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Data Management
REVIEW

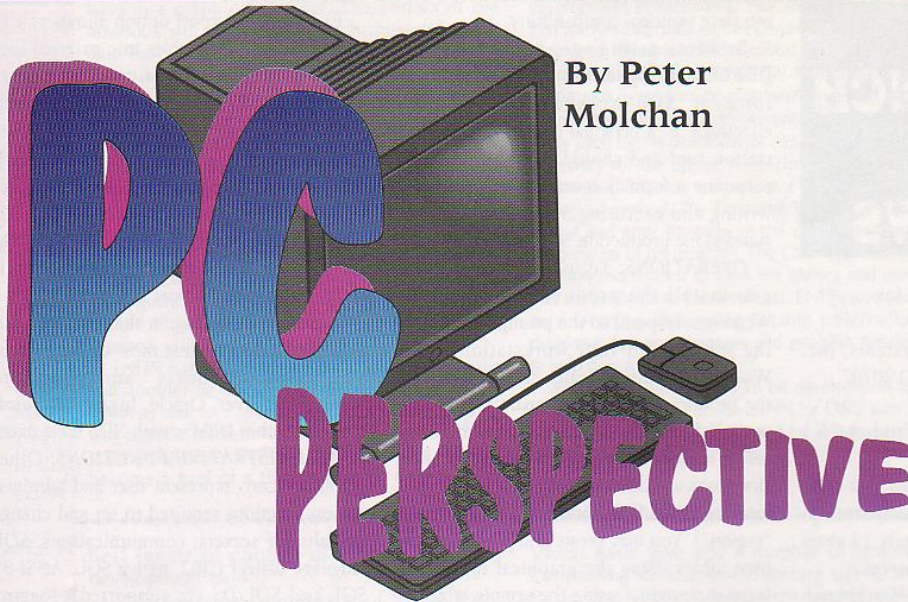
Client/Server and Object Technology Solutions for the Enterprise

**The Dream
Cooperative
Processing API**

**DB2 on
the Desktop**

**A BASE
for CASE**





By Peter
Molchan

HAVE YOU FOUND EXCELLENCE YET?

What grabs you when you think back to the '80s? Reagan, Bush? Your first mortgage? The last episode of M*A*S*H? The fact that you missed the '70s?

Fortunately, I had no leisure suits to discard (couldn't afford them) and didn't have much time for being an evening tele-potato. I spent most of the '80s in a classroom. It was my education decade. Having an undergraduate degree was a good foundation but I needed to expand my horizons. High-tech seemed like the most likely career growth path. A year of night school, that equated to standing in line to use the card punch machine and the challenges of measuring the height of card decks to see who was buying that night, certified me as a programmer.

Within six months of graduation, I had started a new career and was teaching night school. The first company I worked for had a generous tuition reimbursement plan, so, I filled in the nights I wasn't teaching and Saturdays with classes to earn a graduate degree.

The mid '80s, which signaled my liberation from the student chair, was also afire with a much needed corporate shot in the arm from a couple of

McKinsey & Company consultants. As John Naisbitt, author of Megatrends put it, "Perfectly timed, well documented...I heartily recommend and strongly urge you to read and digest...*In Search of Excellence*." Read and digest? I was mentally constipated on it. Grad school—studied and studied it. Work—saw the video. Changed jobs that year—saw the video again. Visited one of my branch offices in Jersey, you guessed it—saw it again. Looking for my seat in coach—half the open briefcases had a copy.

So where is your copy? At home? At work? If its in arms reach, will you have to blow the dust off? How about the video on file in the corporate library—is it VHS or Beta?

SUCCESS PRINCIPLES

In Search of Excellence studied 43 successful American companies specializing in consumer goods, high technology and services. It garnered eight management principles intended to be profit maximizing and readily transferable. The listing of excellence doctrines oppose the front cover. Highlighted in my copy is the second: "Staying close to the customer—learning his preferences and catering to them."

Flip to page 196 (yes, I've been a

teacher for a long time) and review with me some "Back to Basics-Close to the Customer" general product development shortcomings identified by Peters and Waterman: "All too often the product is designed in a vacuum, the pipedream of engineers who love technology but may never have seen living, breathing customers use their companies' products."

"The excellent companies are not only better on service, quality, reliability and finding a niche; they are also better listeners."

I work in a high-tech niche with products designed to "emulate" mainframe technologies that enable implementation of a total mainframe testing environment on the PC. My on-line thesaurus gives two synonyms for the verb emulate, "to rival or to compete" and defines it as, "to strive to equal or surpass." In terms of long-run cost efficiency, there is no doubt that the PC environment (i.e., the box and the software), can compete, rival and surpass the mainframe.

MAINFRAME EMULATION OBSTACLES

To reach the performance levels that justify the investment in PC technologies, the programmer faces several obstacles:

- developing expertise with a variety of interfaces;
- dealing with bugs in the software;
- acquiring upgrades and new releases;
- setting up the emulation environment; and
- creating work-arounds for unsupported functions.

The first three obstacles are software related, the direct result of designing in a vacuum, not staying

close to the customer (user in this case) and contribute heavily towards creating mass confusion:

- Like five people trying to share the same umbrella in a thunderstorm, one part of the software combination is PFK driven, another driven by pop-up menus, some portions developed with diverse levels of mouse support while others sport varied GULish interfaces;
- New releases often suffer a two to three month roll-out in intensive care relying on the nursing skills of the users to report symptoms through help/hot lines;
- Whether the 'next' release patches in fixes or includes new support, the acquisition initiative is on the user, whether it be through direct request or access privilege to a variety of BBS lines with different interfaces (more to learn) and protocols for download.

Factor in the overhead of setting up the emulation environment and discovering and building the framework for work-arounds with the increases in day-to-day workloads prompted by streamlining the professional staff. In a year or two, you may find the six to eight thousand dollars invested per workstation to have been, at best, a learning experience for measuring future expectations.

ENSURING SUCCESS

I have another *Excellence* doctrine highlighted: "A bias for action: a preference for doing something—anything."

What planning will you incorporate into your workstation investment or what action you will take if you've already invested to overcome the known obstacles and ensure the success of the rollout?

Most budgets allow for hardware, software and general education but there is an overwhelming need to compensate for the lack of catering to user needs and preferences characteristic of generic technologies that must perform specialized functions. Part of the package should include consulting services that:

- document the implementation plan for the downsized application(s);
- coordinate the development team (DBAs, tech support, applications and PC personnel);
- fine tune the software mix;
- define the application architecture;
- build and install automation features to minimize the learning curve and streamline procedures; and
- oversee the rollout to the general public.

The decision to buy into PCs is measured against savings in mainframe costs over a period of time. The costs for expert consulting to bridge the obstacles with personalized service can and should be subject to this same test:

A. Determine the mainframe costs that will be incurred over a specific time line without consulting services to downsize the environment.

B. Subtract mainframe costs saved by shortening the implementation time line with consulting services from the total in A.

C. Add B to the cost of consulting services.

D. Compare C to A.

You may be pleasantly surprised to find savings gains combined with the guarantee of a successful project.

Peter Molchan is an instructor for The Systems Group, Inc., a technical training and consulting firm based in Glastonbury, Conn., that specializes in PC Workbench, CASE and mainframe relational data base technologies. He has developed several technical courses on workbench-related topics and recently co-authored a desktop reference on the Workbench published by GED Information Sciences, Inc. of Wellesley, Mass.



Was this column of value to you? If so, please let us know by circling Reader Service No. 49.

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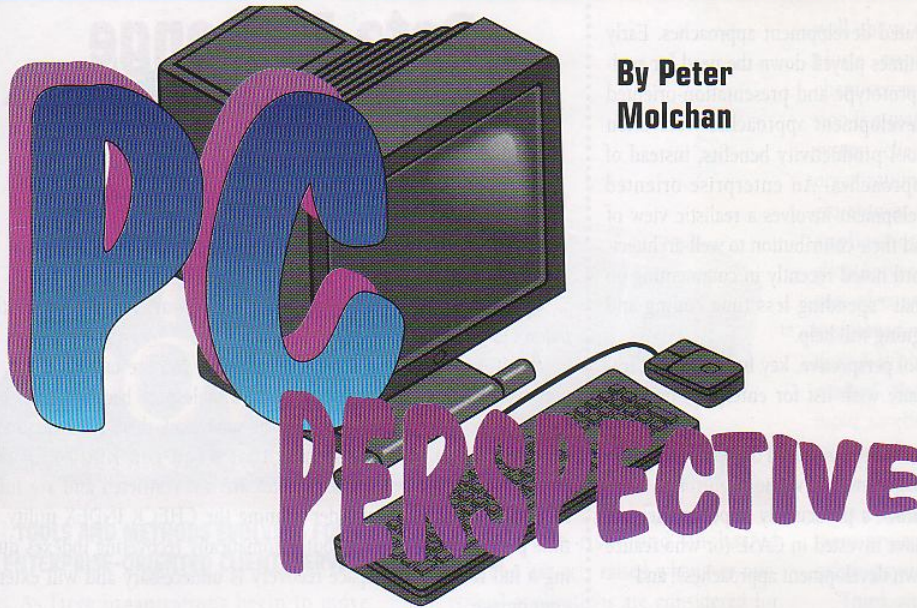
SSA-NAME3 generates "callable" software routines, compatible with any DBMS, for precise, quick, and accurate retrieval. Available for IBM, UNISYS, and VAX mainframe users as well as in "C" for all UNIX, DOS and PICK users.

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By Peter
Molchan

PREFAB COBOL SOFTWARE?

Back in August, with an eye towards the hereafter, I mapped out a checklist of requirements for PC development tools that would address the issues of current productivity and future compatibility:

- support front-ends to data bases on a wide range of platforms;
- require very modest learning curves;
- remove the requirement of intimate knowledge of the hardware/software platform;
- offer visual programming tools for assembling graphical user interfaces (GUIs) quickly and easily;
- run under multiple platforms such as Windows or OS/2;
- allow all programmers to concentrate on solving business problems;
- provide solutions for supporting legacy systems; and
- provide foundation options for future technologies.

DIGITALK PARTS WORKBENCH

In regard to new development and the rush to client/server, I also looked at Digitalk PARTS (Parts Assembly and Reuse Tool Set) Workbench, based on Smalltalk/V object technology, that enables rapid PC application construction from prefabricated software parts. The PARTS Workbench

enables programmers to create applications by manipulating text windows, graphics, list panes, menus, dialog boxes and other graphical controls of the platform.

It meets the above criteria for platform adaptability, ease-of-use and is not prone to obsolescence.

DIGITALK PARTS COBOL WRAPPER

Satisfying the need to provide solutions for supporting legacy systems, the PARTS COBOL Wrapper, an addition to the PARTS Workbench, transforms COBOL programs into parts you can use with the PARTS Workbench.

Wrapping a COBOL program allows you to deliver applications that extend the program's functionality by interconnecting COBOL programs to:

- GUI objects;
- Smalltalk/V and C;
- DLL (Dynamic Link Library) accessors;
- data base servers that use SQL;
- CICS OS/2; and
- other COBOL parts.

The PARTS COBOL Wrapper allows developers to wrap existing legacy COBOL into components that can be shared like other parts. Existing code can be re-used by turning it into a part that is more modular

and maintainable.

The required software necessary to run the PARTS COBOL Wrapper is OS/2 Version 2.0, the Digitalk PARTS Workbench (of which it runs as a subset) and Micro Focus COBOL Version 2.5 or greater. Outside of PARTS Workbench, you compile the COBOL subprograms and package them in DLLs via linking with Micro Focus COBOL. "Wrapping" a COBOL program creates a COBOL part that

encapsulates the program's linkage section data for interprogram communication. The COBOL part initiates DLL calls, controls parameters passing to and from these DLL subprograms, and handles data conversions between Micro Focus COBOL and PARTS Workbench formats. The COBOL Wrapper also automatically generates text entry fields and table panes for entering and displaying data.

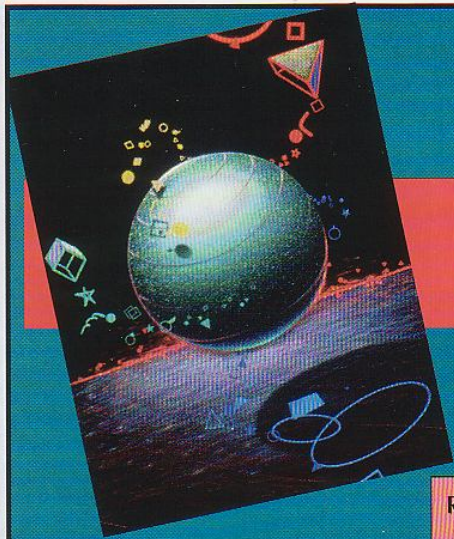
Various COBOL subprogram architectures are supported by the COBOL Wrapper such as:

- a single program with one entry point;
- a single program with multiple entry points;
- multiple programs with multiple files; and
- a single driver program for multiple programs.

The only data section of the COBOL program examined in the wrapping process is the linkage section. The COBOL Wrapper creates a buffer for the linkage section items that are the arguments for calls to the COBOL entry points. The buffer is also used to transfer data between the COBOL part and other parts.

Linkage section items supported include:

- multiple records;



NEXT MONTH

Designing and Modeling Object-Oriented Data Bases

THERE IS AN OODBMS IN YOUR FUTURE

By John Slitz,

OBJECT AND RELATIONAL DATA BASE MANAGEMENT SYSTEMS

By Cindy Saracco,
IBM Corporation

Rob Mattison compares the top Object-Oriented Data Base Technologies on the market today in an expanded Product Review format.

THESE NOVEMBER OBJECT-ORIENTED PRODUCT REVIEWS ARE:

- GEMSTONE by SERVIO Corporation
- IDB OBJECT DATA BASE by Persistent Data Systems
- ITASCA by Itasca Systems, Inc.
- MATISSE by ODB (Object Data Bases)
- Objectivity/DB by Objectivity, Inc.
- ObjectStore by Object Design
- ONTOS by ONTOS
- Open ODB by Hewlett-Packard Company
- UniSQL by UniSQL, Inc.
- VERSANT by Versant Object Technology

- levels 01-49 and 77;
- one level of OCCURS;
- INDEXED BY; and
- usages of BINARY, COMP, COMP-4, COMP-5 and DISPLAY.

Unsupported linkage section items include:

- levels 66, 78 and 88 (ignored);
- DEPENDING ON, ASCENDING or DESCENDING on the OCCURS clause;
- usages of COMP-1, COMP-2, COMP-3, COMP-X, POINTER, PACKED-DECIMAL and INDEX; and
- REDEFINES, SYNCHRONIZED, JUSTIFIED and BLANK WHEN ZERO clauses.

For those insisting on converting legacy systems to client/server architectures, the overhead of recoding data-items could be substantial. Additionally, mapping files to mainframe DD names is not supported requiring SELECT statement rewrites to static PC file assignment. And, of course, data formats must be in ASCII. These obstacles, however,

should be measured against the gains of having created reusable COBOL objects with extended functionality combined with the reduction in mainframe and legacy maintenance costs.

Once the compatible code has been linked to DLLs, the programmer "wraps" the program. COBOL data-names are transformed into internal PARTS Workbench names for events and messages. A further transformation is done for the default field label associated with the COBOL data-item to be displayed on the Workbench. The names are converted to lower case, hyphens are removed and the first letter of each word is capitalized. Fields may be dropped from the display or reordered. The application is then launched by linking it to, for instance, a push button.

COBOL parts can be assembled in stand-alone applications. The deliverables include the application EXE files, the PARTS run-time files and any DLLs needed to run the application. A Digitalk Application Develop-

ment License will likely be required to distribute the application.

Watch this column for a forthcoming look at the PARTS Data Base Interface providing connection of PARTS applications to SQL Server, Oracle, IBM Extended Services Data Base Manager, DB2 and others.

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