



What's Next?

Looking to the future, Garanti are planning to introduce new alternate channel services. The company is currently working with a large corporate client to integrate back office applications through web services and intends to offer these new eBusiness services to its corporate customers in 2003. Another current project is focusing on the delivery of banking services over mobile phones. As Rustu Karaca explains, 'Through the introduction of our original set of alternate services; phone banking and internet banking; Garanti have grown a significant new channel in five short years. Today, alternate channels account for over 40% of our banking activity in comparable

banking services. With the introduction of additional services we expect that percentage to be even higher.'

"DL/2 was an important part of our success in building a strong technology platform for the future' said Ferda Bek. 'It enabled the smooth transition of data and applications from IMS to DB2 at an acceptable level of risk. We found Circle's consultants very knowledgeable and always willing to help in ensuring that the project was a success."

Results

- All 4 IMS databases migrated to DB2 in 6 months without requiring changes to the 10,000 applications that access them
- 24*7 operations for telephone banking, internet banking and ATM's now much easier to support
- All data is in a consistent format making business intelligence and customer analysis far easier and more comprehensive
- Cancellation of IMS licenses, saving \$480,000 per year
- In phase 2, changes to database access (replacing DL/1 calls with DB2 calls) made alongside program logic enhancements. DL/2 supported changes on a program-by-program basis
- With the completion of phase 2, Garanti have now cancelled maintenance on DL/2
- Whole process was achieved through a low risk, step by step approach

About Circle

Circle Computer Group is a trusted supplier of software, training and consulting to the IBM mainframe community. Circle's DB2 data migration solutions are used by organisations worldwide to accelerate the move to DB2 while reducing much of the complexity and risk associated with migration projects.



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Garanti Bank re-architects data environment to support multi channel banking



Garanti Bank

Founded in 1946, Garanti Bank has grown over the years to become the largest private sector bank in Turkey. It provides retail, commercial and corporate banking through a network of over 300 branches in Turkey as well as having branches and subsidiaries in nine countries.

Recognized as a market leader, Garanti has attained ISO 9001 Quality Systems accreditation in all of its banking areas. It has also won numerous awards including "Best Smaller Bank in the World", "Best Bank in Turkey" and "Turkey's Best Internet Bank".

Garanti's IT infrastructure is built around IBM mainframe technology. In its data center in Istanbul there are three s/390 Enterprise Servers (one Z77 and two Z87's) that host the core banking applications. Like many banks, the company developed a large portfolio of applications in the 80's based on PLI and IMS to support its various banking activities.

With the improvement of Turkey's economy in the mid 1990s the bank recognized an opportunity to gain market share through providing increased access to banking services for its customers.

This included expanding the ATM coverage across the country as well as offering new telephone banking and internet banking services. 'Garanti Bank has always been a technology leader in the Turkish banking sector' said Ferda Bek, Mainframe Systems Unit Manager for Garanti Teknoloji, Garanti's IT Services division. 'We were determined to extend that lead in the development of our alternate channels services.'

Company Facts

Garanti Bank

Headquarters:
Istanbul, Turkey

Core Business:
Largest private sector bank in Turkey

Business Need:
To migrate core applications and databases from IMS to DB2 in support of multi channel banking initiatives

Technology Solution:
DL/2 from Circle Computer Group



Choosing DB2

In 1995 Garanti carried out a strategic review of their application development environment and made the decision to adopt DB2 for all next generation applications. 'It was clear to us that DB2 provided the right foundation to support our future banking requirements' said Rustu Karaca, Assistant General Manager for Application Software in Garanti Teknoloji. 'In addition to supporting new application development, we selected DB2 as the foundation for our data warehousing strategy, also based on the mainframe.' DB2 was initially used in the development of a number of new applications with good results. However, the core systems remained on IMS.

As new 'alternate channel' applications (call center and internet banking) were rolled out, provisions were made to support the limitations of IMS in this new environment. For example, account balances were held in two separate files, one to support the batch processing requirements of the core applications and one to support the 24*7 requirements of the new services. As IMS systems were brought off line for

housekeeping and batch processing, alternate channel banking activity was recorded in VSAM logs which then required synchronization with the core IMS databases. The bank was also interested in doing cross channel analysis of their customers and with programming required to extract information for reporting purposes, the IMS environment was not conducive to this growing management information and customer intelligence requirement.

Moving From IMS to DB2

Ferda Bek recalls, "Our operational environment became increasingly complex.

"...a traditional migration approach introduced a level of risk and cost that was considered unacceptable."

We also realized that the level of complexity would continue to grow as additional services were introduced. The answer to us was clear; we needed to migrate our data from IMS to DB2. With data in DB2 the duplicate files required for supporting alternate channel

applications could be eliminated. This is because DB2 supports 24*7 processing, allowing batch and online applications to run concurrently with housekeeping activities. And with the corporate data warehouse on DB2, the migration of data from the operational systems to the warehouse would be greatly simplified. However, with 10,000 IMS applications in production, a traditional migration approach introduced a level of risk that was considered unacceptable.

In their search for a migration solution, Garanti Teknoloji evaluated a number of approaches including the use of DL/2 from Circle Computer

Group. It found the DL/2 approach to be unique in its ability to support data migration without requiring changes to their applications. Circle consultants performed an initial analysis to establish the scale and complexity of the project and this was then followed

by an on-site proof of concept to satisfy Garanti that there was a good technology fit between DL/2 and the company's applications and data.

DL/2 selected for IMS migration

In the end, DL/2 was selected as the only realistic solution for migration. Some of the key reasons were:

1. The migration could occur one database at a time, limiting the amount of change introduced at any stage in the project
2. DL/2's IMS to DB2 mapping tool greatly simplified the analysis and design phase. DL/2 then generated the necessary transformation and load logic to automate the DB2 load process.
3. The data could be migrated without requiring logic changes to the applications that accessed it. As far as the applications were concerned, they continued to issue IMS calls as before. Testing was simplified, as no tests were required to check for changes in application logic.
4. Because programs could run without change, all phase 1 activity could be focused on

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data migration, not application modification. This meant that the data was migrated far more quickly than would otherwise have been the case - unlocking it for use in by new applications as well as for business intelligence purposes.

Work Begins

Data migration work began in August 1998 with various General Ledger and Accounts databases. In all, 4 IMS databases were migrated to DB2. During this time, Garanti Bank acquired Korfez Bank, a private Turkish bank. Korfez's core IT applications were also based on IMS and as part of the overall migration project, DL/2 was used to migrate these systems to DB2. Both migration projects were complete and in production by the end of 1999.

In 2002, Garanti cancelled their IMS licenses giving them an on-going reduction in software costs of \$40,000 per month.

Phase 2 of the project kicked off in 2000 and focused on re-engineering the 10,000 applications. Since these applications were originally developed, there had been many changes to banking practices and banking channels. As a result, the re-engineering involved introducing new functionality while at the same time changing the DL/1 calls to DB2. DL/2 was able to support these changes on an application-by-application basis, again greatly reducing risk and simplifying testing.

And with all data access calls now redeveloped in SQL, in 2002 they were also able to discontinue the use of DL/2.

Commenting on the success of the migration, Ferda Bek said, "Without DL/2 and its low risk approach, it is unlikely that we could have done this project at all."