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AUTOMATED APPROACH FOR CUSTOMIZED DATA MIGRATION

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ABSTRACT

Data migration is the process of moving data from one environment to a new one; it may be used to support migration from one database to another or between major upgrades of a database. The implementation of master data management may also require data migration. The data integration, ETL,ELT and replication, which are primarily concerned with moving data between existing environments, may be used in order to support the migration process .Data migration is often undertaken as a part of a broader application migration (for example: migrating from SAP to Oracle, consolidating SAP environments or migrating from one version of SAP to another. or when migrating to SaaS (software as a service) environments it is important for data migration to be automated as much as possible, especially where these applications have been acquired directly by the business rather than via IT. Data migration projects are undertaken because they support business objectives. There are costs to the business if it goes wrong or if the project is delayed, and the most important factor in ensuring the success of such projects is close collaboration between the business and IT. Whether this means that the project should be owned by the business—treated as a business project with support from IT—or whether it should be delegated to IT with the business overseeing the project is debatable, but what is clear is that it must involve close collaboration.

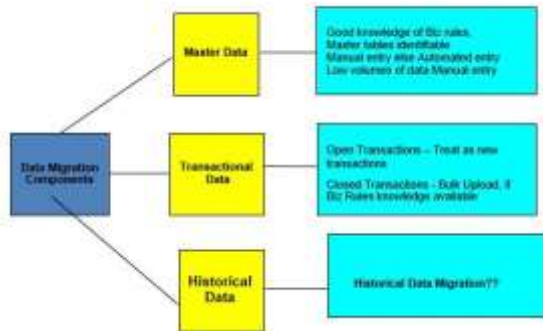
This white paper is about the acquisition of FMG(Fast Moving Goods)business of one company(COM-1) by another company (COM-II) resulting in the merger of the FMG business of COM-I into COM-IIs. It involves migration of huge amount of data from one company to the other resulting from partial M&A between COM-I and COM-II keeping the following parameters in check -Data integrity, Time(duration of engagement),Cost of technology, Man hours sent, Downtime, Maintaining availability of application. Huge data migration is not only cumbersome but requires special tools and techniques for maintaining integrity of the data. Migration of data from one source (company) to the other (company) requires time and effort and has huge cost implications that are not visible on the surface and hence extensive design, planning and funding are needed.

Various tools are evaluated for migration of data but owing to the complexity of the existing system which involves Open road as front end, tuxedo at middle tier and Oracle 10g at the backend and there were many critical business rules applied at all the three tiers, that needs to be taken into account while migrating the data. This involved lots of study and research in term of determining the best methodology for migration data from one landscape to another landscape. Please note the two landscapes may be on two entirely different platforms involving lots of complexity and contradictions. There was a need to study in details the application and hardware architecture of both the systems for the purpose of data migration /integration. For the purpose of data migration from one environment to another, all the validation (including Biz validation at front end and middleware and data referential and integrity validations at backend) should be considered and cannot be bypassed for the sake of migration.

KEYWORDS:FMG (Fast moving goods), SaaS (software as a services).

INTRODUCTION

Elements of Data Migration -



The above figure explains all the three basic components of data namely Master data, transactional and historical data. From the industry standards and practices guidelines, all the three have to be considered under the scope of data migration. This is a pre requisite. Historical data migration to be done depending on the requirement of business else it can be copied on separate database server to be used in case of need only. As it may require lots of space on live database which can hamper the system performance also. Copied master and transactional data along with referential integrities should be in sync for the smooth and successful operation of the system.

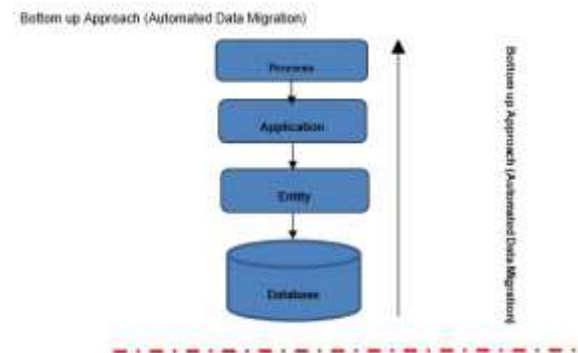
APPROACH FOR CUSTOMIZED DATA MIGRATION

This involves entities identification to be migrated, strategy to be adopted for Manual Upload or Auto-loader (Available market tools or customized tool development).The outcome of this determines the degree of success of this project. The choice based on the requirement of Biz user, number of records to be migrated, and transactional and master data. Using market available ETL / ELT tools, automated loading will be definitely faster; performance oriented and very less no of man-hours will be required for data uploading. But there are chances of skipping of some of front-end applied biz validations. So depending on volume of data to be loaded, integrity of data and time and efforts to be spent, a tradeoff is reached between different methodologies of data uploading. There will be multiple inputs required with multiple techniques, processes, tools and methods. Business entities are required to be in sequencing and proper

validation is required at both front end and back end so that the data entered is done sequentially. Master data, Historical data and Application data will be inputted using automation and the transactional data needs to be submitted through application form only using manual approach. Based on the existing application code we need to identify the Application Interfaces of the existing application, database for application, already scheduled jobs and batch for routine operations and triggers and procedures in database for data security and for migration of data entities. Knowledge of Biz Entities-Database entities, archival policy, application interfaces, and batch jobs is required for seamless flow of data into entire application.

PROCESS FOR DATA MIGRATION

The process diagram depicts the approaches to be followed for migration of data from one landscape to another,



ETL STRATEGY

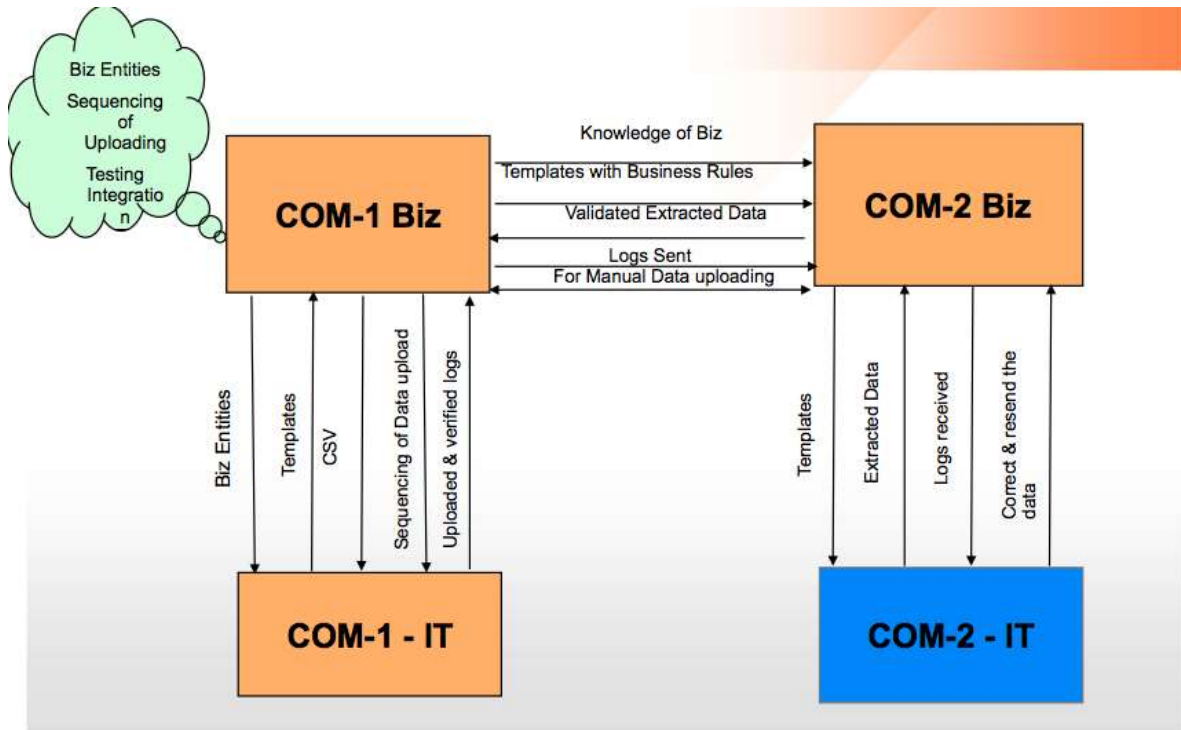
For the approaches discussed above for data migration, EXTRACT, TRANSFORM and LOAD (ETL) strategy is being used.

Extract - IT to extract data based on the templates drawn by Biz.

Transform - Get the templates for the auto-loadable entities. Do the transformation mapping of target Entities to source Entities & arrive at Signed Off templates.

Load - Get the data in signed-off templates. Use Autoloader scripts for uploading source data.

The ETL elements involved in the transition are depicted in the figure –



CONCLUSION

Data migration is an integral step in moving data from current system to a newer one. Data migration needs careful planning ahead of time as data legacy will need to go through data cleansing as it will need modifying before it can be transferred to the new system. With careful planning and research business can avoid a lengthy and expensive task. In this paper we have covered the data migration strategy, approach and implementation to be followed in moving the data from one company to another using different platforms and databases. Thus Database security and database integrity are the two major concerns that need to be addressed. In this paper one thing that needs to be highlighted is that we believe that a pre-cursor to delivering data migration projects on time, on budget and to meet user requirements is that data migration should be regarded as a discipline in its own right, with its own methodology, best practices and tools. Today, data migration is treated in many IT departments that should know better, as a dead end job with no prospects. This is unlikely to encourage expert practitioners and high caliber personnel to get involved: which means that you get a vicious circle with low expectations, low prestige and even lower enthusiasm. In order to break this cycle of defeat, expertise in data migration needs to be recognized as a valid, and valuable, career path. We

believe that recognizing data migration as a market in its own right is a first step in this direction.

The most important factor in ensuring successful migrations is the role of the business. All migrations are business issues and the business needs to be fully involved in the migration—before it starts and on an on-going basis—if it is to be successful. As a result, a critical factor in selecting relevant tools will be the degree to which those tools enable collaboration between relevant business people and IT. Finally, data migrations should not be treated as one-off initiatives. It is unlikely that this will be the last migration, so the expertise gained during the migration process will be an asset that can be reused in the future. Once data has been cleansed as a part of the migration process, it represents a more valuable resource than it was previously, because it is more accurate. It will make sense to preserve the value of this asset by implementing an on-going data quality monitoring and remediation program and, preferably, a full data governance project.

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