

Quill pens were the dominant writing instrument for about 1300 years. They made written communication possible, but they didn't make it easy. Even the best quills required sharpening the tip every few pages. A much-needed revolution in writing finally occurred in England in 1803 when the steel pen was invented. It was a wonderful invention. The durable quality of its tip saved every writer large amounts of time. Better still, the steel pen was dirt cheap because it could easily be mass-produced. Indeed, it was produced by the kind of industry that Adam Smith knew and loved. By the early 1800s, there were 13 pen factories in Birmingham alone and many more around the world. These steel-pen companies competed mainly on price and modest differences in quality. For about a hundred years companies like these competed in a market for steel pens.

to scratch things out by pen. Then I either typed the manuscript or gave it to a secretary. By eliminating that second process of typing out handwritten drafts, word processing was an enormous time saver. It had as great an effect on writing as did the shift from quill pen to steel pen.

But word processing software isn't produced by the kind of industry that Adam Smith knew. There aren't thirteen firms in Birmingham cranking out word processing software, nor will there ever be. At any point in time the market for word processing tends to be dominated by a single firm. It was Wang from the late 1970s to the early 1980s, WordStar from the early to mid 1980s, WordPerfect from the mid-1980s to the early 1990s, and Word since about 1993. The market for word processing software has

COMPETITION AND THE ART OF WRITING

by *David Evans*

Each company knew what it needed to know to increase its market share—it had to get production costs down so that it could offer its pens at a lower price. It was a competitive market, but one that was eventually to be shaken up by a further innovation in writing. By the end of the century two larger revolutions—the fountain pen, followed by the typewriters—would make the steel pen business obsolete.

The typewriter industry prospered for about 100 years, but it, too, proved to be a temporary stage in the evolution of writing. The development of word processing killed the typewriter industry off almost to the same degree as steel pens killed off quill pens. It's worth reflecting on why word processing was such an incredible invention. I think I'm typical of most people who spent a great deal of time writing professionally in the 1970s. I wrote first drafts by hand because it was easier

never been about which company could be the low-cost provider. While prices certainly matter to consumers, the businesses developing and selling word processing programs don't really think of themselves as competing on price.

Instead, for some twenty years competition in word processing has been competition *for* the market. Firms vie to come up with a product that is so good—or so convenient—that everyone wants to use it. Indeed, a word processing program that is considered good must ultimately be one that is widely used. That represents an important transformation in writing technology. For the first time in history, it matters to every writer which technology others are using to write. If we aren't using the same word processing software, it is very difficult to exchange files and read one another's work electronically. As a result, a single software package quickly

becomes the standard, at least within your circle. Economists describe this as “network effects:” the value I get from a product is higher if other people use that product too. Steel pens didn’t have network effects. No one cared what kind of pen anyone else was using. And there was no need to have a standard.

Network effects have three implications for how competition works. First, it tends to be competition *for* the market—competition to create the standard. This is widely known as winner-take-all or winner-take-most competition. Second, it tends to result in drastic innovation. Everyone knows they can’t displace the standard with a small innovation. It has to be big—like going from steel pens to fountain pens. Third, the fragility of the winner’s position depends on how likely drastic innovation is.

When the Remington Company produced the first typewriter that was actually faster than writing using the pen, they won the competition for the market. They probably weren’t terribly worried about being replaced by anyone else anytime soon. That’s because the pace of technological change was so slow. It took a quarter century before there was a big enough innovation to displace them.

The situation is entirely different in word processing software. Moore’s Law broadly defined has resulted in tremendous advances in computing speed, computing storage, and communications bandwidth. Every 18 months or so the world changes. For example, today, the market for traditional word processor software is being challenged by the Internet in much the same way pens were initially challenged by typewriters. Writing is migrating from memos done with word processors to e-mails. And open html standards make proprietary word processing standards less important.

The combination of rapid innovation and network effects leads to a very interesting form of competition in these kinds of markets—and writing implements is just one example. Competition tends to be based on a series of races. Lots of firms are trying to come up with the next great idea. And if you are in the market you really have no idea who these firms are because they aren’t visible. This the reason why Andy Grove who used to run Intel said famously—“only the paranoid survive.” Your competition is

completely unknown, but you know that it is never far behind.

What does this situation imply for public policy? We tend to evaluate the intensity of competition by how many firms we observe in the ring slugging it out. That is what is often taught in undergraduate economics. But that image is misleading, particularly (but not only) when applied to new economy industries. We should instead be looking at the race to become the next leader. Races like these keep the current leaders on their toes. They determine whether consumers are going to keep getting cheaper and better products. Competition authorities around the world tend to get obsessed about market shares—but market share doesn’t tell you much about the dimensions of competition that actually matter to consumers in these sorts of industries.

We should be thinking hard about how public policies promote or retard these competitive races. The reward system is very important. Many firms enter these races but only one firm wins. That means all the others lose. To make firms want to enter the races and spend time and money in coming up with the “new new thing”—to use the popular business literature jargon—the winner needs a big reward. That has obvious implications for intellectual property rights and capital gains taxation. I would argue that it also has implications for labor policies—society wants a deep supply of people who can participate in these races. Immigration and educational policies can help do that.

In any case, all these public policies should be aimed at creating markets where new ideas have a chance to displace old ones. That requires understanding competition in the new, dynamic sense of competition for a market. The history of writing has shown us not only how dramatically the tools of writing have changed, but also how much the markets for those tools have changed. Writing will remain with us, regardless of public policy. But the technology that changes the way we write will very much depend on letting dynamic marketplaces continue to thrive.

• **David Evans** is Senior Vice President of National Economic Research Associates (NERA). This article is adapted from a talk by Evans to the Institute of Economic Affairs in London.