

Ralph Gomory

Increasingly, nominating committees seek board members with in-depth expertise in one specific area. These specialists complement the broad but, many times, shallow perspective that the traditional CEO brings to the board. In recruiting a specialist, the trick is to find a specialist who doesn't sit on the sidelines during broad scale discussions.

Ralph E. Gomory is an example of an Outstanding Director who blends together highly valued technology expertise, with the ability to think broadly.

He was director of research at **IBM** when the company was in its hey day as a technology leader. But he has the breath of vision to contribute to a board's shaping of overall strategy and policy issues.

"Ralph really has a deep understanding of business—not just technology," says **Paul Curlander**, CEO of Lexmark, the maker of computer printers and related office supplies.

The questions he poses on the boards of **Washington Post Co.**,

Ashland Inc., **Lexmark International**, and **Polaroid**—are never merely academic. "He is intensely practical," observes **Don Graham**, CEO of the Washington Post. "He begins with business questions and consumer questions. He's the opposite of the stereotypical technology thinker who wants something built just because it's technically possible or technically eloquent."

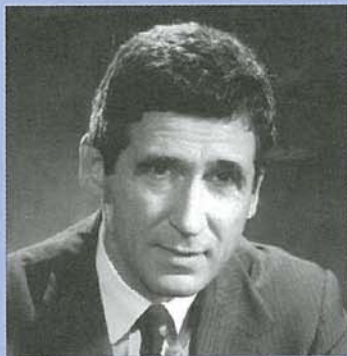
Three critical things make Gomory stand out on corporate boards, declares Graham. "First, there's his wonderful questioning nature. Next, his unlimited availability to the company. And, finally, the fact that he cares so much." Following a brief pause, Graham exclaims, "It all adds up to a sensation."

His relentlessly questioning nature led Gomory to a Ph.D. in mathematics at Princeton. From there he proceeded to a sensational three-decade career with IBM. At the computer manufacturer he oversaw work that brought an astonishing three Nobel prizes in physics to the company's research team. As the chief of the **Alfred P. Sloan Foundation**, Gomory, now 71, continues pursuing questions about science, technology, education and the economy.

Gomory's bias toward useful science dates back to his days as a graduate student. "I always thought of mathematics as a way of dealing with the world, rather than as something to pursue in itself," he says. "I was not enthralled with the prospect of an academic career."

Rather than lock himself up in the ivory tower, Gomory joined the Navy when he completed his studies. It was there that he began using science to solve complex practical problems.

One of his earliest challenges was devising a method for organizing a



BORN

May 7, 1929 in New York.
71 years old.

EDUCATION

PhD, Princeton, 1954; BA, Williams College, 1950.

CAREER HISTORY

Currently president of the Alfred P. Sloan Foundation. Formerly director of research at IBM Corp and professor at Cornell.

FAMILY

Married to Lilian.
Has three children and seven grandchildren.

HOME

Chappaqua, NY.

CURRENT BOARDS

Ashland, Lexmark International, Polaroid, Washington Post.

military task force in the most efficient way possible. Given a particular mission, how many, say, aircraft carriers should the Navy send to get the job done at minimal cost? Conventional math doesn't work for problems like this, in part, because it often yields fractional solutions. You can't very well run a task force using two and two-thirds aircraft carriers.

"This is actually a very hard problem," Gomory notes. In figuring out how best to solve it, the young mathematician invented an entire field, known as integer programming, that still exists. "Today it's used for things like scheduling airline crews," he reports.

By the time he joined IBM, Gomory was convinced that the company's computer business had a bright and significant future. Despite founder **Tom Watson, Sr's** famous 1943 remark that "there is a world market for about five computers," Gomory set about solving old problems with brand-new technology.

A noteworthy conundrum he attacked at IBM was called the 'stop-cutting problem,' which affects paper mills and makers of other flat materials, such as plate glass.

The problem?

Mills produce ten-foot-wide rolls of paper, which they then have to cut up to fill customer orders. The challenge is to cut up the paper in such a way as to waste as little of each roll as possible. Paper mill workers with years of experience used to solve this problem intuitively. "They just had a feel for how to do it," Gomory says.

Gomory and a partner developed a way for computers to decide more precisely how to cut the paper up. When they showed mill operators that their savings would exceed the cost of

buying computers, the researchers had created a new market for IBM.

In 1981, Gomory took his business-oriented problem-solving approach to his first board—the **Bank of New York**. **John Opel**, then the CEO of IBM, was leaving the Bank's board, and he suggested Gomory as a replacement.

"I learned a lot about large financial institutions," Gomory says of that experience. And the Bank of New York learned a lot from him. While Gomory was on the board, the bank was deciding what to do with its data processing operations. Was it better to outsource those operations, or to

Lexmark's Curlander says. "His focus is on why we will win. What do we have to put together? What is the compelling proposition? What do we have to execute along the way to get there?"

And his intellect benefits more than just shareholders. He also sits on the board and provides funding to **LingraphiCARE**, a private concern dedicated to developing high-tech methods of speech-language therapy. People suffering from stroke-induced aphasia and other speech difficulties use the company's computer-based therapies to recover their speech.

"I am inspired by Ralph's attitude

"Ralph really has a deep understanding of business—not just technology."

—Paul Curlander, CEO, LexMark

keep them internal? Was it viable for the bank to sell data processing services to other financial institutions?

"I saw data processing as a core business," Gomory recalls. And that was not a universally popular view 20 years ago. Gomory persuaded many of his colleagues that the bank should turn data processing into a profit center. "Today," Gomory notes, "BoNY is one of the nation's leading data processors. They do it for a lot of other banks."

Gomory no longer sits on the Bank of New York board, but his intellect continues working in the interests of shareholders. "His scientific training and background have given Ralph a very thorough thinking process,"

toward LingraphiCARE," says **George Beitzel**, a former IBM director and senior vice president who also sits on LingraphiCARE's board. "He has a clear vision of two things: the promise of LingraphiCARE's technology, and the importance of having people escape from stroke-induced silence."

Ralph Gomory is no stranger to praise. He has earned numerous plaudits and prizes for his extensive contributions to mathematics, technology, industry—and society as a whole. To a list that includes the National Medal of Science, the Princeton University Madison Medal, and the Heinz Award for Science and Technology, Gomory now adds his Outstanding Director award.