

BIG BLUE KNEECAPS THE FRUIT: IBM's Calculated PC Play
Ranga Sankaralingam <ranga@wabisabimicro.com>

Notice: PERSONS attempting to discern the relevance of this narrative will be prosecuted; persons attempting to find a moral in it will be banished; persons attempting to find a plot in it will be shot.

For the skimmers: **IBM created a machine that was designed not to be technologically superior, but to be strategically disruptive. In my view, the IBM PC might as well have been "scientifically designed" to kneecap Apple. The conventional wisdom is that IBM foolishly didn't capitalize on an ecosystem they created, letting Wintel dominate. But that misses the point. If IBM's primary goal was to prevent Apple from becoming a major player in the business-computing market, they succeeded beyond their wildest dreams.**

My journey into software engineering, like that of many of my generation, was inextricably linked to the rise of the personal computer. The narrative often focuses on the Windows vs. Mac rivalry, but that misses a more nuanced and, frankly, more brutal story. **To be clear, the original battle was not between the PC and the Mac, but the PC and the Apple II.**

The Apple II was a groundbreaking machine. Launched in 1977, four years before the BBC Micro I grew up on, it was one of the first truly successful personal computers, finding its way into homes, schools, and crucially, into businesses. Its success in businesses was driven by the availability of software like VisiCalc, the first electronic spreadsheet. This "killer app" transformed the Apple II from a hobbyist's toy into a serious business tool.

Apple was a billion-dollar business by the early 1980s, a staggering achievement at the time. But even as the Apple II was raking in the money, forces were gathering that would soon alter the landscape of personal computing forever.

Enter IBM. The corporate giant, a behemoth in the technology world, ignored the personal computer at first. But **when IBM acted, they acted decisively and ruthlessly to vacate the possibility of Apple ever threatening IBM's core business-computing market.** Their response was not a technological leap forward, but a strategic masterstroke. **The IBM PC, released in 1981, was not a revolution in terms of raw computing power. It was, however, a revolution in terms of market strategy.**

Note that IBM didn't move any of its high-end mainframe technology to the PC, although IBM had a wealth of advanced technology, including sophisticated memory management systems and high-speed interconnects. Instead, **IBM assembled a small, new team in Boca Raton, Florida.** This team, led by Don Estridge, was given a remarkable degree of autonomy. They were tasked with creating a personal computer quickly and cheaply. They used off-the-shelf components from various manufacturers, which kept costs down and sped up development. **IBM simply "invented afresh" anything else needed to fill technology gaps at the low end.** For example, the ISA bus and the MDA and CGA video adapters were all developed specifically for the PC. *Aside: it's remarkable that a company with such a large and established engineering organization could so readily create a completely new set of technologies for a low-end product.*

And, most crucially, IBM adopted an open architecture, a radical departure from its traditional closed approach. We should not take lightly the fact that a storied company with essentially infinite technical depth and execution skills adopted such an unconventional-for-them approach.

It was a classic case of "commoditize your opponent." By making the PC an open standard, IBM made it easy for other companies to produce compatible machines, driving down prices and making the Apple II, with its proprietary hardware and higher prices, seem less competitive.

This wasn't just a case of IBM "catching up" with Apple. It has the hallmarks of a calculated move meant to protect their core business, the business of large-scale computing. Listening to Steve Jobs's talks from that era, it's crystal clear that he was focused on the business market.

Note that IBM created a machine that was designed, not to be technologically superior, but to be strategically disruptive. In my view, the IBM PC might as well have been "scientifically designed" to kneecap Apple. **It was a move that undermined Apple's business position by creating a competitive market that Apple would struggle to compete in.**

The conventional wisdom is that IBM foolishly didn't capitalize on the ecosystem they created, letting Wintel dominate. But that misses the point. If IBM's primary goal was to prevent Apple from becoming a major player in the business market, they succeeded beyond their wildest dreams.

The rise of the PC clones was a double-edged sword for IBM. On the one hand, it helped to establish the PC as the industry standard, creating a massive market for PC software and peripherals. On the other hand, it also meant that IBM gradually lost control of the market they had created.

As more and more companies began producing cheaper and more powerful PC clones, IBM's market share began to erode. They tried various strategies to differentiate themselves from the clones, including introducing new PC models with proprietary architectures, like the PS/2, and trying to enforce their patents more aggressively. However, these efforts were largely unsuccessful. The PC market became increasingly commoditized, and IBM eventually exited the PC hardware business. *Aside: my fondness for Thinkpads will be covered another time!*

Apple, meanwhile, struggled to respond effectively to the rise of the PC. **Apple, under the leadership of Steve Jobs, neglected the Apple II line, going all-in on new, more advanced (and ultimately unsuccessful) platforms. This was a critical misstep, as they failed to defend their existing core business.** Their attempts to leapfrog the PC with the Lisa and the Macintosh were both technologically ambitious but ultimately unsuccessful. The Lisa, released in 1983, was technically advanced but prohibitively expensive. The Macintosh, released in 1984, was revolutionary in its interface, but it was initially underpowered, expensive, and lacked software.

It was only much later, with the return of Steve Jobs and the introduction of the iPhone, that Apple finally found a way to regain its footing. **Jobs, a generational talent with a genius for technological arbitrage,** recognized that existing technologies, like mobile processors, touchscreens, and the internet, could be combined in a new and innovative way. This led to the creation of the iPhone. Later, **MacBooks with Retina screens and excellent touchpads, along with the rise of the open web ecosystem, finally brought Apple back to the business market, albeit primarily at the high end.**

Apple spent decades in the wilderness between these two eras.

The story of the IBM PC and the Apple II is more than just a tale of two computers. It's also a story about how a corporate giant, through a combination of strategic planning, calculated risk-taking,

and disciplined execution, was able to effectively commoditize a potential threat and reshape an entire industry. **It's a story that offers valuable lessons for anyone seeking to understand the dynamics of technological innovation.**

Rebuttals Acknowledged:

“neglected Apple II” is too strong: Agreed. I’m rounding up to communicate what I consider to be a needless existential risk taken on by Apple. And I think the argument stands even with that phrase removed, because the the impact on the product line (supply) and customer behavior (demand) is the key thing that mattered.

“wilderness” is too strong: Partially agreed. I’m considering the *extent* of Apple’s fall in stature too. Note that companies like Sun Microsystems and SGI were making *bank* during this time.

“failed to defend their existing core business” is too strong: Partially agreed. A bet-the-farm leapfrogging strategy being adopted by the *incumbent* in a market segment is puzzling. Perhaps Apple was freaked out way more than we think about the rumours of IBM entering the fray? Perhaps Apple themselves saw the writing on the wall, and decided to retreat to the high end way back in 1981? Otherwise, a bet-the-farm strategy being adopted by the *incumbent* in a market segment is puzzling.

Steve Jobs was farsighted enough to have had that insight way back in the 1980s (listening to his talks from that time, I now think he’s underrated). In hindsight, perhaps Steve Jobs may have been right about what was best for Apple, and he was just “too early to market”? Perhaps the required technology pieces simply proved too expensive to be developed solely by Apple? Underestimating R&D timelines is rife. So perhaps Jobs deserves way more credit simply for shipping **two** leapfrogging devices in a span of four years?

Perhaps it took a further couple decades for “two curves to intersect”? Steve Job’s “requirements curve” for what would make for a magical device, and a “capability curve” for the ability of the world’s industrial infrastructure such as factories and logistics to manufacture at volume and at reasonable cost the entire set of parts needed that would meet Jobs’s lofty standards.

It’s not easy to keep the flame alive in a company for decades in the wilderness. In this light, Apple’s story looks like an uncompromising hero’s epic journey.

****LLM prompt:** Analyze the validity of the points made in this article. Analyze the validity of the statement: there are lessons applicable to the present day to be learned from this retelling of the 1980s.**