[Why Software Subscriptions Might Actually Be Fueling Digital Piracy](#)

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When streaming titans and enterprise software giants abandoned perpetual licenses in favor of monthly auto-renewals, corporate boardrooms hailed the subscription model as the ultimate piracy killer. The logic seemed unassailable: lowering upfront payments would lure potential pirates into legitimate digital storefronts. Yet in 2023 alone, global visits to piracy websites surged past 229 billion — a 12 percent jump since 2019 — proving that unauthorized digital channels remain as stubborn as ever.

[A new study](#) by a researcher at Tulane University's Freeman School of Business upends core assumptions of the subscription economy. Rather than eliminating illegal downloads, recurring subscription models can backfire dramatically. Under specific market conditions, they can push a company’s most dedicated users toward pirated copies while generating lower profits than traditional one-time sales.

Hongseok Jang

“Under a subscription model, heavy users must pay repeatedly over extended periods, which makes recurring fees accumulate quickly,” says Hongseok Jang, assistant professor of management science and the study’s lead author. “For these intensive users, incurring a one-time effort to acquire an illegal copy becomes a far cheaper substitute than paying an endless ticking meter."

To map these market dynamics, Jang and co-authors Janice E. Carrillo, Kyung Sung Jung and Young Kwark constructed a game-theoretic model examining consumer behavior across both integrated direct-sales channels and decentralized retail networks.

In a traditional ownership model — such as purchasing a perpetual software license — firms charge a fixed price for indefinite access. Casual users who only need the product occasionally might balk at the steep upfront cost and search for cracked versions, while intensive users readily pay for long-term access. Subscription models completely invert this sorting mechanism, with light users happy to pay modest monthly fees for occasional use, while power users see their long-term expenses add up.

When its customer base consists predominantly of casual users, a subscription-based company faces a dilemma. The firm must either cut recurring fees drastically to retain power users or surrender those heavy users to unauthorized distribution channels to protect profit margins on everyone else. In these market environments, selling outright generates higher overall profits and suppresses piracy far more effectively.

The study also uncovered an unexpected dynamic in multi-tier supply chains, where content creators distribute through third-party intermediaries like Amazon or specialized app stores. Economists have long observed the friction of “double marginalization,” where creators and retailers layer separate markups onto a product, pricing everyday consumers out of the legal market.

In decentralized channels, the threat of unauthorized downloads acts as an unlikely market stabilizer.

“Digital piracy operates as a shadow competitor,” explains Jang. “Because retailers must price aggressively to keep consumers from fleeing to pirated alternatives, the presence of piracy disciplines wholesale markups, mitigates channel inefficiencies, and aligns the business interests of both creators and retailers.”

These insights explain why distinct pricing architectures stubbornly coexist across modern industries. While enterprise suites like Adobe Creative Cloud and Wolfram Mathematica thrive on recurring fees, video game publishers like Nintendo still favor perpetual purchases for flagship titles where concentrated playing hours make subscriptions vulnerable to pirate substitution.

The researchers also note important boundary conditions. When companies bundle supplementary cloud services, mandatory security patches, or dynamic content libraries that pirates cannot easily replicate, subscriptions regain their competitive advantage.

As global digital goods revenues climb toward an estimated $511 billion by 2031, executives shouldn’t treat subscriptions as an all-purpose antidote to copyright theft. In an increasingly fragmented marketplace, business model choices do more than just collect revenues. They help determine whether high-value users remain as customers or become digital pirates.

“Subscription vs. Selling for Digital Goods Supply Chains in the Presence of Piracy” is forthcoming in *Production and Operations Management*.