

# 30-year war between Intel, AMD still rages

There has been a war raging in the IT world for over 30 years. It started when I was in high school before ever touching a computer.

The first battles were fought in the early 1980s when I was crawling into mainframes and feeding thousands of computer cards into a Cyber 175 before I could legally drink. When personal computers came to the market place at a price of around \$5,000 each, I first saw the two opponents: Intel and AMD.

These two CPU (central processing unit) producers are battling it out now just as heavily as they were when big hair, spandex and Trans Am's were hot. Intel got a headstart being founded back in 1968. They came out with their revolutionary microprocessor called the Intel 8088 in 1979 which became the chip of choice by IBM for the IBM PC.

Another company called Advanced Micro Devices (AMD) was also started back in the late 1960s by a group of top dogs from Fairchild Semiconductor. AMD was producing a look-alike of the Intel 8088 which Intel picked up on and contracted AMD out to be a second source



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for the real 8088. This was so Intel could fulfill production orders from IBM to keep up with the new IBM PC demands.

This short peace treaty only lasted until 1986 when Intel broke the contract with AMD and the war was hot again —

lawsuit hot this time though. It took until 1994, but a court did rule against Intel for breaching the AMD contract.

While the lawyers were fighting it out Intel rolled out the Intel 386 chip and soon after AMD produced a similar named and capable AM386 in the early 1990s. Then Intel volleyed with the i486 and AMD countered with the AM486.

That same time period numerous lawsuits were filed between Intel and AMD over microcode that ran the CPUs. Determining the rights and usage terms took years of mediation and litigation to iron out and settle.

Fifteen years later both AMD and Intel are still trying to outperform each other in CPU design and production, but have not tired of throwing legal hand grenades in court. Their fierce competition over the past three decades has benefited two groups of people: law firms and consumers.

I couldn't care less about the bottom-feeding legal benefactors, but when there's good competition things get better, faster, smaller and cheaper. That is why those computers back in the early '80s ran \$5,000 and now we buy faster laptops for \$500.

When this Intel-AMD battle started in the late 1970s an ounce of gold was around \$200 and now it is over \$1,100. That tells me the \$5,000 laptop back then was worth \$25,000 in today's devalued dollars.

Sounds kind of sad that our American dollar has dropped five-fold while the cost of a computer has dropped 10-fold. In other words, American ingenuity coupled with the free enterprise capitalism and fierce competition between AMD and Intel gave us the cheaper faster computer.

Unfortunately, American government overspending has almost destroyed our currency and the new socialism trend could end those market forces that enabled and grew two powerful American technology companies.

Today both AMD and Intel are still cranking out better and faster chips trying to leap frog and out perform the other with each release. Intel is kicking tail with their Core 2 Duo and Quad Core CPUs sets while AMD is in the fight with their K10 array of processors.

I could impress some, but probably bore most of you with technical benchmark performance numbers and all sorts of IT jargon to make my case which computer chip company makes the better CPU, but I won't.

Simply put, over the years

my experience has lead me to the opinion that if you want a cheap and fast clocking CPU then go with hotter running but robust AMD in exchange for reliability. If you want a more stable but still fast CPU then rely on Intel for a slightly higher price.

The low end desktop and laptop computers that you can purchase in the \$300 to \$500 range at Walmart and Best Buy will most likely have AMD processors. Mid-tier PCs above \$600 will probably come with Intel processors. The average user running e-mail, web surfing and word processing will never know the difference.

The problems that both I and Harper at Computer Helpers have experienced with AMD processors is that they run consistently warmer than similar Intel CPUs.

This is because AMD runs with a higher clock rate thereby generating more heat than the internal fans and heat sinks can adequately disperse.

In other words, AMD processors run hotter which shortens their lifespan resulting in a higher chance of hardware failure. In my opinion, Intel CPUs are like well-trained athletes conditioned and disciplined to make a good run to finish a marathon.

AMD CPUs, on the other hand, are like high school jocks hopped up on Red Bull that will run fast but crash and burn before long.

Some AMD CPU technical specifications show that their processor runs cooler than the Intel counter part, but all that

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is dependent on the heat exchange system of a good conductive heat sink that is bonded well to the CPU cooled with a strong fan that can pull the heat away from the processor and out of the computer chassis.

Intel has done a much better job over the years with thermal management of their processors which I believe increases the life of both the CPU and the motherboard. With all the dead computers Harper and I have dealt with over the past decade here in Washington County, we both believe

that Intel makes a better CPU than AMD.

Bottom line: The 30-year war between Intel and AMD still rages which gives the consumers a faster cheaper computer and the lawyers their blood money.

Next week's column: NetBooks.

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