

## XBRL: XBRL for Reporting in Government



XBRL based reporting systems have found wide application internationally as well as in India in the corporate sector. The advantage of XBRL in making the reported data 'analytics ready' is well recognised. This article explores the application of XBRL for internal reporting in the context of Government departments, projects and schemes. It begins with the complexities of reporting in Government. A framework for XBRL based reporting in Government has been presented. The article also explains how the framework can be applied taking two real life examples of reporting situations in Government. The broad steps in implementation of the XBRL based reporting framework have also been explained. Certain issues that one can expect in a typical implementation exercise are also highlighted.

### What is XBRL?

XBRL or eXtensible Business Reporting Language is an application of XML to business information. It uses tags to describe the data, making it immediately reusable, interactive and intelligent. XBRL is also "extensible" making it customisable for unique reporting situations.

The possibility of using XML (eXtensible Markup Language) for electronic reporting of financial information was first explored in April, 1998. XBRL International today is a consortium of more than 650 companies and other agencies worldwide working to promote the adoption of XBRL. XBRL International is governed by a Board of Directors. It has produced a number of specifications and taxonomies so far. XBRL India is a Section 25 company incorporated for managing the affairs of Indian jurisdiction of XBRL International.



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## Tagging

In XBRL, each piece of data whether numbers or text, is given a unique ID based on standardised lists of terms known as taxonomies. This unique ID is called a 'Tag' in XBRL terminology.

For example, a data point of 2,00,000 might be linked to the following terms:

- Currency in Rupees
- Accounting item as Net Profit
- Time period as the second quarter of 2011

Once data is tagged, it becomes computer-readable. The tags remain connected to the data, so even when the data is used in other software, it can still be understood in its original context. A machine reading this data point now understands it as the net profit of ₹2 lakh for the second quarter of 2011.

## Benefits of XBRL

Usage of XBRL has increased over the past few years. XBRL brings in huge cost savings by avoiding duplication in reporting and improves process efficiencies at the same time making the data more reliable and accurate. This has resulted in availability of better quality information for decision making and analysis. Specific benefits of XBRL include:

- XBRL enables analysts to shift focus from organising and re-entering of data to actual analysis of tagged data with the aid of a software tool;
- XBRL has ushered in standardisation of reporting. Data which was earlier being reported in varied forms like spreadsheets, PDF, html pages and so on is being reported in a standard XML format;
- Anybody whose job involves collection of data and its reuse for analysis stands to benefit from XBRL since it makes the data seamlessly move from one software to another;
- Its extensible nature means that it can be adjusted to meet particular business requirements, even at the individual organisation level.



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**of the information generated by the reporting system from the complexities discussed above. XBRL can also make the job of consolidation at different project monitoring levels easier due to its structure. XBRL makes the data 'Analytics Ready.'**

## XBRL and the Government Sector in India

XBRL *per se* is not new to the Government sector in India. The Ministry of Finance and the Ministry of Corporate Affairs (MCA) have been the front runners in usage of XBRL in India. E-filing of income tax returns is in XML which is the language used for XBRL. Filing of returns to RBI by Indian banks is progressively shifting to XBRL mode. The MCA has introduced XBRL for filing of annual financial statements by companies.

This article discusses a hitherto unexplored area of usage of XBRL in Government, i.e. for internal reporting and control. The potential for process efficiencies and better monitoring when XBRL is applied for internal reporting is immense.

## The complexities of Reporting in Government

The number of Government schemes implemented at various levels (Central, State and Local) run into thousands with large budget allocations. As of February 2008, there were 515 active projects in implementation across India costing ₹100 crore or more each. Each scheme has multiple projects undertaken by different implementing agencies. Every scheme has to be monitored in terms of the physical progress, resource utilisation, timelines, costs and outcomes.

For example, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA) with an outlay of ₹40,000 crore in FY2010-11 has over the past five years completed about 7.3 million works, providing employment to about 55 million households, in the process generating about 250 crore person days of work. Revamping of MIS has been identified as one of the key challenges in project implementation in MGNREGA. The scenario for other Government projects is no different. The complexities of reporting in Government arise as a result of one or more of the following:

- **Complex project structures** – a number of Government projects (particularly externally aided projects) now include administrative reforms, civil works and capacity building initiatives all bundled into one project;

- **Diverse implementing agencies** – such as the Central Government, State Governments, local bodies, special purpose vehicles, and NGOs;
- **Involvement of a number of external agencies** – such as vendors, contractors, consultants and so on, both national and international;
- **Capacity issues** – lack of training amongst staff in project monitoring and reporting;
- **Data quality** – Re-presentation and consolidation of reports at multiple levels affect the authenticity of the data thereby adversely impacting the decisions made.

discussed above, it can help Government agencies bring in the required standardisation and discipline in regular reporting. XBRL to a large extent can insulate the quality of the information generated by the reporting system from the complexities discussed above.

XBRL can also make the job of consolidation at different project monitoring levels easier due to its structure. XBRL makes the data 'Analytics Ready' if we may call it so. A lot of the analysis done by humans can now be transferred to the machine without fear of losing reliability due to poor data quality.

As a result of these factors, information generated at the grassroots level by the time it reaches the ultimate decision makers at the other end of the pipeline loses its utility for decision making.

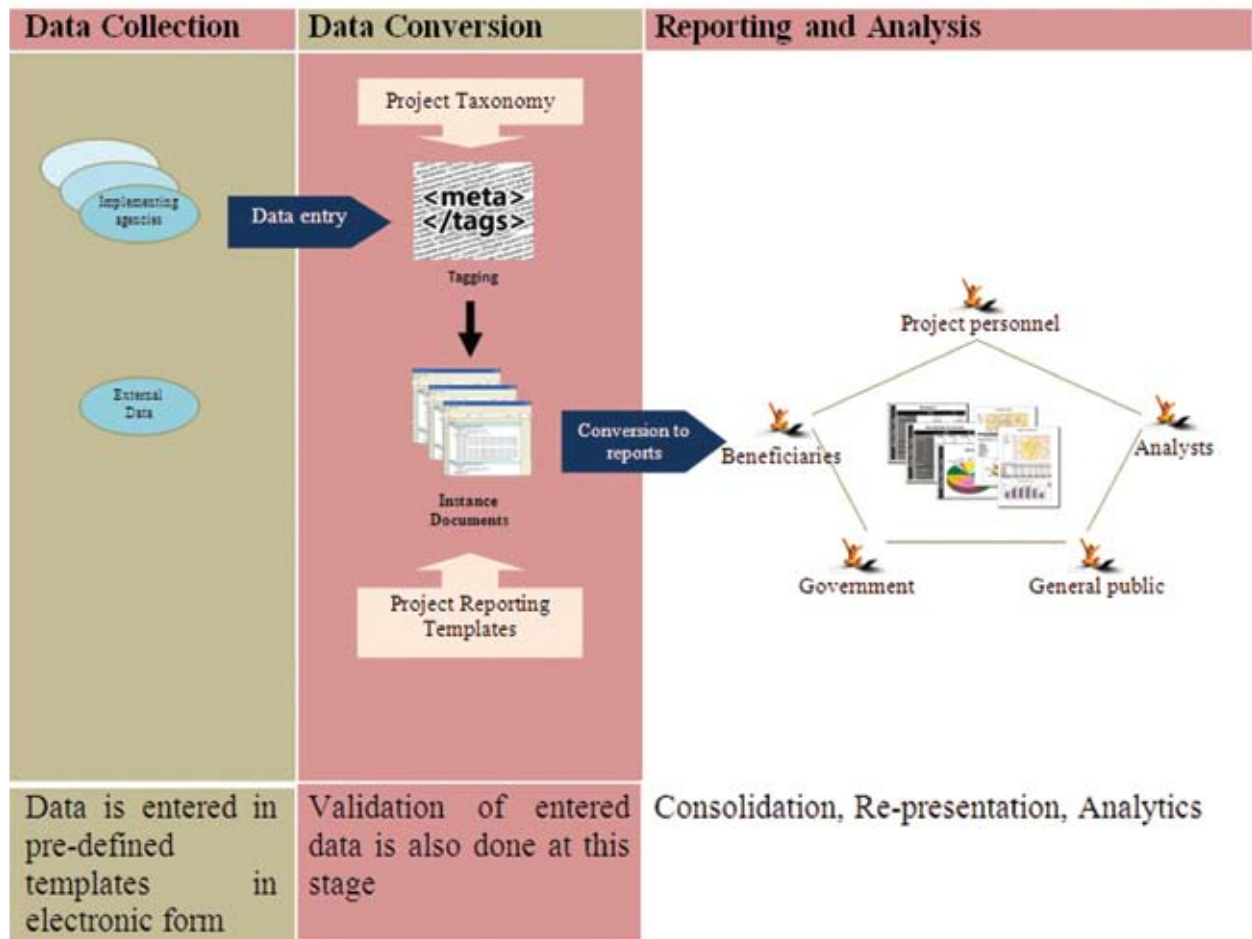
**How can XBRL help?**

While XBRL is not the tool to address all the complexities

**A Framework for XBRL based Reporting in Government**

A framework for XBRL based reporting for Government projects is shown in Exhibit 1. While the framework generally applies to all kinds of reporting environments that use XBRL, the specific factors to be considered in each phase are discussed here.

**Exhibit 1: Framework for XBRL based reporting in Government**



## Data Collection

This is the most crucial phase since the inputs for the reporting system are captured here. Most of the data quality issues originate in this phase. Necessary system controls and process controls need to be in place to ensure that the data entered is authentic. An important point to note with regard to the data collection phase is that it need not necessarily be the first point of data recording. The data is generally collected from existing sources of project data, electronic or manual.

For a Government project, the primary source of data is from the field generated by the implementing agencies. This data mainly pertains to the status of awarding contracts, physical progress of project activities and expenditure incurred. Data on results achieved as against project outcomes also comes from the field. External data pertaining to budgetary allocations, Government orders and approvals, clearances from other agencies and so on are also important inputs captured in this phase. Different modes of collecting data may be adopted:

- i. From a transaction processing system like the project management system or the accounting system – real time or in batches. Data already entered is pulled electronically;
- ii. Manual data entry – perhaps the easiest to setup but prone to errors. The risk of errors can be mitigated by using pre-defined templates with in-built validations. Typically, spreadsheets are used for this;
- iii. Smart devices like smart cards or handheld devices like barcode and Quick Response code readers.

The first round of validation happens at this stage itself. The extent and the robustness of the validation are dependent on whether the validation is manual or automated using a validation tool. The validation throws out errors in the collected data which need to be corrected before the conversion to XBRL format can happen.

## Data Conversion

Data conversion phase is all about applying the necessary tags (electronic) to the data collected and generating the instance documents (xml files). Tagging is done by the XBRL software and requires no human intervention if the data collected is fully validated. The output of this phase is one or more xml files which don't make any sense to the human eye. This phase is driven by two fundamental factors, namely the Project Taxonomy and the Project Reporting Templates.

The **Project Taxonomy** is a dictionary of all the types of data elements that are used in the project. It is defined at the project conceptualisation stage itself by

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the agency responsible for the project implementation. The project taxonomy provides the tags that are applied to the data in this phase. For instance, the item <<Date of commencement>> will be defined in the taxonomy as a date field in the dd/mm/yyyy format with validations like 'it cannot precede the contract date (which is another data item), it cannot exceed the project completion date and so on.

The **Project Reporting Templates** which in turn are governed by the project reporting parameters are a set of report templates covering different aspects of the project. The project reporting templates are developed around:

- **Physical reporting** – Progress and status of project activities, status of contract awards, completion of civil works and so on;
- **Financial reporting** – expenditure, budget variances, debt servicing and so on;
- **Outcome evaluation** – Project impact *vis-à-vis* desired outcomes.

Once the tagging is done, the software generates one xml file corresponding to each project reporting template.

## Reporting and Analysis

Different user groups might need different reports depending on their information needs. The key

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stakeholders in a Government project and their reporting needs are:

- The project personnel interested in reports showing the status of the project on different parameters;
- Beneficiaries interested in the status of completion of different activities;
- Government interested in the overall project

progress, fund utilisation and the outcomes achieved;

- Analysts interested in inter-project, inter-agency, time series comparisons;
- General public interested in the status and outcomes of Government projects.

Each report template has a corresponding instance document as explained earlier. The instance documents can be converted to a human readable form using a software tool. The reports can then be printed or circulated just like a normal document.

The data conversion (tagging) process renders the data ready for further analysis. Apart from the standard reporting templates, the tagged data can be used for analysis by different user groups. Generation of consolidated reports at various levels of the project implementation structure also becomes easy with tagged data. The same report can be presented in different forms without the risk of losing credibility of the report.

### Application of XBRL in reporting for Externally Aided Government Projects: The Case of KMRP

The Karnataka Municipal Reforms Project (KMRP) is a World Bank funded project aiming to help improve the delivery of urban services in Karnataka by enhancing urban infrastructure and improving the institutional and financial frameworks at the Urban Local Body (ULB) and State level. It is a \$310 million project with the total investment expected to go up to \$450 million. The project involves 37 implementing agencies executing more than 100 contracts across the state of Karnataka. There are at least five distinct levels of project monitoring and reporting.

#### The existing reporting framework

KMRP follows a monthly review cycle wherein the physical progress and financial progress of all components are reviewed by the nodal agency. The nodal agency in turn submits monthly and quarterly reports to the State and Central Government and to the funding agency. In addition to this, adhoc reports are generated whenever required. Periodic and exception reports like compliance reports are prepared whenever required. For the monthly review itself each implementing agency prepares around

fourteen reports covering physical parameters and five reports covering financial parameters. At a conservative estimate, the average number of reports prepared per month is around 750.

Needless to say, the exercise involves a lot of duplication of efforts and is error prone. The reports prepared are not uniform either in format or in content. There is a lot of subjectivity in interpretation of the information provided by the reports. Consolidation and analysis of the information provided by the reports is not possible in such a scenario.

#### XBRL based reporting framework for KMRP

The first step would be to define a taxonomy for the project. The project taxonomy will provide a global set of metadata tags applicable to KMRP. For example, for the item 'Status of work' the taxonomy will prescribe that it can be only one of 'to be started', 'in progress' or 'completed'. This will automatically prevent an implementing agency from furnishing a report with the status of work as 'tenders called for' since that is not defined in the taxonomy.

Exhibit 2 on the next page shows the three phases of the XBRL framework discussed earlier as applied to the case of KMRP.

## Exhibit 2: Framework for XBRL based reporting in Government

Phase	Implementing agency	XBRL software	End users
<b>Data Collection</b>	Each implementing agency uploads data on the physical and financial progress of its activities in electronic form. The data undergoes one round of validation at the entry stage itself		
<b>Data Conversion</b>		The data uploaded by the implementing agencies is tagged using the project taxonomy. Any inconsistency in the data submitted is pointed out at this stage, ensuring that the output xml files are reliable. Based on the pre-defined report templates, instance documents are generated as xml files	
<b>Reporting and Analysis</b>			The instance documents can be read using a reading tool by the end users. Custom reports can also be built with the tagged data

### The benefits

The human effort in the entire reporting exercise is reduced to the initial data collection. All errors in data capture are eliminated either in the data collection phase through validations or during data conversion if they do not correspond to the

project taxonomy. The taxonomy introduces the discipline in reporting and ensures that different terms are interpreted in a uniform way across the project hierarchy. Electronic data makes it very easy to generate custom reports as and when situation demands.

### Application of XBRL in Government Reporting: The Case of Urban Local Bodies

Another potential area of application of XBRL for reporting in Government is in preparation of financial statements by ULBs. With migration to double entry accrual based accounting, more and more ULBs across the country are preparing financial statements. However, this has generally remained an academic exercise with no consolidation or analysis being done. Consolidation and analysis as we now

understand require standardisation in reporting.

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### Steps in Implementation

XBRL implementation involves a series of activities covering IT as well as non-IT aspects. A typical implementation cycle would consist of the following stages:

- Definition of the project taxonomy;
- Definition of the project reporting templates;
- Mapping of data sources to the project reporting templates;
- Procurement and configuration of a suitable software tool;
- Establishment of data collection processes;
- Pilot runs with sample data;
- Training – conceptual, software and procedural;
- Steady state – regular project reporting in an XBRL environment.

### Implementation Issues in Usage of XBRL for Government Reporting

While the financial benefits of a well implemented XBRL based reporting system are unquestionable, implementation of XBRL in Government has its

own unique challenges. Failure to take cognizance of these issues at the planning stage itself would make the implementation a harrowing experience for the stakeholders. Below are given certain key considerations in this regard.

- It is crucial to get the taxonomy right. An improperly defined taxonomy will adversely affect the quality of the information generated;
- Like it or not, there is a certain amount of technical knowledge required to implement XBRL projects. This has to be planned for in the initial stages itself. A model which has proved successful in implementation of e-Governance projects in India is to institutionalise the technical knowledge into special purpose vehicles at the Central or State Government levels;
- Project management and internalisation issues, which have spelt the doom for many e-Governance projects in the past apply equally to XBRL implementations as well;
- It is very important to put in place processes and controls to ensure timely and accurate data capture;
- Factors having a bearing on data quality like the chart of accounts in the case of financial data, measurements in the case of civil works data have to be addressed along with implementation of XBRL.

### XBRL or XGRL?

It needs no further emphasis that the potential in the coming years for XBRL to revolutionise the reporting scenario across all functions of the Government is immense. The Indian Governments both at the central and state levels have been at the forefront in implementing e-Governance reforms and some of the reforms have been of a path breaking type. Should XBRL not be the next big reform that the Government must immediately initiate? Or to come back to the title, should it not be called XGRL – eXtensible Government Reporting Language?

### References

1. *Approach paper on automated data flow from banks to RBI – November 2010*
2. *Indian Public Finance Statistics 2010-2011, Ministry of Finance, Department of Economic Affairs*
3. *MGNREGA presentation to minister of Rural Development dated 13<sup>th</sup> July 2011*
4. *Report of the Technology Advisory Group for Unique Projects, Ministry of Finance – January 2011*
5. [www.mca.gov.in/xbrl](http://www.mca.gov.in/xbrl)
6. [www.xbrl.org](http://www.xbrl.org)
7. [www.xbrl.org.in](http://www.xbrl.org.in) ■