Craig Barrett is spending the last days of his tenure as Intel chairman the same way he spent his previous 35 years at the corporation: moving at a superhuman pace that leaves exhausted subordinates in his wake.

Mr. Barrett has maintained this lifestyle since he replaced Andrew Grove as CEO of Intel in 1998. "Was it hard to follow a legend?" he asks himself in his typical blunt way, adding, "What do you think?" Mr. Barrett barely broke pace when he became chairman in 2005, and shows no sign of slowing even now, at age 69, as he faces retirement.

A big man with a big presence, he barely seems to fit in his tiny work cubicle -- an Intel tradition for senior executives dating back to the company's earliest days. We head for a tiny, windowless meeting room. He strides like a man accustomed to hiking over the Bitterroot Mountains, all the while talking about elk and mule deer. And when he sits down, he folds his big, calloused hands -- the hands of a rancher, not of the chairman of a $40 billion corporation --knees forward, and nods at each question with infinite gravity. He doesn't hesitate to reply with "Oh come on" or "Do you really believe that?"

The latest thing that has him animated is the record $1.45 billion antitrust fine levied against Intel by the European Union this week. Mr. Barrett shakes his head and says, "The antitrust rules and regulations seem designed for a different era. When you look at high-tech companies, with the high R&D budgets, specialization and market creation they need to hold their big market shares, it's so very different from the old world of oil companies and auto makers that the antitrust regulations were designed for. They are out of sync with reality."

"And how do you reconcile European regulators, who don't believe that any company should have more than 50% market share -- even a market that company created -- with the way we operate here? Of course, now it seems as if our Justice Department is preparing to march in lock-step behind Europe. In the end, all they are going to do is create barriers to companies growing, entering into new markets, and bringing new technologies into those markets. And when we stop being the land of opportunity, all of those smart immigrant kids getting their Ph.D.s here are going to start heading home after they graduate. Then watch what happens to our competitiveness."

Mr. Barrett is legendary for a working week that begins at the Intel facility near Phoenix, where he has lived for a quarter-century ("I haven't been home for five days in a row in 20 years," he says) and moves Tuesday mornings to Santa Clara, Calif., and Intel headquarters -- with stops around the world (30 nations per year on average) in between. It's back to Phoenix on Thursday night and then off to Montana to hunt and fish at his celebrated Three Rivers resort. He returns to Phoenix late Sunday night.
After this interview, he will participate in his last Intel analyst meeting -- he retires on May 20 -- and then he will meet to discuss the company's response to the EU fine.

It hasn't always been this way. Mr. Barrett, one of the few leaders of Silicon Valley to have been born here (in San Carlos, just south of San Francisco), spent his early career as an academic close to home. "I only traveled seven miles to go to college at Stanford," he says. He earned his Ph.D. there, then joined the faculty as a professor of materials science and engineering. Mr. Barrett would go on to write more than over 40 technical papers dealing with the influence of microstructure on the properties of materials as well as a classic textbook in the field.

But Intel came calling in 1974 and he jumped to the corporate world, beginning as a manufacturing manager. His leadership skills and deep understanding of how chips were made proved vital to the struggling company during the years of vicious competition with Japan. Within a decade, Mr. Barrett was promoted to vice president. He was named executive vice president in 1990.

As Mr. Barrett himself admits, from the beginning he knew his career would be spent "in the shadow of the guys who preceded me" -- the legendary troika of integrated circuit co-inventor Robert Noyce; Gordon Moore, whose name is attached to the fundamental law of the digital age; and the celebrated business executive Andrew "Only the Paranoid Survive" Grove. Just as frustrating, Mr. Barrett began his career at Intel during a market crash, led the company during the dot-com crash, and now finds himself retiring during yet another market crash.

He waves his hand in a sine wave through the air, "That's how it is in this business. The endless boom-bust cycle -- I've been through eight of them. You just deal with what you're given . . . and develop a thick skin."

Still, if no catchphrase or law is likely to attach to Craig Barrett's name, his tenure at Intel, leaving the semiconductor industry's leading company even more dominant that when he arrived, offers a collection of important lessons. Call them Barrett's Rules.

- The business is bigger than the business. Mr. Barrett has long recognized that, with a company as large and influential as Intel, governments and cultural forces loom as large as any competitor. That's why, when Intel was being battered by Japanese competitors in the early 1980s, he took his fellow managers to Japan to visit everything from manufacturing plants to corner markets to show them how to build in quality.

For the same reason, Mr. Barrett has made education his personal crusade, from backing Intel's global science fairs to giving (with his wife Barbara, the former U.S. ambassador to Finland) $10 million to Arizona State to create an honors college. He brings his usual bluntness to this work as well, recently saying that America's second-rate educational system will lead to "the decline and fall of the United States as an economic power."

By the same token, like most Silicon Valley executives, he's been a strong proponent of investment in basic research. He notes with no little irony that he may be getting his wish in the most unlikely way: "After all of these years of asking for an increase in the National Science Foundation budget and how do we finally get it? With an investment banking crisis!"

- Don't mess with Moore's Law. This metronome of the digital age, says Mr. Barrett, isn't really a law, but "a social contract, a road map, a sign post. It's something to hang in front of the bright, bushy-tailed new young graduates and tell them: 'We've kept this thing going for 40 years now, so don't screw it up' -- and by God, they don't."

Inevitably, Mr. Barrett says, every few years "some company will say, 'What's with the pell mell rush to improve our technology every two years? Let's slow down to say, four years, and only have to invest half as much capital.' It always sounds like a cool idea, and it always ends up with that company losing market share."

Mr. Barrett has personal experience. Early in this decade, Intel hung on to the Pentium IV microprocessor too long.
and watched smaller competitor Advanced Micro Devices (AMD) gobble up half the market. Mr. Barrett sent out a blistering, all-hands memo that still makes employees shudder. "We won't let that happen again," he says, with finality.

- Invest during hard times. The two most controversial decisions Mr. Barrett made as Intel CEO were: 1) to take the company, largely by acquisition, into the communications business; and 2) to maintain the company's traditional level of capital investment right through the darkest days of the dot-com bust. Of the former, he just shrugs, "I bought high and sold low. But at least money was cheap in those days." But history has shown that the latter decision -- for which Mr. Barrett took a lot of flak (he uses an earthier term) -- may have been the most brilliant of his career. Intel not only came out of the downturn faster and stronger than its competitors but still had a capacity shortage, which could have been devastating had Mr. Barrett not made the investment.

- Consensus is good -- except when it isn't. "I remember being in a meeting at one of our plants with 21 of our manufacturing managers. We started talking about changing our factory model and one of the veteran managers -- one of those guys who kind of ran his own little kingdom like a prince, said, 'Are we going to discuss this? Are we going to get a vote on this?' And I said, 'Yeah, we'll vote -- the only problem for you is that I get 22 votes.' In other words, there's a time to let everyone twist the knobs and a time to make a decision."

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- Follow the business, not Wall Street. "The job of the CEO is not to reward the short-term speculator of your stock," Mr. Barrett says, "but to do a good job long-term for your shareholders, employees and customers. You don't invest for 'let's have a 20% lay-off tomorrow to prop up our stock' or 'let's cut R&D to get a positive response from Wall Street.' Thank God for Moore's Law, because it won't let us think like that; because if we do we get hammered."

- When something works, don't re-invent it, reproduce it. Perhaps Mr. Barrett's greatest contribution to the semiconductor industry was the concept of "Copy Exactly," the absolutely exact reproduction of successful existing practices and facilities in other locations. Copy Exactly has been the key to Intel and other chip companies actually improving yield rates (the ratio of chips that actually work) even as the products themselves have become thousands of times more complex and miniaturized and fabricated by the millions. The decision not to reinvent the wheel every time was, in fact, the subject of that contentious meeting where Mr. Barrett outvoted his managers. "I got the idea from McDonald's," he says. "I asked myself why McDonald's french fries tasted the same wherever I went. That's what I told my guys, "We're going to be the McDonald's of semiconductors."

- It pays to have good competitors. Despite AMD's victory with the EU, Mr. Barrett has nothing but praise for Intel's competitors, which have ranged over the years from Motorola to NEC to Samsung to, always, AMD. "It's like athletes: To be a great company you need great competitors," he says. "It's what keeps you alive and keeps you honest."

Mr. Barrett hops up from his chair. He needs to get to the analysts meeting in another building. But before he leaves, he pulls out a photograph, saying, "Hey, look at this." It shows a grinning Barrett cradling a gigantic trout he has just caught while fly fishing in South America, "Lemme tell ya," he says, gesturing like he's working the fly pole, "That guy was so close I had to let him swim away before I could set the fly down in front of him." Then Craig Barrett is gone, striding purposely down the long hallway.

Mr. Malone's new book, "The Future Arrived Yesterday," will be out next week from Crown Business.

Please add your comments to the Opinion Journal forum.
Moore’s Law is the prediction that the number of transistors in a dense integrated circuit doubles every two years as technological progress advances. The observation was made by Gordon Moore, co-founder of Intel, who saw that the size of transistors was shrinking rapidly due to continuous innovation. History of Moore’s Law. 1965. Gordon Moore, CEO of Fairchild Semiconductor and later co-founder of Intel, predicted that the number of transistors in a dense integrated circuit (IC) would double every year for the next decade, based on the economics of the integrated circuit. Moore wrote: “The co Moore’s Law refers to Moore’s perception that the number of transistors on a microchip doubles every two years, though the cost of computers is halved. Moore’s Law states that we can expect the speed and capability of our computers to increase every couple of years, and we will pay less for them. Another tenet of Moore’s Law asserts that this growth is exponential. Understanding Moore’s Law. Eventually, Moore’s insight became a prediction, which in turn became the golden rule known as Moore’s Law. From Prediction to Truism. Moore’s law (roughly speaking - I’m not sure of the details) reflects the notion stated by a leading engineer at Intel that every few years the price of electronics (specifically integrated circuits) will be cut in half while the performance doubles...” What is Moore’s Law in computer architecture? There isn’t one. In electrical engineering (and chip manufacturing) there is a rule of thumb that says “the number of transistors on a chip doubles every two years.” It has been paraphrased to apply to computers, but it was never all that accurate. Moore’s law - Wikipedia.