


Kinect

Kinect for Xbox 360

	
	
Kinect sensor device	
Product family	Xbox
Generation	Seventh generation era
Units Sold	8 million (as of January 6, 2011) ^[1]
Release date	<ul style="list-style-type: none"> • ^{NA} November 4, 2010^[2] • ^{EU} November 10, 2010^[3] • ^{CO} November 14, 2010^[4] • ^{AUS} November 18, 2010^[5] • ^{JP} November 20, 2010^[6]
Platform	Xbox 360, Microsoft Windows (TBA)
Connectivity	USB 2.0 (type-A for original model; proprietary for Xbox 360 S)
Resolution	640×480 pixels @ 30 Hz (RGB camera) 640×480 pixels @ 30 Hz (IR depth-finding camera) ^[7]
Predecessor	Xbox Live Vision

Kinect for Xbox 360, or simply **Kinect** (originally known by the code name *Project Natal*),^[8] is a "controller-free gaming and entertainment experience" by Microsoft for the Xbox 360 video game platform. Based around a webcam-style add-on peripheral for the Xbox 360 console, it enables users to control and interact with the Xbox 360 without the need to touch a game controller, through a natural user interface using gestures and spoken commands.^[9] The project is aimed at broadening the Xbox 360's audience beyond its typical gamer base.^[10] Kinect competes with the Wii Remote Plus and PlayStation Move and PlayStation Eye motion control systems for the Wii and PlayStation 3 home consoles, respectively.

Kinect was launched in North America on November 4, 2010,^[8] in Europe on November 10, 2010,^[3] in Australia, New Zealand and Singapore on November 18, 2010^[5] ^[11] ^[12] and in Japan on November 20, 2010.^[13] Purchase options for the sensor peripheral include a bundle with the game *Kinect Adventures* and console bundles with either a 4 GB^[14] ^[15] ^[16] or 250 GB^[17] Xbox 360 console and *Kinect Adventures*.^[14] ^[15] ^[16] ^[17]

In December 2010, it emerged that Microsoft was bringing Kinect technology to Windows PCs, when Korean game developer GamePriX announced that its PC MMORPG *Divine Souls* would be one of the first games to use the console hardware as a controller.^[18]

Technology



Kinect is based on software technology developed internally by Rare, a subsidiary of Microsoft Game Studios owned by Microsoft and range camera technology by Israeli developer PrimeSense, which interprets 3D scene information from a continuously-projected infrared structured light.^{[19] [20]} This 3D scanner system is called Light Coding^[21], employing a variant of image-based 3D reconstruction.^{[22] [23]}

The Kinect sensor^[9] is a horizontal bar connected to a small base with a motorized pivot and is designed to be positioned lengthwise above or below the video display. The device features an "RGB camera, depth sensor and multi-array microphone running proprietary software",^[24] which provide full-body 3D motion capture, facial recognition and voice recognition capabilities. At launch, voice recognition was only made available in Japan, the United Kingdom, Canada and the United States. Mainland Europe will receive the feature in spring 2011.^[25] The Kinect sensor's microphone array enables the Xbox 360 to conduct acoustic source localization and ambient noise suppression, allowing for things such as headset-free party chat over Xbox Live.^[9]

The depth sensor consists of an infrared laser projector combined with a monochrome CMOS sensor, which captures video data in 3D under any ambient light conditions.^{[9] [26]} The sensing range of the depth sensor is adjustable, with the Kinect software capable of automatically calibrating the sensor based on gameplay and the player's physical environment, such as the presence of furniture.^[27]

Described by Microsoft personnel as the primary innovation of Kinect,^{[28] [29] [30] [31]} the software technology enables advanced gesture recognition, facial recognition and voice recognition.^[32] According to information supplied to retailers, the Kinect is capable of simultaneously tracking up to six people, including two active players for motion analysis with a feature extraction of 20 joints per player.^[33]

Through reverse engineering efforts,^[34] it has been determined that the Kinect sensor outputs video at a frame rate of 30 Hz. The RGB video stream uses 8-bit VGA resolution (640 × 480 pixels) with a Bayer color filter, while the monochrome depth sensing video stream is in VGA resolution (640 × 480 pixels) with 11-bit depth, which provides 2,048 levels of sensitivity. The Kinect sensor has a practical ranging limit of 1.2–3.5 m (3.9–11 ft) distance when used with the Xbox software. The area required to play Kinect is roughly 6m², although the sensor can maintain tracking through an extended range of approximately 0.7–6 m (2.3–20 ft). The sensor has an angular field of view of 57° horizontally and 43° vertically, while the motorized pivot is capable of tilting the sensor up to 27° either up or down. The horizontal field of the Kinect sensor at the minimum viewing distance of ~0.8 m (2.6 ft) is therefore ~87 cm (34 in), while the vertical is ~63 cm (25 in), resulting in a resolution of just over 1.3 mm (0.051 in) per pixel. The microphone array features four microphone capsules^[35] and operates with each channel processing 16-bit audio at a sampling rate of 16 kHz.^[33]

Because the Kinect sensor's motorized tilt mechanism requires more power than can be supplied via the Xbox 360's USB ports,^[36] the Kinect sensor makes use of a proprietary connector combining USB communication with additional power. Redesigned "Xbox 360 S" models include a special AUX port for accommodating the connector,^[37] while older models require a special power supply cable (included with the sensor^[35]) which splits the connection into separate USB and power connections; power is supplied from the mains by way of an AC adapter.^[36]

History

Kinect was first announced on June 1, 2009 at E3 2009 under the code name "Project Natal". Following in Microsoft's tradition of using cities as code names,^[9] "Project Natal" was named after the Brazilian city of Natal as a tribute to the country by Microsoft director Alex Kipman, who incubated the project,^[38] and who is from Brazil.^[9] The name Natal was also chosen because the word *natal* means "of or relating to birth", reflecting Microsoft's view of the project as "the birth of the next generation of home entertainment".^[29]

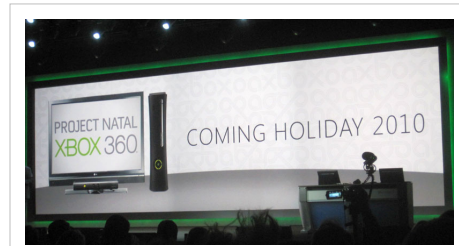
Four demos were shown to showcase Kinect when it was revealed at Microsoft's E3 2009 Media Briefing: *Ricochet*, *Paint Party*, *Milo & Kate* and *Mega Ring Ring*.^[39] A demo based on *Burnout Paradise* was also shown outside of Microsoft's media briefing. The skeletal mapping technology shown at E3 2009 was capable of simultaneously tracking four people,^[26] ^[29] ^[32] ^[38] with a feature extraction of 48 skeletal points on a human body at 30 Hz.^[27] ^[38]

It was rumored that the launch of Project Natal would be accompanied with the release of a new Xbox 360 console (as either a new retail configuration,^[40] ^[41] a significant design revision^[42] and/or a modest hardware upgrade^[43]). Microsoft dismissed the reports in public and repeatedly emphasized that Project Natal would be fully compatible with all Xbox 360 consoles. Microsoft indicated that the company considers it to be a significant initiative, as fundamental to the Xbox brand as Xbox Live,^[29] and with a launch akin to that of a new Xbox console platform.^[44] Kinect was even referred to as a "new Xbox" by Microsoft CEO Steve Ballmer at a speech for the Executives' Club of Chicago.^[45] ^[46] When asked if the introduction will extend the time before the next-generation console platform is launched (historically about 5 years between platforms),^[47] Microsoft corporate vice president Shane Kim reaffirmed that the company believes that the life cycle of the Xbox 360 will last through 2015 (10 years).^[29]

During Kinect's development, project team members experimentally adapted numerous games to Kinect-based control schemes to help evaluate usability. Among these games were *Beautiful Katamari* and *Space Invaders Extreme*, which were demonstrated at the Tokyo Game Show in September 2009.^[48] According to creative director Kudo Tsunoda, adding Kinect-based control to pre-existing games would involve significant code alterations, making it unlikely for Kinect features to be added through software updates.^[49]

Although the sensor unit was originally planned to contain a microprocessor that would perform operations such as the system's skeletal mapping, it was revealed in January 2010 that the sensor would no longer feature a dedicated processor. Instead processing would be handled by one of the processor cores of the Xbox 360's Xenon CPU.^[50] According to Alex Kipman, the Kinect system consumes about 10-15% of the Xbox 360's computing resources.^[51] However, in November, Alex Kipman made a statement that "the new motion control tech now only uses a single-digit percentage of the Xbox 360's processing power, down from the previously stated 10 to 15 percent."^[52] A number of observers commented that the computational load required for Kinect makes the addition of Kinect functionality to pre-existing games through software updates even less likely, with concepts specific to Kinect more likely to be the focus for developers using the platform.^[50]

On March 25, Microsoft sent out a save the date flier for an event called the "World Premiere 'Project Natal' for the Xbox 360 Experience" at E3 2010. The event took place on the evening of Sunday, June 13, 2010 at the Galen Center.^[53] The event featured a performance by Cirque du Soleil. It was announced that the system would officially be called Kinect, a portmanteau of the words "kinetic" and "connect", which describe key aspects of the initiative.^[54] Microsoft also announced that the North American launch date for Kinect will be November 4, 2010.^[55] Despite previous statements dismissing speculation of a new Xbox 360 to accompany the launch of the new control system, Microsoft announced at E3 2010 that it was introducing a redesigned Xbox 360, complete with a connector port ready for Kinect. In addition, on July 20, 2010, Microsoft announced a Kinect bundle with a redesigned Xbox 360,



A January 2010 promotional banner indicating the expected release of Kinect (then "Project Natal") by holiday 2010

to be available with the Kinect launch.^[16]

In January 2011, Microsoft CEO Steve Ballmer told the BBC that the PC platform will at some point receive formal Kinect support.^[56]

Launch

Microsoft had an advertising budget of US\$500 million for the launch of Kinect, a larger sum than the investment at launch of the Xbox console.^[57] The marketing campaign *You Are the Controller*, aiming to reach new audiences, included advertisements on Kellogg's cereal boxes and Pepsi bottles, commercials during shows such as *Dancing with the Stars* and *Glee* and print ads in various magazines such as *People* and *InStyle*.^[58]

On October 19, Microsoft advertised Kinect on The Oprah Winfrey Show by giving free Xbox 360 consoles and Kinect sensors to the people in the audience.^[59] On November 4, Kinect bundles with Xbox 360 consoles were also given away to the audience of Late Night With Jimmy Fallon.^[60]

On October 23, Microsoft held a pre-launch party for Kinect in Beverly Hills. The party was hosted by Ashley Tisdale and was attended by soccer star David Beckham and his three sons, Cruz, Brooklyn, and Romeo. Guests were treated to sessions with Dance Central and Kinect Adventures, followed by Tisdale having a Kinect voice chat with Nick Cannon.^[61] Between November 1 and November 28, Burger King gave away a free Kinect bundle "every 15 minutes".^[62]

A major event was organized on November 3 in Times Square, where singer Ne-Yo performed with hundreds of dancers in anticipation of Kinect's midnight launch.^[63] During the festivities, Microsoft gave away T-shirts and Kinect games.^[64]

Software

Requiring at least 190 MB of available storage space,^[65] the Kinect system software allows users to operate the Xbox 360 Dashboard console user interface using voice commands and hand gestures. Techniques such as voice recognition and facial recognition are used for automatically identifying users. Among the applications for Kinect is Video Kinect, which enables voice chat or video chat with other Xbox 360 users or users of Windows Live Messenger. The application can use Kinect's tracking functionality and the Kinect sensor's motorized pivot to keep users in frame even as they move around. Other applications promoted with Kinect include ESPN on Xbox 360 and Zune on Xbox Live.^[65]

Games that require Kinect have a purple sticker on them with a white silhouette of the Kinect sensor and "Requires Kinect Sensor" underneath in white text.^[66] Games that have optional Kinect support (meaning that Kinect is not necessary to play the game or that there are optional Kinect minigames included) feature a standard green Xbox 360 case with a purple bar underneath the header, a silhouette of the Kinect sensor and "Better with Kinect Sensor" next to it in white text.^[67]

Kinect launched on November 4, 2010 with 17 titles.^[68] As of September 2009, third-party publishers confirmed by Microsoft to be working on future Kinect titles include Activision Blizzard, Bethesda Softworks, Capcom, Disney Interactive, Electronic Arts, Konami, MTV Games, Namco Bandai, Sega, Square Enix, THQ Inc. and Ubisoft.^[69]

Open source drivers

In November 2010, Adafruit Industries offered a bounty for an open-source driver for Kinect. Microsoft openly voiced its disapproval of the bounty, stating that it "does not condone the modification of its products" and that it had "built in numerous hardware and software safeguards designed to reduce the chances of product tampering".^[70] On November 10, Adafruit announced Héctor Martín as the winner,^[71] ^[72] who had produced a Linux driver that allows the use of both the RGB camera and depth sensitivity functions of the device.^[73] ^[74] Microsoft later clarified their

position, claiming that while they do not condone hacking of either the physical device or the console, the USB connection was left open by design.

“The first thing to talk about is, Kinect was not actually hacked. Hacking would mean that someone got to our algorithms that sit inside of the Xbox and was able to actually use them, which hasn't happened. Or, it means that you put a device between the sensor and the Xbox for means of cheating, which also has not happened. That's what we call hacking, and that's what we have put a ton of work and effort to make sure doesn't actually occur. What has happened is someone wrote an open-source driver for PCs that essentially opens the USB connection, which we didn't protect, by design, and reads the inputs from the sensor. The sensor, again, as I talked earlier, has eyes and ears, and that's a whole bunch of noise that someone needs to take and turn into signal.”

—Microsoft's Alex Kipman speaking formally on NPR's Science Friday^[75]

In December 2010, PrimeSense, whose depth sensing reference design Kinect is based on, released their own open source drivers along with motion tracking middleware called *NITE*.^[76] PrimeSense later announced that it had teamed up with Asus to develop a PC-compatible device similar to Kinect, which will be called *WAVI Xtion* and is scheduled for release in the second quarter of 2011.^[77]

Third party development

Numerous developers are researching possible applications of Kinect which go beyond the system's intended purpose of playing games. For example, Philipp Robbel of MIT combined Kinect with the iRobot Create to map a room in 3D and have the robot respond to human gestures,^[78] while an MIT Media Lab team is working on a JavaScript extension for Google Chrome called *depthJS* that allows the user to control the browser with hand gestures.^[79] Other programmers, including the Robot Locomotion Group at MIT, are using the drivers to develop a motion-controller user interface similar to the one envisioned in the film *Minority Report*.^[80] The developers of MRPT have also integrated open source drivers into their libraries and provided examples of live 3D rendering and basic 3D visual SLAM.^[81] Another team has shown an application that allows Kinect users to play a virtual piano by tapping their fingers on an empty desk.^[82] Oliver Kreylos, a researcher at University of California, Davis, adopted the technology to improve live 3-dimensional videoconferencing, a technology NASA considered adopting in 2011.^[83]

Alexandre Alahi from EPFL presented a video surveillance system that combines multiple Kinect devices to track groups of people even in complete darkness.^[84] Companies So touch and Evoluce have developed presentation software for Kinect which can be controlled by hand gestures; among its features is a multi-touch zoom mode.^[85] In December 2010, the free public beta of HTPC software *KinEmote* was launched; it allows navigation of Boxee and XBMC menus using a Kinect sensor.^[86]

Sales and reception

IGN gave the device 7.5 out of 10, saying that "Kinect can be a tremendous amount of fun for casual players, and the creative, controller-free concept is undeniably appealing", though adding that for "\$149.99, a motion-tracking camera add-on for the Xbox 360 is a tough sell, especially considering that the entry level variation of the Xbox 360 itself is only \$199.99".^[89] *Game Informer* rated Kinect 8 out of 10, praising the technology but noting that the experience takes a while to get used to and that the spatial requirement may pose a barrier.^[88] *Computer and Video Games* called the device a technological gem and applauded the gesture and voice controls, while criticizing the launch lineup and Kinect Hub.^[87]

CNET's review pointed out how Kinect keeps players active with its full-body motion sensing but criticized the learning curve, the additional power supply needed for older Xbox 360 consoles and the space requirements.^[90] Engadget, too, listed the large space requirements as a negative, along with Kinect's launch lineup and the slowness of the hand gesture UI. The review praised the system's powerful technology and the potential of its yoga and dance games.^[91] Kotaku considered the device revolutionary upon first use but noted that games were sometimes unable to

recognize gestures or had slow responses, concluding that Kinect is "not must-own yet, more like must-eventually own."^[96] TechRadar praised the voice control and saw a great deal of potential in the device whose lag and space requirements were identified as issues.^[93] Gizmodo also noted Kinect's potential and expressed curiosity in how more mainstream titles would utilize the technology.^[97] *Ars Technica's* review expressed concern that the core feature of Kinect, its lack of a controller, would hamper development of games beyond those that have either stationary players or control the player's movement automatically.^[98]

The mainstream press also reviewed Kinect. *USA Today* compared it to the futuristic control scheme seen in *Minority Report*, stating that "playing games feels great" and giving the device 3.5 out of 4 stars.^[92] David Pogue from *The New York Times* predicted you will feel a "crazy, magical, omigosh rush the first time you try the Kinect." Despite calling the motion tracking less precise than Wii's implementation, Pogue concluded that "Kinect's astonishing technology creates a completely new activity that's social, age-spanning and even athletic."^[99] *The Globe and Mail* titled Kinect as setting a "new standard for motion control." The slight input lag between making a physical movement and Kinect registering it was not considered a major issue with most games, and the review called Kinect "a good and innovative product," rating it 3.5 out of 4 stars.^[100]

8 million units of the Kinect sensor have been shipped as of January 6, 2011,^[1] surpassing Microsoft's original goal of selling 5 million units by the end of 2010.^[101] 1 million units of the sensor were sold within 10 days of its North American launch.^[102] ^[103] According to the NPD Group, within one month of availability Kinect became the "top-selling accessory item in terms of dollar sales on a year-to-date basis".^[104] According to Wedbush analyst Michael Pachter, about half of all Xbox 360 console sales in December 2010 were Kinect bundles.^[105]

References

- [1] "Kinect sold 8 million units worldwide in the first 60 days on market" (http://ces.gamespot.com/story/6285921/xbox-360-sells-50-million-kinect-8-million?tag=top_stories;title;2). GameSpot. .
- [2] "Microsoft Xbox 360 Kinect Launches November 4" (<http://gizmodo.com/5563148/microsoft-xbox-360-kinect-launches-november-4>). Gizmodo. .
- [3] "Kinect gets UK release date" (<http://www.bbc.co.uk/newsbeat/10996389>). BBC. . Retrieved August 17, 2010. "*It will hit the shelves on 10 November, five days after the US.*"
- [4] "Ya llegaron a Colombia los videojuegos que no necesitan controles [They've arrived in Colombia: controller-free video games]" (<http://www.caracol.tv.com/noticias/cienciaytecnologia/video-197113-ya-llegaron-a-colombia-los-videojuegos-no-necesitan-controles?>) (in Spanish). Caracol TV. .
- [5] "Xbox 360's Kinect given release date for Australia" (<http://123kinect.com/xboxkinect-release-date-australia/>). September 1, 2010. . Retrieved September 3, 2010.
- [6] "Microsoft to launch Kinect in Japan in November" (<http://economictimes.indiatimes.com/infotech/hardware/Microsoft-to-launch-Kinect-in-Japan-in-November/articleshow/6518791.cms>). The Economic Times. .
- [7] "libfreenect Kinect protocol documentation" (https://github.com/OpenKinect/libfreenect/blob/master/doc/kinect_protocol.asciidoc). . Retrieved November 21, 2010.
- [8] "Cirque du Soleil Experience Unveils Kinect for Xbox 360" (<http://www.xbox.com/en-US/community/events/e3/kinect.htm>). Microsoft. June 13, 2010. . Retrieved June 14, 2010. "On the eve of the annual Electronic Entertainment Expo (E3) in Los Angeles, Xbox made entertainment history through a stunning Cirque du Soleil production that brought controller-free gaming and entertainment to life and gave "Project Natal" its real name: **Kinect for Xbox 360**."
- [9] ""Project Natal" 101" (<http://blog.seattlepi.com/digitaljoystick/archives/169993.asp>). Microsoft. 2009-06-01. Archived from the original (<http://download.microsoft.com/download/A/4/A/A4A457B3-DF5D-4BF2-AD4E-963454BA0BCC/ProjectNatalFactSheetMay09.zip>) on 2009-06-01. . Retrieved 2009-06-02.
- [10] Pham, Alex (2009-06-01). "E3: Microsoft shows off gesture control technology for Xbox 360" (<http://latimesblogs.latimes.com/technology/2009/06/microsofte3.html>). Los Angeles Times. . Retrieved 2009-06-01. "The effort aims to attract a broader audience to Microsoft's console. Most of the 30 million Xbox 360s sold since November 2005 have been snapped up by avid young males drawn to complex shooter or adventure games such as Halo and Modern Warfare or R.P.Gs"
- [11] Jotham Lian. "Kinect launches Nov 18 with StarHub tie-up" (<http://www.channelnewsasia.com/stories/technologynews/view/1085935/1.html>). ChannelNewsAsia.com. .
- [12] "New Zealand Kinect Launch Date confirmed!" (<http://123kinect.com/new-zealand-kinect-launch-date/>). September 17, 2010. . Retrieved September 17, 2010.
- [13] "Xbox Kinect Japanese launch date" (<http://123kinect.com/kinect-launch-japan/>). September 14, 2010. . Retrieved September 17, 2010.

- [14] "New Xbox 360, Kinect Sensor and "Kinect Adventures" — Get All Your Controller-Free Entertainment in One Complete Package" (<http://www.microsoft.com/presspass/press/2010/jul10/07-20KinectPackagePR.mspx>). Redmond, Washington: Microsoft. July 20, 2010. . Retrieved July 20, 2010.
- [15] "New Xbox 360, Kinect Sensor and *Kinect Adventures* — Get All Your Controller-Free Entertainment in One Complete Package" (http://www.xbox.com/en-GB/press/kinect-price_200710.htm). London: Microsoft. July 20, 2010. . Retrieved July 20, 2010.
- [16] Boyd, Graeme (July 20, 2010). "Kinect bundled with slim 4GB Xbox 360 Arcade for \$300, new console for \$200 in August" (<http://www.joystiq.com/2010/07/20/kinect-bundled-with-slim-4gb-xbox-360-arcade-for-300-new-conso/>). Twitter. Archived from the original (<http://twitter.com/AceyBongos/status/19004621612>) on July 20, 2010. . Retrieved July 20, 2010. "Euro prices are 149.99 Euro for the camera + Kinect Adventures, 299.99 Euro for the 4GB console bundle."
- [17] Purchase, Robert. "£300 Kinect 250GB bundle confirmed" (<http://www.eurogamer.net/articles/2010-09-08-GBP300-kinect-250gb-bundle-confirmed>). Eurogamer. .
- [18] Citizen, Jessica (December 20, 2010). "Kinect is officially coming to PC" (<http://www.gamepron.com/news/2010/12/20/kinect-is-officially-coming-to-pc/>). GamePron. . Retrieved December 21, 2010.
- [19] Takahashi, Dean (2009-09-05), "How many vendors does it take to make Microsoft's Project Natal game control system?" (<http://venturebeat.com/2009/09/05/how-many-vendors-does-it-take-to-make-microsofts-project-natal-game-control-system/>), *Venture Beat*, , retrieved 2010-01-08
- [20] Press, MS (March 31, 2010). "PrimeSense Supplies 3-D-Sensing Technology to Project Natal for Xbox 360" (http://www.microsoft.com/Presspass/press/2010/mar10/03-31PrimeSensePR.mspx?rss_fdn=Press+Releases). *MsPress*: p. MsPress. . Retrieved March 31, 2010.
- [21] <http://www.primesense.com/?p=535>
- [22] <http://mirror2image.wordpress.com/2010/11/30/how-kinect-works-stereo-triangulation/>
- [23] <http://www.futurepicture.org/?p=116>
- [24] Totilo (January 7, 2010). "Natal Recognizes 31 Body Parts, Uses Tenth of Xbox 360 "Computing Resources"" (<http://kotaku.com/5442775/natal-recognizes-31-body-parts-uses-tenth-of-xbox-360-computing-resources>). *Kotaku*, Gawker Media. . Retrieved November 25, 2010.
- [25] "Microsoft: Kinect doesn't listen in mainland Europe till spring" (<http://123kinect.com/europe-canada-kinect-voice-spring/>). September 1, 2010. .
- [26] Totilo, Stephen (June 5, 2009). "Microsoft: Project Natal Can Support Multiple Players, See Fingers" (<http://kotaku.com/5279531/>). *Kotaku*. Gawker Media. . Retrieved June 6, 2009.
- [27] Wilson, Mark; Buchanan, Matt (June 3, 2009). "Testing Project Natal: We Touched the Intangible" (<http://gizmodo.com/5277954/testing-project-natal-we-touched-the-intangible>). *Gizmodo*. Gawker Media. . Retrieved June 6, 2009.
- [28] "Project Natal in detail" (<http://www.xbox.com/en-GB/news-features/news/Project-Natal-in-detail-050609.htm>). Microsoft. June 5, 2009. . Retrieved November 24, 2009. "Proprietary software at the heart of "Project Natal" is what makes the magic possible. This is what distances "Project Natal" from any other technology on the market..."
- [29] Takahashi, Dean. "Microsoft games exec details how Project Natal was born" (<http://venturebeat.com/2009/06/02/microsoft-games-executive-describes-origins-of-project-natal-game-controls/>). *VentureBeat*. . "The companies are doing a lot of great work with the cameras. But the magic is in the software. It's a combination of partners and our own software."
- [30] Bramwell, Tom. "E3: MS execs: Natal not derived from 3DV" (<http://www.eurogamer.net/articles/e3-natal-not-derived-from-3dv>). *Eurogamer*. Eurogamer Network. .
- [31] Lee, Johnny. "Project Natal" (<http://procrastineering.blogspot.com/2009/06/project-natal.html>). *Procrastineering*. .
- [32] Dudley, Brier. "E3: New info on Microsoft's Natal -- how it works, multiplayer and PC versions" (http://seattletimes.nwsources.com/html/technologybrierdudleysblog/2009296568_e3_new_info_on_microsofts_nata.html). *Brier Dudley's Blog*. The Seattle Times. . "We actually built a software platform that was what we wanted to have as content creators. And then [asked], 'OK, are there hardware solutions out there that plug in?' But the amount of software and the quality of software are really the innovation in Natal."
- [33] "Play.com (UK) : Kinect : Xbox 360 - Free Delivery" (<http://www.play.com/Games/Xbox360/4/10296372/Project-Natal/Product.html#jump-tech>). Play.com. . "This information is based on specifications supplied by manufacturers and should be used for guidance only."
- [34] "libfreenect open source Kinect driver" (<http://git.marcansoft.com/?p=libfreenect.git;a=summary>). .
- [35] "Kinect for Xbox 360" (<http://store.microsoft.com/microsoft/Kinect-Sensor-for-Xbox-360/product/C737B081>). *Microsoft Store*. Microsoft. . "Array of 4 microphones supporting single speaker voice recognition"
- [36] "Project Natal & Its Instruction Manual(!) In The Wild" (<http://kotaku.com/5520812/project-natal--its-instruction-manual-in-the-wild>). Kotaku. April 20, 2010. . Retrieved May 27, 2010.
- [37] "Original Xbox 360 requires separate power connection for Kinect" (<http://www.joystiq.com/2010/06/14/original-xbox-360-requires-separate-power-for-kinect>). Joystiq. June 14, 2010. . Retrieved June 14, 2010.
- [38] Gibson, Ellie (June 5, 2009). "E3: Post-Natal Discussion" (<http://www.eurogamer.net/articles/e3-post-natal-discussion-interview>). *Eurogamer*. Eurogamer Network. pp. 1–2. . Retrieved June 9, 2009. "Essentially we do a 3D body scan of you. We graph 48 joints in your body and then those 48 joints are tracked in real-time, at 30 frames per second. So several for your head, shoulders, elbows, hands, feet..."
- [39] "E3 2009: Microsoft Press Conference Live Blog" (<http://xbox360.ign.com/articles/988/988356p1.html>). IGN. June 1, 2009. . Retrieved June 1, 2009.
- [40] French, Michael (November 11, 2009). "Natal launch details leak from secret Microsoft tour" (<http://www.mcvuk.com/news/36466/Natal-launch-details-leak-from-secret-Microsoft-tour>). *MCV*. Intent Media. . Retrieved November 11, 2009. "November 2010 release, 5m

- units global ship, 14 games, and super-low sub-£50 price [...] Microsoft is planning to manufacture 5m units for day one release, with a mix of console and camera plus solus SKUs expected. [...] The device should cost under £100,00 when sold solo. The somewhat confirmed price is stated to be at 150\$ (USD) when sold alone this is 50\$ higher than the original 99\$ projected price. [...] Another even says the camera could even retail for just £30."
- [41] Channell, Mike (October 3, 2009). "Mark Rein Interview" (<http://www.oxm.co.uk/article.php?id=14296>). *Xbox 360: The Official Xbox Magazine*. Future Publishing. . Retrieved October 11, 2009. "And you know, I think they said they were going to ship Natal with every Xbox when they actually launch the thing, so everybody will have one."
- [42] Brightman, James (August 21, 2009). "Xbox 360 Slim? Analysts Weigh In" (<http://www.industrygamers.com/news/xbox-360-slim-analysts-weigh-in/>). *IndustryGamers*. pp. 1–2. . Retrieved September 2, 2009.
- [43] Kennedy, Sam (June 12, 2009). "Rumor: Xbox Natal is Actually Microsoft's Next Console" (<http://www.1up.com/do/newsStory?cId=3174762>). *IUP.com*. UGO Entertainment. . Retrieved June 19, 2009.
- [44] Graft, Kris; Sheffield, Brandon (June 16, 2009). "Microsoft's Future Begins Now: Shane Kim Speaks" (http://www.gamasutra.com/view/feature/4053/microsofts_future_begins_now_.php). *Gamasutra*. Think Services. p. 3. . Retrieved June 20, 2009.
- [45] Gruener, Wolfgang (2009). "Ballmer announces 2010 Xbox 360 at The Executive Club Chicago" (<http://www.tgdaily.com/content/view/42931/98/>). *TG Daily* (Chicago: Tigervision Media). 2009-06-19. . Retrieved 2009-06-19. "I am talking about the Global Leaders luncheon with Steve Ballmer yesterday in Chicago, during which the executive announced 'a new Xbox for 2010.' [...] I triple-checked with a few friends who were sitting in the audience as well and it seemed pretty clear to them that a new Xbox is coming in 2010, after what Ballmer had said."
- [46] Reilly, Jim (2009-06-19). "Ballmer Clarifies His 'New' Xbox 360 Comment" (<http://xbox360.ign.com/articles/996/996584p1.html>). *IGN*. IGN Entertainment. . Retrieved 2009-06-21. "I confused the issue with my poorly chosen words. There is no news in my comments. Things are as reported after E3. Sorry."
- [47] "Generation When?" (<http://www.edge-online.com/magazine/generation-when/>). *Edge Online*. Future plc. 2009-06-18. p. 2. . Retrieved 2009-06-22. "Since the NES, every five years or so a distinct new wave of technology has washed across the industry, bringing with it new power and functions to a market galvanised by the promise of faster, better, more."
- [48] Crecente, Brian (September 25, 2009). "Playing Space Invaders, Katamari Damacy on Natal" (<http://kotaku.com/5367460/playing-space-invaders-katamari-damacy-on-natal>). *Kotaku*. Gawker Media. . Retrieved September 26, 2009.
- [49] Chester, Nick (September 25, 2009). "TGS 09: Patching older 360 games to work with natal not possible" (<http://www.destructoid.com/tgs-09-patching-older-360-games-to-work-with-natal-not-possible-149867.phtml>). *Destructoid*. . Retrieved September 26, 2009.
- [50] "Microsoft drops internal Natal chip" (http://www.gamesindustry.biz/articles/microsoft-drops-internal-natal-chip_1). .
- [51] "Microsoft's body-sensing, button-busting controller" (<http://www.newscientist.com/article/mg20527426.800-microsofts-bodysensing-buttonbusting-controller.html>). .
- [52] "Kipman: Kinect CPU use down to single-digits | News" (<http://www.gamesindustry.biz/articles/2010-11-02-kipman-kinect-uses-a-single-digit-percentage-of-the-360-cpu>). *Gamesindustry.biz*. . Retrieved 2010-11-04.
- [53] "Microsoft Planning Special Event for Project Natal on June 13th" (<http://www.xboxpotato.com/2010/03/project-natal-e3-event/>). 2010-03-25. . Retrieved 2010-03-25.
- [54] Toulouse, Stephen (2010-06-13). "What's in a name? Everything and nothing, depending." (<http://stepto.com/Lists/Posts/Post.aspx?ID=620>). *Stepto.com*. . Retrieved 2010-07-02.
- [55] Snider, Mike (2010-01-04). "Microsoft Kinect gets into motion as E3 confab kicks off" (http://www.usatoday.com/tech/gaming/2010-06-14-vidgame14_ST_N.htm). *Usatoday.Com*. . Retrieved 2010-06-15.
- [56] Chris Kohler (2011-01-07). "Microsoft Will Support Kinect on PC, Ballmer Says" (<http://www.wired.com/gamelif/2011/01/kinect-pc/>). *Wired News*. . Retrieved 2011-01-08.
- [57] Atkinson, Claire. "Microsoft gears up for big launch of Kinect controller-free device for Xbox - NYPOST.com" (http://www.nypost.com/p/news/business/microsoft_move_3gVmAyryJuD6px1dV7LeDP?CMP=OTC-rss&FEEDNAME=). *New York Post*. .
- [58] "Kinect Ads: 'You Are the Controller'" (<http://www.microsoft.com/presspass/features/2010/oct10/10-21kinectads.msp>). *Microsoft*. .
- [59] "Oprah Audience Explodes Into Hysterics Over Free Xbox Kinects" (<http://gizmodo.com/5668115/oprah-audience-explodes-into-hysterics-over-free-xbox-kinects>). *Gizmodo*. .
- [60] Mitchell, Richard. "Jimmy Fallon gives everyone in his audience a Kinect" (<http://www.joystiq.com/2010/11/05/jimmy-fallon-kinect/>). *Joystiq*. .
- [61] "Ashley Tisdale Hosts The Xbox Kinect Event" (<http://www.bsckids.com/2010/10/ashley-tisdale-hosts-the-xbox-kinect-event/>). *Bsckids.com*. .
- [62] Tom Goldman. "Greasy Fingers Don't Matter With Kinect" (<http://www.escapistmagazine.com/news/view/104937-Greasy-Fingers-Dont-Matter-With-Kinect/>). *The Escapist*. .
- [63] Chris Greenhough. "Time Square grinds to a halt for Microsoft Kinect" (<http://www.inquisitr.com/89380/time-square-grinds-to-a-halt-for-microsoft-kinect/>). *Inquisitr.com*. .
- [64] Mike Luttrell. "Microsoft knows how to throw a Kinect party" (<http://www.tgdaily.com/games-and-entertainment-brief/52345-microsoft-knows-how-to-throw-a-kinect-party>). *TGDaily*. .
- [65] "Xbox.com: Kinect" (<http://www.xbox.com/en-US/kinect>). *Xbox.com*. Microsoft. . Retrieved 2010-09-18.
- [66] "Xbox.com: Kinect Games" (<http://www.xbox.com/en-US/kinect/games.htm>). *Xbox.com*. Microsoft. . Retrieved 2010-10-20.

- [67] "Some Games Are "Better With Kinect", Others "Require" It News" (<http://www.totalvideogames.com/Xbox-360/news/Some-Games-Are-Better-With-Kinect-Others-Require-It-15441.html>). TotalVideoGames. . Retrieved 2010-07-02.
- [68] Van Camp, Jeffrey. "Microsoft reveals Kinect launch games" (<http://www.digitaltrends.com/gaming/microsoft-reveals-kinect-launch-games/>). *digitaltrends.com*. .
- [69] "Xbox 360's "Project Natal" Awakens Imagination of Global Video-Game Industry" (<http://www.microsoft.com/presspass/press/2009/sep09/09-23tgsnatalpr.mspx>). Microsoft. September 24, 2009. . Retrieved November 4, 2009.
- [70] "Microsoft furious at 2000 bounty for open source Kinect drivers" (<http://www.techeye.net/software/microsoft-furious-at-2000-bounty-for-open-source-kinect-drivers>). TechEye. November 5, 2010. .
- [71] "Adafruit Contest Winner Announcement" (<http://www.adafruit.com/blog/2010/11/10/we-have-a-winner-open-kinect-drivers-released-winner-will-use-3k-for-more-hacking-plus-an-additional-2k-goes-to-the-eff/>). . Retrieved November 11, 2010.
- [72] "Me gusta trastear [I like to tinker]" (http://www.elpais.com/articulo/tecnologia/gusta/trastear/elpepatec/20101111elpepatec_4/Tes) (in Spanish). El País. .
- [73] "OpenKinect's libfreenect" (<https://github.com/OpenKinect/libfreenect>). . Retrieved November 15, 2010.
- [74] "Open Source Kinect contest has been won" (<http://hackaday.com/2010/11/11/open-source-kinect-contest-has-been-won>). *hackaday.com*. .
- [75] "Microsoft: Kinect wasn't hacked, USB port left open 'by design'" (<http://www.techflash.com/seattle/2010/11/microsoft-kinect-not-hacked-left.html>). *techflash.com*. .
- [76] Mitchell, Richard. "PrimeSense releases open source drivers, middleware for Kinect" (<http://www.joystiq.com/2010/12/10/primense-releases-open-source-drivers-middleware-for-kinect/>). *Joystiq*. .
- [77] "PrimeSense Teams Up with ASUS to Bring Intuitive PC Entertainment to the Living Room with WAVI Xtion" (<http://www.businesswire.com/news/home/20110103005276/en/PrimeSense-Teams-ASUS-Bring-Intuitive-PC-Entertainment>). Business Wire. .
- [78] Jenna Wortham (November 21, 2010). "With Kinect Controller, Hackers Take Liberties" (http://www.nytimes.com/2010/11/22/technology/22hack.html?_r=1). The New York Times. . Retrieved November 25, 2010.
- [79] <http://github.com/doug/depthjs>
- [80] Savov, Vlad (2010-12-09). "Kinect finally fulfills its Minority Report destiny (video)" (<http://www.engadget.com/2010/12/09/kinect-finally-fulfills-its-minority-report-destiny-video/>). Engadget. . Retrieved 2010-12-09.
- [81] http://www.mrpt.org/Kinect_and_MRPT
- [82] James Newton. "Become Tom Hanks in Big with Kinect's Giant Piano Hack" (http://www.kinectaku.com/news/2010/12/become_tom_hanks_in_big_with_kinects_giant_piano_hack). *KINECTaku.com*. .
- [83] Newton, Casey (January 10, 2011). "Microsoft's Xbox Kinect beyond hackers, hobbyists" (<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2011/01/09/BUO01H4ISI.DTL#ixzz1Ag01V1V9>). San Francisco Chronicle. .
- [84] Bonvin, Didier. "Connecting Kinects for Group Surveillance" (<http://actu.epfl.ch/news/connecting-kinects-for-group-surveillance/>). .
- [85] "Control your PowerPoint and PDF presentations with Kinect" (<http://www.prllog.org/11120062-control-your-powerpoint-and-pdf-presentations-with-kinect.html>). PRLlog.org. .
- [86] Protalinski, Emil. "KinEmote brings Kinect to Boxee and XBMC on Windows" (<http://www.techspot.com/news/41724-kinemote-brings-kinect-to-boxee-and-xbmc-on-windows.html>). TechSpot. .
- [87] Tim Ingham (November 4, 2010). "Kinect Review" (<http://www.computerandvideogames.com/article.php?id=273523>). Computer and Video Games. . Retrieved November 3, 2010.
- [88] Annette Gonzalez (November 4, 2010). "Kinect Hardware Review: Wave Of The Future" (<http://gameinformer.com/b/news/archive/2010/11/03/kinect-hardware-review.aspx>). Game Informer. . Retrieved November 3, 2010.
- [89] Scott Lowe (November 4, 2010). "Microsoft Kinect Review" (<http://gear.ign.com/articles/113/1132213p1.html?>). IGN. . Retrieved November 3, 2010.
- [90] Jeff Bakalar (November 4, 2010). "Xbox 360 Kinect Review" (http://reviews.cnet.com/xbox-360-games/xbox-360-kinect-xbox/4505-11457_7-34182443.html?tag=cnetRiver#reviewPage1). CNET. . Retrieved November 3, 2010.
- [91] Ross Miller (November 4, 2010). "Kinect for Xbox 360 review" (<http://www.engadget.com/2010/11/04/kinect-for-xbox-360-review/>). *Engadget*. AOL. . Retrieved November 3, 2010.
- [92] Brett Molina (November 4, 2010). "We play Kinect..." (<http://content.usatoday.com/communities/gamehunters/post/2010/11/review-microsoft-kinect-marks-big-leap-for-motion-gaming/1>). *USA Today*. . Retrieved November 4, 2010.
- [93] "Microsoft Kinect review" (<http://www.techradar.com/reviews/gaming/games-consoles/controllers/microsoft-kinect-905010/review>). *TechRadar*. November 4, 2010. . Retrieved November 8, 2010.
- [94] Ron Harris (November 4, 2010). "Microsoft Kinect review" (<http://www.washingtonpost.com/wp-dyn/content/article/2010/11/04/AR2010110404178.html>). *The Washington Post*. . Retrieved November 10, 2010.
- [95] Jeffrey L. Wilson (November 4, 2010). "Microsoft Kinect for Xbox 360" (<http://www.pcmag.com/article2/0,2817,2372069,00.asp>). *PCMag.com*. . Retrieved November 10, 2010.
- [96] Stephen Totilo (November 3, 2010). "Review: Kinect" (<http://kotaku.com/5680501/review-kinect?skyline=true&s=i>). *Kotaku*. Gawker Media. . Retrieved November 3, 2010.
- [97] Jason Chen (November 4, 2010). "Xbox Kinect Review: It's a Brand New Console" (<http://gizmodo.com/5680205/xbox-kinect-review-its-a-brand-new-console>). *Gizmodo*. . Retrieved November 4, 2010.

- [98] "Buy a house, clean your floor, move your butt: Ars reviews Kinect" (<http://arstechnica.com/gaming/reviews/2010/11/buy-a-house-clean-your-floor-move-your-butt-ars-reviews-kinect.ars/6>). Ars Technica. 2010-11-04. .
- [99] David Pogue (November 4, 2010). "Kinect Pushes Users Into a Sweaty New Dimension" (http://www.nytimes.com/2010/11/04/technology/personaltech/04pogue.html?pagewanted=1&_r=1&src=busln). *The New York Times*. . Retrieved November 4, 2010.
- [100] Chad Sapieha (November 4, 2010). "Microsoft's Kinect sets new standard for motion control" (<http://www.theglobeandmail.com/news/technology/personal-tech/gadgets/review-microsofts-kinect-sets-new-standard-for-motion-control/article1784987/page1/>). *The Globe and Mail*. . Retrieved November 4, 2010.
- [101] "Microsoft's 2.5 million Kinect sales expected to double by Christmas" (<http://www.financenews.co.uk/entertainment/microsofts-2-5-million-kinect-sales-expected-to-double-by-christmas/>). Finance News. .
- [102] Josh Lowensohn. "Kinect officially a hit with 1 million units sold" (http://news.cnet.com/8301-10805_3-20022878-75.html). cnet. .
- [103] "Microsoft Sells 1 Million Kinect Units In The First 10 Days" (<http://blogs.forbes.com/oliverchiang/2010/11/15/microsoft-sells-1-million-kinect-units-in-the-first-10-days/?boxes=financechannelforbes>). Forbes. .
- [104] Thorsen, Tor. "DS, Call of Duty: Black Ops top US Nov. chart - NPD" (<http://www.gamespot.com/pc/action/callofduty7workingtitle/news.html?sid=6285121>). GameSpot. .
- [105] James Brightman. "Microsoft's Xbox 360 Kinect Bundles Outsold Move Bundles By 5:1" (<http://www.industrygamers.com/news/microsofts-xbox-360-kinect-bundles-outsold-move-bundles-by-51/>). Industrygamers.com. .

External links

- Official website (<http://http://www.xbox.com/kinect/>)
- Kinect Playlist (<http://www.youtube.com/user/xbox#grid/user/13DAE6AFF31073FB>) at the official YouTube Xbox channel
- Kinect (<http://www.microsoft.com/uk/wave/hardware-kinect.aspx>) on Microsoft Wave
- KinectShare (<http://kinectshare.com/>) KinectShare.com
- iFixit teardown of Kinect (<http://www.ifixit.com/Teardown/Microsoft-Kinect-Teardown/4066/1>)
- Patent application (<http://v3.espacenet.com/publicationDetails/biblio?CC=WO&NR=2010088032A2&KC=A2&FT=D&date=20100805&DB=EPODOC>) relating to Kinect

Article Sources and Contributors

Kinect *Source:* <http://en.wikipedia.org/w/index.php?oldid=414881074> *Contributors:* 14montel, 17steve, 5 albert square, A man alone, APAD, Abhishikt, Aceleo, Adam9325, Adamc7, AdriaanGTAP, Affleck, Agent00f, Alan Liefing, Alansohn, Ale jrb, AlexiusHoratius, Allmorris, Alphathon, Alrik Fassbauer, Andypany2020, AnelZukic, Anna Lincoln, Anonymous Dissident, Antiuser, Awesome Fool, Bacardee, Back ache, BadMuroZ, Banaticus, Baxpace, Bdids14, Bellagrace063, Bender235, Bermanya, Betmeno, Biker Biker, Bluefoxicy, Boing! said Zebedee, Bongwarrior, Borisduck, Brianreading, Brighterorange, Brooksjbo, C628, Cadsuane Melaidhrin, Calmer Waters, CaptRik, Chris TC01, Chzz, Closeteuphoria, CommonsDelinker, Complete Prat, ConCompS, Coopmaster123, Courcelles, CrazyInSane, Csloomis, Cybergeek6, DARTH SIDIOUS 2, DKqwerty, DMCer, Da-rb, Dancter, Danielgb123, Darguz Parsilvan, Davewild, Deathawk, DemonBarberTodd, Department of Redundancy Department, DerBorg, Dieuz, Difu Wu, Digana, Djpaetkau, DonPMitchell, Dotarray, Downunder1, Drunken Pirate, Dskoll, Duncan, Dylanspronck, E. Ripley, EVula, Ed g2s, Eekerz, Elberth 00001939, EpicAmbu, Eponymous-Archon, Excirial, Ezequielj, FeralMoose, Fernandosmission, Ffgamera, Floul1, Fourthords, Frecklefoot, FuelledByJordan, Funkamatic, Fæ, GSK, Gamesraid, Gary King, George2001hi, Gerry Tulong, Gilbertgagnon, Gilliam, Glane23, Gobbleswogglor, GrantyO, Gregersonke, Grunts Company, Guinea pig warrior, HalfShadow, Hdezela, Headbomb, HelloAnnyong, Heymid, HifiGamer, Hotlikefrosty, Icairms, Iceseartles, Ike-bana, ImplyingIwonteditstuff, Interchange88, Iridescent, J.delanoy, JBSupreme, JCDenton2052, JForget, JWaters, Ja 62, JamesBWatson, Jean-Frédéric, Jeff G., Jeffrey Mall, Jellytea, Jericho1337, Jhsounds, Jjgp80, Jlkeegan, JosephinaWolfexeld, Josh7289, Jujutacular, Justowen, KCMraz, KOLANICH, KP-TheSpectre, Kaxero, Keckles, KenAdamsNSA, KiasuKiasiMan, KieferSkunk, Kimdino, Kiranantovadassery, Krahat96, Krashlandon, Kuguar03, Kwamikagami, L Kensington, Lerdthenerd, Letigre101, Liamb2001, Likelife, Lillemanden, LinDrug, Ljkitson, Logical Fuzz, Lopifalko, Luph25, Mahanga, Marek69, Maria cuando seras mia, Markhaug, Markhoney, Martarius, Masem, MasterQuest1984, McDoobAU93, McGeddon, Mchaddock, Mephiles602, Mhiji, Michaplot, Middlederun, Mika1h, Mikeo, Minimac's Clone, Mion, Moogwrench, MrZapper, Mrrayk, Mshatwan, MuZemike, N5iln, NGMan62, NJA, NebraskaDontAsk, NerdyScienceDude, Nick Wilson, Nickin, Niels Olson, Nightscream, Nishit gandhi, Nixon, Ntyler01mil, Orange Suede Sofa, OrangeDog, Oscartheecat, Ost316, Oxilium, PMDrive1061, Pcuser42, Pedro, Pedro thy master, Perseus8235, Petron12345, Pipedreamgrey, Pointillist, Pownerus, Prolog, Qwyrxian, R1bb3t, Rajpaj, Rannpháirtí anaithnid, Reach Out to the Truth, Reaper Eternal, RekishijEJ, Resnov1997, Richard Wolf VI, Richiekim, Richwales, Rmosler2100, Rob-beatz, Rodhullandemu, Ronhjones, SCHLEGEBAGLE, Sammy00193, Sandb, Sdornan, Seaphoto, Seireeni, Sfazzio, Shadow Android, Shadowjams, Sion8, Skomorokh, Sleske, Slon02, Smappy, Snakeferreira, Snigbrook, SoCalSuperEagle, South Bay, Spencerbolger, Spitfire19, Sriranjn, Stenver, Stillwaterising, Stolsvik, SudoGhost, SuperHamster, Supfoolio, Svick, Synthmon, TPIRFanSteve, Tarchon, Tbotch, Tentimook, Th1rt3en, The Thing That Should Not Be, TheBlasphemous1, Thesevenses, Thevilma51, ThomasO1989, Thumperward, Tide rolls, Timmy po, Tomfin, Tommy2010, Tophtucker, TurboGUY, Turkeyphant, Twest2665, UKER, Umuhk, Unity74, Victory93, Vjdchauhan, Wayne Slam, Whisky drinker, Wikidemon, William Avery, Wonchop, Woohookitty, Wrightfront, X NorAxeR X, X201, Xander756, Xxxjust2awesomexxx, Yeokaiwei, YoshackFyre, Zachdms, Ziyuang, Zomic13, ZooFari, 914 anonymous edits

Image Sources, Licenses and Contributors

File:Kinect logo print.png *Source:* http://en.wikipedia.org/w/index.php?title=File:Kinect_logo_print.png *License:* unknown *Contributors:* User:BotMultichillT

File:KinectSensor.png *Source:* <http://en.wikipedia.org/w/index.php?title=File:KinectSensor.png> *License:* Creative Commons Attribution-Sharealike 3.0 *Contributors:* User:Dancter, user:Alphathon

Image:KinectTechnologiesE3.jpg *Source:* <http://en.wikipedia.org/w/index.php?title=File:KinectTechnologiesE3.jpg> *License:* unknown *Contributors:* Dylanspronck, We hope

Image:Kinect Holiday 2010.jpg *Source:* http://en.wikipedia.org/w/index.php?title=File:Kinect_Holiday_2010.jpg *License:* Creative Commons Attribution-Sharealike 2.0 *Contributors:* JohnAStele

License

Creative Commons Attribution-Share Alike 3.0 Unported
<http://creativecommons.org/licenses/by-sa/3.0/>