AmigaMCC News
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The Pioneering Amiga

Last month I talked about the up-and-downsides to the Amiga's preemptive multitasking (specifically the type that did not require a memory management unit which worked on less expensive hardware). This month my subject is what was considered a defining advantage of the Amiga for years — its custom graphic and sound co-processor chips.

I used to consider the Amiga's custom chips a double-edged sword in much the same way, and in some ways it was. The chips gave the Amiga systems a tremendous advantage at the start, but a dependence on that same hardware made it difficult to advance and keep pace with the hardware developments of competing systems. (Years of limbo following Commodore going under didn't help either.) Looking at it with a little more objectivity and hindsight, I view it now more as a difference in philosophy and some foot-dragging on the software front.

The foot-dragging is in relation to separating (or abstracting, as some say) graphic and sound functions of software and the operating system from a specific set of hardware, thus making it easier to change or update that hardware without a corresponding rewrite of the software side. Late or not, it was eventually done. The 3.X versions of the Amiga OS, along with software such as CybergraphX and Picasso96, introduced the base of the RTG (Re-Targetable Graphics) Amiga era. AHI did much the same for the audio side. Before then, while there was video and sound hardware for the Amiga, software had to be specifically written to use it. Next-generation systems such as Amiga OS4, MorphOS, and AROS took it a step further, taking advantage of advanced features of modern video cards. It was mostly out of necessity, as the new operating systems had to run on the modular hardware of the time. As it stands, most software that "follows the rules" runs much the same on whatever video hardware it's running on. This is in contrast to the earlier times, when Amiga software was tied directly to the stock hardware, "banging the metal," as they used to say.

Part of the reason for the delays in a more hardware-abstract Amiga system was the philosophies of the time, the hardware and the people who wrote software for it. The Amiga, in fact most modern systems born in the "eighties," were the next generation to various "closed" systems that weren't known for having a lot of expandability or hardware variation — your Ataris, your Apples, your Commodores. The Amiga was also born, in part, of the desire to create a kickass gaming system, another hardware field not commonly having much variety between examples of the same brand. By contrast, the DOS/Windows PCs, and the Macs and Atari STs to a lesser extent, used more off-the-shelf hardware compared to the custom-designed coprocessors of the Amiga. The (formerly IBM) PC stood out especially by being more a set of specifications than a specific set of hardware, manufactured and assembled by various companies. In a market like that, software writers had to work for a wider array of hardware support, either writing for several hardware configurations at once, or writing for the operating system, and letting it do the heavy lifting between software and display or speakers. On a "narrower" spec like the Amiga (especially in the days before the A3000 came out) it was common to write software that accessed the custom chips directly, as it was more efficient and usually yielded better performance. Games generally "banged the metal" the hardest, even throwing out operating system routines entirely to squeeze out that extra bit of performance, memory, or disk space for a better experience. This is all fine and good until one starts tinkering with their Amiga's hardware, such as expanding the memory, getting a CPU accelerator, or even trading up to a new A1200 or A4000 with new architecture, CPU, custom chips, and more. The diversity of hardware specifications and performance widens as well between low-end (A1200, 14mhz 68020, AGA chips) and high (A4000T, 50 MHz 68060 and PPC, multiple drives, AGA, and extra video and sound cards). It's under those circumstances that metal-banging software breaks, and the case for hardware abstraction becomes more apparent. Early on it seemed the hardware drove the software, both by its capabilities and its limitations. Now in this Windows-dominated climate, the software dictates the hardware quite often, forcing the user to upgrade if they want to run the latest applications or (especially) games.

Whether the world at large remembers it or not, the Amiga and its custom chips were a pioneering force for the way things are done now. The Amiga's video and audio co-processors took the load off the main processor, providing great performance as they could work independently. The early video cards on Windows and other systems did little more than just put the display on the screen, leaving the real work to the CPU. They may have been able to put more colors up on the screen, but when it came to manipulating the graphics, the Amiga and its specialized hardware had the edge, even under a slower CPU. As

the CPUs got faster and faster, the video cards added more and more features as well, including the ability to act independently of the CPU, taking that page from the Amiga book. While it's easy to look at the Amiga's custom chips as something that held the system back in its later years after pushing it forward in its early days, I prefer to look at the super-hyper-polygon-pushing video cards found on the heavy duty gaming Windows PCs, and thank the Amiga for starting the party.

…by Eric Schwartz
From the AmiTech Gazette
March 2010

The National Broadband Plan

(Note: for the full text of the plan, go to http://www.broadband.gov/plan/)

Preface

The staff of the Federal Communications Commission (FCC) created the National Broadband Plan. To an extraordinary extent, however, the author of this plan is America itself.

The FCC started the process of creating this plan with a Notice of Inquiry in April 2009. Thirty-six public workshops held at the FCC and streamed online, which drew more than 10,000 in-person or online attendees, provided the framework for the ideas contained within the plan. These ideas were then refined based on replies to 31 public notices, which generated some 23,000 comments totaling about 74,000 pages from more than 700 parties. The FCC also received about 1,100 ex parte filings totaling some 13,000 pages and nine public hearings were held throughout the country to further clarify the issues addressed in the plan.

The FCC also engaged in significant collaboration and conversations with other government agencies and Congress, since the scope of the plan included many issues outside of the FCC's traditional expertise. Many people from across government contributed expertise and advice along the way, for which the FCC staff is eternally grateful.

The Internet also provided new ways to involve the public. Through an innovative Web presence at www.broadband.gov, the FCC posted more than 130 blog entries and received nearly 1,500 comments in return. The FCC's Twitter feed now has more than 330,000 followers, making it the third most popular government Twitter feed after the White House and the Centers for Disease Control.

The FCC staff digested this extensive record and worked long hours analyzing and debating the record. Every comment cannot be referenced in the plan, but they were all read, considered and valued.
Public comment on the plan does not end here. The record will guide the path forward through the rulemaking process at the FCC, in Congress and across the Executive Branch, as all consider how best to implement the plan's recommendations. The public will continue to have opportunities to provide further input all along this path.

This is America's plan, written by and for Americans. It's now time to act and invest in our nation's future by bringing the power and promise of broadband to us all.

- Goal 1: At least 100 million U.S. homes should have affordable access to actual download speeds of at least 100 megabits per second and actual upload speeds of at least 50 megabits per second.
- Goal 2: The United States should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.
- Goal 3: Every American should have affordable access to robust broadband service, and the means and skills to subscribe if they so choose.
- Goal 4: Every community should have affordable access to at least 1 Gbps broadband service to anchor institutions such as schools, hospitals and government buildings.
- Goal 5: To ensure the safety of Americans, every first responder should have access to a nationwide public safety wireless network.
- Goal 6: To ensure that America leads in the clean energy economy, every American should be able to use broadband to track and manage their real-time energy consumption.

April Calendar

April 5 — Amiga-By-The-Loop Chapter
7:00 PM — Main Grand Prairie Library
901 Conover Drive, Grand Prairie

April 5 — MCCC Board of Director's Meeting
Approximately 9:15 PM — Location TBD

April 24 — Newsletter Deadline — 7:00 AM

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