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**DUMP YOUR MAINFRAME OVERVIEW**

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REVISION 1.3

## Introduction

Many organizations still maintain and operate their mainframe computers to access legacy data that needs to be retained for operational, analysis or regulatory reasons. This is a major expense, but deemed necessary as either legacy applications are still needed to access mainframe data, or to avoid the mixed success, long lead-time and high cost of creating a data warehouse. It was for the latter case that WhamTech provided an alternative solution.

## Key Business Benefits

The WhamTech solution:

- Provides a low cost/high ROI alternative to either (a) doing nothing, and still maintain and operate the mainframe, or (b) creating a data warehouse
- Implements rapidly
- Takes advantage of already archived data
  - The data files themselves become the database
- Fully complies with regulations as working with original/unaltered operational data
- Runs modern applications against legacy mainframe data
- Seamlessly combines legacy mainframe data with modern application data
  - Legacy data indexes and results cleansed, transformed and standardized to comply with modern data model

## WhamTech's Solution

WhamTech developed an External Index and Query (EIQ) Product™ solution for a very large, private environmental recycling company to enable it to query and read results from archived-off-mainframe, Cobol-written VSAM data files. The mainframe data files (MDFs) are stored in original EBCDIC binary format on Windows servers. WhamTech developed an ODBC driver that enables the MDFs to be initially read, parsed and indexed. More importantly, once standard SQL queries are executed against the indexes, the ODBC driver enables specific results data from the MDFs to be read using internal file pointers, combined with other data and presented back to end-user applications. This solution enables the company to automate the previously manually intensive tasks of querying and reading data from the mainframe using mainframe query tools and language. It will also eventually enable them to drop their expensive mainframe maintenance and operations contract.

## Key Technical Benefits

The WhamTech solution:

- Retains original mainframe file formats (MDFs) as a data source, e.g., EBCDIC binary
- Uses archived MDFs that are in compliance with Sarbanes-Oxley, EPA and other regulations on low-cost network-attached storage NAS or storage area network (SAN)
- Implements an index and query processing layer external to the archive MDFs storage
- Cleans, transforms and standardizes data as it is being read and indexed (option) – data discarded
- Maintains hierarchical relationships and/or automatically convert hierarchical relationships to relational or flatten/denormalize

- Adds pre-aggregated and pre-calculated field indexes (option)
- Adds unstructured text indexes (option)
- Adds categorization (option)
- Adds entity extraction to unstructured text (option)
- Adds fuzzy matching (option)
- Adds link mapping and link analysis indexes (option)
- Maps standard data models and metadata to the indexes (option)
- Accesses the index and query processing layer with applications/middleware using standard database drivers, e.g., ODBC, JDBC, Web Services
- Processes SQL queries against the standard data models and metadata-mapped indexes
- Automatically uses index pointers to retrieve data from archived files using file pointers or from indexes themselves
- Cleans, transforms and standardizes results data (option)
- Combines results from multiple data sources (option)
- Updates and adds new data by writing back to a modern database/file system (option) – the original archive files remain intact
- Seamlessly combines access to original archive MDF indexes and updated/new data indexes (option)
- Develops link networks and perform link analysis within and across multiple data source indexed systems for virtual CDI-MDM and other solutions (option)

### Solution Extension Option

The WhamTech solution for the environmental recycling company was for archived MDFs residing on non-mainframe storage. This approach can be extended to also work with files still residing on mainframes whether the files are static/archived or live/operational. As with the WhamTech solution for the aforementioned company, external indexes would be developed. But, instead of file pointers used to retrieve data, the existing mainframe drivers, queries and methods for data retrieval would be used. Going forward, WhamTech has reviewed and prepared for such options. These options could allow transition and migration from legacy mainframe to modern database applications. They could also defer plans indefinitely to create a data warehouse by enabling modern applications to successfully access mainframe data now, as well as to later shift to access archived MDFs as described.

WhamTech's EIQ Products are a unique suite of adapters and sub-middleware that integrate easily with existing systems and architectures.

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