



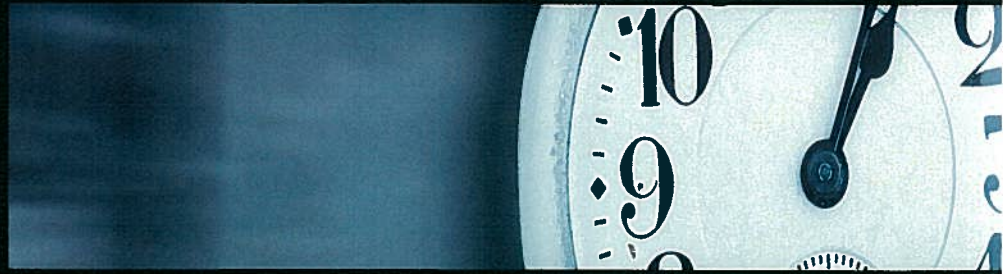
“I’ve got 15 minutes. What do I need to know about Landmark?”

A note to the Re



Landmark

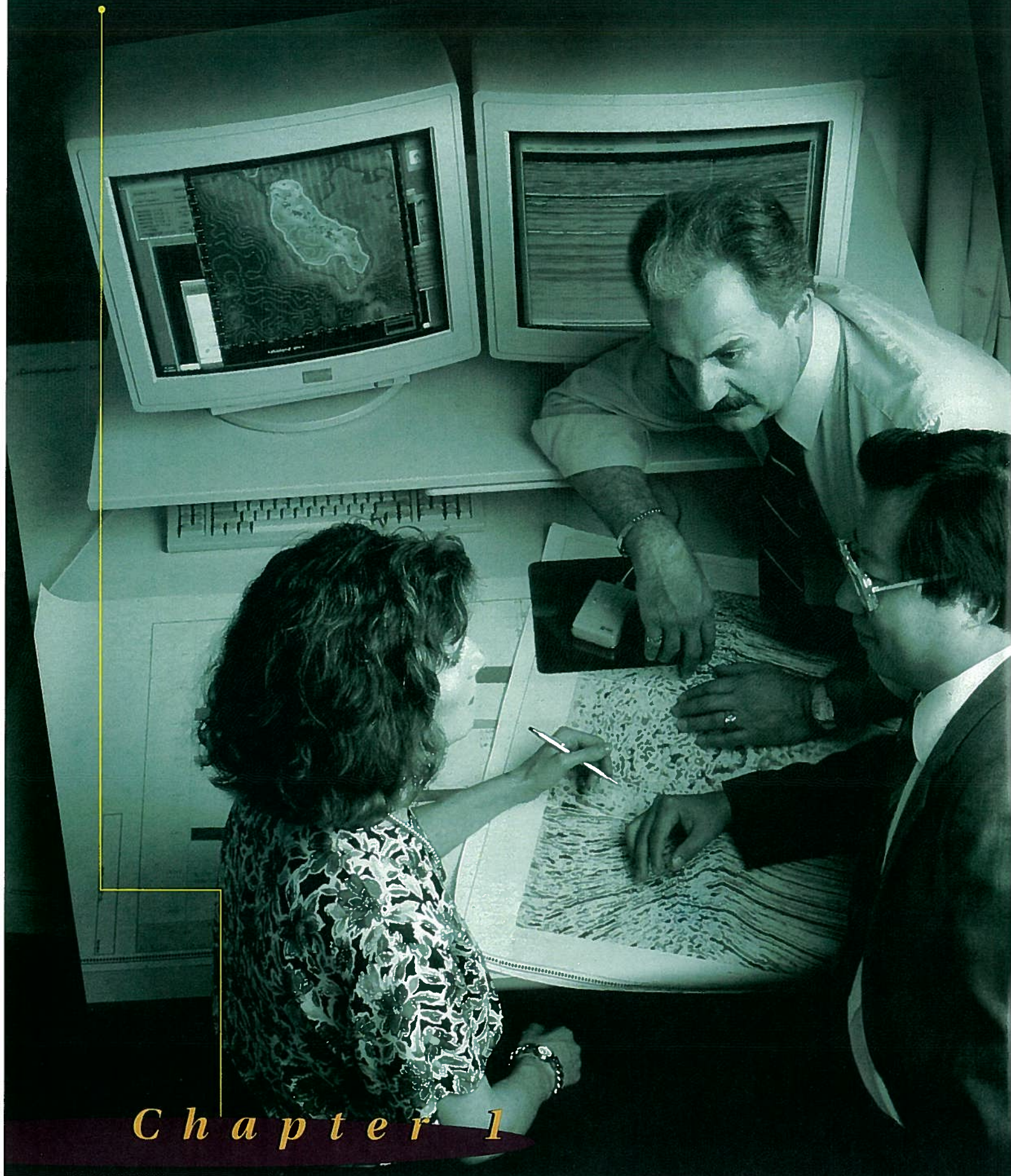
ader



I wrote the following dialogue to capture the essence of Landmark for business and non-technical readers. The last thing I wanted to produce was another bland corporate brochure, written in a generic corporate voice. How could I personalize it? Avoid hype on the one hand, and techno-babble on the other? I closed my eyes, and imagined what I would say if I accidentally met an oil company executive and got a chance to explain the whole of Landmark. ***In 15 minutes...***

– Jay E. Valusek

“Business Results”



Chapter 1

? Like What?"

Just after signing in at the security desk, I turned a bit too abruptly and collided with a tall, silver-haired man, almost knocking him over. As I was apologizing, he noticed my gold Landmark lapel pin. “Landmark? The software company?”

“That’s right,” I replied, shaking hands as we walked toward the elevators. When he asked what I did for Landmark, I told him I was a writer with Corporate Communications, and a former geologist. He punched the up arrow and introduced himself. Seems I had run into the President of Global Exploration and Production. *Oops*, I thought. He asked the purpose of my visit.

“I’m finalizing a case study we’re publishing with one of your reservoir management teams,” I explained. “It’s about some dramatic business results they got in an old field using a multidisciplinary approach and an **integrated system** from Landmark.”

“Business results,” he repeated, raising an eyebrow. “Like what?”

The elevator arrived and we stepped in. “For example,” I said, “your team — a geologist, geophysicist, and engineer — added several million barrels of reserves, **increased ultimate recovery** about 75 percent, and extended the productive life of the field perhaps 20 years.”

“I see,” he said. “And how did Landmark contribute?”

“We provided two integrated applications that share a common database,” I responded. “With that system, they **cut cycle time** by two-thirds; tied together a large amount of well, seismic and production data; and found some big oil reservoirs that had been overlooked for 70 years.”*

The elevator slowed to a stop. “Interesting story,” said the president, as the doors opened and we stepped out.



“We’re trying to make

Chapter 2

Two-story glass windows flooded the hallway with early morning sunlight. He glanced at his watch and turned to me. “Do you have a few minutes?” he asked, gesturing toward a lounge area near the windows. □

“Sure,” I said. “I’m early for my meeting.” We sat down in padded armchairs, next to a glass and metal coffee table.

“Look,” he said, leaning forward. “I’ve got fifteen minutes before my executive staff meeting. We’re talking about how to improve our **information systems** to support new E&P business processes. Landmark’s name keeps coming up. So does Schlumberger. I’ve done business with them for 25 years. But all I know about Landmark is that you make 3D seismic software. What else should I know before I go into that meeting?”

I was stunned. Executive staff meeting. Fifteen minutes. “Well, uh,” I stammered. “If you could tell me more about your **business processes**, maybe I could suggest how Landmark can help.”

“Okay. Fine,” he replied, looking up to gather his thoughts. “Ultimately, every decision we make in E&P depends on our ability to create reasonable ‘pictures’ of the subsurface — maps or models of reservoirs, fields, and basins.

“Then we monitor production and run economic forecasts on various drilling and producing scenarios, and rank them by return on investment. With hundreds of properties companywide, we need to **manage risk** and balance our investment portfolio much more rigorously. If all of our reservoir, field and economic information is right, we’re more likely to make good **investment decisions**. If not, we can waste huge amounts of capital deploying iron and steel in the field — ships, rigs and platforms.

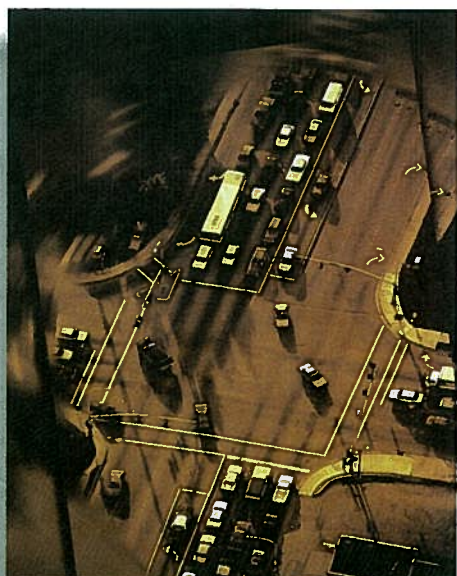
“So,” he continued, “we’re trying to make better decisions. But that’s not enough. We need to make them in less time.

“Over the last decade, we’ve reduced headcount and outsourced a lot of non-core activities. Now we need to cut E&P cycle times, to do more work with fewer people without increasing our costs.

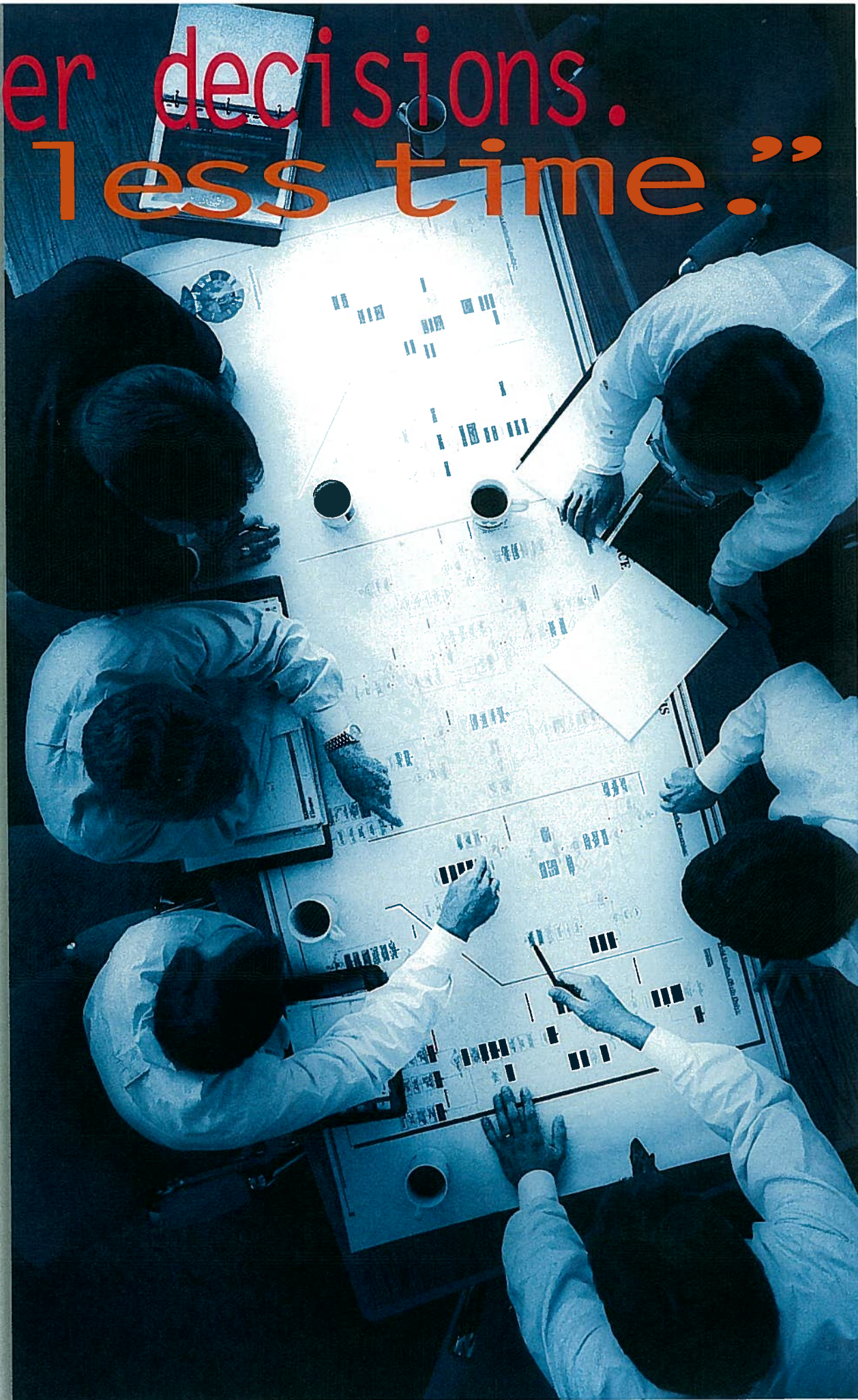
“That’s why we’re reorganizing our core exploration and reservoir management activities around these **cross-functional asset teams**. We believe the team approach will help us replace reserves faster and optimize production better than the old, functional organization.

“We know we need to leverage computer technology more efficiently, to support this new process,” he concluded. “That’s what this meeting is all about.”

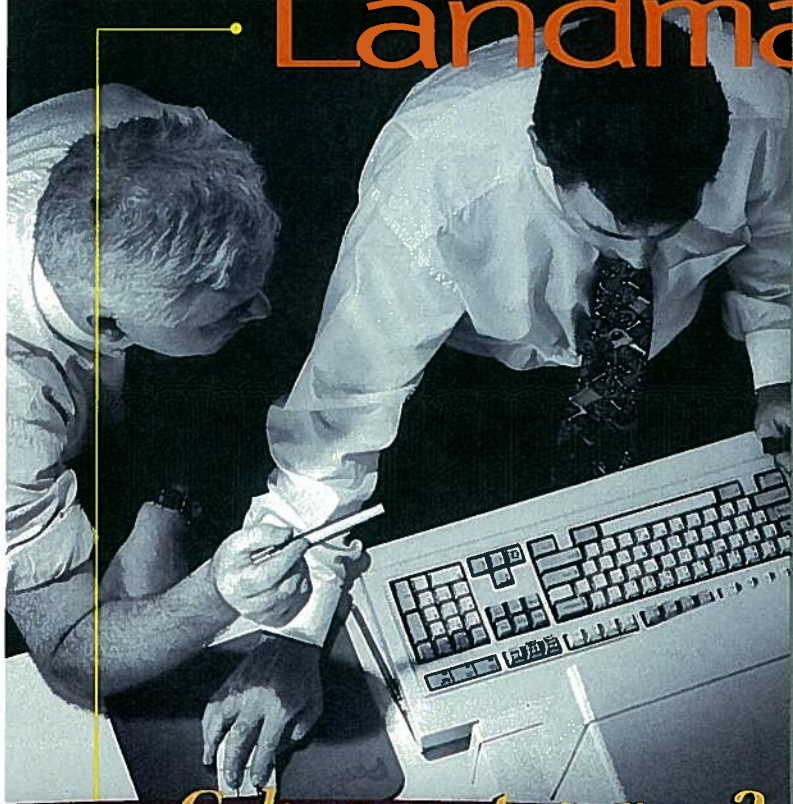
As he leaned back in the chair, the sun came out from behind a cloud, and glared hotly through the smoked glass.



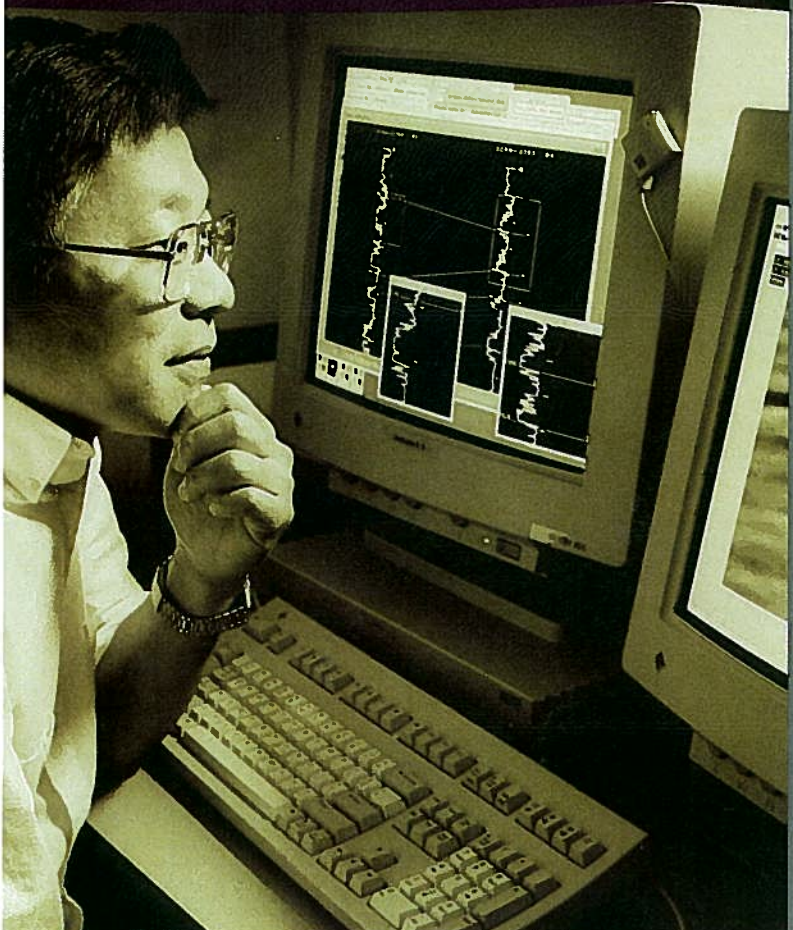
better decisions.
In less time.”



“So ‘integration’ Landmark’s key



Chapter 3



Sitting up straight, I took a deep breath. “Off the top of my head,” I said slowly, “I can think of three things Landmark could do to help you create more detailed reservoir models, manage risk, reduce cycle time, and increase productivity.”

“First, we have a professional **consulting services** group that could study your entire E&P computing infrastructure, look for bottlenecks in your workflows, and optimize overall performance. Improve networking, integrate new technology with existing systems, whatever.

“Second, your seismic interpreters have been using our software for years. But we can also supply the other members of your asset teams with the most tightly integrated **suite of ‘name brand’ software** in the industry. Landmark now has applications for seismic processors as well as interpreters. For geologists, petrophysicists, reservoir engineers, drilling engineers, and production engineers.

“Third, we can provide **data management** and integration technologies that keep raw data, ideas and interpretations flowing freely throughout the system.”

is differentiator?”

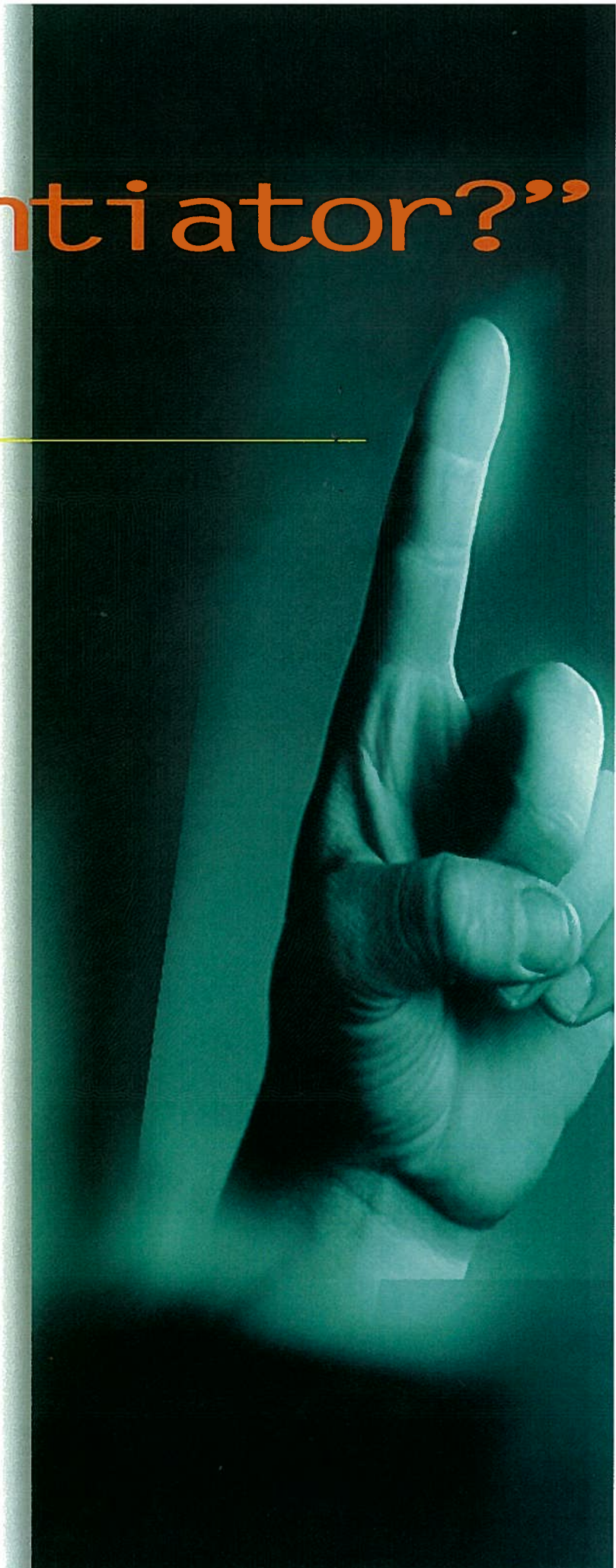
I held up my index finger. “If there’s One Big Thing you should know about Landmark,” I said, “It’s that we can tie all the parts together and optimize the whole E&P workflow better than anyone else in the industry today. When it comes to ‘integration,’ no other technology supplier even comes close.”

The president uncrossed his legs. “You’re telling me Landmark offers **complete solutions**, not just software,” he said, squinting slightly. “And integration is your key differentiator.”

“Yes, sir,” I replied. “Integrated solutions — software, systems and services. But Landmark’s services revolve around information technology. The tools your people need to **make better decisions**. We are not an oil field service company. We do not acquire data, drill, complete or workover wells. And information technology is not just one division of Landmark. It’s all we do.

“In fact, we’re the largest independent E&P technology supplier in the industry. We have over 1000 employees and 35 offices worldwide. We serve customers in more than 70 countries, including 90 percent of the industry’s largest petroleum companies — majors, independents, and nationals.”

“No wonder Landmark’s name keeps coming up,” he said. “Look, it’s getting a bit warm here. Why don’t we go up to my office?”



“What is an ‘inte of name brand

Chapter 4

We crossed to another bank of elevators, and rode swiftly to an upper floor. The lobby opened onto a panoramic view of lush green woodlands miles away. The president’s assistant greeted us and handed him a stack of messages.



“Would you bring in some coffee?” he said. “And hold my calls for about ten minutes.” He ushered me into his office, where we sat down at a small conference table.

“Okay,” he said, taking off his coat. “Tell me more about your product line. What do you mean by an ‘integrated suite of name brand software?’”

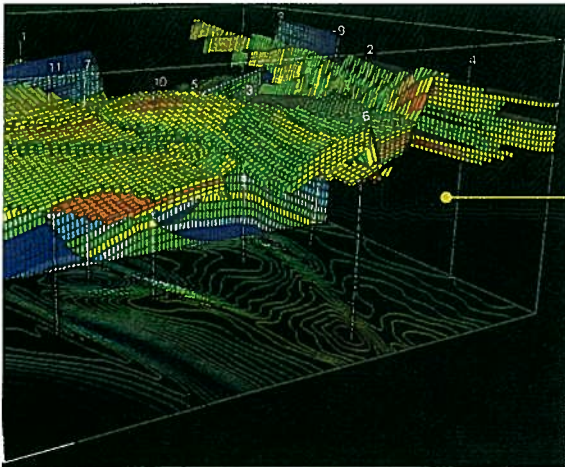
“Two things,” I responded. “We have a whole suite of software that is more tightly integrated than any other set of applications in the industry. Also, many of them are ‘name brands’ in their respective fields. They come from technology innovators and market leaders Landmark has acquired to cover all the core E&P disciplines.

“For example, we acquired Zycor for its expertise in **mapping and geology**. Advance Geophysical for seismic **processing**. Stratamodel for **3D reservoir modeling**. Munro Garrett for drilling and production **engineering**, and economic evaluation. The assets of Western Atlas Software for **reservoir management**, including simulation and geostatistics. And of course, Landmark itself has long been an industry leader in **3D seismic** interpretation.

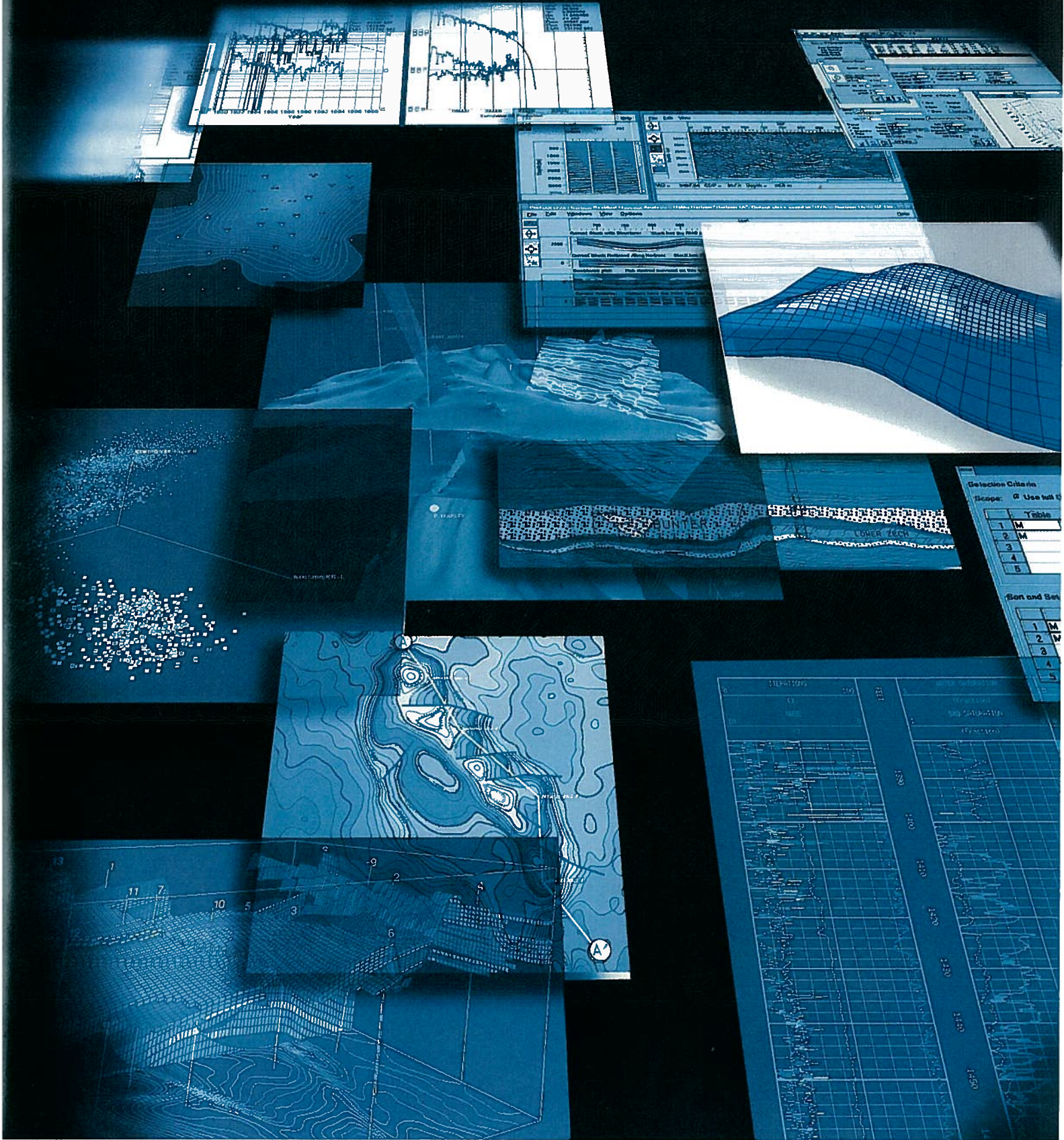
“During the 1980s, we helped launch an era of ‘computer-aided exploration,’ focused on 3D seismic interpretation. Today, we’re pioneering a new era of ‘computer-aided reservoir management’ [CARM] focused on 3D reservoir characterization and simulation. Our customers are seeking ways to optimize existing assets as well as develop new ones. So multi-disciplinary 3D reservoir modeling joins 3D seismic at centerstage. The only efficient way to build **detailed 3D models**, with all the rock and fluid properties, is with integrated tools for everyone on the team.

“However,” I said. “We don’t claim to have every application you might need. But we do have a large, and growing, number of third-party business partners who are experts in related areas. They integrate their applications and share data using a ‘framework’ we call OpenWorks®.

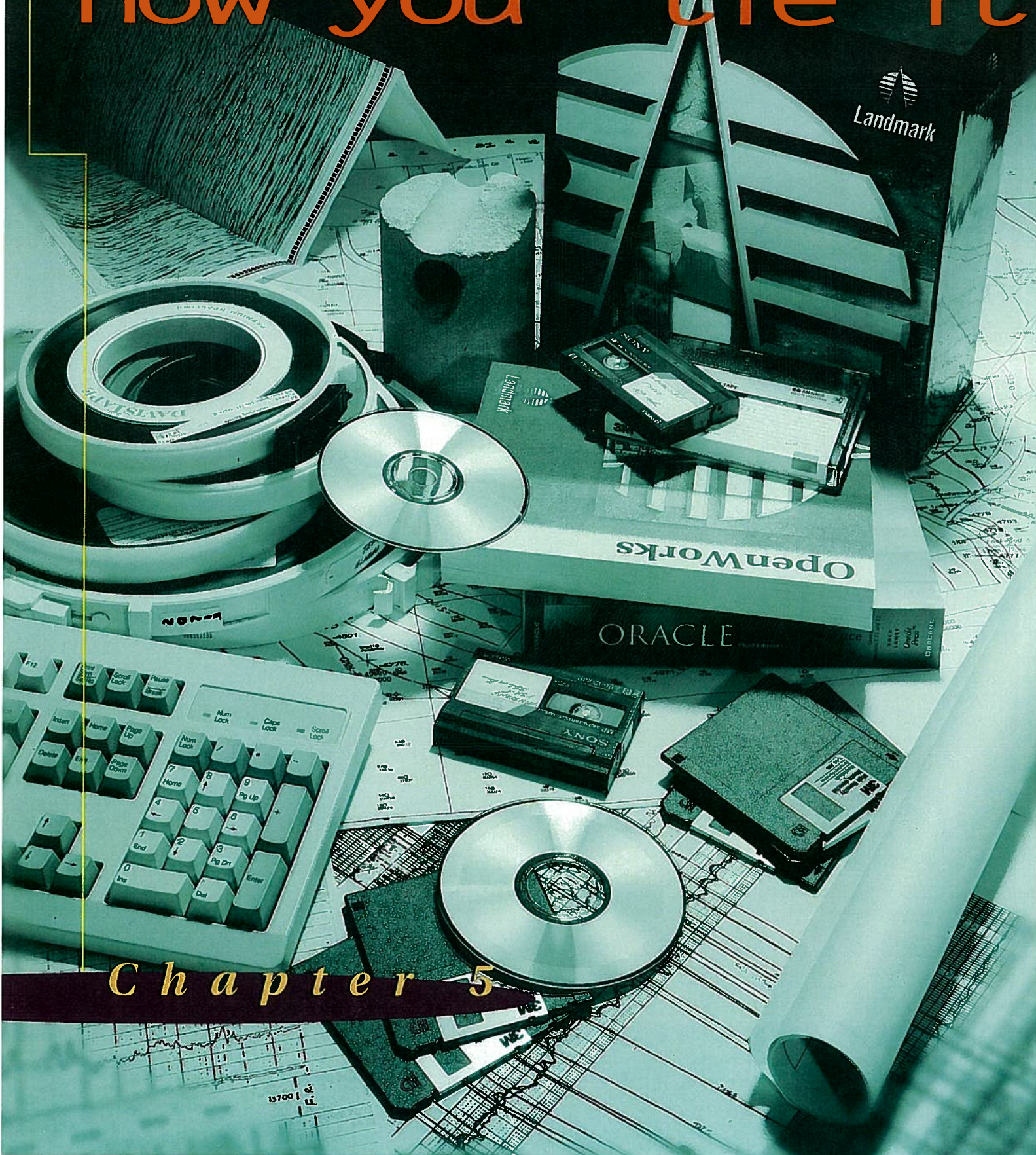
“OpenWorks technology is the heart of Landmark’s data management and integration strategy.”



grated suite software'?"



“So OpenWorks is
how you ‘tie it



Chapter 5

all together'?"

The president's assistant brought in a pot of coffee, poured two cups. "So OpenWorks is how you 'tie it all together'?" he asked, taking a sip.

"Yes and no," I said. "OpenWorks today is just part of a larger solution we're developing to address the **E&P data management** and integration problem.

"Many large companies like yours have dozens of digital databases, from mainframes to PCs, each one storing data in a different way. And a lot of data is still 'stored' on paper, like old well logs. Every year, you generate more seismic, well and production data. Meanwhile, asset teams and decision makers need access to this information.

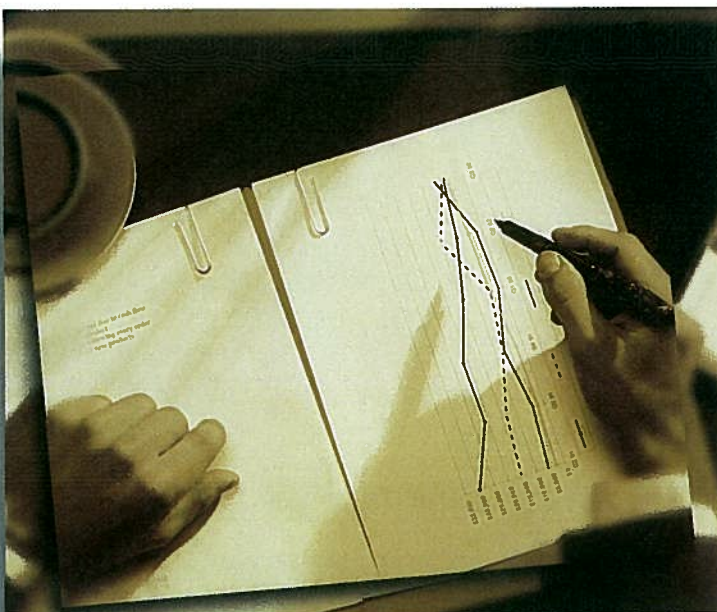
"Unfortunately, getting data from one database or application to another can be a nightmare. Searching for data, converting and loading it consumes as much as 15 to 30 percent of staff time by some estimates — time better spent on productive work.

"That's why Landmark is developing scalable solutions to the data management problem, using industry standards such as POSC and PPDM. First, we developed OpenWorks technology to integrate reservoir and field data at the project, or asset team, scale. OpenWorks provides a common relational database and set of data management tools for team members using many different applications. Seamless data sharing **streamlines workflow** and **reduces overall cycle time**.

"In fact, OpenWorks manages project-scale E&P data so well that some of our customers began using it on the business unit-scale, where many strategic investment decisions are made. To do that more efficiently, we're expanding our core technology in two significant ways. One is by increasing its capacity to handle large volumes of data on a regional scale. The other is by integrating business and financial information with the technical data, which **facilitates decision making** across an entire operating company. We call this 'decision management' — not just 'data management.'

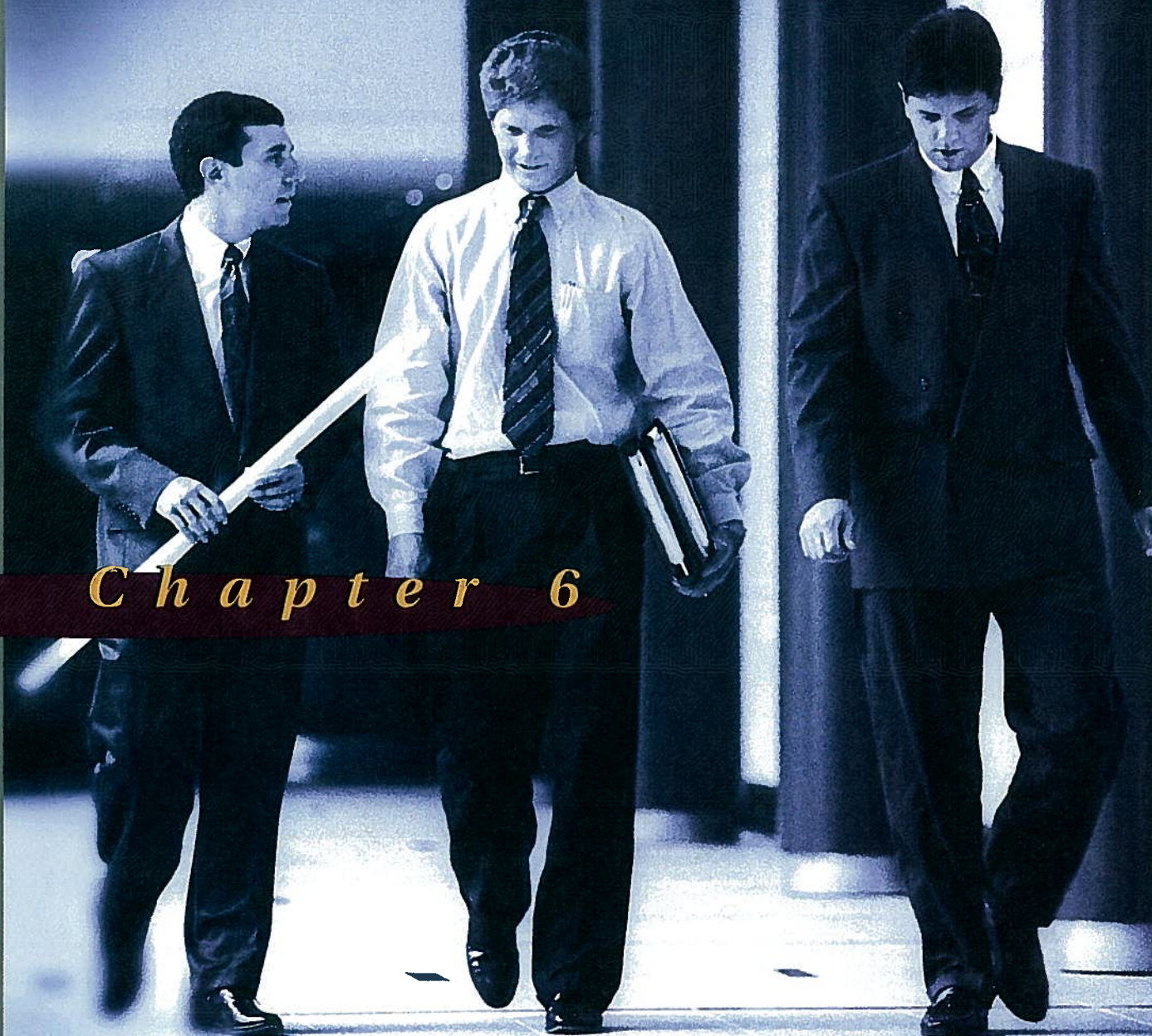
"Finally, our consulting services group has the expertise to pull it all together. They can integrate existing corporate databases with OpenWorks, and link our applications with non-Landmark software. For example, geoscientists at Phillips Petroleum wanted access to data stored in half a dozen mainframes. We designed an application that allowed users to bring up a map, select data from those corporate databases with a few button clicks, and load it straight into OpenWorks projects. Not only did this save time, it also extended Phillips' investment in current systems.

"Our professional services group could develop something similar for your—" The phone rang, cutting me off. *Time's up*, I thought.



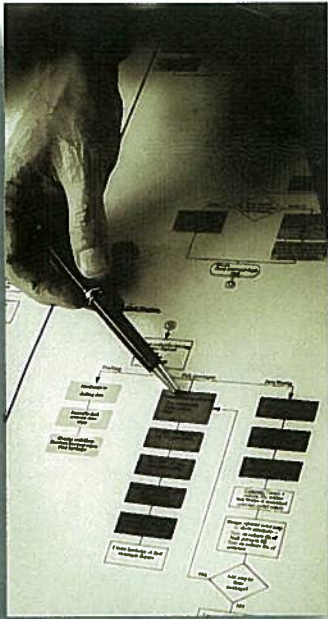
“Why should I use
professional

Chapter 6



Landmark's services?"

The president picked up the telephone. "Yes," he said. "I remember about the meeting. We're almost done here."



Turning back, he said, "I've only got a few minutes. Let's talk about your professional consulting services. I understand you don't provide oil field services. Is this the group that optimizes the **whole computing infrastructure**?"

"That's right," I replied. "We've been dealing with hardware and data issues since the company's earliest days. Our first product was a custom standalone workstation, designed for our software. As technology advanced, customers started networking our systems. Soon we started offering off-the-shelf hardware in client/server workgroups. A lot of customers requested help configuring their networks for optimum performance with our applications. We began to develop special support services.

"Until recently, these services were not a major part of our business. But demand has grown, so we formed a new group called Integrated Solutions. Brought in upper management with years of experience in high-tech services. So today we supply a wide range of consulting services worldwide.

"If an E&P organization has little or no computing infrastructure, we can design one to meet its needs, and build it essentially from scratch. We've signed some large contracts with national oil companies to do just that.

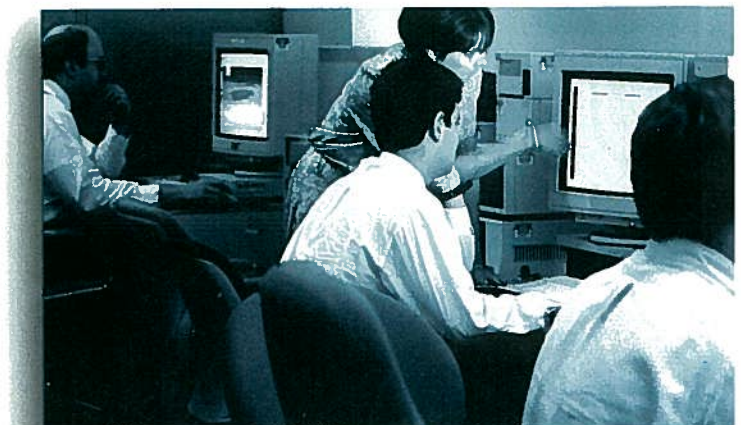
"In your case, however, we would probably recommend an initial **workflow study**, to document your current processes and identify bottlenecks, redundancies and underutilized resources. The study is done by a team of experienced geoscientists and systems engineers, and adds considerable value to your technology investment.

"From that study, we can **reengineer processes**, replace outdated systems, integrate databases, tie non-Landmark applications with ours, optimize overall performance. Then our onsite service people can support and maintain your whole infrastructure. Some companies outsource all of their **technical support** to us. Others supplement their staff with Landmark systems and applications support professionals."

Setting down his coffee, the president inhaled. "Why," he asked, "should we use Landmark instead of, say, the systems integrator we use for accounting?"

"Hmm, well," I said, chewing on my lower lip. "Because we understand the science of exploration and production. We're not a business systems integrator or hardware company. We grew up in the oil patch. And we've wrestled for over a decade with the technologies necessary to make complex geoscience and engineering applications **work efficiently**. Besides, we've got proven technology — I mean OpenWorks — around which we can integrate your whole E&P information system."

The president sat in silence, elbows on the armrests, pressing his fingertips together. I wondered what he was thinking.



“Who would I call to set up

Chapter 7

Just then, his assistant stepped in the doorway and said, “Two minutes,” pointing toward a conference room across the lobby. The president stood. “Fine. Well, that’s about it. Any last thoughts?”

“Um, yes. One more thing.” I opened my brief case, shuffled through some papers. “I think this neatly summarizes the **business advantages** of working with Landmark. Let me see. . . Here it is.”

I pulled out a brochure Landmark had printed for a recent trade show. On the cover was **a quote** by one of our customers, **a manager with BP Exploration**.

He scanned the page, raised an eyebrow, and looked at me. “May I keep this?”

“Sure,” I replied. He held out his hand. I shook it firmly.

“Now,” he said with a glint in his eye. “Who would I call to set up a meeting between your people and my people?”

I gave him my business card. “I’d be happy to arrange it, any time you want.”

The President of Global Exploration and Production nodded and walked briskly from the room, still holding the brochure.





a meeting?"

[End]

Ray Mohundro, BPX



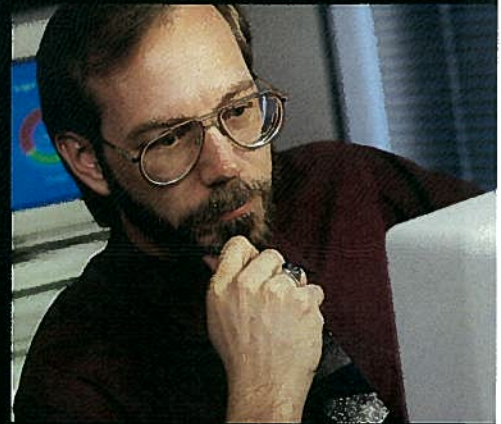
“Financial and competitive pressures are compressing cycle times in a way we never dreamed possible, even a few years ago. On most projects, for example, we now have only one year between drilling the discovery well and making very significant capital expenditure decisions — which are ranked very competitively among all of BPX’s investment opportunities.

“A number of factors have contributed to our interpretive staff’s ability to respond to these demands. One factor has been Landmark’s continuing progress on developing a more functional, better integrated line of software — ranging from initial seismic processing through detailed reservoir characterization — complemented by high quality service and support staff.

“This combination of products, services and people has consistently leveraged our efforts to produce results of superior technical integrity and lower risk, even within today’s collapsed time frames.”

about the author:

Jay E. Valusek is senior writer with Landmark's Corporate Communications team. He has published dozens of articles in industry trade journals about computer-aided exploration and reservoir management technology. Prior to joining Landmark in 1988, he worked as a reservoir development geologist with Pennzoil Company, and earned his M.S. degree in Geology from Colorado School of Mines. He has won writing awards from the Society for Technical Communication, the International Association of Business Communicators, and the Public Relations Society of America.

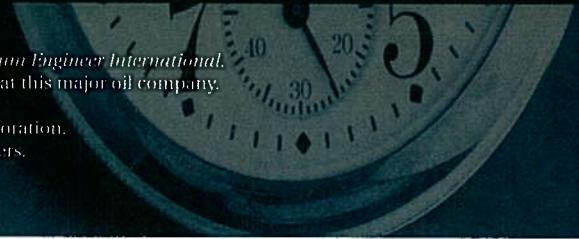


* Footnote to Chapter 1

This is a true story about a team with Mobil Oil Corporation, published in *Petroleum Engineer International*. This case study is only an example. No part of this imaginary dialogue took place at this major oil company.

Landmark and OpenWorks are registered trademarks of Landmark Graphics Corporation. All other company and/or product names are trademarks of their respective holders.

©1996 Landmark Graphics Corporation.





Innovative Ideas. Integrated Solutions. Global Vision.

World Wide Web <http://www.lgc.com> • E-Mail moreinfo@lgc.com

Houston (713) 560-1000 • Singapore 65-338-5833 • Weybridge +44 (0) 1932 832097 • Calgary (403) 263-0070 • Dubai +971 4 306 4729