

Game on!

How a humble video game with a ball and two paddles launched a billion dollar industry. By **Simon Fogg**.

In 1972, Atari released Pong, the first commercially successful video game and one that, arguably, launched an entire industry. To mark the game's 40th anniversary, Atari is running a competition for indie developers to reimagine the game for a modern audience. Finalists will debut their version on the Atari app store where people can download it and then play it on their smart phones. The technology may have changed, but the appeal of hitting a ball back and forth on screen seemingly has not.

Simon Webb, curator at the Museum of Computing in Swindon has been involved with video games since the very beginning and believes that, in many ways, they have come full circle. This is all part of a natural evolution of our interaction with machines.

He said: "Pong was the birth of a whole industry; Pong started it. But there was gaming before Pong when computers were based on valves and they were located in university departments and MoD establishments. People have always played games on computers and people have always written games."

Pong was actually based on a game included in the world's first home games console, the Magnavox Odyssey designed by Ralph Baer. An analogue system, it used discrete components to produce a game on a tv screen. "Nobody had ever seen anything like that," Webb recalled. "It was the first time you could interact with your tv; something we take for granted today."

These types of systems were known generically as tv tennis because they offered bat and ball games with basic capabilities built into the console. According to Webb, things started getting interesting when chip manufacturers realised they could put the whole game onto one integrated circuit. This encouraged manufacturers of everything from toys to electronics



Simon Webb, curator, the Museum of Computing, with some of the computer games launched over the last four decades. Pic: Charlie Milligan

to package these games in various guises, with a classic example being the bright orange Binatone TV Master. In the late 1970s, the technology started coming to the UK. Webb summarised: "It was very new and exciting for people, but limited to what you could do on it."

The first milestone for the industry was the development of separate plug in cartridges instead of building games into the actual console. These rom based solid state cartridges were popularised by the Atari 2600, a console which had a pleasing wood panel effect designed to fit alongside any tasteful 1970s furnishings. The idea of integration into the home was important because this was the stage where arcade games were becoming part of the living room. In Webb's opinion: "What really shot this into superstardom was the launch of Space Invaders in the late 1970s, which you could play in the pubs." This transition turned video games into a global industry.

With the formative technology in place, the path was paved for a new wave of consoles that used 8bit microprocessors to provide exciting new graphics and stereo sound. This was the beginning of a well known rivalry between





platforms: some gamers were loyal to the Nintendo Entertainment System (NES) because it had Super Mario; others were buying the Sega Master System for Sonic the Hedgehog. Webb noted: "People were buying them not necessarily for the consoles, but for the games available on them. That's something that's very true to this day."

The solid state memory in the cartridges of this era was known to be robust, but it was also expensive with relatively low storage capacity. More sophisticated games required more memory, which meant the production of bigger cartridges, then the next generation of consoles used 16bit microprocessors for an extra leap that enabled pseudo 3d graphics. Other manufacturers decided it was about time they cashed in.

Webb said: "Companies like Commodore, who were very successful with the Commodore 65 home computer, produced a version without a keyboard – just a cartridge slot. So it was designed as a dedicated games console. Amstrad did the same thing with the JX 4000, which was basically an Amstrad home computer minus the keyboard. These weren't terribly

successful because they were always a bit of a compromise – they never had the speed or power of the graphics of the dedicated consoles."

By now it was 1992 and the major players were Nintendo, with the Super Nintendo Entertainment System (SNES), and Sega, with several incarnations of the Mega Drive. Then everything changed when a third major player entered the market.

Sony had originally been designing a cd interface product for Nintendo, but when the relationship between the companies fell apart, Sony decided to produce its own console – the Playstation. At the time, cds were beginning to be used for data storage and the 650Mbyte they offered was a massive amount of data compared to that of a solid state cartridge. Incorporating this new technology from outside the industry positioned the Playstation perfectly to make an impact. The key to the marketing strategy was that Sony also aimed its games at a more mature adult audience, not only further transforming the technology, but also forever shaping the evolution of the gamers.

1989



Sega Mega Drive

1990



Amstrad GX4000

1992



Super Nintendo Entertainment System

1994



Atari Jaguar



Somewhere in the background, Atari was trying to catch up. The company decided to bank its efforts on the public's obsession with higher numbers and released the 64bit Jaguar a year before the 32bit Playstation hit the shelves. The technology looked impressive on paper, but there was a lot of expense in the outdated data cartridges. Sony, on the other hand, could mass produce cds incredibly cheaply, so there was no real competition and Atari largely disappeared from the market.

The advent of cd technology and its low costs meant other manufacturers were keen to jump on the bandwagon. Sega released the 32bit Saturn – one of the first consoles to allow online gaming via the inclusion of a modem – earning it a soft spot in the hearts of many gamers, who viewed it as ahead of its time. A few years later, Microsoft entered the market with the Xbox, which borrowed hard disks and processors directly from pcs. Even Panasonic came up with a console.

Webb said it was a time where everybody saw the potential of games consoles. "A lot of people tried, but it really left us with the three big players today."



This generation of consoles, with their relentless pursuit of graphics and processing power, combined with a mostly young adult audience, replaced Mario with Lara Croft and targeted the machines at becoming a vital part of a home entertainment system. The Playstation's successor, the PS2, may have lacked the early Atari's wood panel effect, but its sleek black lines were a perfect fit for the modern connected home. With this type of gaming fast reaching a zenith, Nintendo decided to do something different.

The Nintendo Wii bucked the trend for power and resolution by producing what was essentially a new way to play video games. The selling point for this platform was how the controllers used solid state accelerometers to produce full motion control. Much like the introduction of cds, this technology had been around for a while outside the gaming industry, but was only just reaching a price where it could be built into a unit like a games console.

Webb observed: "The graphics aren't as good, it's not as fast, but it brought a new fuller, fun element to gaming and it targeted a much wider age range."

Wii's could also be used where a solitary gaming system could not, such as communal accommodation. Meanwhile, Sony's Playstation 3 focused on

immersion. Its eight cored Cell processor was reminiscent of multiprocessor pcs, where tasks could be offloaded.

Gaming had split: some systems were following the natural path of evolution from the early transistorised consoles and were reaching new heights of processing power; others were focusing on the shared experience of a family or group of friends hitting a ball back and forth on screen. Except now they were playing Wii Tennis with motion controllers, rather than Pong with a joystick.

Webb said that, in many ways, gaming has returned to its roots. "When the first tv tennis games came out, they appealed to a lot of different people, so families used to play these together because it was novel – the family would gather round the tv set in the evening to play tv tennis. It was a unique experience to interact with your tv and everybody wanted to try it."

Since then, the users changed with the processors. When the novelty of tv tennis wore off, machines like the NES focused on younger gamers. As realism improved, Sony immersed more mature gamers. The next logical step was to find the technology that could appeal to the whole spectrum of ages.

Webb believes we have reached a point where there's room for all types of games and gamers. A catalyst for this may have been online gaming which introduced real opponents and interaction – the social element that has defined how we interact with machines over the last decade by letting us interact with each other. This may be what shapes the future of gaming technology.

Glasses-less 3d is on the horizon, as evidenced by Nintendo's handheld 3DS, which if properly integrated could open an entire new dimension of gaming. The successor to the Wii – the Wii U – has a controller with a touchscreen, presumably influenced by the development of the tablet pc, giving the user another level of control. Existing technology, such as GPS and speech recognition, is also approaching a price where it can be incorporated, with Webb noting the advancement of audio games for the partially sighted that enable a surprising amount of interactivity. We might soon be talking to our consoles. "There are exciting times ahead," he enthused.

As these technologies find their place in the video game world, people could potentially rediscover the excitement they originally experienced when Pong gave them a new way to interact with their tv. This is why gaming has come full circle and why the 40th anniversary of Pong is significant – whether you play it on your iPhone or on a dusted off unfashionable 1970s machine.

In Webb's view, Pong's influence is something to celebrate. "It was a completely new idea and brought gaming into the living room. And now it's a multibillion pound industry that rivals or overtakes Hollywood in terms of turnover. It's a phenomenal success story."

