

niche producer. But lowering the cost of supplying Polymatic made what he did much easier to imitate. Whether or not it was in the customer's interest, it wasn't in Andy's interest to change the way the customer ran its business. It may have happened of its own accord sometime in the future, but there was no sense hurrying it along.

Andy figured out what the customer wanted, shared the knowledge, and then watched the customer take the knowledge to the competition. He made a larger pie that others could eat. That's a mistake that even the most famous companies have made. We believe it's exactly the mistake IBM made when it entered the personal computer business.

Many people have written about the difficulties IBM ran into in the late 1980s and early 1990s. In particular, they've commented about IBM's failure to translate the towering position it once had in mainframe computers into a strong position in personal computers. Some people point to concerns at IBM that personal computers would cannibalize the mainframe business. Others point to IBM as a textbook example of the difficulties large organizations have in making big changes in the way they do business. Let's look at the IBM story from the perspective of unhealthy imitation.

Loss of Computing Power When IBM entered the personal computer market in 1981, Apple Computer was ahead and IBM was playing catch-up. Speed was all-important. At that time, IBM needed to establish an installed base of its machines, and fast. It wanted to move from design to market in just twelve months. To this end, it abandoned its tradition of internal development and, instead, turned to Intel and Microsoft to supply the microprocessor and operating system technology for its PC. IBM was lauded for this innovative move.³⁹

The benefit of IBM's outsourcing decision was the rapid creation and adoption of the IBM PC. There was a larger pie sooner. The cost of its decision was having to share the pie with Intel and Microsoft. For the sake of simplicity, let's assume that IBM, Intel, and Microsoft could each get one-third of that larger pie. For IBM, that might well have been better than a much larger slice of the much smaller pie that would have resulted from keeping every-

thing in-house. For Intel and Microsoft, of course, sharing the big pie was just fine.

Outsourcing was half of IBM's strategy in PCs. The other half was an open-architecture policy. The rationale was to help programmers write application software for the IBM PC. An unintended consequence was that other players started cloning IBM's hardware. They quickly resolved any software incompatibility problems. First Osborne, Leading Edge, and Hewlett-Packard, then Compaq, Dell, and hundreds of others entered the hardware business, all building IBM clones using Intel chips and Microsoft operating software.

Now Intel and Microsoft were more important than ever. Microsoft was a monopoly supplier of an essential input into the fast-growing business of making IBM-compatible PCs. Although Intel was forced to license its original 8086 chip, with each successive generation Intel became more of a monopoly supplier, too. The bigger the pie, the better for Intel and Microsoft. But the implications for IBM were very different. A Compaq machine was a very decent alternative to an IBM. No longer the sole provider of hardware, IBM now had a drastically curtailed added value.

IBM's real error was pursuing the outsourcing and open-architecture policies together. Had it stopped at bringing in Intel and Microsoft, and not given up control of the hardware portion of the business, it would have remained in a strong position. Had it kept control over the chip and operating system technologies, then, despite cloning of the hardware, it would still have been in a strong position. Either approach might well have been effective. But outsourcing together with opening the architecture was a mistake. It's a case of two rights making a wrong.⁴⁰

Even bringing in Intel and Microsoft and opening up the architecture wouldn't have been as bad for IBM had it made Intel and Microsoft pay to play. IBM could have demanded equity stakes in Microsoft and Intel in return for bringing them in. Back in the early 1980s IBM had the power to shape the game in this way. But it missed these opportunities.

Realizing its error, in 1987 IBM tried to regain control by introducing the PS/2 line of personal computers, which contained the OS/2 operating system developed jointly with Microsoft. But by then it was too late. Microsoft didn't need IBM. Microsoft's 1990 release of