ORACLE

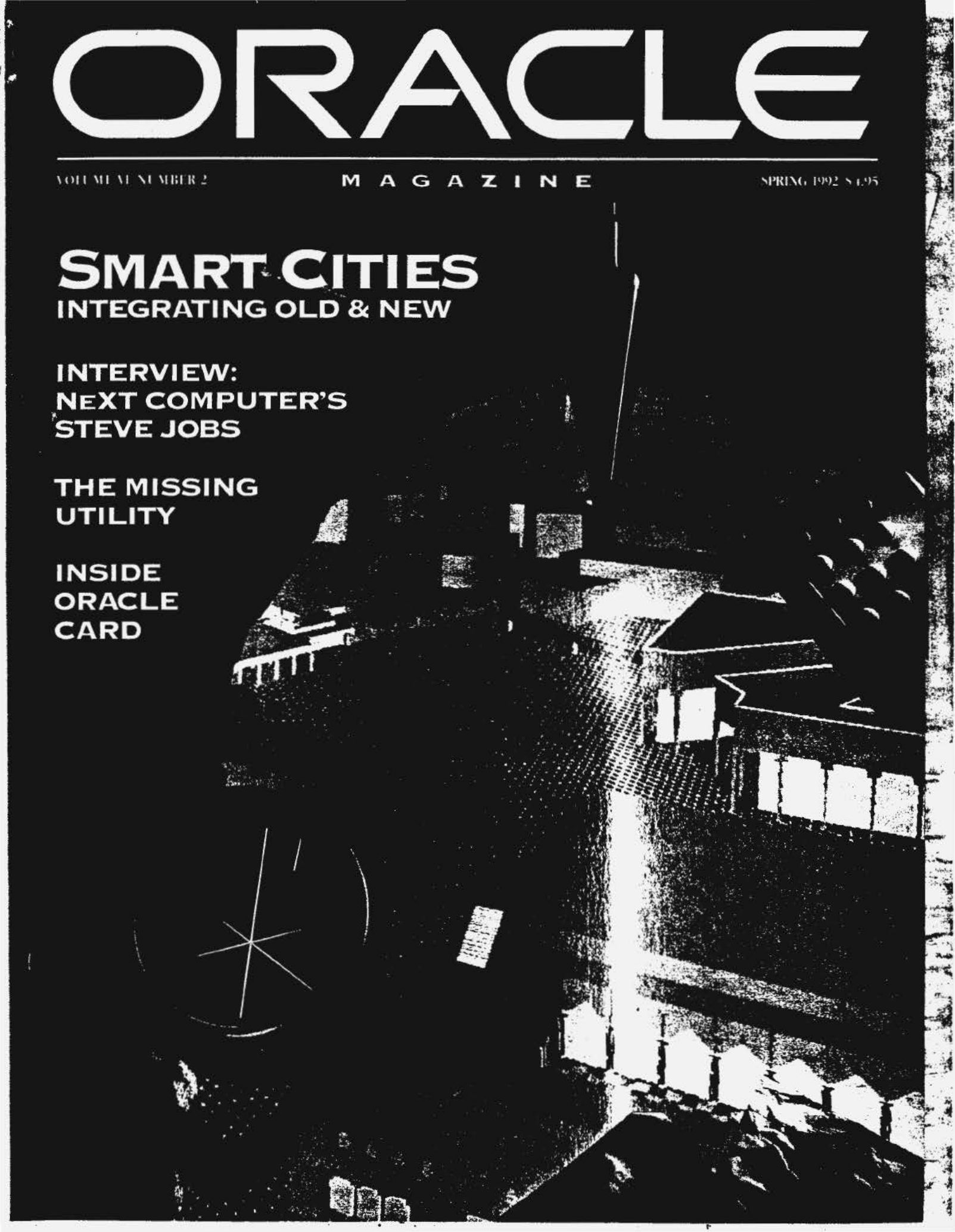
VOLUME VI NUMBER 2 MAGAZINE SPRING 1992 $4.95

SMART CITIES
INTEGRATING OLD & NEW

INTERVIEW:
NEXT COMPUTER'S
STEVE JOBS

THE MISSING
UTILITY

INSIDE
ORACLE
CARD



SPRING 1992

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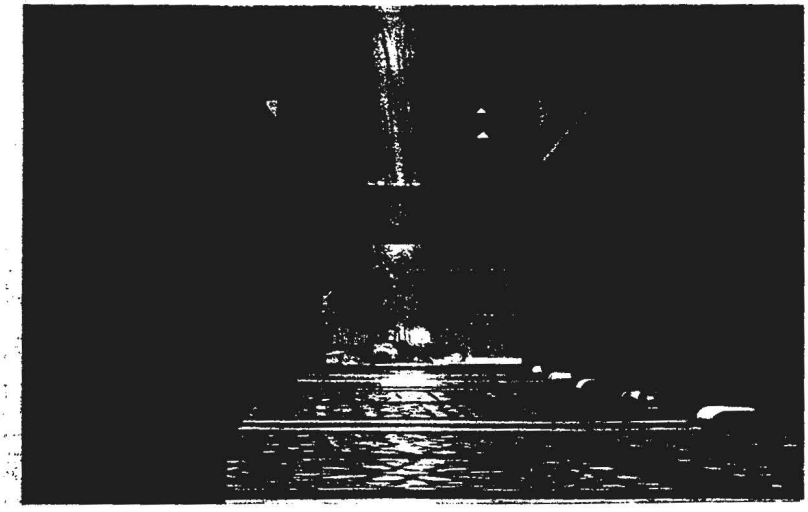
APPLICATIONS



17 Across a Sea of Sand

BY TOM CYPHER WITH REBECCA HICKMAN

Isolated from the outside world by the harsh expanse of desert, Riyadh, Saudi Arabia remained virtually unchanged for generations. But in the late 1950s, the phenomenal growth of the oil industry catapulted Riyadh into the modern era. To manage the tremendous growth of Riyadh's urban environment, the Saudi government has established a comprehensive city-wide information management system based on the ORACLE Relational DBMS.

22 Bright Ideas

BY JOCELYN AUDETTE

Baltimore Gas and Electric Company (BG & E), the oldest utility in the United States, has provided heating and lighting services for 175 years. To support its information management needs, BG & E uses a large computer network running ORACLE.

26 A Policy for Success

BY BOBBIE DELANEY

One of the nation's oldest and largest insurance and financial services organizations, ITT Hartford Insurance Group provides a complete line of insurance plans. Hartford chose the ORACLE RDBMS and its family of application development tools as the foundation for the company's new software support system.

30 Designing the Perfect Tomato

BY JOCELYN AUDETTE

California-based Calgene has been working for over a decade to produce better agricultural products, including tomatoes, potatoes, cotton, and rapeseed. The company relies on ORACLE to manage replicated yield trials for their biogenetic engineering experiments.

PERSPECTIVE

4 The Hidden Costs of Downsizing

BY JOHN GANTZ, VICE PRESIDENT AND CHIEF ANALYST, DATAQUEST

The economics of downsizing are well documented—although often more in theory than in practice. As businesses are realizing in ever-increasing numbers, you can conduct certain traditional mainframe or minicomputer applications on PC or server networks.

80 Warning Signs: Recognizing Complex Requirements

DAVID MCGOVERAN, PRESIDENT, ALTERNATIVE TECHNOLOGIES

To implement a new RDBMS system successfully, you must identify potential problem areas early and address them in the design and development of applications. Answering yes to any one of these "warning signs" should cause the potential RDBMS user to seek professional advice.

NEW PRODUCTS

7 Oracle Data Query

PERSPECTIVE

Warning Signs

Recognizing Complex Requirements

To successfully implement a new RDBMS system, you must identify potential problem areas early and address them in the design and development of applications. One way to do this is with project assessment criteria, or "warning signs," based on RDBMS technology maturity. Like a list of disease symptoms, answering yes to any one of these should cause the potential RDBMS user to seek professional advice. Note that many refer to the "average current standard" (ACS)—a quantity defined by the experiences of production users of the particular RDBMS.

- *Overall size:* Is the long-term expectation of database storage requirements larger than the ACS or your previous experience? Is the number of rows or storage requirements for any table larger than the maximum CS?
- *Tables:* Is the number of tables larger than the ACS? Do any columns or tables have ambiguous or multiple meanings? Is the number of relationships between tables greater than the ACS? Is the number of business rules in an application larger than the ACS?
- *SQL:* Are individual SQL statements more complex than the ACS?
- *Transactions:* Do transactions contain more statements, affect more tables or columns, or run longer than the ACS? Does the concurrent transaction mix require serializability for consistency and data integrity?
- *Request Mix:* Will the RDBMS need to provide several of the following request types concurrently: decision support, ad hoc query, OLTP, batch operational processing, and batch end-user processing?
- *Concurrency:* Will the RDBMS have to support concurrent log on and/or active requests by more users or applications than the ACS?
- *Data and Schema Volatility:* Do data values change more frequently, by inserts, deletes, or updates, than the ACS? Does the system catalog change more frequently than the ACS?
- *Data Types:* Does the application manipulate nonstandard data types, either in or out of the database?
- *Migration Requirements:* Does the application require the migration of data from nonrelational data stores? Must you replace existing nonrelational application functionality with a relational version?
- *Interfaces:* Does the application interface demand a procedural interaction (whether it's an end-user requirement or a design limitation)?
- *Performance:* Does the application require a higher transaction rate than 88 percent of the RDBMS vendor's published TPC benchmark result on the same platform?
- *Availability:* Is the sum of required backup, production, recovery, and maintenance time more than 80 percent of available time?
- *Distribution:* Does the application require distributed processing or distributed database functionality that is not reflected by the ACS?
- *Complexity:* Does the application contain a larger number of lines of code or access more tables per screen than the ACS?
- *Modules:* Is the number of "mission-critical" modules (application or code) in an application larger than in your previous experience with an RDBMS application?
- *Environments:* Must the application run simultaneously in many more environments than the ACS?
- *Developer Experience:* Are your application and database developers unfamiliar with the particular RDBMS?
- *End-user Experience:* Is this the first RDBMS application with which your end users will have experience?
- *Delivery Schedule:* Is the application delivery schedule "tight" or are delivery dates mission-critical?

Database administrators should be familiar with how these criteria are applied given the RDBMSs in their shop. By paying attention to these warning signs, they can apply solutions in the requirements analysis and design stages, and assess the project costs more accurately. ◙

This article was excerpted from the author's book, An Advanced Guide to Client-Server Applications, *and is reprinted by permission.*

JAMES LA MARCHE

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