The Expert's Opinion

Guy L’Heureux is database administrator at Cessna Aircraft Company working in an IMS and DB2 environment. Guy’s over 15 years of data processing experience has included appointment as Assistant Director of Technical Services at Cap Gemini America.

Interview by Mohammad Dadashzadeh

JDA: What is the role and what are the major responsibilities of the Database Administrator at Cessna?

L’Heureux: Data modeling, database performance, database design and implementation, database security (through the program specification block), and database maintenance (tuning, reorganizations, etc.).

JDA: What do you consider to be the most important contributions of the DBA to an organization?

L’Heureux: Naturally, that depends on the company. I feel that it is important to have the foresight to plan for what is going to happen one month down the road, as well as five years down the road. You have to be constantly aware of the business needs of the company, and steer your decisions (or recommendations) in that direction. Other contributions would be meeting users’ information requirements, database availability and stability, and database performance.

JDA: What is the computing environment at Cessna? Is computing decentralized? Is development decentralized?

L’Heureux: There are two major systems for the financial and business applications. The system that the database systems are on has DB2 and IMS DB/DC. The other system has CICS/VSAM and TOTAL. I would say that currently, the majority of the computing and development are centralized.

JDA: What are some of the major computer-based information systems at Cessna? What are the volumes of transactions? Are they implemented using a DBMS?

L’Heureux: Currently, our manufacturing system in running under IMS DB/DC. This system has over 1100 transactions defined, and it has 93 databases spanning 12 IBM 3390 disk drives. We are also moving towards implementing a paperless environment for manufacturing that uses DB2 tables with IMS/DC as the transaction processor. It has 31 DB2 tables using approximately 250 cylinders of DASD. Our plans for next year (1991) include integration of financial applications (Accounts Receivable, Billing, Accounts Payable, General Ledger, etc.) that will add roughly 65 new DL/I databases, and about 250 new IMS/DC transactions.

JDA: What is the reporting structure of the DBA and the MIS function as a whole at Cessna?

L’Heureux: The database administrators report to the manager of information systems planning, who reports to the director of information management.

JDA: Does Cessna have an integrated database? Are there any plans to move in that direction?

L’Heureux: Currently our engineering information and our manufacturing information are almost fully integrated. The direction that I would like to go is to integrate as much as feasible. There are some plans for 1991 and 1992 to integrate more of the engineering data, and also to integrate some portion of the financial components.

JDA: What tools would you consider or have at your disposal if you were to integrate the separate databases?

L’Heureux: None at the present time.

JDA: Is Cessna planning for migration to a relational DBMS such as DB2?

L’Heureux: We have DB2 in use for some applications, however we are not planning to migrate existing systems to DB2 in the foreseeable future. We are using DB2 on some new development work, and may consider migration of TOTAL databases to DB2 in the future.

JDA: Do you consider the need to migrate to a relational DBMS as an opportune time to push for an organization-wide integrated database?

L’Heureux: We already have in existence some organization-wide databases, and are already planning for more. However, relational DBMS is not regarded as a prerequi-
site for an organization-wide (global) database.

JDA: Do you consider the concept of an organization-wide integrated database a mirage?

L’Heureux: Absolutely NOT. I believe that it is very real, and that it is the direction that a company should be positioned for.

JDA: What tools do you like to see become available for your database environment?

L’Heureux: A tool that would extract records from a database and create a smaller test database based on control cards. It would have to have the ability to extract records and their related components (those defined through implicit semantic integrity relationships, or extremely complex IMS-type logical relationships).

JDA: What features of your DBMS do you most appreciate?

L’Heureux: With DL/I, it has to be that it has been proven over time. With DB2, it has to be its ease of use.

JDA: What features of your DBMS do you consider most annoying?

L’Heureux: With DL/I, it is cumbersome to use. With DB2, it is the way the optimizer will choose an access path. At times, you have a difficult time making a program behave the same way in production as it behaved in test. At least with IMS, you can control the physical path that will be used to access the data.

JDA: What do you consider to be the most important roles of a Data Dictionary System in your environment?

L’Heureux: We currently use a manual system. We have several systems under consideration for an automated data dictionary. The greatest benefit will come from standardization through the common use of items, labels and data elements.

JDA: What methodology or diagrammatic technique do you use for logical database design?

L’Heureux: We are currently using Yourdon Structured Methodology. By the time we begin designing a database, the Entity-Relationship diagrams, dataflow diagrams and entity state transition diagrams (along with a data dictionary summary of the data elements) have been done. When the design is completed, a data structure diagram is provided.

JDA: How do you deal with specification and enforcement of integrity constraints?

L’Heureux: Currently, it is handled by applications. For example, none of the applications that are currently in-house, or being planned for the near future are having the DBMS enforce referential integrity automatically. If a field must relate to a record in another database or table, then the application program will take care of checking to see that the appropriate value exists.

JDA: What do you see as future trends and issues in database management?

L’Heureux: First trend is distributed processing and cooperative processing. I feel that over the next few years this will be the up-and-coming issue. Second trend is the organization-wide integrated (global) database. This will catch on as distributed processing catches on. Corporate data will live in one place for everyone with a need to know to share, while allowing extract databases that are used by decision support applications to live in another place.

JDA: What would be your advice to your colleagues to help them prepare or deal with challenges of database administration over the next decade?

L’Heureux: Remain open to change. The industry is going to encompass a lot of change. Be aware of how you want to be positioned in a long range plan. Then, try and make decisions and recommendations not only based on today, but also tomorrow.
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