

PLAYSTATION 3

Volume #1, Issue #1,

November 18, 2005

Spring 2006

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HISTORY

The PS3 was officially unveiled on May 16, 2005, at Sony's E³ conference, where the console was first shown to the public. The console was in non-operational form at E³ and the Tokyo me Show in September 2005, although videos of soon-to-be released games running on the hardware were presented, such as *Metal Gear Solid 4* and *Killzone 3*. However, many have disputed the authenticity of the *Killzone 3* footage; Guerrilla Games has stated that it ran the game on PlayStation 3 prototype hardware at 5 frames-per-second, and then sped up the recording to 60FPS for the E3 presentations. Supporters state that since it was an early in-development game, it will look at least as good as it did in the presentation when released, due to the engine becoming more mature during development.

COST AND RELEASE DATE

The system's retail price has not yet been confirmed. Sony officials hinted that the PS3 will actually cost less than ¥50,000 in Japan, which is currently about US\$450 (£260). To compete with the upper price ceiling of the Xbox 360, it is likely that the PS3 will try to sell in the U.S. for 400 dollars (£230).[1] Sony President Ken Kutaragi points out "It'll be expensive" and "I'm aware that with all these technologies, the PS3 can't be offered at a price that's targeted towards households.

I think everyone can still buy it if they wanted to," said Kutaragi to a mostly Japanese crowd.

"But we're aiming for consumers throughout the world. So we're going to have to do our best [in containing the price]". In contrast Kazuo Hirai, president of Sony Computer Entertainment America, says the PS3 will not be expensive and that it will be competitively priced with the Xbox 360.[2] The PlayStation 2 retails in Japan for ¥39,800, in the US at \$150 and in the UK at £105.

More recently, however, a report [3] compiled by Merrill Lynch Japan and published in the business magazine Toyo Keizai estimated the total cost of producing a PS3 at launch time at ¥54,000, or US\$483 (£270) (the most expensive components, the Cell microprocessor, the RSX Graphics processing unit, and the BD-ROM drive are each estimated to cost US\$101 (£57), with the additional cost going into the motherboard, RAM, wireless chipsets, and probably system-on-

a-chip imple-
the PS1 and
for backwards
Sony is already
to control
costs, and



system's planned integrated router to reduce expenses [4]. In the same report, Merrill Lynch predicts that Sony will initially sell the PlayStation 3 for ¥44,800 (US\$410) in Japan, and US\$399 (£225) in the USA, taking a financial loss (as it did with the PlayStation 2) in order to build the console's install base, losing as much as US\$1 billion in the first year after release. Sony would later recoup this loss (as well as the Cell's US\$1.8 (£1.01) billion (R&D expenses) through software licensing fees and future reduced hardware manufacturing costs. The report also notes that Microsoft may plan to disrupt the

normal console business cycle by choosing to cut the price of the Xbox 360 at the same time the PS3 launches, which the report estimates would cause

PlayStation 3 will
be available around
March 2006

Sony to lose an additional US\$730 (£400) million in its second year, and US\$457 million in its third. It is not known whether these hypothetical losses would be due to Sony being forced to further cut the price of the PS3 hardware, or suffering reduced revenue from game purchases due to stiff competition from Microsoft. For the consumer this means one may be able to obtain a PlayStation 3 at a lower price than its actual manufacturing cost was.

In the same magazine, Sony Computer Entertainment president and "father of the PlayStation" Ken Kutaragi was interviewed, and expressed little concern over the PS3's possibly high launch price, believing that customers would be willing to pay extra for a superior product, as they had in the past for the original PlayStation (¥39,800 vs. 12,500 for the Super Famicom).

During its E3 presentation, Sony confirmed the PlayStation 3 will be available around March 2006. Reports quoting high-ranking Sony officials suggest the PlayStation 3 may be launched simultaneously in Japan and North America (not world-wide), a tactic that would differ significantly from the PlayStation (launched December 1994 in Japan and September 1995 in North America) and PlayStation 2 (launched March 2000 in Japan and October 2000 in North America).

Some industry critics speculated that due to many of its monumental technical content, liability of processing challenges could severely delay the release of the PlayStation 3 up to about early 2007. Fortunately, according to German website Gamefront, chairman and CEO of the European brand Sony Entertainment, Sir Howard Stringer has added confirmation to Sony's E3 press release that the company indeed launches its next generation console in spring of 2006.

GAMES IN DEVELOPMENT

As of October 2005, there are already over 120 PS3 games in production by multiple developers and publishers, like SCEA, Electronic Arts, Konami and many others.

Most developers have already announced games for the PS3. Some anticipated ones include Killzone 3, Resident Evil 5, Devil May Cry 4, Shin Megami Tensei, Armored Core 4 and Unreal Tournament 2007. In the E3 2005 Press Conference, Sony showed some demos of games in development with the codenames Eyedentify, Vision Gran Turismo and MotorStorm. Also shown at E3 was a technical demo of Final Fantasy VII's opening sequence remade in PlayStation 3 graph-

ics, at the time recent to the show, SquareEnix stated no plans for a remake. Square Enix is however listed for a Final Fantasy game along with 70 other Japanese developers during TGS 2005. Since they aren't working on a remake then this will most likely be Final Fantasy XIII. Perhaps the most anticipated PS3 game up to this point is Metal Gear Solid 4: Guns of the Patriots, which had its first trailer shown at the Tokyo Game Show 2005 event. Controversial games developers Rockstar North have also hinted that they are planning the provisionally named Grand Theft Auto 4, primarily for the PS3.

BACKWARDS COMPATIBILITY GAMES

The PlayStation 3 will be compatible “on the chip” with most PlayStation 2 and PlayStation games, without emulation. It still isn’t known how Sony has achieved this (although Sony had developed a single-chip PS2 CPU/GPU solution, used in newer revisions of the “slim” PS2). Compatibility with PS2 online games and games designed for the hard drive support hasn’t been elaborated upon. In a recent interview Ken Kutaragi has recently stated that backwards compatibility will be achieved through a combination of hardware and software:

“Third-party developers sometimes do things that are unimaginable. For example, there are cases where their games run, but not according to the console’s specifications. There are times when games pass through our tests, but are written in ways that make us say, ‘What in the world is this code?!’ We need to support backward compatibility towards those kinds of games as well, so trying to create compatibility by software alone is difficult. There are things that will be required by hardware. However, with the powers of [a machine like] the PS3, some parts can be handled by hardware, and some parts by software.”

HARDWARE

According to PSM Magazine the PS3 will not be backwards compatible with some of the hardware peripherals of the PS2. Which means that memory cards for PlayStation and PlayStation 2 won’t work on the PlayStation 3 hardware. [10]

“We’ve received a lot of letters asking about how PS3 will be backwards compatible with PS2 and the original Playstation if it doesn’t have memory card slot. Well, we have an answer, and it’s both good and bad. First, the bad news: All of those old memory cards you have won’t be usable with PS3. Okay then, what’s the solution? Sony has actually decided to only use Memory Stick Duo cards (the same format PSP uses) for PS3 save data. However, if you play a PS1 or PS2 game on PS3, the system will treat the Memory Stick like it’s a normal memory card. This is different from the PS2, which requires you to use a PS1 memory card for PS1 saves. What this means is that you won’t be able to use any of your old saves if you play PS1/PS2 games on PS3 (wonder if a DexDrive will work...). But there’s an upshot to all this: Downloading and sharing saves via PC for all three Playstations and PSP (hint, hint) will be easy as pie.”

It is currently possible to get PS1 and PS2 games transferred to a PSP memory stick using the PSP USB cable. The Data game enhancement accessory Max Media can be used to transfer them directly from the PS2 to the PSP.

HARDWARE SPECIFICATIONS

A simple comparison of the system architectures appears to indicate that the floating point capability of the PS3 is at least double that of the Xbox 360. It should be noted that this figure is based on the combined floating point capacity of the Cell microprocessor and the RSX GPU in the PS3 compared to the combined capacity of the Xenon CPU and Xenos GPU in the Xbox 360. The amount of completely programmable floating point capacity afforded by the Cell microprocessor for general-purpose tasks, like procedural content generation and game physics, is considerably much higher than that of the Xbox 360's CPU, while the floating-point performance of the two systems' GPUs, which are designed specifi-

cally for graphics rendering tasks, are somewhat closer to parity.

According to a press release by Sony at the May 16, 2005 E3 Conference, the specifications of the PlayStation 3 are as follows.

CENTRAL PROCESSING UNIT

3.2 GHz Cell processor:

- * 1 PPE (PowerPC-derived)
 - o 32 KB L1 cache
 - o 512 KB L2 cache
 - o VMX vector unit (IBM's branding for AltiVec)
- * 7 SPE (Synergistic Processing Elements) vector processor units [12]
 - o 256 KB SRAM local memory for each SPE
 - o 218 GFLOPS (billion floating point operations per second)
 - o 128×128-bit SIMD general purpose register files

GRAPHICS PROCESSING UNIT

Custom "RSX" or "Reality Synthesizer" design co-developed by NVIDIA and Sony:

- * Clocked at 550 MHz
- * 1.8 TFLOPS (trillion floating point operations per second)
- * Full high definition output (up to 1080p) x 2 channels
- * Multi-way programmable parallel floating point shader pipelines
- * 136 shader operations per cycle
- * 100 billion shader operations per second (with CPU)
- * 51 billion dot products per second (with CPU)
- * 128-bit pixel precision offers rendering of scenes with high dynamic range imaging

NVidia CEO Jen-Hsun Huang stated during Sony's pre-show press conference at E3 2005 that the RSX will be much more powerful than two GeForce 6800 Ultra video cards combined. Current industry speculation is that the RSX may be based on the G70 architecture used in NVidia's GeForce 7 Series GPUs which were introduced in June of 2005, but implementing many more parallel pixel and shader pipelines than any consumer PC GPU (NVidia's top-of-the-line GeForce 7800 GTX currently contains 24 pixel and 8 vertex pipelines), and clocked higher than any PC GPU based on G70 (with speculation that the RSX chip will be reworked using the new G71 architecture topping 650-700mhz and an improved vertex pipeline support, as well as an increased 512mb memory) (again, the 7800 GTX is clocked at 430 MHz, compared to 550 MHz for the RSX). An nVidia spokesperson was quoted in PlayStation Magazine as saying that the 7800GTX "shares a lot of similar inner workings with the PS3's RSX chip, only it (the 7800GTX) isn't nearly as fast (as the RSX)."

STORAGE

Blu-ray Disc: PlayStation 3 BD-ROM, BD-Video, BD-ROM, BD-R, BD-RE

DVD: PlayStation 2 DVD-ROM, PlayStation 3 DVD-ROM, DVD-Video, DVD-ROM, DVD-R, DVD-RW, DVD+R, DVD+RW

CD: PlayStation CD-ROM, PlayStation 2 CD-ROM, CD-DA, CD-DA (ROM), CD-R, CD-RW, SACD, SACD Hybrid (CD layer) SACD HD

Memory Stick standard/Duo and standard/mini slots

CompactFlash Type I and II slot

SD slot

Slot for detachable 2.5" hard drive with Linux pre-installed

MMC slot for mp3s, ogg vorbis, nokia music, and aacs

[edit]

Physical dimensions

CONTROLLER

SCEI's press release indicates that controller connectivity to the PlayStation 3 can be provided via:

Bluetooth

2.0 (up to 7

controllers)

USB 2.0

(wired)

Dual Shock and Dual Shock 2 controllers, will provide much greater comfort for extended hours of play

802.11 b/g Wi-Fi for [mesh networking] and connectivity with the PlayStation Portable IP networking

Currently there has been some controversy among fans about the new PlayStation 3's controller, which they dubbed DualShock 3. Some

argued that it was simply untastefully designed and somewhat of an eyesore, or that the controller itself had poor ergonomics, all aesthetic attributes aside, while others love it. Its design has been likened to a boomerang or a banana by many observers. However, many suggest that the controller, while a little un-traditional in contrast to the DualShock

and DualShock 2

controllers, will

provide

much

greater

comfort

for extended hours of play, and that eventually everyone will "get used to it." According to the Japanese video game publication Famitsu, Sony Computer Entertainment chief technical officer Masayuki Chatani said that the controller design is a "prototype, so there could be some

small adjustments.” [18] In an echoed these statements by study”. Some people pointed that to the old Alps Interactive 3rd for the PlayStation. [19]



Unconfirmed reports suggest DualShock 2 (and by logical extension of ports to support such backward compatibility would most likely be limited to one, although this is

interview with Edge, SCEE’s Chris Deering describing the E3 controller as “just a design the controller bears a similar resemblance party controller which was originally made

that the PS3 may in fact support the older DualShock) controllers. The number compatibility would most likely be limited

Play Station 3

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