

XXXONOMICS

How the internet changed the market for sex

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By **Allison Schrager, Christopher Groskopf, and Scott Cunningham**

“Elle” is a 63-year-old sex worker. She’s been at it for decades, and what makes her extraordinary isn’t just her longevity in the business, but her ability to adapt to a changing market. Sex work is as old as civilization, but in the past 20 years the market for illegal sex services has undergone a radical transformation thanks to the internet, upending how it is sold and priced. There are now more women selling sex, more overall encounters, and—unlike in many other industries disrupted by the web—higher wages for workers.

We used 17 years’ worth of data scraped from The Erotic Review, a website that is like the Yelp for illegal sex services. The dataset features about 1.1 million reviews, which contain extremely detailed descriptions of encounters, time spent, features of the sex worker, and price. According to data on the site, average inflation-adjusted hourly rates increased 38% between 2000 and 2015. Elle’s reviews have appeared since 2000 and her prices—now around \$270 per hour—almost exactly track the national average each year.

“So you’re saying I am average,” Elle says wryly upon hearing this news.

In many ways, Elle’s path is typical of long-term sex workers. Her career started in the mid-1990s at a San Francisco-based escort agency. They found her clients and she paid them about 20% of her earnings.

The agency went out of business when it was discovered by law enforcement. Elle briefly worked at another agency, but it was the turn of the millennium and the internet was starting to take off. She, like many other sex workers, realized that she didn’t need an agency anymore—the web let her set her own prices and work for herself.

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Clandestine markets are often the earliest adopters of technology. Illicit work is risky: technology makes it both safer and more profitable. Few industries have been transformed as quickly and profoundly by the internet as illegal sex work.

A look at the data reveals how the economics of sex work have changed. Classical economics often assumes transparent pricing and a market where buyers and sellers can easily find each other. Needless to say, this did not apply for illicit sex work. The internet has enhanced transparency and made it easier to match buyers with sellers. In many ways, it makes some women safer and better off, though it also comes with a dark side.

How sex is bought and sold now

Sex work has what economists call a “matching” problem. Before the internet, it was particularly difficult for buyers and sellers to find each other. Regional markets were thin and workers who advertised in newspapers risked arrest. As a result, the illegal sex trade, like other illicit businesses, was inefficient, with unpredictable prices and patchy availability. Violence, instead of law, was used to enforce contracts.

The market for sex has traditionally been segmented. There are low-end prostitutes who walk the street and work with pimps on one end, and high-end escorts who work for agencies on the other. But on the internet, sex workers found they could advertise to many more potential customers, and all segments of the market moved online, though they might advertise in different places. Craigslist and Backpage are the most popular sites that cater to the low-end market, while Eros is the best-known site on to the higher end, though there is often overlap.

The growth of internet-based sex work also spawned more variety in services, including a mid-range market. Research by Scott Cunningham of Baylor University and Todd Kendall of consultancy Compass Lexecon argues that the internet [shrank the street market](#) by making it easier for sex workers to move indoors. They estimate the indoor market grew because of both substitution (streetwalkers moving indoors) as well as women entering the market for the first time as the costs and risks associated with sex work fell.

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The internet doesn't just help workers advertise more widely. Sex workers gather on message boards where they share strategies, pricing, and warnings about bad customers. For their part, customers post detailed reviews on sites like The Erotic Review. The combination of these sites brings buyers and sellers together far more efficiently than before. Services are bundled, search costs are lower, and verifiable reputations for everyone involved bring greater transparency to a previously opaque industry.

As reviews became visible, available for others to see online, they began influencing the workers. Like all reputation mechanisms, this improved accountability, according to [another study by Cunningham and Kendall](#) (pdf). Providers couldn't blackmail customers, renege on services that were pre-negotiated, or take money and leave before performing services without risking a bad review that would hurt future business.

One sex worker told Cunningham and Kendall that “a lot of girls use [The Erotic Review] for the ratings. I have dozens of pages of reviews on there. It took me years to get those good ratings, and I make good money now because of it, but I had to work my butt off for them.”

The transparency and reliability of the sex business has improved as review sites have grown in popularity. Increased activity on sites like The Erotic Review is also a proxy for the overall

growth in the market—more sex workers engaging in more encounters with clients—since there is no reliable census or sampling of sex workers due to its illegal status.

The number of buyers and sellers on review sites appear to grow in concert, suggesting that they play an important matching role. Now anyone can peruse a listing of sex workers from their home, instead of taking the risk of curbside crawling.

Is selling sex online safer?

Even among willing adults who buy and sell sex online, risks remain. Agreeing to a tryst with someone they meet online still exposes sex workers to the risk of both violence and arrest, the same as during the analog days. Sex workers are easy prey for sadistic individuals: they might be robbed, blackmailed, beaten, raped, or even killed. One-third of all sex worker homicides are due to [murder by serial killers](#) (pdf). Another fear is that a purported client might be an undercover cop. When asked, sex workers are divided on what's a bigger worry, violent psychopaths or the police. What isn't in doubt is that sex workers now use technology to make themselves safer from both, mostly through better screening.

Screening lets a sex worker learn more about a new client's background and intentions before agreeing to meet with him. Informal examples include asking for letters of reference, calling him at work, doing background checks, and talking extensively via email and the phone. Formal examples include designated third-party services like Preferred411 or shared "whitelists" of approved clients. Whitelists have always been around in the escort industry, but until the internet came along they weren't as widely shared.

The Erotic Review, for instance, provides a service whereby a client seeking to engage with a sex worker for the first time has another sex worker vouch for him. While not perfect, these and other screening practices have made the work considerably safer for both buyers and sellers, thus ensuring more efficient matches.

It seems sex workers are safer despite engaging in more encounters thanks to the internet.

That said, getting access to credible screening services raises its own problems. One sex worker complained to Quartz that access to one site required a good review from a high-status reviewer on The Erotic Review. She felt pressure to offer free or heavily discounted services to obtain a good review from the person as a result.

It seems, in general, that sex workers are safer despite engaging in more encounters thanks to the internet. Cunningham's [latest research](#) (pdf) examined the impact that Craigslist's opening of its "erotic services" advertising section in certain cities had on violence against women. Craigslist offered these listings in different cities at different times, and the researchers used the variations to identify the causal effect that the platform had on homicides against women.

They found that the availability of Craigslist's erotic services led to a 1-17% reduction in homicides, and a modest decline in rape. They also found that Craigslist's service was associated

with a higher probability of escorts working independent of an agency and more “incalls,” in which a client travels to meet a sex worker. Furthermore, the probability a review contained the word “street” declined after erotic services opened in a city, suggesting that at least some of the increase in the online market came from prostitutes who formerly worked the streets shifting to soliciting indoors. The risks are profoundly lower for work arranged via online exchanges.

How the internet changed the price of sex

As the information and matching problems that historically plagued this underground market were reduced by the internet, pricing practices changed, too.

We spoke to Elle about how she sets her prices and why they have gone up by as much as they have. This was surprising because over the past 15 years, she transitioned away from escorting and into lower-paid erotic massage. “I don’t have the body to escort anymore,” she said, wistfully.

Elle has kept her prices in line with the rising market because she does her homework. “There is a Google group I belong to that is for women in the sex business,” she said. “Sometimes fees are discussed to see what others are charging. Newbies may charge a little less since they are learning the ropes, so to speak. “

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Elle works in different cities, so she adjusts her prices to match the local market conditions. “I will also look at the places that I travel to for work, go to the ads on backpage.com or Eros.com, and then check out their websites,” she said. “Most girls will have their prices listed.” Prices are cheaper in the Midwest, at about \$200 an hour, but on the coasts she charges \$260.

Regularly checking market conditions allows Elle to increase her prices. Unlike women in most industries, Elle is always aware what others are paid, and this empowers her to set prices that suit market conditions. Of course, unlike other markets, sex services are unique. Prices matter, but providers offer enough of an idiosyncratic service that there is less pressure to undercut the competition at the margin, by offering \$299 instead of \$300 per hour, for example.

As the market has grown, different price tiers have emerged for different segments. Data from The Erotic Review reveal a multi-tiered market, with prices clustering around even numbers such as \$200, \$250, and \$300 per hour.

The rise of high-end sex work

Since 2000, more transactions have been recorded at the top end of the market, probably due to more women joining the industry who see their services as higher quality and justifying a large premium. The median and lower-end prices have also increased, but not by as much.

Patty Plenty has been a sex worker for decades and has amassed a long history of reviews on The Erotic Review. She claims she's appeared in nearly 100 adult films and in her online listing under "Breast Cup" it reads,

"JUST PLAIN HUGE." The 60-something said these features mean she can charge a premium to other sex workers. (In fact, she used far more lewd language to describe the source of her superior pricing power.)

Patty's premium has been consistent over time, at almost exactly twice the national average. When clients balk at her price she tells them, "You can go with some flat-chested local girl for that price."

Patty lives in Hawaii, where the market is smaller and prices are generally higher. She says she increased her prices over time to reflect the higher cost of living, taxes, and what it takes to continue "looking good." She also earns money from real estate deals and adult films. She has been married seven times, and has an adult daughter who works in finance.

Before the internet, Patty advertised in newspapers, specializing in erotic massage but willing to have sex with clients if they paid her more. She says she started advertising online in the mid-1990s, and she's always been an early adopter of new technology. "I always had a computer, even in 1983," she said.

Many of the top-end sex workers have what economists call a "reservation wage." That is, they will only do sex work if they are paid enough to make it worth their while. Since the internet made it easier and safer for women with high reservation wages to enter the market, this may be why prices at the high end of the market are growing the fastest.

Is this efficient?

In part, the overall rise in the price for sex reflects higher costs, like health care and rent in the urban areas where most sex workers work. But it also seems to indicate higher price markups, which is surprising. You might assume that an online marketplace that generates more competition and transparency would result in lower markups—like what Amazon is doing to the retail industry. After all, why would someone pay a sex worker \$700 an hour when they can get a similar service for \$200?

When the market operated in the shadows, charging higher prices was a way to separate low-end street walkers from escorts. But these prices didn't necessarily reflect the quality service. This practice now seems unnecessary given the detailed reviews on sites like The Erotic Review. Thus, if the market is working as it should, higher prices should be the result of a better customer experience. For sex work, it seems like that's the case, to a certain extent.

Users of The Erotic Review post a numeric score of their overall experience after each transaction. Higher ratings are correlated with a higher price.

So, it seems customers get what they pay for. Performance is hard to quantify, but it seems highly related with appearance: higher priced sex workers typically have above-average performance and appearance ratings.

This could reflect a causal effect of performance and appearance on price. Many studies have shown that workers who are more attractive on average [earn more money](#). Or, it may reflect a sort of placebo effect, in which price influences the subjective evaluations of quality, such as the tendency for [wine drinkers to give higher ratings to pricier bottles](#).

For sex work, the relationship between price and performance flattens out at the higher end of the ratings. Customers who paid \$600 an hour tend to give similar ratings as people who paid \$400 or \$500. Most reviews tend to cluster around a 7 or 8 out of 10.

It could be that buyers can get an “8” experience for \$400, \$600, or more. It is hard to know for certain. Paying for services at the top end of the market may also come with outsize expectations that are difficult to fulfill.

The downside of making sex easy to buy

Most sex workers are willing adults who work independently. Since moving online, illegal sex work has become safer, easier, and more profitable. Is that a good thing?

It is an unambiguous improvement that sex workers are now less reliant on pimps, often a [source of violence](#) (pdf), and can now better screen potential customers, further lowering their risk of harm. But [there is evidence](#) that the ease of promoting sex work online has also led to an increase in human trafficking, especially of minors. Some of the websites where providers advertise, especially at the lower end of the market, include human trafficking victims.

Illegal sex work has become safer, easier, and more profitable. Is that a good thing?

Backpage has been sued multiple times for featuring trafficked minors in its listings. In January, the US Senate [released a report](#) (pdf)—“Backpage.com’s Knowing Facilitation of Online Sex Trafficking”—that detailed the extent of the problem, based on a two-year investigation. It noted that 73% of trafficking tip-offs to the National Center for Missing and Exploited Children from the general public involved Backpage.

Shortly after the report, [BackPage shut down](#) its adults-only section. Backpage claims it cooperated with law enforcement and was often used as a tool to uncover human traffickers. Other websites [make similar claims](#). The Erotic Review [also pledges](#) a zero-tolerance policy for reviews involving human trafficking or minors, and claims to cooperate with law enforcement when it finds offenders.

Greater transparency and the funneling of both coercive and consensual sex work through a few popular sites should, in theory, make it easier to identify human traffickers. The internet-enabled

market for sex is growing so quickly, though, that it provides both cover and more opportunities for human traffickers to ply their trade.

Like many industries, the internet changed the market for sex faster than it could be regulated and policed. While consenting adults may be better off as a result, advances in technology have also allowed criminals to exploit the most vulnerable.

If you ask 100 sex workers why they work in the business, you'll get 100 different answers. Some enter the industry by force, some are in it for the money, and others genuinely enjoy the work. Moving this large, diverse industry online has fundamentally changed how sex is bought and sold, generating benefits as well as horrible costs.