

Tracking Planning and Implementation Interventions across Regions and Institutional Boundaries: Failure to Establish a Uniform Reporting Language across Government

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Abstract

There is a growing concern that performance in service delivery does not match the rate of progress required for poverty reduction. These concerns are focusing attention on the need for a better understanding of ‘planning and implementation effectiveness’, what works, what does not, in which contexts, and why.

Large volumes of information are currently produced by different processes and systems established as a result of an ever increasing concern with accountability and effectiveness of service delivery by government. Disparate information flows and a lack of alignment in semantic meaning (i.e. differences in opinion of what constitutes a programme or project) between established systems imply that information across organizations cannot be easily aggregated or compared for purposes of broader, cross-regional policy formulation, joint action and budget analysis. These factors often contribute to the confusion surrounding the prioritisation of competing goals and dilute government alignment when responding to service delivery challenges.

The paper describes the establishment of a uniform reporting language across government as a likely enabler to improve communication of programme and project

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information over a multi-year period. This research emanates from a need to improve inter-governmental alignment and coordination in the planning, resource allocation and implementation of key interventions. The paper concludes with the national deployment of the IDP Nerve Centre (www.idp.org.za) by the South African Government, as a case study example.

Key Words: *integrated development planning; cooperative information systems; service delivery performance; uniform reporting language; semantic interoperability; inter-regional planning; information sharing; data exchange standards; monitoring and evaluation.*

Introduction

Efforts to overcome the challenge of persisting under-development of a deeply polarized society and economy can only be achieved through focused implementation and better integration and alignment of government as a whole. This requires of the three spheres [1] and agencies of government to work as one to create ‘... a better life for all our people ... within our national effort to place our people, their well-being and prosperity at the centre of public life and state action’ [2].

In less than ten years, a complex system of intergovernmental relations has taken root. Key areas of focus during this period were the establishment of national and provincial structures in 1994, and the comprehensive phased transformation of local government, culminating in the establishment of Local Government structures in 2000. In addition a range of Acts, policies and programmes [3] in the national and the provincial sphere were passed, focussing on development and improving the performance of the State. National objectives and a medium and short-term implementation focus were also embedded through the decisions of the Cabinet Lekgotla, Government’s Programme of Action, the President’s State of the Nation Addresses and the Medium Term Strategic Framework (MTSF).

Significant progress has been made in setting up intergovernmental structures and a range of collaborative planning initiatives between the three spheres [4]. However, in endeavouring to achieve the national development objectives and in giving effect to the national development principles, resource constraints dictate that government need to make hard choices regarding the allocation of resources between different localities, programmes, spheres and sectors, as well as between short, medium and longer-term priorities.

In terms of the notion of the Developmental State these efforts must ensure:

- a more coherent and focused approach to investment;
- a shared sense of direction in planning in government; and
- a greater synergy in infrastructure investment and development spending within and across all spheres and sector departments.

In order to provide guidance and direction for these kinds of difficult decisions in such a way that they do not contradict each other, Cabinet adopted the National Spatial Development Perspective (NSDP) [5] to put in place a common platform of principles for infrastructure investment and development spending that have to be adhered to by all spheres of government in their planning, decision-making and implementation activities.

The NSDP-platform provides for:

- a district-based national perspective on the distribution of, and relationship between poverty and economic development potential; and
- a set of guiding principles for infrastructure investment and development spending.

Given that a substantial portion of actions by government need to take place/culminate in the various district and metropolitan municipal areas, aligned intergovernmental action across these shared areas of impact is crucial. In order to ensure that these interventions are implemented in a coordinated way in these shared areas of impact, prioritisation and resource allocation by the three spheres of government has to be aligned in the

preparation and review of Provincial Growth and Development Strategies (PGDSs) and Integrated Development Plans (IDPs). This requires the three spheres of government to:

- reach agreement on the spatial location of economic development potential and need/poverty in provinces and district/metropolitan municipalities;
- align infrastructure investment and development spending in the 47 district and six metropolitan municipalities in accordance with the NSDP principles; and
- track and assess progress being made.

The challenge of tracking planning and implementation interventions across government has many dimensions. One of these is the *proliferation of incompatible information systems* that resulted from a combination of top-down legislation driven change and bottom-up technology driven change. The other relates to role-players inability to access planning, programme and project-based information in a manner that is *both consistent and easy to understand*. This limits the extent whereto different role-players can plan and coordinate different actions for the same area of impact.

The fundamental problem that this research is seeking to address is to establish the means through which an *essential level of integration* can be maintained between information and decision support systems without the need for central control and without detracting from the ability of government organizations to develop their own systems to meet their own requirements.

This paper presents:

- a) perspectives on information integration by highlighting the likely social, institutional and technical processes that need to be managed. A brief overview of current literature on social and technical process interactions in information system development is presented. The overview does not sufficiently account for the interactions among the social and technical processes that play out throughout information integration initiatives, but rather attempts to create an awareness of the multi-disciplinary nature of

- information integration. Further research in the application of social and institutional information integration models is required to support the application and use of the proposed Uniform Programme (Project) Reporting Language across government;
- b) an effort currently underway [6] to deploy a Uniform Programme (Project) Reporting Language across government, as a likely enabler, to improve access and integration of planning, programme and project information across organizations and regions; and
 - c) IDP Nerve Centre, as a case study example.

Elements of information integration

Any attempt that wishes to improve the way we track planning and implementation interventions across regions and institutional boundaries need to consider the complex network of factors that influence our ability to access and integrate information across organizations. A socio-technical framework will be used to explain some of these factors.

SOCIO-TECHNICAL FRAMEWORK

Socio-technical theory emerged from the work of Trist in the 1950s and 60s to provide a framework for joining the social and technical perspectives of organizational theory. The foundational work relies on two essential premises: ‘in an organization in which people are required to perform functions, there is a joint system operating: a social and a technical system. The performance of an organization is a function of the fit between these two systems. Second, every socio-technical system is embedded in an environment that is influenced by a culture and its values and sets of generally accepted practices, and the environment permits certain roles for organizations, groups and people’ (Van de Ven and Joyce 1981).

Integration processes often involve new work processes and significant organizational change. Moreover, designing and implementing cross-boundary integration of

information is a lengthy process, involving learning and evolving inter-organizational relationships (Trist 1981).

To better understand these interactions, information integration must be viewed holistically, as embedded in four different but related elements. Each has related theoretical perspectives useful for studying information integration processes. The elements are illustrated in Figure 1 below.

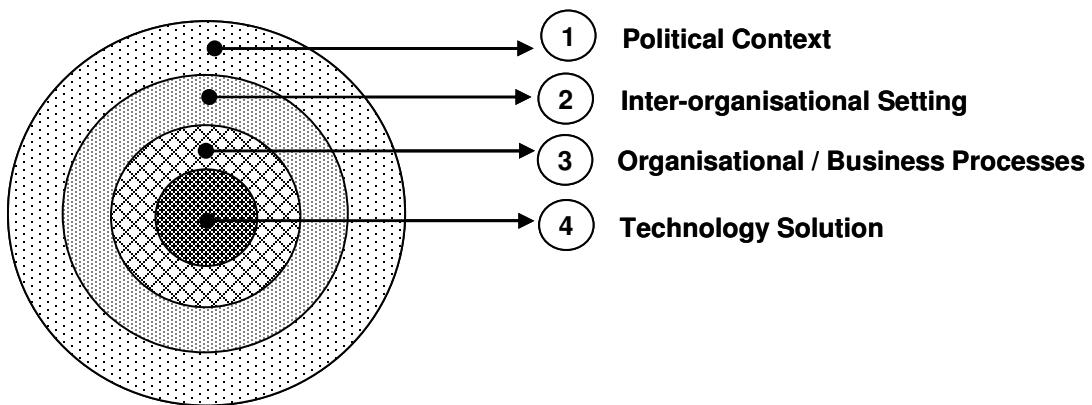


Figure 1: Elements of information integration

Figure 1 illustrates how a specific technology solution for integration, which relies on the concepts and techniques of computer and information science, depends also on connections and interactions with the relevant business processes of the involved organizations. These, in turn, involve work flows, information flows, and decision processes in each organization. The interaction and adaptation of business processes across organizations is shaped primarily on the other elements of the larger multi-organizational setting (such as resource sharing and trust), which can be studied from the perspective of inter-organizational relationships and collaborative structures. These relationships and structures are influenced, in turn, by factors in their shared environment. At this macro level, influences can be examined from the perspectives of such fields as political and decision making sciences. Highlights of the research literature pertaining to each of these four elements are summarized in the following sections.

INFORMATION TECHNOLOGY SOLUTION

Issues on meaning and semantic translation are central to integrating and sharing information from diverse, distributed sources such as data bases, spreadsheets and text files. For example, if one system regards a phase of a project as an extension in time (typically financial year) while the other regards it as an extension in space, the one system will only store one location for the project while the other may store a different location for each phase, resulting in the inability to exchange information between the systems without a loss in meaning. Even with compatible conceptual data models, it may still not be possible to exchange information if the semantic meanings of the contents differ. For example, the fact that both systems may carry <Project Status> as a field, does not solve the problem of exchanging status information between the two systems if one system recognizes eleven values while the other recognizes four values.

Solving the technical problems of access and use of information from these diverse sources typically involves the development of standards, platform and application interoperability, metadata, and the use of data transfer translations interfaces (i.e. XML). These address the problems resulting from unstructured information by developing automated matching methods (Cohen 2000). Other techniques involve constructing systems of ontologies that provide the underlying structure for alignment of meanings across heterogeneous data bases (Krishman, Steier and Zhao 2001). These methods have the potential to greatly reduce the cost of *manual translation and mapping* and make *automated translation and mapping* of heterogeneous data feasible in large data base environments. However, these methods will not by themselves resolve issues of agreement about the significance or use of integrated data across organizational boundaries or problems of policy in the public sector (Safai-Amini 2000).

The changing and expanding use of data across government and the private sector demands increased attention to all the components of data quality – accuracy, timeliness, consistency and completeness (Tayi and Ballou 1998). Until recently this attention was confined to improving the quality of data generated and used within *single* organizations. Today, the effectiveness of inter-governmental planning, resource allocation and

implementation depends on data exchanges with others. As more organizations deploy and use communication networks (i.e. email, internet) in their day-to-day processes, sharing and integrating data across organizational boundaries becomes more attractive and more feasible. However, integrating large volumes of data that often differ in format, as well as organizational and geographical origin, poses a myriad of challenges in ensuring the quality of the integrated data. These problems arise because the integrated data reveals broad inconsistencies in definition, content and overall quality, even when the individual data sources appear to be valid. Moreover, data quality cannot be evaluated, and hence improved, independently of the data sources (data owners) where the data have been captured, stored and used. Whether data are of high quality depends on the characteristics of the resulting integrated information infrastructure and on the demands of the tasks that use these data.

ORGANIZATIONAL OR BUSINESS PROCESS CONTEXT

The tasks and production processes of complex organizations have been the subject of research since the early 20th century when Taylor offered his principles of scientific management that so strongly influenced the structure and functional specialization of business and government organizations (Taylor 1967).

Information systems are commonly understood to embed processes and information flows in complex software, which becomes difficult to change and have strong influences on the work of the organization and its employees, managers and leaders. Information integration demands that the work processes of multiple organizations be both understood and *mutually adjusted*. However, the development of separate operating procedures, control mechanisms, information and work flows make such integration exceedingly difficult, leading to serious problems, quick disintegration, or outright failures of information system initiatives that depend on not only information integration but process integration (Fountain 2001).

INTER-ORGANIZATIONAL CONTEXT

Sharing and integrating information among organizations depends on the creation and maintenance of inter-organizational relationships. The formation of these relationships, involving diverse goals and interests, requires negotiation and the development of commitment (Ring and Van de Ven 1994). The strength and richness of resource commitments and their distribution can be influential (Hart and Saunders 1997). The development and maintenance of these relationships may also be critically dependent on trust (Dirks and Ferrin 2001). Knowledge and information sharing among organizations is also characterized by substantial risk, resource constraints, and conflict. Some risk and conflict come from differences in expectations and goals the various parties bring to the sharing process. These differing expectations may reflect each party's individual and organizational history, or simply variations in the characteristics of the individuals or organizations. Inter-organizational relationships are also influenced by the characteristics of the problem or goal motivating the activity.

Inter-organizational relationships may result from mandates, or common interests or interdependence (Logsdon 1991) or from the need to resolve a variety of different problem situations. In addition, there may be substantial disagreement among potential participants about the level or exact nature of the problem to be addressed.

Inter-organizational networks in government have traditionally been studied as political structures (Warwick 1975; Wright 1978) and more recently as dynamic operational partnerships (Milward and Provan 1998).

POLITICAL CONTEXT

The political environment of government organizations exerts strong institutional and situational influences on information integration. The focus on government organizations requires attention to bureaucratic and political theories. Most government activity is defined and funded through legislation that creates specific programmes and assigns responsibility for those programmes to specific government departments and

municipalities. This web of vertical and horizontal relationships leads to government organizations to focus on their own programmes and projects rather than on cross-boundary issues or linkages with outside organizations. These programme / project boundaries are powerful barriers to collaboration.

Government organizations personnel develop deep knowledge and expertise in their respective programmes and protect their ability to act with discretion and autonomy (Rourke 1978). Since information integration may subject organizations to external performance evaluation and criticism, government organizations seldom regard programme information as an asset of the whole of the organization, government, or the public.

Weiss (1987) argues that since cooperation across organizations implies joint responsibility and shared control, it often involves coordination, monitoring, and feedback that can potentially damage the legitimacy and integrity if cooperation fails. Dawes (1995) contends that some of these barriers can be lessened by policies that encourage information use and stewardship (rather than ownership) and by the creation of practical tools, such as metadata inventories and standardized data sharing agreements.

In summary, it is clear that any attempt to access and integrate information across regional and institutional boundaries is bound to fail if it starts with the development and deployment of an information technology solution. Rather, an in-depth understanding of the broader political, inter-organizational interactions and underlying business processes is essential. An effort currently underway, known as a Uniform Programme (Project) Reporting Language for government, aims to support the systematic collection of data across regional and institutional boundaries.

Uniform Programme (Project) Reporting Language (UPRL)

The Uniform Programme (Project) Reporting Language (UPRL) has been developed, as part of ongoing research, to improve alignment and coordination of programme and

project activities across government. The departure point for identifying programmes and projects, as the *common denominator* for integrating information, was based on extensive government-wide interviews [7] designed to establish the need for exchanging information between related business processes such as Strategic (Development) Planning, Budgeting, Implementation and Monitoring and Review.

It was found that programmes and projects extended over all four of the primary business processes in government as depicted in Figure 2 and that the exchange of programme and project information, together with consistent spatial referencing and workflow automation would make a significant contribution towards improving inter-organizational information access, integration, analysis and reporting.

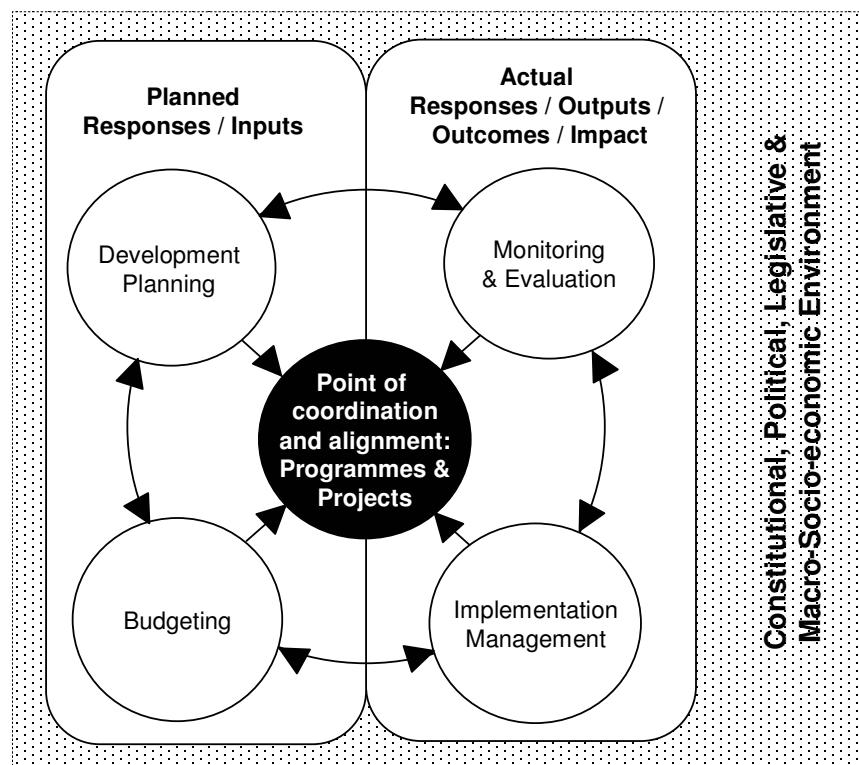


Figure 2: Point of coordination and alignment in government

In the context of this paper, programmes and projects are defined as follows:

- *Programme* is an aggregated whole of a planned series of events and activities -including projects - logically linked in time framed sequences. Programmes link vision and mission to projects. It is medium term i.e. one to five years,
- *Project* is an integrated unit of packages of outputs; characterized by daily, weekly or monthly decisions and activities. Projects link programmes to activities. Projects are short to medium term i.e. one week to one year, and relate more to what is commonly known as infrastructure projects, i.e. housing, water, sewerage, roads, rail, ports, telecommunication infrastructure, electricity, health and educational facilities.

After analysing the results of these government-wide interviews⁷, ACTIONiT found that the original four core business processes consisted of sub-processes (Figure 3), many of which required interaction between different spheres of government or between units in the same sphere. The exact number and position of the arrows used to indicate interaction are illustrative only.

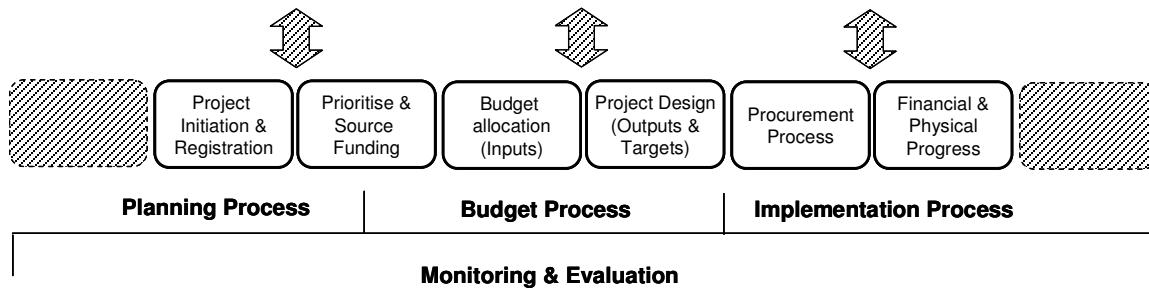


Figure 3: Information integration required across the business processes

This confirmed the hypothesis that the development and introduction of a Uniform Programme (Project) Reporting Language would support the alignment and coordination of planning and implementation interventions across regional and institutional boundaries by:

- Strengthening the elusive link between planning, project prioritisation, budgeting and implementation across different organizational boundaries.

This could be achieved by improved communication and teamwork resulting from a convenient way of exposing programme and project information to other relevant parties. It applies to a spectrum of departments each focussing on a different part of the business process, e.g. treasury is primarily concerned with budgeting and financial management/monitoring while the Municipal Infrastructure Grant (MIG) is concerned more with the operational aspects of the delivery of infrastructure.

- Maximizing the potential of the annual budget as a coordination tool, because it is often the only time that all the approved programmes and project actions of a department and municipality are reviewed and planned.
- Bridging the gap between programme (project) management systems and financial management systems, which often only speak to each other through separate, summarized reporting in senior management forums. This would enable breakdowns of budget allocation and spending patterns to be made available on a project level.
- Facilitating the commitments of infrastructure project co-financing from national and provincial government and other funding agencies.

THE NATURE OF THE UPRL

The Uniform Programme (Project) Reporting Language (UPRL) is viewed as an important enabler for integrating programme and project information across organizations and regions. The UPRL is an electronic format for simplifying the flow of programme and project information between organizations. It is a royalty-free, open specification, originally developed by ACTIONiT and refined by the Council for Scientific and Industrial Research (CSIR) to reduce the cost of reporting programme (project) information, increase consistency and accuracy in information handling, improve data integrity and generally promote the ease of information interchange. UPRL is an XML-based format [8]. It gives the Monitoring and Evaluation (M&E) community a standards-based method to generate, maintain and publish programme and project

information in a uniform format, reliably extract and exchange (via web services) this information with other organizations that comply to the UPRL.

UPRL enhances usability and transparency of programme and project information, allowing departments and municipalities to communicate information more readily in a digital format, independent of application or service provider. With the UPRL serving as a common denominator, each system needs to create only a single translator (i.e. mapping / translating the data of the source system against the UPRL).

A prototype UPRL has been developed (See extract of the UPRL in Appendix A). The UPRL specification partially caters for the *first three levels* of interoperability, illustrated in Table 1 below. The fourth level is more difficult to achieve because it is not concerned so much with the data than with the respective business processes (order of workflow steps) and workflow information of the participating organizations.

Table 1 Levels of interoperability between information systems

Level	Interoperability	Notes
1	Connection	Levels 5 to 7 of Open System Interchange (OSI) model. IP (Internet protocol), TCP (Transmission Control Protocol, HTTP (Hypertext Transfer Protocol)
2	Data Field	To exchange data, both systems must have the same (or similar) data fields in their database schemas. For example: <Project Status>
3	Content & Semantic Meaning	Given the same (or similar fields), the meaning must also be compatible. For example: a phase of a project should not mean an extension in time in one system and an extension in space in the other system
4	Workflow & Business Process	Considerably more difficult than other levels because users and their permissions, audit trails, etc. become as important as the data fields. Fundamental differences between systems.

The UPRL structures the data by defining:

- data fields (compulsory / optional)
- lookup values
- structure / relationships

- purpose
- definitions / notes and annotations
- refinements; and
- examples.

Implementation

Programme and Project Monitoring and Evaluation (M&E) systems will especially benefit from the use of the UPRL, mainly because of the following reasons:

- M&E Systems need to source information from other information systems. One-way transfer of information occurs from these systems to the M&E system, where it is integrated and analysed. Any corresponding additions or revisions to the baseline information are done in the source system which functions within a specific organizational / business process context. Compared to transaction systems, there is no apparent need to interoperate on a workflow / business process level which makes the integration effort easier (see section on organizational and business process context as one of the elements for achieving information integration and Table 1).
- M&E Systems are dependent on other programme and project management information systems for information in a *standardized format*. In the majority of cases these systems have been designed and built to support a specific institutional context, process and user community. Receiving information from these systems amounts to the difficult task of interpreting the data (in the absence of the data owner), before integrating it. Use of the UPRL by the source system, will divide the work evenly, by requesting the owner of the programme and project data to translate the data and export it in the common UPRL format. Translation will in most cases occur once, where after the procedure can be automated (i.e. Web Service).

Due to the number of programme and project management systems that would potentially have to be accommodated through UPRL, the solution relies on developing and publishing an open exchange specification that offers equal opportunity for all vendors to

exchange data (subject to certification as discussed below). The advantage of this approach, pioneered through a research grant from the Department of Science and technology, (see <http://www.actionit.org.za/about/progress.htm>) is that each participant (source system) only needs to implement one data translator/adaptor instead of one for every participating information system.

Implementation and maintenance of the UPRL throughout government will require not only the commitment and maintenance of a network of inter-organizational relationships, but most likely the establishment of the following:

- *Technical secretariat*

A technical secretariat is required to oversee the continual updating of the UPRL in an open and participatory forum. There are many examples [9] of how similar bodies function to develop open standards. It usually involves an iterative process of work done by one or more committees, circulation of the proposed changes to members and incorporating changes through a formal process until the changes are finally adopted by an executive committee. Throughout the revision process the potential impact of proposed changes on all participating systems need to be considered carefully.

- *Certification*

An important aspect of ensuring the currency, completeness and quality of data supplied via the UPRL is that of certifying participating information systems for compliance.

- *Service Level Agreements*

Service level agreements between the owners of the participating information systems in which commitments are given to keep their systems compliant with the UPRL.

While the establishment of a *Uniform Programme (Project) Reporting Language* is but one of the dimensions of the alignment and coordination challenge, it is viewed as a critical enabler for *sharing structured information* across organizational boundaries to support coordinated investment. The need and potential contribution of sharing structured information has since been confirmed by at least two independent government initiatives:

- As one of four strategic pillars for promoting intergovernmental relations, the Department of Provincial and Local Government in 2002 embarked on the establishment of an IDP Nerve Centre (IDPNC). ‘The IDP Nerve Centre will provide a tool to support inter-governmental planning in South Africa using IDP as the building block. In time the Service will not only provide key information from other spheres to municipalities, but transfer key IDP information to the whole of government in an effort to inform other spheres of the development intentions of municipalities across South Africa. By providing access to this structured information, the whole inter-governmental planning system in South Africa will be strengthened’ (Department of Provincial and Local Government, 2003).
- In a similar move to share structured information between the National and Provincial Departments of Housing, the National Department of Housing commissioned work in 2001 to standardize information submitted through Provincial Housing Development Plans to achieve performance-based allocation of housing subsidies.

Case Study: The IDP Nerve Centre

The inter-governmental nature of the IDP Nerve Centre made it an ideal candidate to test the Uniform Programme (Project) Reporting Language.

The establishment of an IDP Nerve Centre (IDPNC), as a tool to support inter-governmental planning, forms part of the Presidential Coordinating Council’s Action Plan for Local Government and has been approved by Cabinet in May 2003. The

Department of Provincial and Local Government (dplg) has received the task to establish and oversee the national implementation of the IDP Nerve Centre.

The IDP Nerve Centre (located at www.idp.org.za) is a web-based system that allows multiple organizations, involved in municipal service delivery, to capture and maintain their own strategic priorities, resource allocations and programme of implementation over a multi-year period in a manner that is consistent, thereby enhancing interpretation and ease of use by external stakeholders.

The intention is that the IDPNC should in time not only provide key planning, programme and project information from other spheres to municipalities, but transfer key IDP information to the whole of government in an effort to inform other spheres of the development intentions of municipalities across South Africa. By providing access to this structured information, the whole inter-governmental planning system in South Africa will be strengthened. The basic version of the IDP Nerve Centre has been developed and is currently deployed in municipalities and key departments throughout South Africa.

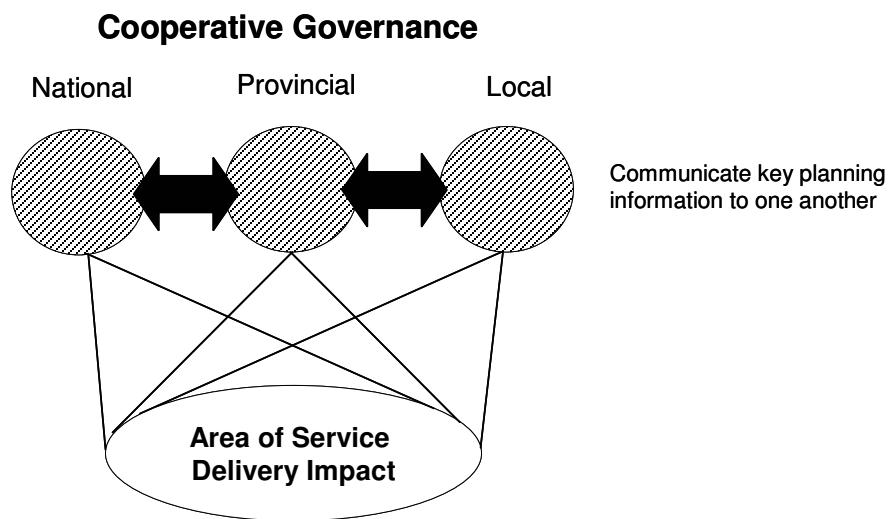


Figure 4: Inter-governmental nature of the IDP Nerve Centre

The inter-governmental nature of the IDP Nerve Centre meant that it had to develop the capability to interoperate with similar information systems in government. As part of the national deployment process, various information systems have been encountered that were identified as likely candidates for the establishment of an ongoing data exchange / publishing procedure with the IDP Nerve Centre (i.e. District Information Management System (DIMS) in KwaZulu Natal, Free State Monitoring and Evaluation System; North West ProMIS and an array of larger metropolitan based programme and project management reporting systems.

INFORMATION INTEGRATION CHALLENGES

Bearing in mind that the ability to align and coordinate programmes and projects across organizational and regional boundaries relies on the ability to aggregate programme (project) information as the basic units of work, the IDP Nerve Centre soon encountered the following challenges:

- *Double counting* of (planned and actual) programmes and project outputs and expenditure due to duplicated projects (for example HSS 431 in figure 5). Duplicate projects are extremely common in situations where different systems are involved in the project pipeline, but even occur in a relatively controlled environment such as the Housing Subsidy System (HSS). The underlying problem here is the lack of a *unique identifier* for every project, or more precisely preventing the same project from being captured twice. If the same project was given a unique identifier (i.e. 5E6A5838-7693-4808-AAE4-01630E820062) in the one system and a unique identifier (i.e. 5D5886B-684B-4133-AB9F-091562ABB1DF) in another system it still would be reported as two different projects – leading to double counting.

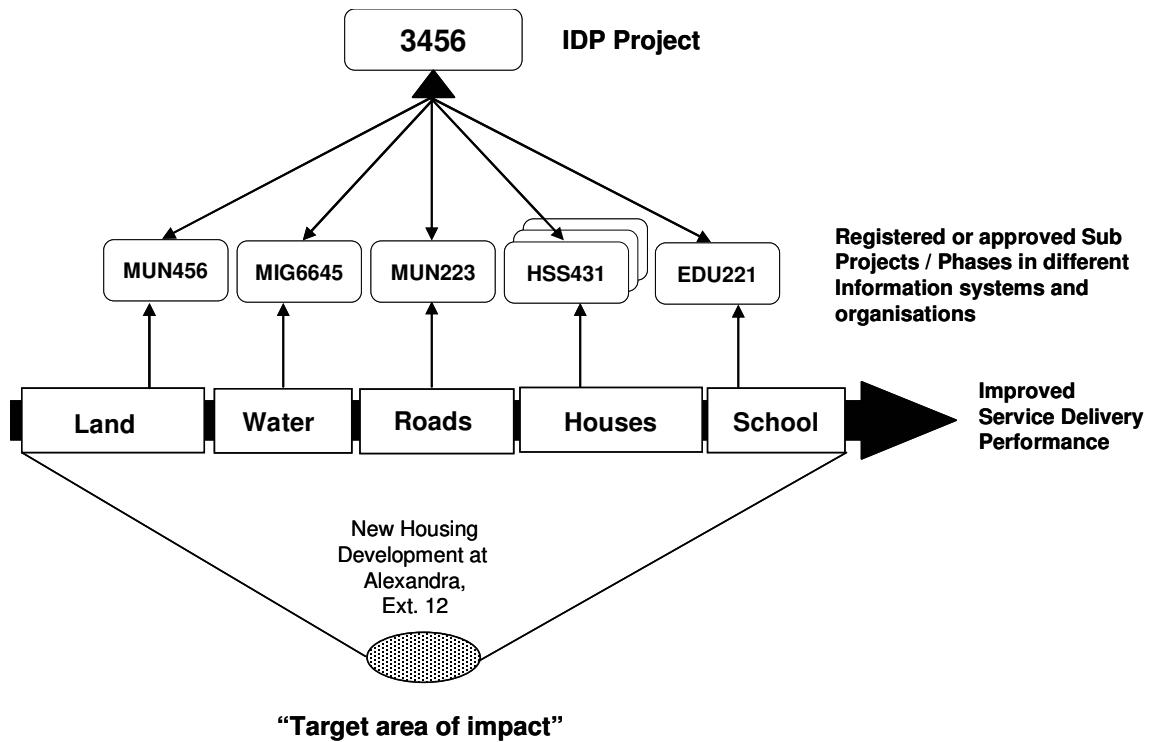


Figure 5: Underlying relationships between projects are absent

- *The association (link or relationship) between projects*, depicted as arrows in the Figure 5, are usually not known, especially if the projects are managed in different systems and organizations. A municipality could view ‘the project’ to be reported on as 3456 while a provincial department of housing could view HSS431 as ‘the project’. Reporting on employment opportunities created by ‘the project’ could therefore vary depending who is asked to collect the information and whether this person has a global or local view of the project.
- Different systems participating in the project pipeline do not share the same definitions of reporting dimensions (indicator) such as *project status*. For example, a status in one system might mean it is on hold, whereas in another system it might mean it is approved, but funding is pending.

Various government organizations and vendors have welcomed the use of the UPRL. Pilot site implementations are currently underway. The following have been identified as key implementation challenges:

- The Uniform Programme (Project) Reporting Language is an *XML-based format*. Although the South African Government subscribes to XML and XML has globally been in existence for several years, all indications are that few government organizations and service providers have the corresponding knowledge and skills to engage with the XML in a meaningful way.
- *Complexity in the translation or mapping* of source system data to the UPRL. Translation of the source system data needs to be done by the owners of the system. Differences in the institutional and business processes make the initial translation difficult.
- *One year budgets*. Current limitations in current service level agreements with IT service providers make it difficult to implement the UPRL over the short term. The responsibility for the development and maintenance of the translator and web service rests with the owners of the source system. In most cases, systems will only be in the position to accommodate the UPRL in subsequent financial years.
- *Use of the UPRL is not compulsory*, which makes implementation by a given date impossible. With the current set of pressures that government organizations must contend with on a daily basis, it is highly unlikely that the UPRL will receive preference. Experience has shown that organizations tend to first adhere to their own internal work pressures.
- *Unique programme (project) identifiers*. Many of the problems alluded in the previous sections are rooted in the fact that there is no unique identifier for projects and phases to serve as link between the different systems and that nobody has a global view of the associations (linkages or relationships) between programmes, projects and phases. In the longer term, government should consider instituting a central repository or clearinghouse for programme (project) identifiers where all participating systems need to register and obtain unique identifiers from. Much has been made of

programme (project) identifiers in the above but the same holds for a number of other potential lists of values that are commonly used across government, such as current variations in the official list and naming conventions for government organizations; agencies, regions, townships or villages, sectors, funding sources, statuses are all crucial to reliable aggregation / integration of information.

Conclusion

Tracking planning and implementation interventions across regions and institutional boundaries will be a growing concern of government in years to come. Integrated information is critical to coordinate, align and track planning and implementation interventions across South Africa.

Tracking of planning and implementation interventions has become almost synonymous with monitoring and evaluation (M&E). However, there are various challenges in the establishment and maintenance of M&E Systems. One of these is the ability to integrate information from dispersed heterogeneous information sources, administered by different organizations. Without this ability, Monitoring and Evaluation Systems are bound to fail.

The proposed Uniform Programme (Project) Reporting Language should be seen as an attempt to contribute to reducing the cost of reporting programme (project) information, increase consistency and accuracy in information handling, improve data integrity and generally promote the ease of information interchange across regions and institutional boundaries.

There exists an equal important need to apply a similar approach to the establishment of a *Uniform Backlog Benchmark* across government, against which programme and project interventions can be measured.

Abbreviations

CSIR	Council for Scientific and Industrial Research
IDP	Integrated Development Planning
IDPNC	IDP Nerve Centre (www.idp.org.za)
IGRF	Inter-governmental Relations Framework Act, 2005
ODSF	Open Decision Support Framework, known as ACTIONiT (www.actionit.org.za)
PCC	Presidential Coordinating Council
PGDS	Provincial Growth and Development Strategy
MIOS	Handbook on Minimum Information Interoperability Standards
M&E	Monitoring and Evaluation Systems
NSDP	National Spatial Development Perspective
XML	Extensible Mark-up Language

Acknowledgements

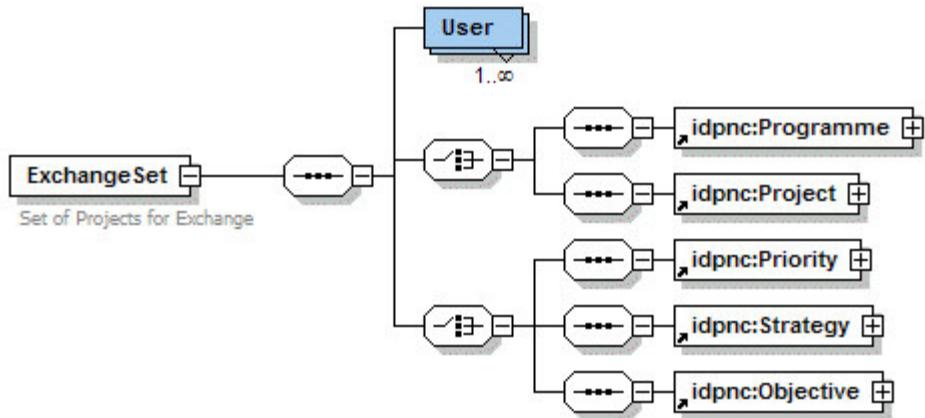
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- Mr Karel van der Walt, Mental Arrow Consulting
- Mr Wim Hugo, MBV Core Technology.

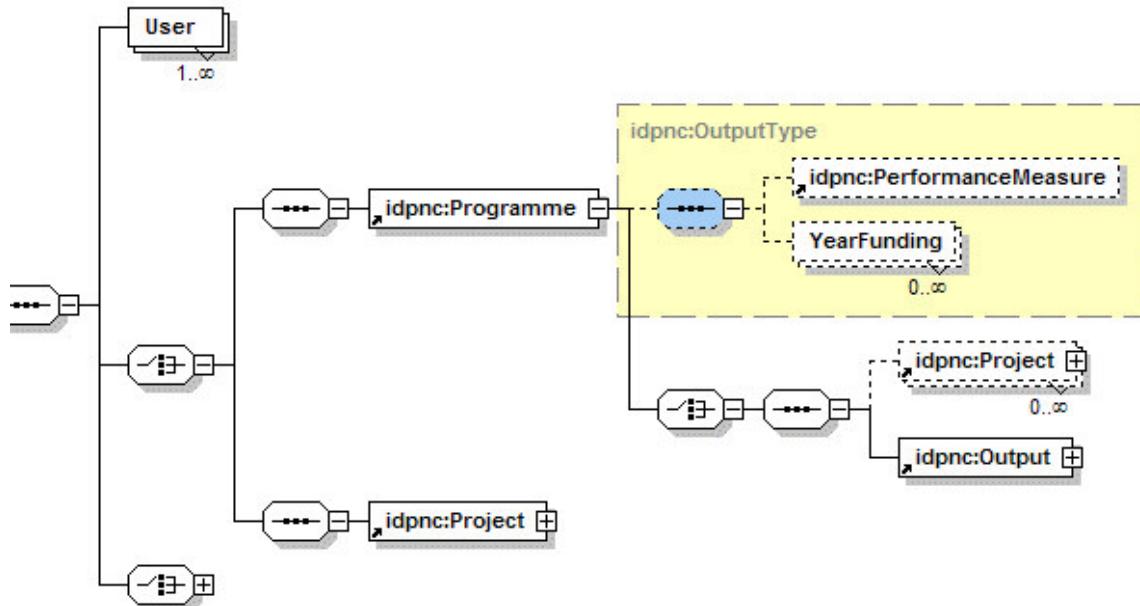
Appendix A: Uniform Programme (Project) Reporting XML Schema:

XML SCHEMA

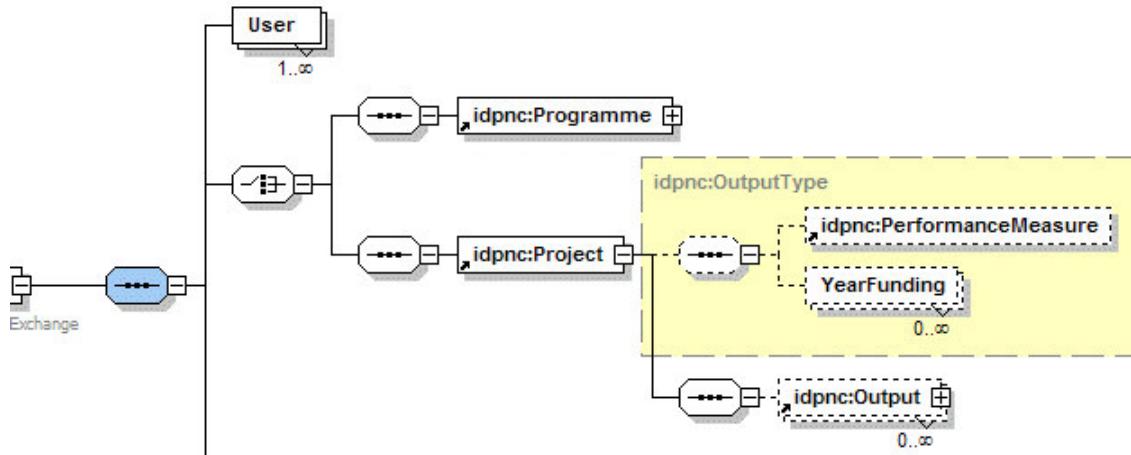
OVERVIEW



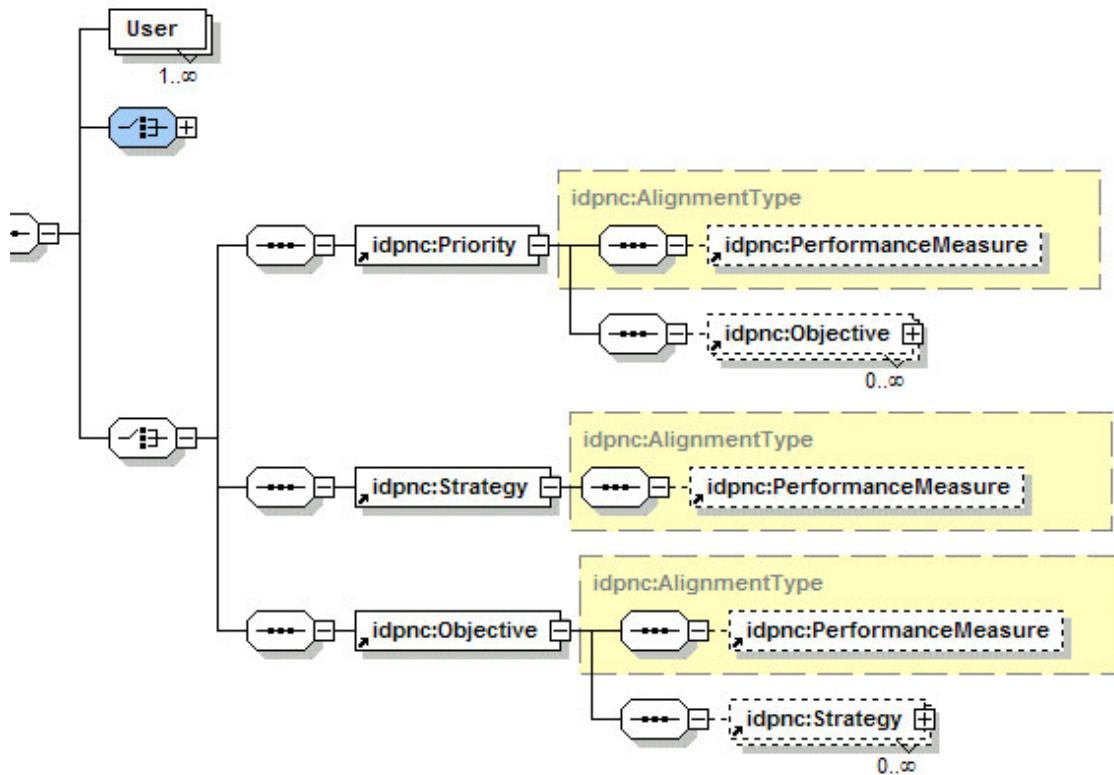
PROGRAMME PERFORMANCE



PROJECT PERFORMANCE



ALIGNMENT MEASURES



XML DATA EXTRACT EXAMPLE

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<?xml version="1.0" encoding="UTF-8"?>

<ExchangeSet xmlns="http://www.idp.org.za" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.idp.org.za IDPNC.xsd" SourceSystem="MIG" DateOfExport="2006-01-13"
SourceSystemVersion="3.2.000">

    <!-- Projects -->
    <Project PlannedStartDate="2004-06-01" PlannedEndDate="2007-01-31" ActualStartDate="2004-06-01"
ActualEndDate="2007-01-31" DurationInMonths="0" SourceSystemID="String" ProjectReferenceNumber="String"
AltProjectReferenceNumber="String" VoteNumber="String" ImplementingOrganisation="Dept. of Health : National"
BudgetStartCycle="String" CostVATInclusive="3.1415926535897932384626433832795" ProjectStatus="Concept"
ProjectCategory="New Capital" ProjectCluster="Economic Development and Infrastructure" ObjectiveID="01"
ProjectSector="Agriculture" ID="String" Name="String" Description="String" OwnerOrganisation="Boland DM"
ResponsiblePersonID="faith" DateLastUpdated="2005-08-13" RegionOrAreaOfImpact="DC44">
        <PerformanceMeasure MeasureDescription="String" Unit="Percentage (%)" Quantity="3.14159"
TargetDate="1967-08-13"/>
        <YearFunding Year="0" Amount="3000 000.00" Status="Secured" Source="MIG"/>

        <Output PlannedStartDate="2004-06-01" PlannedEndDate="2007-01-31" ActualStartDate="2004-
06-01" ActualEndDate="2007-01-31" DurationInMonths="0" SourceSystemID="String"
ProjectReferenceNumber="String" AltProjectReferenceNumber="String" VoteNumber="String"
ImplementingOrganisation="Dept. of Health : National" BudgetStartCycle="String"
CostVATInclusive="3.1415926535897932384626433832795" ProjectStatus="Concept" ProjectCategory="New Capital"
ProjectCluster="Economic Development and Infrastructure" ObjectiveID="01" ProjectSector="Agriculture" ID="String"
Name="String" Description="String" OwnerOrganisation="Boland DM" ResponsiblePersonID="faith"
DateLastUpdated="2005-08-13" RegionOrAreaOfImpact="DC44">
            <PerformanceMeasure MeasureDescription="String" Unit="Percentage (%)" Quantity="3.14159"
TargetDate="1967-08-13"/>
            <YearFunding Year="0" Amount="3000 000.00" Status="Secured" Source="MIG"/>
        </Output>
    </Project>
    <Output PlannedStartDate="2004-06-01" PlannedEndDate="2007-01-31" ActualStartDate="2004-06-01"
ActualEndDate="2007-01-31" DurationInMonths="0" SourceSystemID="String" ProjectReferenceNumber="String"
AltProjectReferenceNumber="String" VoteNumber="String" ImplementingOrganisation="Dept. of Health : National"
BudgetStartCycle="String" CostVATInclusive="3.1415926535897932384626433832795" ProjectStatus="Concept"
ProjectCategory="New Capital" ProjectCluster="Economic Development and Infrastructure" ObjectiveID="01"
ProjectSector="Agriculture" ID="String" Name="String" Description="String" OwnerOrganisation="Boland DM"
ResponsiblePersonID="faith" DateLastUpdated="2005-08-13" RegionOrAreaOfImpact="DC44">
        <PerformanceMeasure MeasureDescription="String" Unit="Percentage (%)" Quantity="3.14159"
TargetDate="1967-08-13"/>
        <YearFunding Year="0" Amount="3000 000.00" Status="Secured" Source="MIG"/>
    </Output>
</ExchangeSet>
```

Endnotes

¹ The South African Constitution provides for a National Government, Nine Provincial Governments and a Local Government Sphere, which currently consists of 47 District, 6 Metropolitan and 231 Local Municipalities.

² Speech delivered by Deputy Minister for Provincial and Local Government, Nomatyalala Hangana, to the National Council of Provinces on the occasion of the debate on the Intergovernmental Relations Framework Bill. Cape Town. 22 June 2005.

³ New pieces of legislation such as the Public Service and Administration Act, Municipal Structures Act, Municipal Systems Act; Public Finance Management and Municipal Finance Management Act. Crosscutting programmes such as the Anti-Poverty Strategy, the Community Based Public Works Programme, the Child Support Grant, the Local Economic Development (LED) Fund, the Integrated Sustainable Rural Development Strategy (ISRDS), Urban Renewal Programme (URP) and Municipal Infrastructure Grant (MIG) Programme.

⁴ Intergovernmental Relations Framework Act, Act 13 of 2005. Department of Provincial and Local Government. Draft Intergovernmental Planning Framework, December 2003.

⁵ The NSDP was adopted at the beginning of 2003.

⁶ The Uniform Programme (Project) Reporting Language, as an XML based format, is tested via pilot site implementations via the IDP Nerve Centre national deployment initiative of the Department of Provincial and Local Government.

⁷ Government interviews were conducted by the CSIR as part of a research grant from the Department of Science and Technology as part of an initiative to establish an Open Decision Support Framework for Government, known as ACTIONiT.

⁸ The South African government subscribes to XML as specified in the ‘Handbook on Minimum Information Interoperability Standards’, or MIOS.

⁹ The standard developed through voluntary membership with a global reach and substantive buy-in, such as World Wide Web Corporation (W3C) or the Object Management Group (OMG). Examples of government-specific initiatives are the e-Government Interoperability Framework (e-GIF) initiatives in the United Kingdom and Australia.

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