agree that the training of public managers in ICTs could make a significant contribution by improving service-delivery processes, two-way-communication between the government departments and the community, and cost-and-time savings.

When participants were asked to comment on the state of e-governance readiness in their departments, all perceived the state of e-readiness as poor or very low. Reasons cited for this state of affairs include:

- outdated technology;
- limited ICT infrastructure;
- public managers who are not academically competent and “techno-savvy”; and
- general reluctance to use ICTs in managerial applications.

The following section seeks to unfold the inputs by participants on the draft e-governance training model which was presented and explained to them during the semi-structured interviews.

Input to and refinement of the drafted training model

The inputs made by participants validated the suitability of the dimensions and aspects included in the preliminary training model. Their feedback and suggestions on other aspects deemed relevant were incorporated to further refine the model. The final model is presented as figure 1 below.

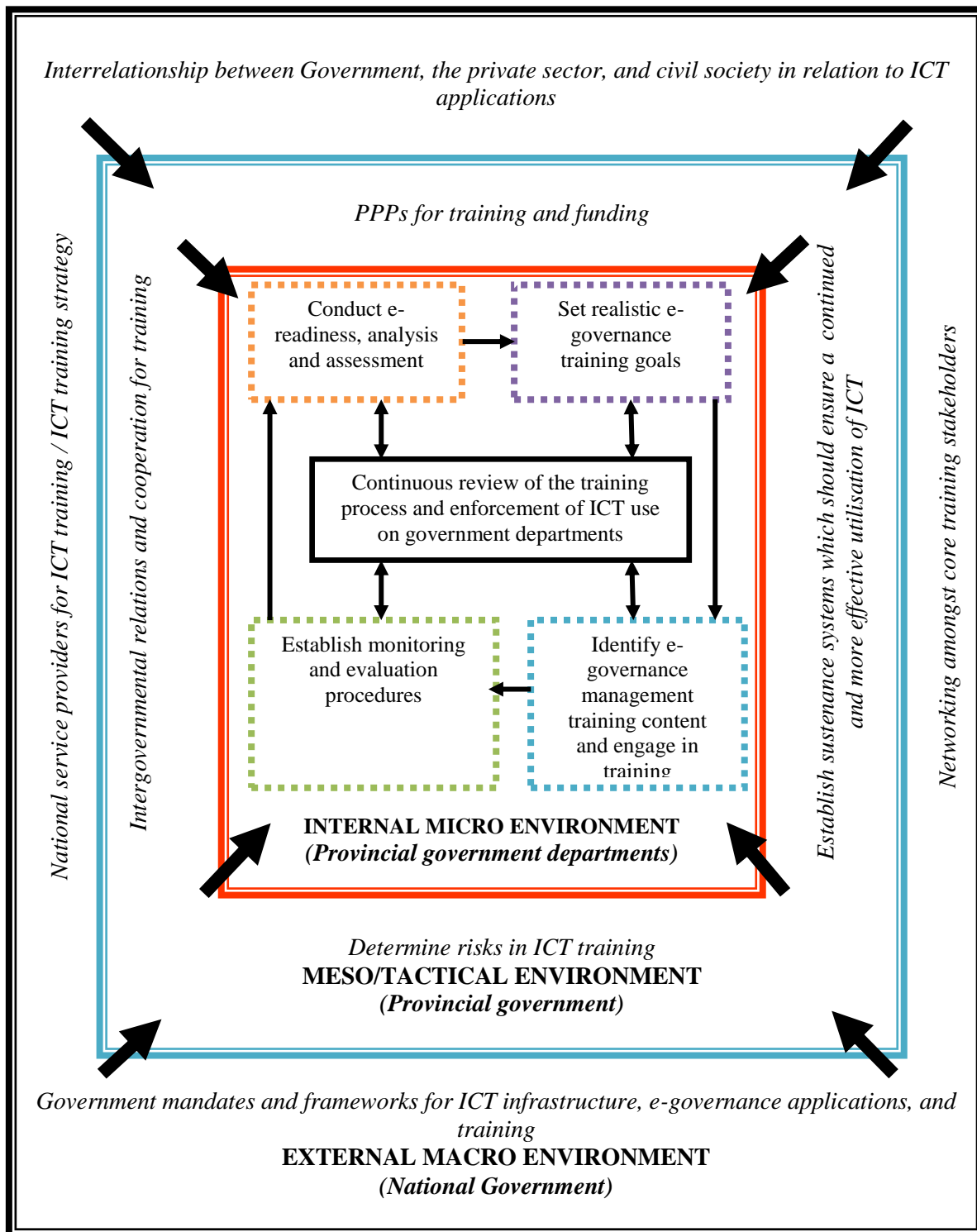


Figure 1: An E-governance Training Model for Free State Provincial Government Departments

SUGGESTIONS FOR THE APPLICATION OF THE TRAINING MODEL

Based on the synthesis from the literature review, case study analysis and empirical validation, the following suggestions can be made on the process that should be followed when applying the model in provincial departments:

- Departments should develop their own operational policies and ICT training schedules, programmes and content, in line with international ICT standards.
- Once these policies, schedules and content are formulated, they should be forwarded to the Provincial Government for scrutiny and approval.
- In accordance with national standards the Provincial Government in turn, should approve these ICT training policies, schedules and content.
- The Provincial Government should furthermore ensure that departments are supported adequately by resources and should facilitate the funding of such ICT training programmes and schedules.
- The Provincial Government should obtain a list of preferred service providers for ICT training from the National Government to initiate actual training.
- The National Government should support provincial governments in their general e-governance endeavours and their ICT-training needs in particular. This should include the design of national policies, strategies and programmes, which may be cascaded down to the departments for closer examination. The aim would be to identify ICT content which is relevant to the particular department.
- The National Government should continuously benchmark their e-governance practices with international best practice, and thereby ensure that the South African Public Service remains on par with international standards and applications for e-governance.

CONCLUSION

The aim of this article was to probe the general e-readiness of public managers in provincial government, to identify core skills required to successfully apply e-governance initiatives, and to design an e-governance training model that could be utilised by Free State Provincial Government departments in addressing the skills deficit. The article also provided a brief theoretical exposition of the application of ICT in government, the state of e-governance internationally and nationally, skills required of public managers, and the typical e-governance training models that are applied. The research methodology utilised and the findings emanating from the survey were also outlined.

It is evident that public managers should acquire the necessary skills associated with ICT applications in government in general and for the effective management of e-governance imperatives in particular. The availability of a skilled workforce is essential for e-governance and as such public managers should have the ability to establish conducive departmental conditions and information technology systems and procedures to facilitate inter- (micro), intra- (meso) and extra- (macro) governmental connections. In light of this reality, there is a need to introduce appropriate training models to train public managers in e-governance applications.

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