

binding precedent. *United States v. Dowd*, 451 F.3d 1244, 1253 (11th Cir.2006).

The district court did not err in enhancing Gonzalez's sentence using a prior conviction not alleged in the indictment or proven to a jury beyond a reasonable doubt because such practice is permitted under *Almendarez-Torres*.

III. CONCLUSION

Because U.S.S.G. § 2L1.2(b)(1)(A)(ii) authorizes a 16-level enhancement for a "crime of violence" conviction, the district court did not err in finding Gonzalez's previous conviction for aiding and abetting a bank robbery warranted the application of such enhancement to Gonzalez's sentence. Furthermore, Gonzalez's 50-month sentence is both procedurally and substantively reasonable, and Gonzalez's constitutional challenge to her sentence is meritless.

AFFIRMED.

**RICOH COMPANY, LTD.,
Plaintiff-Appellant,**

v.

**QUANTA COMPUTER INC., Quanta
Storage, Inc., Quanta Computer USA,
Inc., and NU Technology, Inc., Defen-
dants-Appellees,**

and

**Business Line Data, Philips Optical
Storage, and Philips Taiwan,
Ltd., Defendants.**

No. 2007-1567.

United States Court of Appeals,
Federal Circuit.

Dec. 23, 2008.

Rehearing and Rehearing En Banc
Denied Feb. 17, 2009.

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John C. Rozendaal, Kellogg, Huber, Hansen, Todd, of Washington, DC, argued for plaintiff-appellant. With him on the brief were Mark C. Hansen, Michael E. Joffre, Richard H. Stern. Of counsel on the brief was Ivan S. Kavrukov, Cooper & Dunham LLP, of New York, NY.

Terrence D. Garnett, Paul, Hastings, of Los Angeles, CA, argued for Defendants-Appellees and Defendants. With him on the brief were Vincent K. Yip, Peter J. Weid, and Jay C. Chiu. Of counsel were Hua Chen, Daniel Prince, Todd Snyder, and Katherine F. Murray.

Before GAJARSA, LINN, and DYK Circuit Judges.

PER CURIAM.

This is a patent infringement case. Plaintiff-appellant Ricoh Company, Ltd. ("Ricoh") appeals from a summary judgment dismissing all claims against defendant-appellees Quanta Computer Inc. ("QCI"), Quanta Storage, Inc. ("QSI"), Quanta Computer USA, Inc. ("QCA"), and NU Technology, Inc. ("NU"). On summary judgment, the district court ruled that the asserted claims of U.S. Patent No. 6,631,109 ("the '109 patent") are invalid for obviousness; that the accused devices do not practice the methods of the asserted claims of U.S. Patent No. 6,172,955 ("the

'955 patent"); and that Ricoh failed to present evidence sufficient to create a material issue of fact as to either direct or indirect infringement of U.S. Patent Nos. 5,063,552 ("the '552 patent") and 6,661,755 ("the '755 patent") by the defendant-appellees. *Ricoh Co. v. Quanta Computer, Inc.*, 579 F.Supp.2d 1110 (W.D.Wisc.2007) ("Summary Judgment Order"). Because the district court applied erroneous legal standards for assessing (1) whether Quanta contributorily infringed the '552 and '755 patents and (2) whether QSI induced infringement of the '552 and '755 patents, the district court's summary judgment of noninfringement is vacated on these issues. The remainder of the decision is affirmed in all respects.

BACKGROUND

The patents in suit are directed to various aspects of optical disc drive technology.¹ Recordable optical discs and disc drives (e.g., CD-R, DVD-R) allow a user to permanently record data, and rewritable optical discs and disc drives (e.g., CD-RW, DVD-RW) allow a user to record, erase, or overwrite data. Recording speeds are expressed as multiples of a nominal standard speed referred to as "1X speed." 1X speed corresponds to a disc having a linear velocity of 1.2 to 1.4 meters per second ("m/s") relative to the laser beam, while a 4X speed corresponds to a linear velocity of 4.8 to 5.6 m/s.²

The '109 patent is directed to methods and apparatuses for generating a particular pulse sequence for recording information to a rewritable optical disc. '109 patent col.3 l.66 to col.4 l.30. Rewritable optical discs store information on a

1. The asserted patents use both "disc" and "disk." For consistency, we use "disc" except where quoted material differs.

2. A laser is used as the light source for reading and writing of optical discs. Linear velocity refers to the velocity at which a particular spot on the disc passes over the laser beam.

"phase change" material, usually a metal alloy. *Id.* at col.1 ll.17-22. When writing, a rewritable optical disc drive can thus use a laser pulse sequence or write strategy to change the material from a relatively crystalline phase (having a more ordered atomic structure) to a relatively amorphous phase (having a more disordered atomic structure), and vice versa. *Id.* at col.2 ll.8-15. When reading, the laser can detect these regions based on their different reflective properties.

The asserted method claims of the '109 patent cover a specific write strategy for making legible marks on phase-change optical discs over a wide range of disc speeds. Asserted claim 1 of the '109 patent states:

An optical recording method which records a sequence of data blocks onto a recording layer of an optical recording medium by emitting light to the recording layer of the medium and changing a phase of a recording material of the recording layer, comprising the steps of: applying a light source driving power to a light source to control emission of a light beam to the recording layer of the medium, the driving power including a sequence of mark and space portions, each mark portion having a pulse width that corresponds to a multiple of a period T of a write clock based on a write data modulation method;

setting a multi-pulse waveform of each mark portion of the driving power that includes a front-end portion, a multi-pulse portion and a tail-end portion, the front-end portion having a first pulse width t_1 with a high-power write level P_w and starting from a middle-power erase level P_e , the multi-pulse portion including a sequence of write pulses each having a second pulse width t_2 with the write level P_w and a third pulse width t_3 with a low-power base level P_b ,

the multi-pulse portion having a given duty ratio $z = t_2/(t_2 + t_3)$, and the tail-end portion having a fourth pulse width t_4 with the base level P_b and ending at the erase level P_e ;

setting a linear velocity of rotation of the medium at a controlled speed; and

controlling the waveform when the linear velocity of rotation of the medium is set in a high-speed range from 5 m/s to 28 m/s, such that the first pulse width t_1 of the front-end portion ranges 0.1 T to 1T and the fourth pulse width t_4 of the tail-end portion ranges 0.2T to 1.3T.

Id. at col. 12 l.65 to col. 13 l.28.

The '955 patent is directed to methods and apparatuses for formatting rewritable optical discs. '955 patent col.1 ll.10-14. For certain types of recording modes, a rewritable disc must be formatted by dividing the recording area on the disc into fixed-sized units, called packets. *Id.* at col.2 ll.14-19. If formatting occurs as a foreground process, the optical disc drive is incapable of performing read or write commands during the formatting period. *Id.* at col.2 ll.22-29. Thus, the '955 patent teaches formatting as a background process, such that the background formatting can be interrupted to carry out a read or write command. The optical disc drive employs background formatting by misinforming the host computer that it is not busy formatting, allowing the host computer to send read or write commands to the drive. *Id.* at col.4 ll.20-24.

Asserted claim 8 of the '955 patent states:

A formatting method for formatting a rewritable optical disc, data being recorded on said optical disc by using a fixed packet write method, said formatting method comprising the steps of: starting a formatting process for said optical disc as a background process, the

formatting process being performed so as to fill a recording area of said optical disc by packets having a fixed length; enabling execution of at least one of a recording process and a reproducing process by interrupting the formatting process and resuming the formatting process after the at least one of the recording process and the reproducing process is ended; and ending the formatting process after the recording area to be formatted has been filled by the packets having the fixed length.

'955 patent col. 13 ll.34-50.

The '552 patent is directed to an apparatus and method for controlling the velocity at which a disc drive spins an optical disc. Optical disc drives typically spin discs at either a constant angular velocity ("CAV") or a constant linear velocity ("CLV"). '552 patent col.1 ll.19-24. In a CAV system, the disc completes the same number of revolutions per unit time, regardless of where on the disc the laser beam is positioned. *Id.* at col.1 ll.25-38. In a CLV system, the linear velocity of the disc is constant relative to the laser beam, such that the disc is turning faster when the laser is near the center of the disc and slower when the laser is near the outer edge of the disc. *Id.* at col.1 ll.39-46. The use of a CLV system increases the recording capacity of an optical disc but requires more complicated machinery in the optical disc drive. *Id.* at col.2 ll.15-36. The invention of the '552 patent addresses this trade-off through the use of Zone-CLV. Zone-CLV, as claimed in the '552 patent, divides an optical disc into annular zones, wherein each zone is recorded at constant linear velocity, but different linear velocities are used for different zones. '552 patent col.3 ll.5-68.

Asserted claim 1 of the '552 patent states:

A method for controlling an information recording and/or reproduction speed " f " and a rotation speed " n " of an optical disk used in an information recording and/or reproduction device, said optical disk having a plurality of tracks in the form of concentric circles or a spiral, said information recording and/or reproduction device being adapted to access said tracks by means of a light beam while rotating said optical disk, thereby to optically record information on or reproduce information from said tracks, said method comprising the steps of:

dividing said tracks into a plurality of concentric annular blocks which are different in radius from each other;

changing said information recording and/or reproduction speed " f " in accordance with the radius of a track to be accessed in such a manner that said recording and/or reproduction speed " f " is constant within a block but different as between said blocks depending on the block radii; and

changing said rotation speed " n " of said optical disk in such a manner that $f/(n \cdot r)$ is constant, where " r " is the radius of said track to be accessed.

'552 patent col.8 l.48 to col.9 l.3.

The '755 patent is directed to methods of writing data to optical discs in multiple sessions. '755 patent col.3 ll.34-44. Optical disc drives typically store the data to be written to the optical disc in a temporary memory called the buffer. *Id.* at col.1 ll.37-40. Many optical disc drives can write data to a disc faster than the data is received by the buffer, which can cause the buffer to go empty—a condition known as "buffer run." *Id.* at col.1 ll.54-63. In addition, at the time the '755 patent application was filed, conventional disc drive technology necessitated that an entire disc or track be written in a single session. *Id.* at col.1

11.29-33. Buffer run could thus cause such a drive to write nonsense or dummy data to the disc, which could cause read errors or render the disc unusable. *Id.* at col.1 11.47-52. The methods of the '755 patent solve this problem by allowing the write operation to pause when the buffer runs low, which ensures that no dummy data is recorded to the disc. *Id.* at col.2 11.62-67.

Asserted claim 1 of the '755 patent states:

A method of recording on an optical disc recording media, said method comprising the steps of:

transferring stored input information to an encoder;

transferring encoded information to a record circuit;

causing an input buffer to contain less than a threshold amount of said input information; and

when said input buffer contains less than the threshold amount of said input information, pausing said transferring of said encoded information, to stop said record circuit at a first point on said optical disk recording media while maintaining said encoded information; and

wherein said record circuit does not write any run-out blocks while paused.

'755 patent col.8 11.51-65.

Quanta Computer Inc. ("QCI") is a large manufacturer of notebook computers. QCI does not, however, sell notebooks directly to consumers. It is an original equipment manufacturer ("OEM") and sells its products to other companies for retail marketing. QCI is a one-third owner of Quanta Storage, Inc. ("QSI"), which

manufactures optical disc drives. Like QCI, QSI is an OEM. It does not sell direct to consumers, but sells products such as optical disc drives to its U.S. customers, including NU Technologies, who in turn sell to consumers. QCI also owns more than ten percent of Quanta Computer USA, Inc. ("QCA"), which is a California company that repairs notebook computers for branded computer companies. QCI, QSI, and QCA are hereinafter collectively identified as "Quanta."

Ricoh filed suit against Quanta and NU, accusing them of directly and indirectly infringing each of the patents in suit.³ On summary judgment, the district court ruled that (1) the asserted claims of the '109 patent are obvious; (2) the asserted claims of the '955 patent are not infringed; and (3) issues of material fact exist as to whether the accused devices perform the methods of the asserted claims of the '552 and '755 patents. *Summary Judgment Order*, 579 F.Supp.2d at 1116, 1118, 1121, 1122. With respect to whether the '552 and '755 patents are infringed by Quanta and NU, the district court further ruled that (1) Quanta does not directly infringe under § 271(a) because it neither sells nor offers to sell the patented methods; (2) NU does not directly infringe under § 271(a) because Ricoh presented no evidence to show either that NU tested the accused devices or that the tests it did undertake were conducted in a manner practicing the asserted claims of these patents; (3) neither Quanta nor NU contributorily infringe under § 271(c) because all of the devices sold have substantial noninfringing uses; and (4) individually QSI⁴ does not actively induce infringement un-

3. Defendant-appellees Quanta and NU filed third-party indemnification claims against Philips Taiwan, Ltd., Philips Optical Storage, and Business Line Data. The district court dismissed these claims as moot upon the dismissal of Ricoh's claims against Defendant-

appellees. *Summary Judgment Order*, 579 F.Supp.2d at 1112.

4. Ricoh asserted a § 271(b) claim for active inducement against QSI only. *Summary Judgment Order*, 579 F.Supp.2d at 1124-25.

der § 271(b) because Ricoh failed to put forth evidence sufficient to create a material issue of fact as to QSI's intent. *Id.* at 1123–26. Accordingly, the court dismissed all of Ricoh's claims against Quanta and NU and entered a final judgment. Ricoh filed a timely notice of appeal, and we have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

Summary judgment is appropriate if “there is no genuine issue as to any material fact and . . . the movant is entitled to a judgment as a matter of law.” Fed. R.Civ.P. 56(c); see also *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247–48, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). A district court's grant of summary judgment is reviewed without deference, reapplying the same standard as the district court. *Micron Chem., Inc. v. Lextron, Inc.*, 318 F.3d 1119, 1121 (Fed.Cir.2003). “In deciding whether summary judgment was appropriate, we view the evidence in a light most favorable to the party opposing the motion with doubts resolved in favor of the opponent. . . .” *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 149 F.3d 1309, 1315 (Fed.Cir.1998).

I. The '109 Patent

The district court ruled that claims 1 and 4 of the '109 patent are obvious over either of Ricoh's European Patent Nos. EP 0898272 (“EP '272”) and EP 0737962 (“EP '962”).⁵ Ricoh concedes that both patents disclose every limitation of claims 1 and 4—i.e., the identical laser pulse sequence or write strategy—except “when the linear velocity of rotation of the

medium [e.g., an optical disc] is set in a high-speed range from 5 m/s to 28 m/s.” *E.g.*, '109 patent col.13 ll.24–26. However, the European patents expressly claim a method “capable of recording information at a linear speed in a range of 2.4 to 5.6 m/s.” EP '272 p. 16 ll.49–50; EP '962 p. 20 ll.48–50. Because the range of recording speeds disclosed in the European patents overlaps the range claimed by the '109 patent, the parties do not dispute that the claims of the '109 patent are presumed obvious. See *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311 (Fed.Cir.2006) (“Where a claimed range overlaps with a range disclosed in the prior art, there is a presumption of obviousness.” (citing *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1322 (Fed.Cir.2004); *In re Geisler*, 116 F.3d 1465, 1469 (Fed.Cir. 1997))). This presumption, however, “can be rebutted if it can be shown that the prior art teaches away from the claimed range, or the claimed range produces new and unexpected results.” *Id.* at 1311 (citations omitted). The district court rejected Ricoh's expert testimony offered to rebut the presumption, reasoning that “plaintiff . . . fails to explain how the prior art ‘teaches away’ from its '109 patent or how the '109 patent provides ‘new and unexpected results.’” *Summary Judgment Order*, 579 F.Supp.2d at 1115. We agree.

On appeal, Ricoh attempts to rebut the prima facie obviousness of claims 1 and 4 of the '109 patent by purportedly making separate arguments that EP '272 and EP '962 teach away from the range of recording speeds claimed by the '109 patent and that the range of the recording speeds claimed by the '109 patent produces unex-

5. Although the district court apparently relied on the European patents as issued, the court properly noted that the corresponding patent applications are the prior art to the '109 patent by virtue of their publication more

than one year prior to the filing date of the '109 patent. In consonance with the district court's opinion, we herein cite to the patents as issued.

pected results in view of the teachings of EP '272 and EP '962. Both arguments, however, stem from a single teaching in EP '272:

when the "recrystallization upper-limit linear speed" of the recording layer exceeds 5.0 m/s, the recording layer cannot assume a complete amorphous state when information is written therein. Thus, satisfactory signal properties cannot be obtained.

EP '272 p. 7 ll.2-4. In its briefing to this court, Ricoh thus argues that EP '272 "specifically states that its write strategy does not work at speeds above 5.0 m/s."

Ricoh's arguments as to the teachings of EP '272 are inapposite because the recrystallization upper speed limit, as defined by EP '272, is unrelated to the effectiveness, at any speed, of the write strategy disclosed therein. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *Optivus Tech., Inc. v. Ion Beam Applications S.A.*, 469 F.3d 978, 989 (Fed.Cir.2006) (quoting *In re Kahn*, 441 F.3d 977, 990 (Fed.Cir.2006)); see also *In re Fulton*, 391 F.3d 1195, 1201 (Fed.Cir.2004) (refusing to conclude that prior art disclosure taught away from the claimed invention where the disclosure did not "criticize, discredit, or otherwise discourage the solution claimed"). Here, EP '272 teaches that the recrystallization upper-limit linear speed is a physical characteristic of the particular phase change media—i.e., optical discs having a specific composition—disclosed therein. EP '272 p. 6 ll.7-9 (stating that the " 'recrystallization upper-limit linear speed' of the recording layer of the optical recording medium is a novel value for characterizing the recording medium, which was discovered by

the inventors of the present invention"). This physical characteristic establishes an upper limit to the speed at which the phase change material of the optical disc can be recrystallized. EP '272 p. 6 ll.3-4 (defining recrystallization upper-limit linear speed as "an upper limit linear speed of a light beam which scans the recording layer at which the recording layer can be recrystallized after being fused with the application of the light beam thereto, and then cooled and recrystallized"). In contrast, the asserted method claims of the '109 patent are write strategies comprising a specified sequence of laser pulses, not limited to use on a particular phase change medium. Ricoh offers no explanation as to why EP '272's teaching of a particular type of medium limited to use below 5.0 m/s would criticize, discredit, or otherwise discourage a person of ordinary skill from using the write strategy of EP '272 at speeds beyond 5.6 m/s (the upper limit claimed by EP '272) when writing to optical media not limited to use below a speed of 5.0 m/s. Accordingly, there is no genuine issue of material fact that EP '272 does not teach away from using its disclosed write strategy, which is the same write strategy claimed in the '109 patent, in a high-speed range from 5 m/s to 28 m/s.

Ricoh relies on this same "teaching away" to support its assertions that the linear speed range of 5 m/s to 28 m/s claimed in the '109 patent is an unexpected result over the teachings of EP '272. As noted by Ricoh, *Ormco* does teach that the presumption of obviousness can be rebutted if "the claimed range produces new and unexpected results," 463 F.3d at 1311 (emphasis added), but Ricoh argues that the claimed range is the new and unexpected result. In this case, Ricoh does not dispute that EP '272 discloses every limitation of claims 1 and 4 of the '109 patent other than the aforementioned linear speed range of the optical medium relative

to the laser executing the claimed write strategy. Rather, Ricoh attempts to argue that increasing the linear speed of the optical medium in the '109 patent is somehow an unexpected improvement over the write strategy disclosed in EP '272, even though Ricoh does not argue that the write strategy differs in any way between the two patents. To the extent that Ricoh has discovered that its previously disclosed write strategy is useful in a higher linear speed range than initially recognized, Ricoh may be free to claim a method executed at this higher speed unless that method is obvious over EP '272. *See, e.g.*, 35 U.S.C. § 100(b) (stating that the term "process" includes "a new use of a known process"). However, the mere understanding that the write strategy of the '109 patent and EP '272 is useful in a faster but overlapping linear speed range is not the type of result that can rebut a prima facie case of obviousness arising from the overlapping ranges. Such development of the prior art is the quintessence of "ordinary skill" or "ordinary skill and common sense" rather than patentable innovation. *Cf. KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727, 1742, 167 L.Ed.2d 705 (2007). We therefore affirm the judgment of the district court.

II. The '955 Patent

Each of asserted claims 8–12 of the '955 patent requires the step of "starting a formatting process for said optical disc as a background process." *E.g.*, '955 patent col.13 ll.21–22. The parties agree that a background process, as that term is used in the '955 patent, differs from a foreground process in that a background process "can be interrupted at *any* time to allow another, higher priority process to be performed." *Summary Judgment Order*, 579 F.Supp.2d at 1117. The district court examined the evidence and concluded that Ricoh had presented no evidence of

any process in the accused devices that starts as a background process. Accordingly, the district court granted summary judgment of noninfringement as to all asserted claims of the '955 patent because none of the accused devices starts a formatting process of an optical disc as a background process. *Id.* at 1118. On appeal, Ricoh argues that the district court mistakenly read the claims as requiring that the formatting process for the entire optical disc must start as a background process. It is Ricoh, however, that has mistakenly read the district court's opinion.

■ Infringement of a method claim "occurs when a party performs all of the steps of the process," *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1379 (Fed.Cir.2007), and Ricoh reads the district court's opinion as improperly applying this standard. In particular, Ricoh argues that the use of "comprising" in the preamble, plus the indefinite article "a" to introduce "a formatting process," indicates that an accused formatting method with one or more additional foreground steps may infringe the claims of the '955 patent as long as at least one process begins as a background process. Although the use of "comprising" in a claim's preamble "raises a presumption that the list of elements is nonexclusive," the enumerated steps of a method claim must nevertheless "all be practiced as recited in the claim for a process to infringe." *Dippin' Dots, Inc. v. Mosey*, 476 F.3d 1337, 1343 (Fed.Cir.2007). Accordingly, even under Ricoh's analysis, the process alleged to meet the background process limitation of claims 8–12 of the '955 patent must itself originate as a background process.

■ In this case, the district court found that the only evidence Ricoh presented of infringement of the '955 patent

was two tests that Ricoh conducted. In both tests, an optical disc drive started formatting the disc as a foreground process and later switched the formatting to a background process. *Summary Judgment Order*, 579 F.Supp.2d at 1116–18. Importantly, Ricoh presented no evidence that the formatting process occurring in the background was a different process than the process that started as a foreground process. That is, the district court ruled that Ricoh had presented no evidence that any process started as a background process. *Id.* at 1117–18. Before this court, Ricoh similarly fails to cite a single piece of evidence to suggest that the accused devices use two separate formatting processes, one of which starts in the foreground and the other of which starts in the background. Accordingly, we conclude, as did the district court, that Ricoh has failed to present evidence to create a material issue of fact as to infringement of the '955 patent.

III. The '552 and '755 Patents

As to both the '552 and the '755 patents, the district court ruled that there are material issues of fact with respect to whether the accused devices practice the methods of the asserted claims. *Summary Judgment Order*, 579 F.Supp.2d at 1121, 1122. Nevertheless, the district court dismissed Ricoh's claims of infringement of the '552 and '755 patents against each of Quanta and NU, ruling that Ricoh had failed to create material issues of fact as to direct or indirect infringement under the provisions of 35 U.S.C. § 271(a)-(c). Ricoh appeals on the grounds that the district court both misinterpreted and misapplied the statute.

A. Direct Infringement

■ We first turn to Ricoh's claims that Quanta directly infringed the '552 and '755

patents through the sale or offer for sale of software that causes the accused drives to perform the claimed methods. The district court ruled that: "[b]ecause the claims asserted in the '552 patent and the '755 patent disclose *methods* for writing and recording rather [than] an actual device, to prove direct infringement, it is not enough for plaintiff to show a sale or offer to sell of an accused device." *Id.* at 1123 (citing *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1321 (Fed.Cir.2005)). In support of this reading of *NTP*, the district court relied on this court's opinion in *Joy Technologies, Inc. v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed.Cir.1993), which stated that "[t]he law is unequivocal that the sale of equipment to perform a process is not a sale of the process within the meaning of section 271(a)." Nevertheless, Ricoh argues that the sale of a method can be distinguished from the sale of an optical drive practicing the method because the software instructions that control the drive can be separated from the hardware that actually carries out those instructions. Because *NTP* explicitly did not decide the question of whether a "method claim may not be infringed under the 'sells' and 'offers to sell' prongs of section 271(a)," 418 F.3d at 1320–21, Ricoh invites this court to provide an answer and hold that a party may directly infringe a method claim under 35 U.S.C. § 271(a) by offering to include patented methods in software sold as part of the accused devices.

The answer lies in the language of the statute, and we therefore begin with its text. Section 271(a) of Title 35 sets forth the requirements of a claim of direct patent infringement: "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent." Ricoh thus argues that the issue in this

case is whether “any patented invention” includes “process,” such that a party who sells or offers to sell a patented process infringes the patent. As did the court in *NTP*, we conclude that we need not definitively answer this question to conclude as a matter of law that Quanta did not sell or offer to sell the invention covered by Ricoh’s method claims.

■ In this case, Ricoh has mistakenly confused software with a process as that term has been interpreted by this court. As the court in *NTP* recognized, “a process is nothing more than the sequence of actions of which it is comprised.” 418 F.3d at 1318. This court has also stated that a process “consists of doing something, and therefore has to be carried out or performed.” *In re Kollar*, 286 F.3d 1326, 1332 (Fed.Cir.2002). In contrast, software is not itself a sequence of actions, but rather it is a set of instructions that directs hardware to perform a sequence of actions. See *Microsoft Corp. v. AT & T Corp.*, 550 U.S. 437, 127 S.Ct. 1746, 1754, 167 L.Ed.2d 737 (2007) (recognizing that software is “the ‘set of instructions, known as code, that directs a computer to perform specified functions or operations’” (quoting *Fantasy Sports Props., Inc. v. Sportslive.com, Inc.*, 287 F.3d 1108, 1118 (Fed.Cir.2002))); *Microsoft Computer Dictionary* 489 (5th ed.2002) (defining “software” as “[c]omputer programs; instructions that make hardware work.”); Alan Freedman, *The Computer Glossary* (9th ed.2001) (defining “software” as “[i]nstructions for the computer.”). Despite its arguments on appeal, Ricoh itself impliedly acknowledges the distinction between a process and instructions to perform a process in its statements to this court—“the software instructions that control Quanta’s drives can be separated from the hardware that actually carries out those instructions.” Appellant’s Br. at 41.

The cases noted here make clear that the actual carrying out of the instructions is that which constitutes a process within the meaning of § 271(a). With this understanding of “process” in mind, we agree with the reasoning of *NTP* that the application of the concept of a sale or offer of sale to the actual carrying out of a sequence of actions is ambiguous. 418 F.3d at 1319 (“[A] process is a series of acts, and the concept of sale as applied to those acts is ambiguous.” (quoting *Minton v. Nat’l Ass’n of Sec. Dealers, Inc.*, 336 F.3d 1373, 1378 (Fed.Cir.2003))). Indeed, the Supreme Court recently recognized that “a patented method may not be sold in the same way as an article or device.” *Quanta Computer, Inc. v. LG Elecs., Inc.*, — U.S. —, 128 S.Ct. 2109, 2117, 170 L.Ed.2d 996 (2008) (holding that despite this difference, the doctrine of patent exhaustion applied to method claims upon the authorized sale of a device embodying those claims). However, because the allegedly infringing sale in this case was the sale of software (i.e., instructions to perform a process rather than the performance of the process itself), we need not determine whether a process may ever be sold so as to give rise to liability under § 271(a). Accordingly, we hold that a party that sells or offers to sell software containing instructions to perform a patented method does not infringe the patent under § 271(a). Cf. *Microsoft*, 127 S.Ct. at 1753–55 (holding that as a set of instructions, software is not a component of a patented device within the meaning of § 271(f) until it is reduced to a machine-readable copy).

We next turn to Ricoh’s § 271(a) claims against NU. Ricoh alleges that NU directly infringed the ’552 and ’755 patents by testing the accused devices upon receipt from Quanta. The district court ruled that Ricoh “failed to adduce any specific evi-

dence that [NU] tested any of the products accused of infringing the '755 and '552 patents or that it tested them in a way that would constitute infringement." *Summary Judgment Order*, 579 F.Supp.2d at 1123. On appeal, Ricoh argues that the district court mischaracterized the evidence against NU in two respects. First, Ricoh takes issue with the district court's conclusion that NU merely "tests some of its products, not all of them." Second, Ricoh argues that it presented evidence sufficient to create material issues of fact as to whether NU's tests were conducted in a manner that infringed the '552 and '755 patents. At the summary judgment phase, the "party with the burden of proof on an issue must 'provide evidence sufficient, if unopposed, to prevail as a matter of law.'" *L & W, Inc. v. Shertech, Inc.*, 471 F.3d 1311, 1318 (Fed.Cir.2006) (quoting *Saab Cars USA, Inc. v. United States*, 434 F.3d 1359, 1369 (Fed.Cir.2006)). After reviewing the deposition testimony of NU's Rule 30(b)(6) witness, we agree with the district court that Ricoh has failed to put forth evidence sufficient to create a material issue of fact as to direct infringement of the '552 and '755 patents by NU.

B. Contributory Infringement

■ We now turn to Ricoh's arguments that Quanta contributorily infringed the '552 and '755 patents by selling optical disc drives adapted to perform the patented recording methods. The district court held that even though Quanta's drives might be capable of being used to infringe Ricoh's patented processes by writing discs, there was no liability for contributory infringement because the drives were also capable of "substantial noninfringing use" within the meaning of § 271(c) because they could also be used to read discs

in a noninfringing manner. *Summary Judgment Order*, 579 F.Supp.2d at 1123–24. This is so, the district court held, even though it apparently assumed that the evidence, viewed in the light most favorable to Ricoh, indicated that Quanta's drives use separate hardware and embedded software modules to perform the patented processes and that those components had no noninfringing use. For purposes of this appeal, we must accept as true Ricoh's evidence that Quanta's drives contain at least some distinct and separate components used only to perform the allegedly infringing write methods. In this posture, this case thus presents an important, and previously unresolved, question concerning the scope of liability for contributory infringement, the construction of § 271(c), and the interpretation of the Supreme Court's decisions in *Sony Corporation of America v. Universal City Studios, Inc.*, 464 U.S. 417, 104 S.Ct. 774, 78 L.Ed.2d 574 (1984), and *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 125 S.Ct. 2764, 162 L.Ed.2d 781 (2005).

The doctrine of contributory infringement long predated the enactment of § 271(c). *See, e.g., Wallace v. Holmes*, 29 F.Cas. 74, 80 (No. 17,100) (C.C.D.Conn. 1871) (holding that the sale of an unpatented burner component intended for use in a patented lamp combination contributorily infringed); *see also Aro Mfg. Co., Inc. v. Convertible Top Replacement Co., Inc.*, 377 U.S. 476, 485–88 & n. 6, 84 S.Ct. 1526, 12 L.Ed.2d 457 (1963). Enacted as part of the Patent Act of 1952, § 271(c) was designed to codify the contributory infringement doctrine "that previously had been developed by the judiciary." *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 179, 100 S.Ct. 2601, 65 L.Ed.2d 696 (1980).⁶ Section 271(c) provides:

6. Although in *Mercoid Corp. v. Mid-Continent Investment Co.*, 320 U.S. 661, 64 S.Ct. 268, 88

L.Ed. 376 (1944), the Supreme Court cast doubt on the continued existence of the con-

Whoever offers to sell or sells within the United States or imports into the United States *a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process*, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, *and not a staple article or commodity of commerce suitable for substantial noninfringing use*, shall be liable as a contributory infringer.

(emphasis added). The language of the statute incorporates the core notion that one who sells a component especially designed for use in a patented invention may be liable as a contributory infringer, provided that the component is not a staple article of commerce suitable for substantial noninfringing use. As aptly summarized in the House Judiciary Committee report accompanying the enactment of § 271(c), providing liability for contributory infringement reflects that "[o]ne who makes a special device constituting the heart of a patented machine and supplies it to others with directions (specific or implied) to complete the machine is obviously appropriating the benefit of the patented invention." H.R.Rep. No. 82-1923, at 9 (1952). The statutory language "offers to sell or sells ... or imports into the United States" applies not only to the bare sale of an infringing component, but also to the sale

of that component as part of a product or device.

It appears to be undisputed that, assuming direct infringement is found, Quanta would be liable under § 271(c) if it imported into or sold within the United States a bare component (say, a microcontroller containing routines to execute the patented methods) that had no use other than practicing the methods of the '552 and '755 patents. Such a component, specially adapted for use in the patented process and with no substantial noninfringing use, would plainly be "good for nothing else" but infringement of the patented process. *Grokster*, 545 U.S. at 932, 125 S.Ct. 2764 (internal quotation marks omitted).

It thus follows that Quanta should not be permitted to escape liability as a contributory infringer merely by embedding that microcontroller in a larger product with some additional, separable feature before importing and selling it. If we were to hold otherwise, then so long as the resulting product, as a whole, has a substantial non-infringing use *based solely on the additional feature*, no contributory liability would exist despite the presence of a component that, if sold alone, plainly would incur liability.⁷ Under such a rule, evasion of the protection intended by Congress in enacting § 271(c) would become rather easy. A competitor who wished to sell hardware that would enable infringement of a patented process could do so without incurring liability for contributory

tributary liability doctrine, § 271(c) was enacted "for the express purpose of reinstating the doctrine of contributory infringement as it had been developed by decisions prior to *Merco*, and of overruling any blanket invalidation of the doctrine that could be found in the *Merco* opinions." *Aro Mfg.*, 377 U.S. at 492, 84 S.Ct. 1526.

7. Ricoh offers a useful illustration of this arbitrary result in its brief. Consider a hypothetical patented method of using an answering

machine to take messages. If a manufacturer of an infringing answering machine sells two versions of the device, a stand-alone version and a version with a built-in telephone, consumers directly infringe when they use either to carry out the patented message-taking method. Under the dissent's logic, however, the manufacturer would only incur contributory liability for the stand-alone answering machine, and not for the version that is identical but for the addition of a telephone.

infringement by selling a device that simply embedded the hardware for practicing the patented process within other hardware that also performs another process, or by combining the enabling hardware with other hardware before importing it. Moreover, only the first person in the supply chain (in the example above, the manufacturer who sells the microcontroller) could be liable for contributory infringement. The person who bought that infringing component and assembled it into something else would face no liability for contributory infringement, even if that component were good for nothing but infringement. And most importantly, no § 271(c) liability could ever be found where an infringing component is both manufactured and assembled into something else by the same person. In many of these situations, the only remedy would be against end users of the product for direct infringement. This result would be contrary to what the Supreme Court recognized in *Grokster* as a fundamental purpose of contributory infringement liability: because "it may be impossible to enforce rights in the protected work effectively against all direct infringers, the only practical alternative [is] to go against the distributor of the copying device for secondary liability." *Grokster*, 545 U.S. at 929-30, 125 S.Ct. 2764.

Nothing in the Supreme Court's decisions in *Grokster* or *Sony* requires the result the dissent would reach today, and much counsels against it. While both of those cases involved contributory infringement under copyright rather than patent law, the principles are generally the same. First, in *Grokster*, the more recent decision of the two, the Court was faced with a contributory infringement claim against the makers of peer-to-peer file sharing software that was widely used to distribute and obtain copyrighted musical works in an infringing manner. 545 U.S. at 919-24,

125 S.Ct. 2764. Pertinent to the present question, the Court explained that the staple article of commerce doctrine codified in § 271(c) "was devised to identify instances in which it may be presumed from distribution of an article in commerce that the distributor intended the article to be used to infringe another's patent, and so may justly be held liable for that infringement." *Id.* While this presumption is fully justified by the sale of an item that can be used only to infringe, the "equivocal conduct of selling an item with substantial lawful as well as unlawful uses" does not give rise to the same presumption of an intent to infringe. *Id.* at 932, 125 S.Ct. 2764.

The *Grokster* Court thus made clear that the purpose of the "substantial noninfringing use" exception of § 271(c) is to allow determination of instances where the intent to infringe may be presumed based on the distribution of a product that has an unlawful use. *Id.* at 932-33, 125 S.Ct. 2764. When a manufacturer includes in its product a component that can *only* infringe, the inference that infringement is intended is unavoidable. While selling a potentially infringing product where each component part thereof has a substantial lawful use may well be "equivocal," *id.* at 932, 125 S.Ct. 2764, it is entirely appropriate to presume that one who sells a product containing a component that has no substantial noninfringing use in that product does so with the intent that the component will be used to infringe. We are unable to read *Grokster* as suggesting that Congress intended § 271(c) to eliminate this presumption in such cases where an infringing component is bundled together with something else.

Second, the noninfringing use analysis of *Sony* simply does not speak to these facts. In *Sony*, the Supreme Court considered whether a manufacturer of video cassette recorders could be held liable for contribu-

tory infringement when the VCRs were used by consumers to record copyrighted works in an infringing manner. 464 U.S. at 419-21, 104 S.Ct. 774. Concluding that the VCRs at issue were capable of and widely used for noninfringing private time-shifting (that is, recording a television program to watch later), a substantial noninfringing use, the Court held that sale of the VCRs to the public did not constitute contributory infringement of the plaintiffs' copyrights. *Id.* at 456, 104 S.Ct. 774.

Nowhere in the *Sony* opinion is it suggested that the VCRs accused of contributing to infringement contained specialized, distinct components that could be used *only* to infringe. The accused VCR could be used in two ways: to infringe a copyright by building a "library" of broadcast movies, or in a substantial, noninfringing way to "time-shift" a program for later viewing or to record an uncopyrighted program. *See id.* at 443-446, 104 S.Ct. 774. Critically, the same tuner and recording features of the VCR would be employed for *either* the infringing or the noninfringing use. Unlike the disputed facts of the present case (as Ricoh presented them in response to a motion for summary judgment), the *Sony* VCRs did not have recording components that could *only* be used to infringe and separable, distinct playback components that did not infringe. Thus, the *Sony* Court simply had no occasion to address the question at issue here. We are unable to read *Sony* or *Grokster* as requiring the court to ignore the sale of a separable, distinct infringing component because it is bundled together with a noninfringing component before being distributed.

Similarly, the dissent's reliance on *Hodosh v. Block Drug Co.*, 833 F.2d 1575 (Fed.Cir.1987), in considering only whether the Quanta drives "as sold" are capable of substantial noninfringing use is mis-

placed. In *Hodosh*, the plaintiff held a process patent on a method of desensitizing teeth with a composition containing potassium nitrate and sued a manufacturer of potassium nitrate toothpaste for contributory infringement. *Id.* at 1576. Although the accused toothpaste containing potassium nitrate did not itself directly infringe Hodosh's method patent, customers undisputedly did so when using the paste to desensitize their teeth. *Id.* at 1576-77. As is relevant here, the alleged infringer argued that the focus of the § 271(c) substantial noninfringing use inquiry should be on the ingredient potassium nitrate, which was admittedly a staple article of commerce with numerous noninfringing uses, rather than on the toothpaste as a whole. *Id.* at 1578. We stated in *Hodosh* that the focus of the § 271(c) inquiry should be on the toothpaste as "what was actually sold," *id.*, which the dissent understands as compelling a determination of whether Quanta's *entire drive* "as sold" has substantial noninfringing uses. But this reading of *Hodosh* divorces the court's holding from the facts upon which it was rendered. In focusing on "what was actually sold," the *Hodosh* court rejected the argument that an otherwise *infringing* product may automatically escape liability merely because it contains a *noninfringing* staple ingredient. *Id.* at 1578; *see also id.* at 1579 ("At trial, for example, the toothpaste containing potassium nitrate may be shown . . . to have a far narrower range of noninfringing uses (if any) than that of potassium nitrate or pure toothpaste alone."). The dissent here would do what *Hodosh* forbade: it would insulate an infringing item by focusing only on its noninfringing component. It does not follow from *Hodosh* that the inclusion of a component with substantial noninfringing uses in a product that contains *other* components useful only to infringe a process patent can or should de-

feat liability for contributory infringement under § 271(c). As is the case with *Sony* and *Grokster*, the question before us was neither present nor decided in *Hodosh*.

Finally, the potential for induced infringement liability in these situations is not a practical substitute for contributory infringement liability. Unlike contributory infringement, induced infringement liability under § 271(b) requires proof that “the inducer [has] an affirmative intent to cause direct infringement.” *DSU Med. Corp. v. JMS Co., Ltd.*, 471 F.3d 1293, 1306 (Fed. Cir.2006) (en banc as to section III.B); see also *Water Techs. Corp. v. Calco, Ltd.*, 850 F.2d 660, 668 (Fed.Cir.1988) (Section 271(b) requires inducer to have “actively and knowingly aid[ed] and abett[ed] another’s direct infringement.” (emphasis omitted)). The Supreme Court in *Grokster* addressed the relationship between contributory and induced infringement. The Court made clear that the sale of a product with substantial noninfringing uses is within a “safe harbor” for purposes of contributory infringement. The sale of such a “safe harbor” product in and of itself cannot establish induced infringement. Rather, the copyright owner or patentee must show other “statements or actions directed to promoting infringement.” *Grokster*, 545 U.S. at 935, 125 S.Ct. 2764. As discussed below, it may or may not be the case here that Quanta has taken such acts directed at promoting the infringing use of its drives (such as advertising their infringing writing capability or providing instruction as to infringing use), and thus shown an intent to induce infringement. But it is incorrect to conclude as a general matter that § 271(b) will provide a sufficient substitute for liability for the sale of an infringing component under § 271(c).

We thus vacate the district court’s grant of summary judgment of no contributory infringement and remand to the district court for further proceedings on the material issue of fact of whether Quanta’s optical disc drives contain hardware or software components that have no substantial noninfringing use other than to practice Ricoh’s claimed methods, in which case contributory infringement may appropriately be found.

C. Active Inducement

Finally, we consider Ricoh’s claim that QSI actively induces infringement under 35 U.S.C. § 271(b), which states that “[w]hoever actively induces infringement of a patent shall be liable as an infringer.” Specifically, Ricoh claims that QSI induced infringement by its customers (e.g., Hewlett-Packard, Dell, and Gateway) as well as the end-users of the drives. The district court granted summary judgment of no inducement on the grounds that Ricoh had not presented evidence sufficient to create a material issue of fact as to whether QSI possessed the requisite intent that the patents be infringed. *Summary Judgment Order*, 579 F.Supp.2d at 1124–26. The district court considered several types of evidence of QSI’s intent—including QSI’s product specification sheets, the fact that QSI fine tunes the firmware⁸ used by the accused drives for writing to optical discs using Zone-CLV, a presentation that QSI gave to Dell, website instructions, and “the simple fact that defendant Quanta Storage ‘designs and sells’ the accused devices”—and concluded that this evidence may establish that QSI “may have known that its customers would perform the patented methods, but plaintiff adduces no

8. “Firmware” refers to the software stored on the chips in QSI’s optical disc drives. *Summary Judgment Order*, 579 F.Supp.2d at 1122.

evidence that Quanta encouraged infringement by its customers." *Id.* at 1125-26.

In its analysis, the court cited the law of this circuit that "[a]ctively inducing, like facilitating, requires an affirmative act of some kind." *Id.* at 1125 (quoting *Tegal Corp. v. Tokyo Electron Co.*, 248 F.3d 1376, 1379 (Fed.Cir.2001)). The court then reasoned that a finding of inducement requires that the identified affirmative acts be communicated in some fashion to the alleged direct infringer. *E.g., id.* at 1125 ("Although defendant Quanta 'fine tunes' the firmware with respect to [Zone CLV], plaintiff adduces no evidence that customers are informed of this, so it is not clear how this could encourage the customer to do anything."). The court also relied on the proposition that the "'sale of lawful product by lawful means, with the knowledge that an unaffiliated, third party may infringe, cannot, in and of itself, constitute inducement of infringement.'" *Id.* at 1122 (quoting *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1276 n. 6 (Fed.Cir.2004)). For the reasons stated below, we conclude that the district court's reasoning was an incorrect application of the law of active inducement.

Initially, we note that a finding of inducement requires a threshold finding of direct infringement—either a finding of specific instances of direct infringement or a finding that the accused products necessarily infringe. *ACCO Brands, Inc. v. ABA Locks Mfrs. Co.*, 501 F.3d 1307, 1313 (Fed.Cir.2007); *Dynacore*, 363 F.3d at 1275-76. However, the district court found that material issues of fact exist as to whether and to what extent direct infringement occurs during the normal use of Quanta drives. *Summary Judgment Order*, 579 F.Supp.2d at 1122. On this record, we therefore reject Quanta's argument that the district court's summary judgment of no inducement can be af-

firmed on the alternative basis that Ricoh has failed to make the requisite showing of direct infringement.

The issue before us is whether Ricoh has introduced evidence sufficient to create a material issue of fact as to Quanta's intent that its drives be used to infringe the method claims of the '552 and '755 patents. Again, we turn to *Grokster* and its analysis of the law of active inducement. The Supreme Court began from the premise that when an article is suitable for substantial noninfringing use, an evidentiary showing that the defendant intended that the article be used for direct infringement is required. *Grokster*, 545 U.S. at 935, 125 S.Ct. 2764. Specifically, liability for active inducement may be found "where evidence goes beyond a product's characteristics or the knowledge that it may be put to infringing uses, and shows statements or actions directed to promoting infringement." *Id.* & n. 10, 125 S.Ct. 2764 (stating that this reasoning applies to § 271(b)).

Evidence of active steps ... taken to encourage direct infringement, such as advertising an infringing use or instructing how to engage in an infringing use, show an affirmative intent that the product be used to infringe, and a showing that infringement was encouraged overcomes the law's reluctance to find liability when a defendant merely sells a commercial product suitable for some lawful use.

Id. at 936, 125 S.Ct. 2764 (internal quotation marks and citation omitted). Of particular import to this case, the Court then examined whether a showing of intent required evidence that the accused indirect infringer successfully communicated a message of encouragement to the alleged direct infringer and concluded that such a communication is not necessary:

Whether the messages were communicated is not to the point on this record. The function of the message in the theory of inducement is to prove by a defendant's own statements that his unlawful purpose disqualifies him from claiming protection (and incidentally to point to actual violators likely to be found among those who hear or read the message). Proving that a message was sent out, then, is the preeminent but not exclusive way of showing that active steps were taken with the purpose of bringing about infringing acts, and of showing that infringing acts took place by using the device distributed.

Id. at 938, 125 S.Ct. 2764 (citation omitted). Accordingly, the district court erred to the extent that it discounted Ricoh's evidence of QSI's intent as failing to present evidence that QSI communicated the nature of its actions to alleged direct infringers.

Similarly, the court erred in discounting evidence that QSI made a presentation to Dell, which touted the advantages of the Quanta drives, on the grounds that the presentation disclosed an algorithm rather than one of the claimed methods. The potential relevance of the presentation is two-fold. First, the presentation is relevant to the extent it indicates QSI possessed the requisite intent that its drives be used to perform the infringing methods. Second, the presentation is relevant to the issue of whether it encouraged Dell to use the drives in an infringing manner. That the presentation may have failed to communicate any information regarding the patented methods or the possibility of infringement does not render it irrelevant as evidence of QSI's intent.

We further conclude that the district court incorrectly analyzed other circumstantial evidence presented by Ricoh in this case. In *DSU Medical Corp. v. JMS*

Co., this court explicitly relied on *Grokster* to clarify that specific intent to cause infringement is required for a finding of active inducement:

It must be established that the defendant possessed specific intent to encourage another's infringement and not merely that the defendant had knowledge of the acts alleged to constitute inducement. The plaintiff has the burden of showing that the alleged infringer's actions induced infringing acts *and* that he knew or should have known his actions would induce actual infringements.

471 F.3d 1293, 1306 (Fed.Cir.2006) (en banc as to Section III.B) (emphasis in original) (quoting *Manville Sales Corp. v. Paramount Sys., Inc.*, 917 F.2d 544, 553 (Fed.Cir.1990)). *DSU Medical* further relied on *Grokster* to reaffirm the sufficiency of circumstantial evidence to prove specific intent. *Id.* ("While proof of intent is necessary, direct evidence is not required; rather, circumstantial evidence may suffice.") (quoting *Water Techs. Corp. v. Calco, Ltd.*, 850 F.2d 660, 668 (Fed.Cir.1988)). Moreover, both *DSU Medical* and *Grokster* relied on prior decisions of this court establishing that specific intent may be inferred from circumstantial evidence where a defendant has both knowledge of the patent and specific intent to cause the acts constituting infringement. See *MEMC Elec. Materials, Inc. v. Mitsubishi Materials Silicon Corp.*, 420 F.3d 1369, 1378 n. 4 (Fed.Cir.2005); *Water Techs.*, 850 F.2d at 668–69 (inferring intent from knowledge of the patent and control over the manufacture of the infringing product and citing 4 Donald S. Chisum, *Patents* § 17.04[4][d], at 17–52 (1984) for the proposition that "design of infringing product may constitute active inducement").

At the outset, QSI does not dispute that it had knowledge of the '552 and '755 patents. Under *Grokster*, *Water Technol-*

ologies, and *DSU Medical*, QSI may therefore be liable under § 271(b) if it had specific intent to cause infringement of the '552 and '755 patents by the manner in which the drives are caused to be used. See *MEMC*, 420 F.3d at 1378 n. 4. Applicable to this analysis, *Grokster* recognized that a failure to remove or diminish infringing features of a distributed product is relevant to a party's intent that those features be used for direct infringement. 545 U.S. at 939 & n. 12, 125 S.Ct. 2764 (noting that evidence of a failure to act, however, must be accompanied by other evidence of affirmative acts); see also *id.* at 940 n. 13, 125 S.Ct. 2764 ("[T]he distribution of a product can itself give rise to liability where evidence shows that the distributor intended and encouraged the product to be used to infringe."). Ricoh's focus on the separability of the allegedly infringing functionality from the noninfringing functionality of the Quanta drives may, therefore, be relevant to whether QSI had a specific intent to encourage another's infringement.

In particular, QSI's role as the designer and manufacturer of the optical drives in question may evidence an intent sufficiently specific to support a finding of inducement. As indicated above, *Water Technologies* inferred a specific intent to cause infringement from a defendant's knowledge of the patent and control over the design or manufacturing of the product used for direct infringement. 850 F.2d at 668–69. Moreover, *Grokster* recognized that providing instruction on how to engage in an infringing use "show[s] an affirmative intent that the product be used to infringe." 545 U.S. at 936, 125 S.Ct. 2764. In this case, QSI has incorporated into its optical drives software that instructs the hardware to perform a series of steps. Ricoh asserts that the only function of certain software components is to instruct the drives to perform its patented meth-

ods. See, e.g., Schlesinger Declaration at 11. Ricoh thus argues that QSI's specific intent that the '552 and '755 patents be infringed is shown by this affirmative act of incorporating components whose sole purpose is to cause the drives to operate in a manner that infringes the '552 and '755 patents under normal circumstances. To the extent that the drives do contain components which are in fact separable from those used to implement noninfringing functions, and to the extent that the components do not in fact have a purpose other than the performance of infringing functions under normal use conditions, such evidence would create a material issue of fact regarding QSI's intent that its drives be used to infringe the '552 and '755 patents, which could not be decided on summary judgment.

Finally, although we have endeavored to articulate the legal principles under which Ricoh's inducement claims should be analyzed, we are unable to determine whether issues of material fact exist in the first instance. Because the court discounted Ricoh's evidence on purely legal bases, we decline to assess the factual sufficiency of that evidence as it impacts Quanta and NU's motion for summary judgment. Accordingly, Ricoh's inducement claim against QSI is remanded for further consideration consistent herewith. We further note that on remand, the issues and proofs regarding QSI's inducement of the manufacturer customers (e.g., Dell) may be different from those regarding its inducement of end-use customers, and the outcome on remand may be different for these groups.

CONCLUSION

Those portions of the district court's judgment that hold that: (1) the asserted claims of the '109 patent are invalid be-

cause Ricoh has failed to rebut the presumption that they are obvious; (2) no party infringes the claims of the '955 patent because Ricoh has identified no formatting process that begins as a background process within the meaning of the asserted claims; (3) Quanta does not directly infringe the '552 or '755 patents because § 271(a) does not prohibit selling or offering to sell software containing instructions to perform a patented method; and (4) NU does not directly infringe the '552 or '755 patents because Ricoh has failed to present evidence sufficient to create a material issue of fact on this issue are affirmed. However, the district court's grant of summary judgment of no contributory infringement under § 271(c) by Quanta is vacated and remanded for further proceedings on the material issue of fact as to whether Quanta's optical disc drives contain hardware or software components that have no substantial noninfringing use other than to practice Ricoh's claimed methods. Similarly, the district court's grant of summary judgment of no inducement under § 271(b) by QSI is vacated and remanded for consideration of whether a material issue of fact exists with respect to QSI's specific intent that the '552 or '755 patents be infringed by the use of Quanta's optical disc drives.

AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED-IN-PART

COSTS

No costs.

Dissenting opinion filed by Circuit Judge GAJARSA as to Section III B.

GAJARSA, Circuit Judge, dissenting as to Section III.B.

I agree with my colleagues with respect to the result and judgment reached, but I

must dissent as to that portion of the opinion and judgment at Section III.B. Specifically, I disagree with my colleagues' decision to decide the difficult issue of contributory infringement on the basis of policy concerns without due regard for the text of 35 U.S.C. § 271(c) and am of the opinion that the majority makes three errors in its analysis. First, the majority ignores the fact that Quanta does not sell or offer to sell the accused components, as the term "sell" is used in § 271(c). Second, the majority opts for an over-inclusive application of § 271(c) that directly contravenes Supreme Court guidance on how this section ought to be interpreted. Third, the conduct to which the majority objects relates to the *design* and *manufacture* of "components," even though § 271(c) only addresses the act of *selling* a component. For each of these reasons, I dissent from the majority opinion as to Section III.B; summary judgment of no contributory infringement was proper in this case.

First, § 271(c) imposes contributory infringement liability on "[w]hoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention..." 35 U.S.C. § 271(c). In this case, the asserted claims of the '552 and '755 patents are directed to methods of writing data to optical discs. The district court reasoned that the accused devices, in addition to writing data to optical discs, were also capable of reading data from optical discs, and the court concluded that the accused devices were therefore suitable for a substantial noninfringing use. *Ricoh Co. v. Quanta Computer, Inc.*, 579 F.Supp.2d 1110, 1115-16 (W.D.Wis. 2007) ("*Summary Judgment Order*"). Accordingly, the court ruled that Quanta

did not contributorily infringe the '552 and '755 patents. *Id.* On appeal, Ricoh asserts that because the reading function is wholly separable from the writing function of the accused drives—i.e., Quanta could have sold read-only drives or drives lacking the features accused of infringing the patents¹—Quanta cannot avoid liability for contributory infringement simply by putting those functions together in the same box. But irrespective of whether the hardware and software components of Quanta's drives identified by Ricoh constitute a separable component or a material or apparatus for use in practicing Ricoh's method claims, it is undisputed that Quanta has neither offered for sale nor sold these components as the term "sale" has been interpreted by this court.

The unmistakable holding of *Hodosh v. Block Drug Co., Inc.*, 833 F.2d 1575 (Fed. Cir.1987), is that "offers to sell or sells" in § 271(c) refers to "the material the accused actually sells." *Id.* at 1578. In *Hodosh*, the question was whether the sale of unpatented toothpaste, which was used by consumers to practice a patented method, would constitute contributory infringement under § 271(c) if the sales were made by a party other than the patentee. One party argued that such a sale would not constitute contributory infringement because the toothpaste contained the staple article potassium nitrate. In rejecting this argument, the court did not hold, as the majority here suggests, "that an otherwise *infringing* product may automatically escape liability merely because it contains a *non-infringing* staple ingredient." Rather, the court focused on the language of the statute and held that

the language of § 271(c) ... *deals with the material actually sold by the accused* and the uses made of it by its purchasers. Section 271(c) requires examination of the patented method only in determining *whether the material the accused actually sells constitutes a material part of the invention* and is known by the accused to be especially made or adapted for use in infringing the patent. *Neither party here "sells" potassium nitrate*, and Block's attempted limitation of the staple/nonstaple inquiry to that mere ingredient would eliminate the § 271(c)-mandated inquiries relating to whether what was actually sold was a material part of the invention and whether the seller knew that what was actually sold was especially made or adapted for use in infringement of the patent.

Hodosh, 833 F.2d at 1578 (footnote omitted) (emphasis added). In the present case, neither party "sells" components adapted to perform Ricoh's patented write methods. They sell optical disc drives capable of reading discs, writing in a noninfringing manner, and writing in an allegedly infringing manner. The majority's attempted limitation of the staple/nonstaple inquiry to one mere component of the optical disc drives sold by Quanta (1) requires an inappropriate factual finding, as neither did the district court find nor does the record presented to us on appeal demonstrate that Quanta's optical disc drives include a wholly separable infringing component; and (2) would eliminate the § 271(c)-mandated inquiry relating to whether what was actually sold was suitable for a substantial noninfringing use.

1. Ricoh's liability expert, T.E. Schlesinger, stated that "the electronic circuitry, firmware elements, and other components of the accused Quanta drives that [allegedly perform the methods of the '552 and '755 patents]

have no practical use other than" performance of those methods. Declaration of T.E. Schlesinger in Support of Ricoh's Opposition to Quanta's Motion for Summary Judgment at 11 (hereinafter "Schlesinger Declaration").

Second, the majority's interpretation of § 271(c) subjugates the public interest in access to unpatented devices to a patentee's interest in realizing economic reward from a patented method. In *Sony Corporation of America v. Universal City Studios, Inc.*, 464 U.S. 417, 104 S.Ct. 774, 78 L.Ed.2d 574 (1984), the Supreme Court reasoned that "when a charge of contributory infringement is predicated entirely on the sale of an article of commerce that is used by the purchaser to infringe a patent, the public interest in access to that article of commerce is necessarily implicated." *Id.* at 440, 104 S.Ct. 774. As to the balance of that public interest against the private right of a patent owner, "the patent statute[] makes reward to the owner a secondary consideration." *Id.* at 429 (quoting *United States v. Paramount Pictures*, 334 U.S. 131, 158, 68 S.Ct. 915, 92 L.Ed. 1260 (1948)). Thus, to strike the appropriate balance, the Court has stated that the "sale of an article which though adapted to an infringing use is also adapted to other and lawful uses, is not enough to make the seller a contributory infringer," reasoning that "[s]uch a rule would block the wheels of commerce." *Sony*, 464 U.S. at 441-42, 104 S.Ct. 774 (quoting *Henry v. A.B. Dick Co.*, 224 U.S. 1, 48, 32 S.Ct. 364, 56 L.Ed. 645 (1912), *overruled on other grounds*, *Motion Picture Patents Co. v. Universal Film Mfg.*, 243 U.S. 502, 517, 37 S.Ct. 416, 61 L.Ed. 871 (1917)).

Moreover, in *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 125 S.Ct. 2764, 162 L.Ed.2d 781 (2005), although a copyright case, the Supreme Court explicitly stated that the purpose of the contributory infringement doctrine was to presume an intent that a product be used to infringe another's patent. *Id.* at 932, 125 S.Ct. 2764 ("The doctrine was devised to identify instances in which it may be presumed from distribution of an article in commerce that the

distributor intended the article to be used to infringe another's patent, and so may justly be held liable for that infringement."). Accordingly, "where an article is 'good for nothing else' but infringement, there is no legitimate public interest in its unlicensed availability, and there is no injustice in presuming or imputing an intent to infringe." *Id.* (citation omitted) (quoting *Canda v. Mich. Malleable Iron Co.*, 124 F. 486, 489 (6th Cir.1903)). As enshrined in § 271(c), the doctrine of contributory infringement "absolves the equivocal conduct of selling an item with substantial lawful as well as unlawful uses, and limits liability to instances of more acute fault than the mere understanding that some of one's products will be misused. It leaves breathing room for innovation and a vigorous commerce." *Id.* at 932-33, 125 S.Ct. 2764.

Despite the Supreme Court's rationale of contributory infringement that favors public access to unpatented goods, the majority here adopts an over-inclusive interpretation of § 271(c) that fails to heed the high Court's caution. In particular, the majority's expansive interpretation of the phrase "offers to sell or sells" subjects not only Quanta to contributory infringement liability, but also Dell, HP and any other reseller of Quanta's drives. These resellers come within the majority's reading of § 271(c) even though their only activity is to sell an unpatented optical disc drive (or even an entire computer system) that has multiple functions, only one of which is alleged to practice Ricoh's claimed methods. Thus, whereas the majority seeks to avoid situations in which "the only remedy would be against end users of the product," it opts for a rule that captures every seller in the chain of commerce for a given unpatented product. The majority's proposed rule would burden the wheels of commerce and would give undue regard to the limited monopoly of the patent statute

at the expense of the public interests identified by the Supreme Court.

Third, § 271(c) imposes contributory infringement liability based solely on offering to sell or selling an unpatented good, but the majority's analysis is (on its face) driven by a concern for activities other than such sales. For example, the majority takes issue with my analysis of § 271(c), because "Quanta may escape liability as a contributory infringer merely *by embedding* that microcontroller in a larger product with some additional, separable feature before importing and selling it." Nothing in § 271(c) can be read as directed to the non-sale activity of embedding components in larger products. Rather § 271(c) is concerned only with the *sale* of either the component or the larger product—under the straightforward analysis of *Hodosh*, Quanta has not sold the component (to the extent a separable component exists), only the larger product. Similarly, the majority recognizes that "no § 271(c) liability could ever be found where an infringing component is both manufactured *and* assembled into something else by the same person." Obviously, § 271(c) does not impose liability for manufacturing unpatented components, and the majority's efforts to target this activity under a provision concerned solely with an offer to sell or sale is misguided under the plain language of the statute.

In sum, my judgment is that the majority's analysis in Section III.B is flawed according to the language of the statute; the balance of interests contemplated by the statute, as that balance has been addressed by the Supreme Court; and the types of activities to which the statute is properly addressed. I would affirm the district court for these reasons.

Stephen W. GINGERY, Petitioner,

V.

DEPARTMENT OF DEFENSE,
Respondent.

No. 2007-3292.

United States Court of Appeals,
Federal Circuit.

Dec. 24, 2008.

the 1990s, the number of people in the United States who are 65 years of age or older is projected to increase from 20 million to 35 million. The number of people aged 75 and older is projected to increase from 10 million to 15 million. The number of people aged 85 and older is projected to increase from 3 million to 5 million.

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