

No. 24-3576

**United States Court of Appeals
for the Ninth Circuit**

RICHARD GIBSON, et al.,
Plaintiffs-Appellants,

v.

CENDYN GROUP, et al.,
Defendants-Appellees.

On Appeal from the United States District Court
for the District of Nevada
No. 2:23-cv-00140-MMD-DJA (Hon. Miranda M. Du)

**BRIEF OF THE INTERNATIONAL CENTER FOR LAW & ECONOMICS
AS *AMICUS CURIAE* IN SUPPORT OF DEFENDANTS-APPELLEES**

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DISCLOSURE STATEMENT

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INTEREST OF *AMICUS CURIAE*

The International Center for Law & Economics (“ICLE”) is a nonprofit, non-partisan global research and policy center aimed at building the intellectual foundations for sensible, economically grounded policy. ICLE promotes the use of law and economics methodologies and economic learning to inform policy debates and has long-standing expertise evaluating antitrust law and policy.

ICLE has an interest in ensuring that antitrust law promotes the public interest by remaining grounded in sensible rules informed by sound economic analysis. That includes ensuring that antitrust enforcement is not used to stifle innovation and expose companies to liability for engaging in rational and efficient economic behavior, topics written upon extensively by ICLE scholars including Brian C. Albrecht, Dirk Auer, Daniel J. Gilman, Geoffrey A. Manne, and Mario A. Zúñiga.¹

¹ ICLE represents that no party’s counsel authored this brief in whole or in part, no party or party’s counsel contributed money that was intended to fund preparing or submitting this brief, and no person – other than ICLE and its counsel – contributed money that was intended to fund preparing or submitting the brief. ICLE files this brief with the consent of all parties.

SUMMARY OF ARGUMENT

Plaintiffs allege two violations of Section 1 of the Sherman Act: a hub-and-spoke conspiracy claim based on allegations that each Hotel Defendant² subscribed to Rainmaker software provided by defendant Cendyn, and a claim that each Hotel Defendant's license of that software also constituted an unlawful vertical restraint. Plaintiffs' claims are inconsistent not only with binding Circuit precedent, but also with economic theory and common economic experience.

First, plaintiffs fail to plausibly allege the "rim" of a hub-and-spoke conspiracy through an agreement among competitors. Plaintiffs offer no direct evidence and rely instead on the mere fact that Hotel Defendants subscribe to the same software as thousands of other hotels. But subscribing to the same software does not imply an agreement to do anything, much less fix prices. The revenue management functions that Rainmaker automates are lawful. And automating lawful commercial activity does not make that activity unlawful. Not only do plaintiffs concede that Hotel Defendants

² Hotel Defendants are: Caesars Entertainment, Inc., Treasure Island, LLC, Wynn Resorts Holdings, LLC, JC Hospitality LLC, and Blackstone Inc. and Blackstone Real Estate Partners VII L.P..

frequently override Rainmaker's pricing recommendations, belying any claim of an agreement on prices, but that behavior is consistent with fundamental economic principles that deter coordinated pricing. Plaintiffs offer no basis to infer a conspiracy from firms seeking to benefit from the significant efficiencies provided by automation.

Second, plaintiffs fundamentally mischaracterize both the nature of the contracts and the software licensed through those contracts in attempting to plead a vertical restraint claim. The agreements are software licenses, not agreements to set prices or otherwise restrain trade. Exposing companies to treble damages based on the simple fact that they licensed the same software that their competitors licensed or may later decide to license would set a dangerous precedent.

ARGUMENT

I. COMMON ECONOMIC EXPERIENCE UNDERSCORES THE FLAWS IN PLAINTIFFS' HUB-AND-SPOKE CLAIM.

Plaintiffs' first count required them to plead: "(1) a hub . . . ; (2) spokes, such as competi[tors] that enter into vertical agreements with the hub; and (3) the rim of the wheel, which consists of horizontal agreements among the spokes." *In re Musical Instruments & Equip. Antitrust Litig.*, 798 F.3d 1186,

1192 (9th Cir. 2015). As with all allegations of horizontal agreements based on parallel conduct where direct evidence is absent, the sufficiency of plaintiffs' allegations "turns on the suggestions raised" by defendants' "conduct when viewed in light of common economic experience." *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544, 565 (2007); see also *id.* at 554 (parallel conduct may be "consistent with conspiracy, but just as much in line with a wide swath of rational and competitive business strategy unilaterally prompted by common perceptions of the market").

These legal standards matter. Alleged hub-and-spoke conspiracies may share features with legitimate business conduct, such as normal discussions between suppliers and distributors, and retaining consultants to advise on outsourcing of certain aspects of a business. Courts correctly proceed with caution in this area of the law. The trial court here correctly found that plaintiffs' allegations based on Hotel Defendants' separate and independent decisions to subscribe to Rainmaker's software over the course of a decade did not plausibly plead a hub-and-spoke conspiracy.

A. Business Software Is Not Inherently Unlawful.

As former FTC Commissioner and then-Acting Chair Maureen Ohlhausen explained: "There is nothing inherently wrong with using

mathematics and computers to engage more effectively in commercial activity, regardless of whether that activity is participation in the financial markets or the selling of goods and services.” Maureen K. Ohlhausen, Acting Chairman, U.S. Federal Trade Commission, *Should We Fear the Things That Go Beep in the Night? Some Initial Thoughts on the Intersection of Antitrust Laws and Algorithmic Pricing* at 3 (May 23, 2017), https://www.ftc.gov/system/files/documents/public_statements/1220893/ohlhausen_-_concurrences_5-23-17.pdf. That is, the automation of lawful business practices does not render them unlawful. This principle directly applies to the hotel industry’s use of revenue management software to analyze market conditions and optimize pricing strategies, just as it applies to business analytics, accounting, and tax software more broadly.

At its core, Rainmaker’s software simply automates what human revenue managers have long done manually—observe publicly available competitor prices, analyze market conditions, and make pricing recommendations that price-setters can take or leave in their discretion. The fact that this process, including its constituent computations, can now be automated through algorithms, implemented via software and computers, rather than performed by individuals does not transform it into

anticompetitive conduct. This leads Ohlhausen to a simple thought experiment—you can get a good sense of whether an automated business practice is legal by evaluating whether it would be legal if “a guy named Bob” did it instead. *Ohlhausen, supra*, at 10.

Plaintiffs reference this thought experiment in their brief, but miss the point. *See* Opening Br. (“OB”) at 3. As the trial court recognized, unlike in Ohlhausen’s hypothetical, there is no allegation here that Rainmaker’s pricing recommendations to one subscriber are based on the confidential information of another subscriber. ER-9; SER-12–13; *see also* Answering Br. (“AB”) at 11–12, 14–16, 32–36.

There is nothing unlawful about many subscribers independently seeking out the features that Rainmaker actually provides—scale, speed, and accuracy. Plaintiffs acknowledge that Rainmaker software is used by “5,500 hotels in 110 countries.” 5-ER-789 ¶191. Apart from their location on the Las Vegas Strip, however, nothing in the complaint distinguishes Hotel Defendants from other Rainmaker subscribers who are not named as defendants. There is no basis to imply a price-fixing conspiracy between a handful of the thousands of hotels subscribing to Rainmaker. Taking plaintiffs’ theory to its logical conclusion (that all subscribers are engaged in

a price-fixing conspiracy) would result in limiting Rainmaker and similar software to a single subscriber in a geographic market to avoid liability for price fixing.

B. Plaintiffs' Allegations About Rainmaker's Features Are Consistent with Independent Decision-Making.

Plaintiffs acknowledge that Rainmaker allows hotels to customize algorithms based on their individual data, provides discretion to override pricing recommendations, and does not share confidential data between competitors. 5-ER-743 ¶121; 5-ER-720 ¶80; 2-ER-74 at 54:4-15. These features help preserve independent decision-making and differentiate prices. In other words, the software does not serve as the sort of commitment device required for firms to cement a conspiracy.

Indeed, there is no economic incentive to coordinate pricing through Rainmaker's software. Basic economic theory teaches that any attempt at coordination faces an inherent instability: each participant has a powerful incentive to "cheat" by undercutting the coordinated price to gain market share. This creates a prisoner's dilemma where the dominant strategy is to deviate from any attempted coordination. *See* Christopher R Leslie, *Trust, Distrust, and Antitrust*, 82 TEX. L. REV. 515, 524-528 (2004); N. Gregory

Mankiw, PRINCIPLES OF MICROECONOMICS 344–45 (8th ed. 2018). Plaintiff’s own allegations demonstrate that this dynamic persists here, fatally undermining any theory of algorithmic coordination.

As plaintiffs acknowledge, hotels can and do freely reject Rainmaker’s pricing recommendations. Indeed, hotels rejected these recommendations so frequently that Rainmaker waged what the complaint describes as a “never-ending battle” trying to “convince” them to stop “overrid[ing] its pricing recommendations.” 5-ER-687 ¶8. This ability and demonstrated willingness to reject pricing recommendations preserves the fundamental competitive dynamic that makes coordination unstable. Just as in a traditional prisoner’s dilemma, each hotel maintains both the ability and incentive to undercut any attempted coordinated price by rejecting recommendations that are higher than their profit-maximizing competitive price. Basic economic theory predicts that hotels will choose to undercut when doing so would be profitable. The complaint’s allegations that hotels frequently did exactly that—override recommendations when it served their individual interests—confirms that prediction. That is also consistent with the economic research. *See, e.g.,* Jeanine Miklós-Thal & Catherine Tucker, *Collusion by Algorithm: Does Better Demand Prediction Facilitate Coordination*

Between Sellers?, MANAGEMENT SCIENCE, Articles in Advance, at 2 (Feb. 20, 2009), <https://doi.org/10.1287/mnsc.2019.3287> (finding better demand forecasting “increases each firm’s temptation to undercut price in periods when consumers are predicted to be willing to pay high prices”).

This dynamic is particularly powerful in the hotel market because hotels compete on both price and the non-price dimensions of competition that differentiate hotels, such as the quality and availability of various amenities, services, and furnishings. A hotel that rejects high price recommendations can rapidly gain occupancy at its competitors’ expense. The complaint itself alleges that casino hotels historically focused on maximizing occupancy because guests “generate other sources of revenue through gaming.” 5-ER-685 ¶ 3. This creates an especially strong incentive to reject high price recommendations and undercut competitors to drive occupancy and capture this ancillary revenue—exactly the type of “cheating” that makes coordination unstable.

In sum, Rainmaker’s software does nothing to solve the prisoner’s dilemma at the heart of any attempted coordination. Each hotel retains both the ability and incentive to reject supra-competitive price recommendations, gain market share, and undermine any attempted coordination. The

complaint's allegations that hotels frequently did exactly that confirms the economic theory that predicts such behavior. So do the allegations that hotels could customize Rainmaker to account for their own preferences, which could influence price recommendations for individual properties. *See* 5-ER-724 ¶¶86-87; 5-ER-734 ¶105; 5-ER-736 ¶108; 5-ER-744 ¶121. This reality is fundamentally inconsistent with any plausible theory of anticompetitive coordination. Rather, it reinforces the "critical role" of human judgment in using predictive software. Ajay K. Agarwal, et al., *Human Judgement and AI Pricing*, National Bureau of Economic Research, Working Paper 24284, at 2 (Feb. 2018), <http://www.nber.org/papers/w24284> (analyzing the divergent incentives of vendors and users of predictive AI).

C. Software Like Rainmaker Creates Significant Economic Efficiencies.

Economic theory not only points away from collusion, but also highlights the efficiencies that drive the use of software like Rainmaker. There is no reason to infer conspiracy merely from subscribing to widely used software based on the efficiencies it offers.

The economic literature has extensively documented how automated tools help firms optimize capacity utilization, respond rapidly to demand fluctuations, and reduce transaction costs in ways that enhance market efficiency. For example, Brynjolfsson and McElheran designed a seminal management and organizational practices survey studying how data affected firms' decision-making. See Erik Brynjolfsson & Kristina McElheran, *Data in Action: Data-Driven Decision Making in U.S. Manufacturing*, Center for Economic Studies Working Paper 16-06 (2016), <https://www2.census.gov/ces/wp/2016/CES-WP-16-06.pdf>. That survey found that increasing the usage of data-driven decision-making is linked to a statistically significant boost in productivity of 3% or more on average. *Id.* at 3. Studies have also shown that “better demand forecasting can, in fact, lead to lower prices and higher consumer welfare.” Miklós-Thal, *supra*, at 2.

Dynamic pricing enabled by revenue management software may account for anticipated or unanticipated changes on either the demand side or the supply side. These changes may be market-wide; for example, demand may ebb and flow seasonally. But they can also drive price differences – not convergence – on a property-specific level. For example, property specific customization of the software, as well as human judgment

in overriding pricing recommendations, can accommodate demand side factors, such as an individual hotel's hosting a popular sporting event, music concert, or conference, and supply-side factors, such as a temporary decrease in the number of available rooms at a property due to hotel renovations.

Dynamic pricing also enhances consumer welfare. In traditional fixed-price models, hotels must set prices well in advance based on limited information. This creates inefficiencies where prices may be too high during low demand periods (reducing consumer surplus) or too low during peak periods (creating shortages). Automated pricing allows hotels to adjust prices dynamically based on actual demand conditions. The best research on dynamic pricing, due to data availability, is from the airline industry. There, dynamic pricing, which is really only possible at scale with some sort of algorithmic pricing, helps consumer welfare on average. *See, e.g.,* Nan Chen & Przemyslaw Jeziorski, *Consequences of Dynamic Pricing in Competitive Airline Markets* at 3 (Jan. 26, 2023), <https://ssrn.com/abstract=4285718>.

Plaintiffs' attempt to characterize basic revenue management practices as inherently suspicious ignores these well-documented efficiencies. Features like competitor price monitoring and automated price recommendations are not nefarious—they are essential tools that help a

hotel operate more efficiently in a complex market environment. Just as manufacturers use inventory management software to optimize production or retailers use demand forecasting to manage stock levels, hotels use revenue management systems to operate more efficiently.

Plaintiffs' theory, if accepted, would dramatically expand antitrust liability to encompass routine business practices that enhance rather than harm competition. In plaintiffs' view, the mere fact that a company licenses the same analytical software as competing companies and receives pricing recommendations based on public data transforms ordinary vertical licensing agreements into antitrust violations. This sweeping theory cannot be reconciled with fundamental economic principles.

All of this has significant implications that extend well beyond the hotel industry. Many industries use third-party vendors that provide data analytics and pricing tools. As noted, airlines use fare analytics software to optimize route pricing. Retailers use inventory management systems that suggest pricing based on competitive data. Manufacturers use ERP systems that incorporate competitor benchmarking. Under plaintiffs' theory, these common business arrangements could all constitute antitrust violations

simply because competitors use the same vendor's analytical tools to process public data and receive recommendations.

The economic problem of this position becomes clear when applied to simpler tools. If multiple gas stations license Excel spreadsheets with the same pricing formulas, is that an antitrust violation? If retailers use the same market research firm's pricing surveys, have they joined a hub-and-spoke conspiracy? If manufacturers rely on the same forecasting software to set production levels, are they unlawfully coordinating output? There is no basis for distinguishing plaintiffs' theory from these scenarios.

This is particularly problematic for smaller market participants who rely on third-party vendors because they lack resources to develop sophisticated analytical tools internally. If using the same vendor as competitors creates antitrust risk, many firms would be forced to either develop costly proprietary systems or forgo analytical tools altogether. This would harm rather than enhance competition by raising barriers to entry and denying smaller players access to efficiency-enhancing technology, including technology that increases price transparency based on publicly available data, benefiting customers and suppliers alike.

Moreover, adopting plaintiffs' theory would stifle innovation. As former Deputy Assistant Attorney General Roger Alford explained: "we cannot presume the simple use of pricing algorithms is an antitrust violation. . . . Misplaced enforcement efforts have the potential to discourage innovation and deter efficiency-enhancing pricing." Roger Alford, Deputy Assistant Attorney General, Antitrust Division, U.S. Dep't of Justice, *The Role of Antitrust in Promoting Innovation* at 8 (Feb. 23, 2018), <https://www.justice.gov/opa/speech/file/1038596/dl>. Plaintiffs' complaint is a prime example of the sort of economically unmoored enforcement efforts that are properly rejected.

II. REFASHIONING THEIR CLAIM AS A SERIES OF INDEPENDENTLY ACTIONABLE VERTICAL RESTRAINTS GETS PLAINTIFFS NO FURTHER.

Plaintiffs' second claim challenges the vertical agreements between Rainmaker and each Hotel Defendant—the spokes of plaintiffs' hub-and-spoke claim—as independent violations of Section 1, asserting that "[e]ach individual agreement between a Defendant Hotel Operator and Rainmaker in isolation had the anticompetitive effect of artificially inflating prices for hotel rooms operated by that Defendant." 5-ER-897 ¶366. But that challenges simple license agreements themselves. And, "[u]nlike horizontal

agreements among competitors, which are relatively uncommon, vertical agreements between actual or would-be suppliers and customers are everywhere. Sales, licenses, franchises, employment agreements, and information arrangements are commonplace. Their very ubiquity indicates that only a few will be of antitrust concern.” Phillip K. Areeda & Herbert Hovenkamp, *ANTITRUST LAW* ¶ 1437 (Supp. 2024). The Rainmaker license agreement is not one of those few.

The Rainmaker software license does not create any restraint on decision-making, much less price. Rather, Plaintiffs admit that the software simply recommends prices that licensees can accept or reject at will. *See* 5-ER-720 ¶80 (subscribers may accept recommendations “as much or as little as [they] want”); *see also* AB 56-60. And, for the reasons discussed above, there is no economic incentive to accept prices without being contractually obligated to do so. *See supra* Part I.B.

Exposing companies to treble damages simply for subscribing to software that their competitors may ultimately also decide to subscribe to would set a dangerous precedent. And inferring a conspiracy—horizontal or vertical—at the pleading stage based on the mere licensing of software would subject countless companies across many different industries to

burdensome antitrust discovery, precisely what the governing pleading standards were designed to prevent. *See Twombly*, 550 U.S. at 558 (“[I]t is one thing to be cautious before dismissing an antitrust complaint in advance of discovery, . . . but quite another to forget that proceeding to antitrust discovery can be expensive.”). The trial court correctly concluded that plaintiffs’ complaint did not satisfy those standards.

ICLE does not contend that all uses of pricing software are necessarily lawful. Competitors could agree amongst themselves to fix prices, and they could use computational tools to maintain an unlawful agreement. But it would be improper—poor reasoning and bad policy—to infer such an agreement from the mere fact that competitors happen to subscribe to the same commercially available software.

CONCLUSION

For the above reasons, this Court should affirm the judgment dismissing plaintiffs’ complaint.

Dated: December 26, 2024

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CERTIFICATE OF SERVICE

I hereby certify that on December 26, 2024, an electronic copy of the foregoing Amicus Curiae Brief was filed with the Clerk of Court for the United States Court of Appeals for the Ninth Circuit using the Court's CM-ECF system and was served electronically by the Notice of Docket Activity upon registered CM-ECF participants.

Dated: December 26, 2024

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CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because it uses a proportionally spaced typeface (Book Antiqua) in 14-point. I also certify that the foregoing brief complies with the type-volume limitations of Fed. R. App. P. 29(a)(5) and Fed. R. App. P. 32(a)(7)(B)(i), because it contains 3,044 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(f), as counted using the word-count function on Microsoft Word software.

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