

# Legal Version Executive Summary

## Introduction

The Multifamily rental market in metropolitan areas has experienced a dramatic surge in prices over the past decade. Many casual observers believe the cause of this surge is the rapid influx of new residents in urban areas. Just a simple supply and demand logic: demand went up, and supply did not rise with it, leading to rising rental rates. My research shows there is something much more calculated and pernicious causing this rapid increase in rental rates. Various companies have colluded to form the 'Rental Housing Cartel.' For example, in Metro Seattle, between 2013 and 2018, rental rates skyrocketed by 82.59%, and homelessness ballooned by 32%. More specifically, between 2013 and 2014, the rental rates increased by over 40%. In 2015, over 35,000 people became homeless for the first time. King County (Metro Seattle) declared a state of emergency over the exploding homelessness crisis. See [Declaration](#). But the crisis isn't limited to Seattle; ten other large metros also filed similar states of emergency in the same period.

The multifamily rental real estate market is a \$12 trillion industry that generates nearly \$100 billion annually, and property managers utilize a shared pricing platform supported by massive databases to manage those properties. They cooperate under the property management system or pricing platform RealPage (hereinafter, Platform) to artificially raise rental rates to maximize profits. Driving this expansive platform is an AI (artificial intelligence) program designed to distort traditional supply and demand logic. Through the Platform, the supposedly competitive property managers and landlords are sharing information on their applicants, tenants, and properties. They collect and correlate data on the current rent rolls using millions of tenants' private and personal applications to decide whom to rent and how much to charge. Powerful AI that brings near-perfect market information but molds that information around toxic, racist, and greedy underpinnings that, above all else, push to maximize profits by 'pricing-out' the bottom 15% of households based on income. Unsurprisingly, this allegedly illegal practice is exacting a heavy toll on our society and costing billions to taxpayers as the government bears the burden of increasing homelessness and its associated costs. The use of the technology remains variably unchallenged or unregulated by any governing body.

To better understand the general nature of these shared technology-driven platforms, we begin our discussions at the origin of revenue management optimization [software](#). Robert Cross was at the heart of the revenue management movement; he owned a company called Manugistics. In 1984, it launched revenue management technologies for Delta Airlines; the company saw \$300 million in incremental revenue gains in the first year. The technology revolutionized how industries create revenues, not by adding services or improving products, but by eliminating unprofitable operating segments such as services, i.e., ticketing, delivery services, or luggage handling, and charging the

customer junk fees and then making the customer complete the task such as ticketing and carry-on luggage.

### **What is Revenue Management or Yield Optimization Software?**

Revenue management or Yield Optimization [Software](#) is the technology system that automates pricing. It was established initially by the travel and hospitality industries to use their vast data to forecast supply and demand and price their products to maximize profits. The idea is that technology determines the price on a particular day and at a particular time. The introduction of this technology ushered in the transition from an oil-driven economy to a data-driven economy, representing the largest economic development in the last 100 years.

Therefore, the old economy's management structures must also change to accommodate and leverage the technology. The new management structure is referred to as: ‘*The Manugistics Standard of Non-Competition*, (referred to throughout this paper as simply ‘Management Standard’). It’s founded on the principle that successful companies can no longer operate as separate entities. To better compete, companies must leverage their working relationships with their competitors, customers, suppliers, and subsidiaries. [\[see the full article\]](#) Concluding that the Management Standard at the heart of its domination campaign is that it cannot compete on price; as we shall see, it would destroy the entire pricing structure, rendering the Management Standard ineffective. Therefore, the process necessitates the cooperation of the data providers and Platform members to collaborate with the established rules of the group. Through the process, they disavow their competitive independence. However, the revenue optimization technology was game-changing; it can double their profits without adding any additional expenses. Hence, it is this technology that the digital industry is framed around.

### **What is a Cartel?**

In a data-driven economy, market share is measured not by individual companies but instead by the industries’ common pricing platform. RealPage (Platform) owns and manages the platform in the rental housing industry. Therefore, market share and power are measured by the percentage of rental units priced on its Platform in a given market.

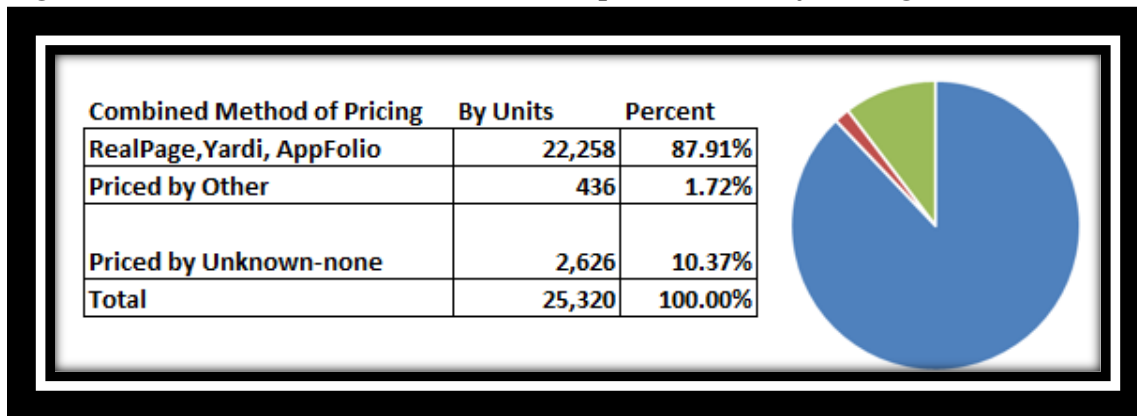
In the Rental Housing Industry, the ‘Rental Housing Cartel’ is an association built from a formal or informal agreement between landlords to control the housing supply, the number of applicants allowed in the renter pool, improve debt collections, and influence prices. However, a cartel in a data-driven economy can look quite different from fifty years ago. For instance, the conduct could arise when a landlord outsources its pricing function to a third-party like the Platform. Suppose multiple competitors engage the same third-party agent (YieldStar) to set their prices using an identical algorithm (with the knowledge that their competitors also engage the same price-setting agent). In that case, there is a risk that this would amount to ‘hub and spoke’ collusion. This does

not differ substantially from traditional price-fixing—it is still a cartel agreement between two people. However, a cartel exists for only one of two reasons: bid-rigging or price-fixing.

In 2022, there were about [44 million](#) rental units in the U.S., and property managers used a property management system (PMS) to manage them. However, there are only three primary PMS providers: RealPage, Yardi, and AppFolio. Locally, per Figure 1, in Metro Seattle, they accounted for between 87.91 and 95% of the market. Our research concluded that the use of DOP technology is concentrated in metro areas.

RealPage Market Share	20 million units or	45.5%
AppFolio Market Share	5 million units or	11%
Yardi Market Share	8 million units or	18%
<b>Total Market Share:</b>	<b>33 million units or</b>	<b>75%</b>

*Figure 1. Metro Seattle, The Combined Group Breakdown of Pricing Methods*



### **The Rental Rate Recommendation:**

The rental rate recommendation is the cartel's terminology to mean that the technology provides the rent rate. By understanding the process by which revenue management systems recommend prices, legal professionals, regulators, and policymakers can better understand those recommendations and determine whether a given price is the result of market manipulation or sound business practices.

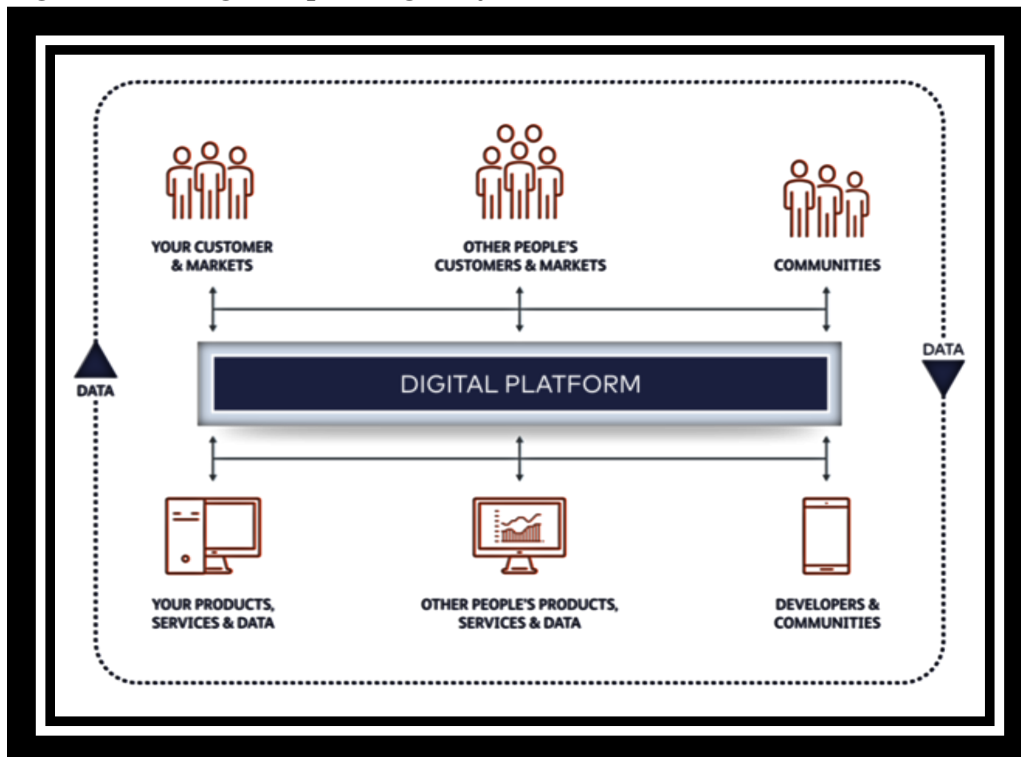
### **1) Digital Operating Platform (DOP)?**

The advent of the new data-driven economy meant they needed to gather, access, and share massive amounts of data on their applicant's tenants and properties to facilitate the 'Management Standards' requirement of leveraging their working relationships. Thus, the technology providers engineered a new type of operating system, the **Digital Operating Platforms (DOP)**, to amass the needed data. Historically, a firm's computerized operating systems only included the business itself. For example, each employee's computer was hardwired into the company's network. This network provided the operating system on which their applications could be run and allowed its employees to communicate and complete tasks. However, this is where the DOP is unique. It's a

core software platform integrating automation and workflows, efficiently centralizing all business functions. It also synchronizes data across different systems and companies into a single framework. The new DOP includes the operating platforms of all business relationships, allowing for better leverage.

The 'DATA' flow in Figure 2 represents data collection in the background without most employees' knowledge. Their jointly employed algorithms accomplish the data-gathering process. In the Rental Housing Industry, for instance, RealPage created a Multi-Sided DOP, or 'Platform,' which creates a fluid relationship with other third-party data providers, allowing it to access and share the massive amounts of information needed for pricing. For example, they are connected to every property management system nationwide, collecting in real-time data. Thus, to accomplish this, they link the property management companies operating platform, 'Your Customers & Markets,' which also includes 'Your Products & Services,' to the DOP. Additionally, on the Platform, you are joined by the other participating property management members, i.e., competitors 'Other People's Customers & Markets.' Additionally, the 3<sup>rd</sup> party providers all plug into the DOP 'Communities.' For example, Experian provides tenant data, i.e., meeting the requirements of their (customers).

**Figure 2 The Digital Operating Platforms**



### **Multi-Sided DOP**

Historically, agents in different industries found it difficult to acquire information across boundaries; for instance, Experian has data on applicants that the landlords need. Conversely, landlords have data on their tenants that Experian needs. The multi or two-sided platform,

however, has solved this transaction-cost problem. It efficiently and conveniently brings customers and service providers together. For instance, the Platform and Experian have a two-sided platform relationship. This arrangement allows the Platform to obtain real-time data on their applicants from Experian, which would otherwise be impossible without this platform as an intermediary.

## 2) The Digital Operating Platform in Rental Housing is the Property Management System (PMS)

A property management system (PMS) provides a centralized cloud-based computer system to organize, schedule, and perform the day-to-day functions and transactions involved in property management, from processing applicants to filing business records to setting rental rates. Per Figure 3, the various PMS offer four core components or segments, and each segment is supported on a separate platform or module.

*Figure 3, The Four Parts of the Property Management System (PMS)*



### What is the difference between a Single Stack and an Open and Connected Platform?

**Single-stack software** – This refers to a platform that includes all features and functionality within one system or stack. All four parts of the PMS system are developed, maintained, and managed by one provider. Historically, a PMS provided all the software solutions that property managers could utilize. For instance, if a manager chose Yardi, then Yardi provided their single-stack software needs, including everything from core property management, such as accounting, to revenue management.

**Open and Connected** – This refers to a software platform designed to integrate modules or systems comprised of the four parts of the PMS system from third-party providers into a single experience for users. The platform provider (i.e., Yardi, RealPage, or AppFolio) takes responsibility for managing the integrations with select providers.

In 2003, the National Multifamily Housing Council (NMHC), the primary industry trade association, issued a notable [joint study](#), pushing the industry to Revenue Management Technology. They essentially put the industry on notice that technological changes were coming. Then, to ensure that the investors would maximize returns on their investments, NMHC pushed further still, making their case for the industry to put aside their petty differences and see the bigger picture. With NMHC's guidance, the industry adopted the Multifamily Information and Transactions Standards (MITS) initiative. What this did was to ensure software developers followed a standard and the technology was required to pass certification in part, driven by the requirements of integration. The initiative essentially broke up the traditional PMS single-stack platforms. It replaced them with an open and connected agile platform that included interchangeable modules that were comprised of everything from accounting software to comprehensive leasing platforms to revenue management. Afterward, managers would focus on best-of-breed solutions to plug into their systems. In other words, operators could maintain their accounting programs with Yardi and still plug into RealPage or LRO for their pricing (Revenue Management Module).

**a) White Labeling (Previously known as Private Labeling)**

White label software is unbranded software that a company leases or rents from a vendor and then rebrands to sell as its own for a profit. Software as a service (SaaS) is a way of delivering software applications or programs remotely over the internet instead of locally on machines. The technology is typically held in the cloud due to the massive size of the technology program. Since about 2010, it's ballooned into a \$180 billion industry. With little to no overhead, an entity can quickly add new features to the product and more quickly attract new customers. Essentially, the developer or manufacturer creates a generic product or service, and the reseller or distributor (user) customizes the product or service with their own branding, logo, and other specific features. The reseller or distributor takes ownership of the product or service and sells it to their customers as if it were their own without disclosing the original developer's or manufacturer's involvement. For instance, RealPage could provide a generic version of YieldStar. Yardi, Rainmaker LRO, Appfolio, and RealPage all use and market White Label Technology.

**b) Integrations**

Software integration is the process of connecting one software application with another, typically through their application programming interfaces (APIs). Once connected, the applications can share data and provide updates to one another in or near real-time. However, true integration occurs when software can access and take advantage of the full functionality of other tools within the software platform. That's opposed to, say, a vendor that can access resident record information from a property management system but can only view a list of information, such as name and unit number. Today, PMS providers are offering the true type of integration. An integration allows the technology owner to mass-market its products through white labeling. For example, RealPage YieldStar gets paid for its use whether RealPage, Yardi, or AppFolio sells the product.

### c) **The Revenue Management Module**

However, to be clear, there were only ever two primary providers of price-enhancing technologies referred to as Asset or Yield Optimization Technology (software): RealPage and its YieldStar pricing algorithm and the Rainmaker Group and its Lease Rent Options (LRO) pricing program. The two modules operated similarly and were cooperatively developed by the industry. The only other pricing technology was Yardi's RENTmaximizer, which automatically plugged into its single-stack PMS. However, its revenue management module was less robust than the Rainmaker or RealPage products. And, prior to 2022, it didn't offer rental rate recommendations. Therefore, to remain competitive, in 2009, Yardi created an integration allowing their larger and more sophisticated customers to acquire the revenue management module from LRO, RealPage, or both. AppFolio created the same scenario in 2016. However, in 2017, the unthinkable happened: RealPage acquired LRO and merged the two platforms, creating the RealPage common pricing Platform within the Revenue Management Module.

### **3) The Leasing Module or Platform**

Historically, landlords faced a scenario in which the market might not have enough qualified applicants to fill their vacancies. Or, applicants might not qualify for a lease at various points in time due to the landlord's chosen "risk setting" in the scoring model. It was a time-consuming process. Today, however, that's no longer the case. When Rainmaker LRO entered the multifamily rental market, they found the entire lead generation process wholly disjointed and fractured. They set out to develop the system more fully. They revolutionized the leasing platform by converging it with revenue management. In other words, their pricing process begins with lead generation. The entire process starts with guest cards. It's the information collected from every prospective applicant who tours a community, online or in person. Rainmaker developed a massive AI-powered platform that automates the guest card process for the entire rental industry, from gathering massive amounts of data to automatically inputting the data into its system, a black box—no human input.

Their programs then use this data to pre-qualify demand, for instance, to ensure they meet a designated minimum rent-to-income ratio. In this early house-hunting stage, prior to a physical application, the technology pre-qualifies the applicants by ability and willingness to pay the highest rates. Then, it prioritizes demand by segments such as wealth, income, skin color, sexual preference, political preferences, and many other sociological characteristics. They created a multi-billion dollar industry, the industry that generates 'qualified' applicant leads and sells the leads to property managers. How widespread is this practice? In 2016, there were 28,181 registered housing discrimination complaints, all left unanswered. Also, some 91.5% of all acts of housing discrimination reported in 2016 occurred during the rental prescreening process long before the applicant signs an application. In essence, their technology knows precisely how many people are looking for housing, the size and type of housing they are looking for, how long they plan to stay, and the amount they are willing and able to pay. At the very heart of their pricing

algorithm is the requirement to precisely measure the tenants' willingness (the willingness factor) to pay the proposed rate increases.

Let's look at how useful it can be for a landlord's management of rent increases and vacancies. They use predictive analytics and revenue management data to forecast upcoming vacancies. It predicts which tenants will stay and which will go. However, for those tenants, the AI predicted would go, they automatically launched a marketing campaign targeting the more lucrative, 'qualified applicants,' to fill those units. They claim to be proactive rather than reactive, filling those units before they become vacancies. In other words, the system will seek out and select a 'suitable' replacement tenant long before the unit becomes vacant. With parallels to the 2002 Tom Cruise blockbuster, "The Minority Report," which is based on a futuristic society where a division of the police called Precrime had full authority to arrest suspects before they committed any actual crimes. Today, their applicant screening program was purpose-built to predict applicants' capability and willingness to pay their rate increases and whether or not they get into housing or are forced to camp in the streets.

Conversely, RealPage's focus was the rent roll. This is where we trace their beginnings. The rent roll contains massive amounts of information, and the ability to harness its secrets led to its powerful YieldStar pricing technology. However, when the two methodologies were combined, RealPage created a powerful platform managing demand from all aspects of the pricing process. The LRO piece of the algorithm managed demand, beginning with the applicant using the guest card data. Then, once the tenant signed the lease agreement, YieldStar provided the platform to manage demand after that. The combination of the two algorithms provided a 360-degree view of demand.

#### **4) RealPage YieldStar AI Revenue Management (AIRM)**

The RealPage YieldStar algorithm sets the rates of rent through four primary steps. The first, Step 1, is the massive data-gathering process. Step 2, the technology leverages the data and provides technology and analytics (various IT programs) to establish forecasting. In this step, the technology manipulates the market by artificially balancing supply and demand. Step 3: Rent Optimization and how the Economic Occupancy Pricing Program is designed to increase the Yield Spread between the advertised rate of rent and the effective or actual rental rates. Step 4: The Rental Rate Recommendation---details how the Platform, not the market, sets the rental rates.

##### **a) Step 1 of the Pricing Process: How they Gather, Access, and Share Data on their Applicants, Tenants, and Properties**

The heart of the matter is that the Platform requires massive amounts of data to be cost-effective. For example, they need supply data on their inventory of properties and demand data on their customers, the tenants. However, AI is only as powerful as the data that fuels it. The primary data they use comes from two sources: external data, which is data that lives outside the property



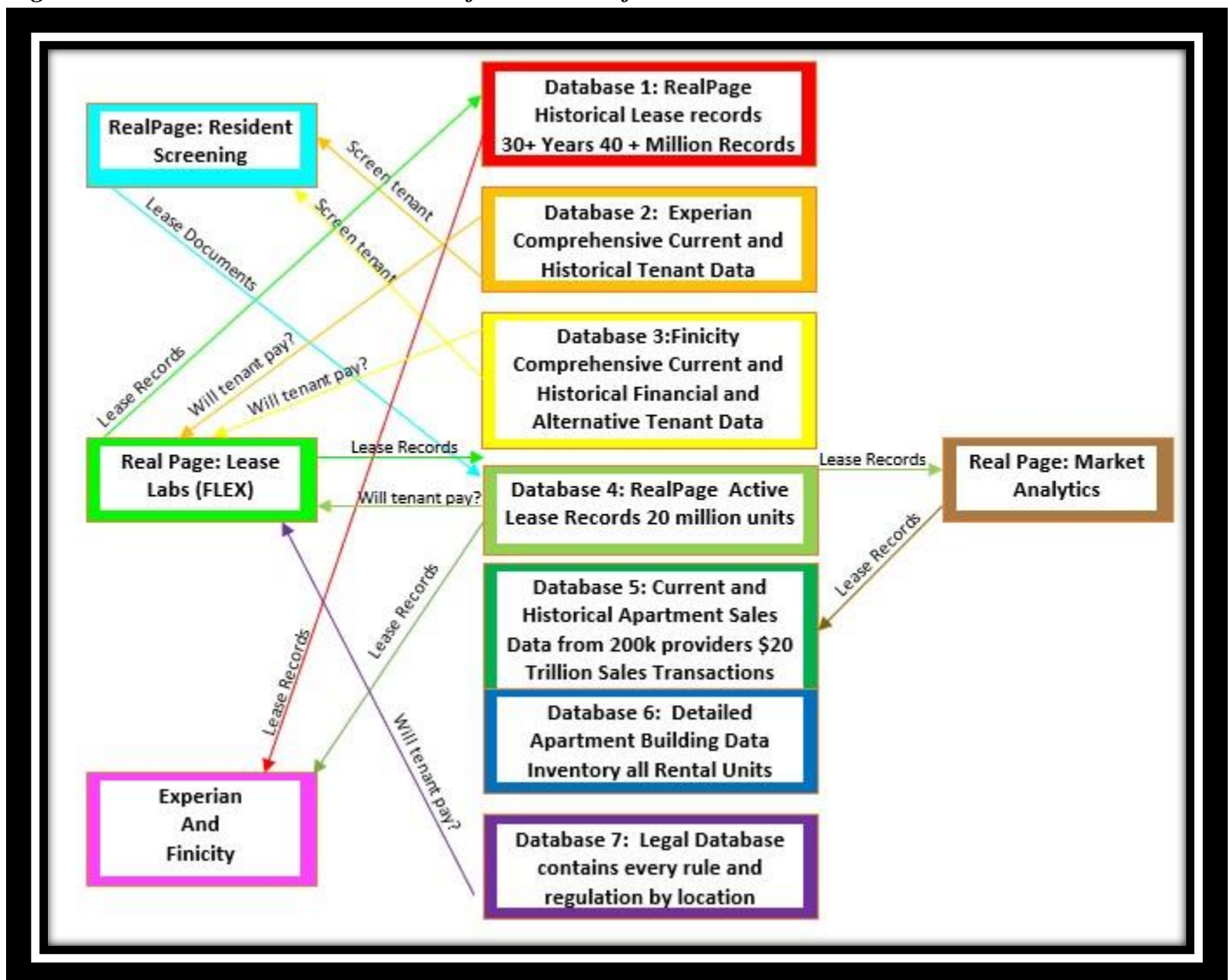
management systems, such as Experian and market data, and internal data, which is the data that lives inside the property management systems, for instance, the landlord's databases.

### The Seven Primary Databases and Their Purpose:

The goal of the pricing algorithm is generally referred to as the '*Optimum Mix Equation*,' i.e., the highest revenue combination of rents and ancillary revenues vs. the lowest occupancy possible by artificially balancing supply with demand, which will be discussed more in the second step.

Suffice it to say, however, massive amounts of data must first be collected to make those calculations. They created seven primary databases that power the pricing algorithm to accomplish this task.

**Figure 4 Their Databases and Sources of Data and Information**



Databases One through Four contain tenant and applicant information, including Guest Card applicant data---maintained in a sub-set of Database One. Databases Five and Six have information

on the properties. Database 7, the Legal Database, is tied to a legion of lawyers and databases of every law, rule, and regulation affecting housing broken down by each state, county, and municipality. In the contracts they create, Database Seven is utilized to circumvent those rules and regulations to maximize profits by skirting the ‘spirit of the law’ and the measure it was meant to protect. The marriage of this vast army of legal advisors armed with infinite amounts of data at their fingertips has forever altered and tipped the rental housing playing field.

#### **b) Step 2 of The Pricing Process: Data Processing, Benchmarking, and Forecasting that Results in Balancing Supply with Demand**

This step of the pricing process can be recognized as it processes the data and then adds Business Intelligence (BI)—a form of artificial intelligence. The practice begins with data aggregation, the process of summarizing a large data pool for high-level analysis. This broad term applies strategies and methodologies to analyze massive amounts of data, transform it into actionable insights, and make the information usable. It involves compiling information from multiple sources and organizing it into a simpler, easy-to-use medium. For instance, data aggregation can be used to conduct statistical analysis. BI includes data mining, process analysis, performance benchmarking, and descriptive analytics.

#### **Forecasting**

Once the data has been benchmarked, their forecasting tools are the final step to be used. The idea is to leverage the technology and data to maximize profits systematically. The heart of their pricing algorithms lies in their ability to forecast based on all that data--the seven databases. Their theory holds that they can maximize profits when there is a balance in supply (housing) and demand (tenants). Therefore, they aim to control the number of applicants allowed in the renter pool to equal the number of available rental units. For instance, if there were 100 available rental units, there should be 100 applicants. This depth of understanding provides a framework known as supply and demand forecasting, which plots a forward-looking unit supply alignment with prospect demand to allow them the ability to balance supply and demand and thus maximize profits.

#### **The Historical Principles of Supply and Demand**

Historically, demand was an economic concept that refers to a consumer's ability and desire to purchase goods and services and willingness to pay a specific price for them. In the rental industry, in theory, rent prices will fall if there are more houses (supply) than renters (demand). Prices will rise if there are more renters (demand) than houses (supply). Additionally, historically, inelastic products are subject to wild price fluctuations. For instance, too many homes on the market meant the prices would drop dramatically. However, raising the prices when a housing shortage occurs is more complicated and takes a long time. But today, this economic theory has been disregarded and replaced with a new method called unconstrained demand.

### **Understanding Price Elasticity, Which Measures the Price Sensitivity of Tenants (Demand) on Supply (Rental Rates)**

Elasticity measures how sensitive the quantity demanded of a good is relative to its price. This goes a bit deeper than just people buying more of a good when it gets relatively cheaper and less when it gets relatively more expensive. Elasticity describes how much demand for a product increases or decreases in response to a change in its price. Some goods, considered luxuries, are very price-sensitive—think high-end jewelry or expensive restaurant food. When these goods get more expensive, people can very easily cut back on their consumption.

On the other hand, other goods are considered inelastic, like food or rental properties. A good is considered inelastic when two criteria are met. First, there are no reasonable substitutes. Second, the good is a necessity. A classic example of an inelastic good is gasoline. For the most part, at least in the short run, there are no reasonable substitutes. It is also a necessity for most people. Thus, when gasoline prices rise, demand for gas will fall, but only by a small amount. People still need to travel in their daily lives. The converse is also true. When gasoline prices fall, gasoline demand will rise, but only by a small amount. People can only put so much gasoline into their cars.

RealPage is not just a passive player when it comes to elasticity. Just as they use market share and AI technology powered by massive data resources to manipulate supply and demand, they also manipulate price elasticity. For some luxury rental units, this is more difficult, but for most units within the RealPage overview, manipulation of elasticity is a key element of their overall pricing strategy. The Platform can maximize revenue when there is a balance in supply and demand. They claim they can incrementally increase rents indefinitely when the market is balanced. The balancing program is called “continuous optimization through connected intelligence.” Essentially, if you can manipulate supply and demand, you can, to a certain degree, also manipulate elasticity or the reaction of a change from one to the other.

#### **i) How RealPage YieldStar Manipulates the Market**

**To Balance Supply:** The first step is to determine the total housing inventory directly from Database Six (listing all available sources). For additional insight into their inventories, it collects data from Database Five (providing historical data) and Seven (legal guidelines)—providing the total available supply. To understand the process of balancing supply, we turned to the Airline Industry. In 2018, the DOJ settled a price-fixing claim against them. The suit alleges that the defendants illegally signaled to each other how quickly they would add or remove new flights, routes, and extra seats. Paralleling the Airline Industry, our research concludes that landlords are holding rental units off-market by extending the ‘hold-time’ of a unit once it becomes vacant. The algorithm signals the pre-determined extended hold period to the participants and is integral to balancing the supply. How widespread is this practice? Think of it this way, nationally, on any given day, the Platform holds over a half million rental units off the market.

**To Balance Demand:** However, by leveraging its relationship with Experian, the Platform maintains some measure of control over the number of tenants allowed in the applicant rental pool at any given period. In other words, their forecasting tools dictate whether or not they increase or decrease the renter pool by simply loosening or tightening their scoring models to match their desired outcome. For instance, when they need additional tenants, they ignore certain white-collar crimes in assessing an applicant, thereby approving applicants who might have otherwise been denied. In short, the scoring model allows property managers to deny a tenant housing one day because they failed the leasing score and then approve that same tenant the next day because, and only because, they can change the integrity of the scoring model.

**ii) The New Definition of Demand--What is Unconstrained Demand? And How they Manipulate Demand in the Market**

Their new methodology changed the definition of ‘demand’ itself, switching from a historical basis to one supported by current events—in real-time. This step of the process is critical to the success of the Rental Housing Cartel. By working together and accessing and sharing data, the RealPage Leasing Platform, OneSite, knows all applicant and tenant information. YieldStar was designed to manipulate the market first by balancing supply with demand.

The first part of the process is made possible by the fact that YieldStar has been integrated directly into the landlord's property management systems, providing access to that real-time data. Thus, it starts with their leasing platform's internal data, where guest card information attributed to LRO methodology is held in Database One along with the RealPage 20 million active lease records. Then, from Database Four, the lease transaction data covers the forty million lease outcome records, providing a historical record of those tenants. However, it goes much deeper than this. Then, the leasing platform technology adds external data, such as real-time consumer credit, demographic, and sociographic data.

Then, they incorporate that data with their technologies and analytic programs, improving the accuracy of models used to calculate the depth of demand by price point. In essence, the technology uses that data to establish qualified demand and knows precisely how many people are looking for housing, the size and type of housing they are looking for, how long they plan to stay, and the amount they are willing and able to pay. It's referred to as unconstrained demand. Once the system has verified the amount of money the tenants are willing and able to pay, the system will balance supply with qualified demand to ensure that the correct number of rental units are available.

However, unconstrained demand can only be achieved because of the vast amount of information the Platform has acquired and combined with its technologies that can eliminate what the Platform deems as unqualified applicants. Therefore, applicants who don't fit their supply availability are eliminated from the renter pool—which is accomplished by simply adjusting the scoring model. Conversely, unconstrained demand can only be deployed when the variable, housing supply, is

known and controllable, which they have apparently accomplished because rental units that are in excess of the qualified renter pool are held off the market.

Let's look at the leasing process to detail what the rate-setting process using unconstrained demand might look like. It calculates demand in a given market using all customer visits, even if a unit isn't leased, and provides forecasting of unconstrained demand -- the quantity that could be sold if there weren't any constraints. In other words, listing an apartment at a given rate establishes the current market value for rent if an applicant acts on (views) that listing. Simply put, rates are based on listings instead of closed leasing transactions. This process provides insight into their pricing methodologies. In short, keeping the available rental units in balance with the number of qualified prospective applicants means that more of those 'pre-qualified' applicants will view listings even if the stated rates of rent are more than they normally would want to pay. In short, when the applicants begin to search for an apartment, they can see that almost all similar units are similarly priced. In the end, the applicants resign themselves to the higher rental rates. And thus, to a certain degree, they've manipulated elasticity or the reaction of a change from one to the other. In this case, the applicant viewed the proposed rental rates and accepted them as market rates based on normal historical supply and demand principles.

In essence, YieldStar replicates an old childhood game called 'Musical Chairs.' In this game, players walk around a row of chairs while music plays. When the music stops, the players try to sit down in a chair. However, the number of chairs is always one less than the number of players. The player who is not fast enough to find a chair when the music stops is essentially left out of housing. In effect, they create an atmosphere of 'chasing' available housing. The process leaves tenants feeling 'lucky' they found suitable accommodation, regardless of the financial burden that has been created.

Additionally, the 'viewing' or visiting process produces what the industry calls the capture rate—the percentage of prospect visits vs. signing a new lease. Thus, once the applicants resign themselves to the new higher rates, the system continuously pushes the rates ever higher. For instance, an industry insider stated that there are a lot of cases in which rents could be set higher, and the customer is still willing to pay. Additionally, suppose you've got a really high capture rate. In that case, the technology may say you should raise the rents because a lot of people are accepting it. Therefore, they can raise the rates indefinitely.

### **c) Step 3 of the Pricing Process, their Methodologies to Increase the Yield Spread**

Now that the landlord has a tenant with a signed lease, the next step in the pricing process is to increase revenue from that signed lease. This section, Step 3: Rent Optimization, details how the industry has adopted the Economic Occupancy Pricing Methodology to increase the yield spread between the advertised and effective or actual rent rates. The yield spread is the increase in the advertised rate of rent over the actual or effective rate of return. In other words, if the landlord

advertises a rate of \$1,300 per month but then adds \$500 in fees, the effective rent becomes \$1,800. In this case, the increase in yield spread is \$500 or 38%. This pricing methodology based on the effective rate of return has been around for centuries, if not longer. However, until now, the program lacked the AI-driven power to harness its ancillary generating potential adequately.

Today, what's happening is that rather than lumping all costs together under one transparent stated rental rate, landlords break this down into other fees to do a bit of bait and switch with renters. This parallels the advertised and effective interest rates the bankers used prior to the practice being outlawed in 1968. It's not that the landlord shouldn't be including their costs, such as maintenance costs, in the rent. It's that they are separating these out on purpose to be sneaky about higher rates. To accomplish this, the pricing algorithm assesses every element of the property and evaluates it for its ability to reduce cost or enhance revenue.

### **i) The Three-Part Revenue Generation Process**

Once the leasing strategy has been established, the next focus is on increasing income, or the yield spread through three necessary parts. The first part begins by artificially inflating the rental rates based on the alleged cartel and price-fixing. Then, in the second part, they increase income through aggressive revenue management---it's designed to "mine" the lease contract. The lease was designed as a fee trap, containing hundreds of different points where they can artificially increase revenues. For example, pet rent, utility billing, late fees, overdraft fees, early termination fees, trash, pest control, and application fees are a few of the hundreds of points where the system can boost ancillary revenue. For instance, psychologically, renters view the artificially increased cost of utility bills (discussed below) differently and are not inclined to view it as a rent increase.

#### **How they Increase Rents through the process of financing their Properties**

Driving the increase in the yield spread using aggressive methods is a bit more than merely charging fees. Some of those hundreds of points are incredibly complex. For instance, one of the more lucrative ancillary revenue sources is the circumvention of taxpayer-subsidized rental units for those citizens qualifying for low-income housing. When YieldStar holds rental units from the market in its balancing scheme, the question becomes, which rental units should be left empty?

To answer the question, we will focus on how metros have turned to HUD-sponsored programs to create affordable housing. In Seattle, for example, they lure contractors by offering special financing terms under the HUD's Multifamily Tax Exemption Program ([MFTE](#)). In this program, the taxpayers, not the property owners, guarantee the property debt. Additionally, the program intends to incentivize builders and property owners to build apartment units in areas struggling to acquire affordable housing by waiving most of the property's taxes. However, these taxes aren't discretionary; they include city services such as police, schools, firefighters, infrastructure, etc. In short, the city waives most of the property taxes and passes those taxes on to other taxpayers; in exchange, the owners, by contract, must set aside 20% of their rental units and accept discounted

rental rates based on tenant eligibility requirements (30% rent-to-income), becoming taxpayer-funded rent-restricted units.

For instance, since 2015, Metro Seattle has been tax-exempting over a billion dollars in new apartment construction yearly, resulting in waiving over \$137 million in annual taxes. Once again, those taxes are passed on to other tax-paying citizens who already pay more than their fair share of taxes. In 2019, the state of Washington completed an [audit](#) to determine the program's effectiveness. They discovered that over a quarter of those rent-restricted units were being overcharged for rent. Worse yet, many of the rent-restricted units were unlawfully leased out for vacation rentals or held off the market for long periods of time as part of the Platforms' economic balancing scheme. The audit findings are meaningful because they shed light on the reality that many rental units intended for the poor and homeless are not being used for that purpose. Yet it appears that by leveraging the MFTE program, they are increasing their profits while providing minimal benefit in exchange for the cities' \$137 million annual investments into affordable housing.

So, we ask the question, why don't the financing programs work as intended? In short, these same national conglomerates managing the rental units are [vertically integrated](#) with their organizational structures, meaning they are also the nation's largest builders. For example, [Greystar](#) is the nation's largest apartment developer, builder, and property manager. This vertical operating structure allows the Platform to maximize profits through a process where the builder (Greystar) contracts with the city (Seattle) first to waive its property taxes on the property. Then secondly, Greystar, now in the role of the property manager, violates the MFTE agreement by not renting many of those units to qualified low-income tenants. This violation occurred because Metro Seattle, in breach of the MFTE rules, wasn't verifying the data provided by the landlords (once again Greystar) on the MFTE program. Database Seven knew it; therefore, it recommended cheating the MFTE program to maximize profits.

## **ii) Part three of the Revenue Generation Process--Decrease Expenses**

The third step decreases expenses through operational efficiencies and by reducing many of their expenses by charging them directly to the tenants. Historically, owners paid for their properties' upkeep and, more importantly, the share of expenses on vacant units; these costs were built into the stated rate of rent. The carrying costs are typically called Common Area Maintenance—([CAM](#)) costs. This includes any and all charges incurred by the landlord to maintain, repair, operate, manage, and insure the property.

### **1) Utility Billing**

Undoubtedly, one of the most substantial inadequately disclosed fees is the means used to recapture those operating expenses from the tenants. What is a Ratio Utility Billing System (RUBS)? RUBS is the process landlords use to calculate a tenant's utility consumption based on factors such as square footage, number of bedrooms, and /or occupants' number. They can operate

this program because most apartments receive one bill for the services, and the property managers are the only party involved in the distribution methodologies. In many states, this type of utility resale is banned by law or rule. That leaves just a few other states where it is allowed: Alabama, Georgia, Kansas, Ohio, Pennsylvania, South Carolina, Utah, and Washington---Database Seven knows this.

### **How the Program Works**

The process is relatively straightforward. The property owner sells the utility meters and utility distribution system within an apartment complex to a holding company, typically comprised of the same property owners. The holding company then buys electricity or water, or both, from utilities and re-sells them to tenants at up to 40% price markup. In other words, what would typically be a \$100 utility bill for a tenant becomes \$140.

The question arises: Is this even legal? A [court case](#) in Minnesota answers this question. In short, the legal question becomes, what is reasonable? And lacking a definition of what is considered reasonable written into the law, the law provides no benefits to the intended recipients, namely the tenants. For instance, in this case, the judge ruled that the law did not define ‘reasonable fees.’ Therefore, the ruling that the law does not prohibit a landlord from billing tenants for fees and does not require that those fees be equitable. Buried deep in the many pages of the lease, the landlords charge the inflated utility billing based on recommendations from Database Seven. Where do the managers get the authority to charge these fees? Simply put, the algorithm adds this one sentence to the lease document appendices: *“Resident may be paying for part of the utility usage in common areas or in other residential units as well as administrative fees.”* Once the tenant signs the lease, they become responsible for thousands of dollars in charges whether or not they know the sentence exists.

### **2) Renters Insurance**

Another example of shifting operating expenses to the tenant is through liability insurance—known as renters insurance; however, before RealPage, that wasn’t the case. This was a program developed by RealPage to increase the stated rates of rent. Today, over 90% of apartment communities require residents to provide liability insurance, typically \$100,000 or more in coverage. However, none of that insurance covers the tenant---it only covers damage to that particular apartment building unit. Suppose the tenant wants insurance to cover their personal belongings. In that case, they must purchase additional insurance, and yes, the PMS provider will sell that to them as well.

Nevertheless, it’s the pricing algorithm that makes the calculations that determine the artificial increase in rents, the amount or combination of various ancillary fee generation or reimbursement of expenses, and the extended hold time of vacant units. In other words, the information from the seven databases combined with their legion of lawyers and every rule and regulation results in the algorithm engineering of the fee mixture to ensure the most profitable method is created to



maximize profit. Yet, as robust as these ancillary revenues have become, before RealPage YieldStar, they weren't a thing, barely a blip on the revenue radar.

### **3) How they Use Data in Their Debt Collection Program**

Property management firms have also decided to leverage this renter application data to improve their debt collection process by allowing debt collectors access to the same databases. Perhaps one of the more troubling findings is their Debt Collection Program. The program is an incentive-based plan designed to encourage staff to take all steps necessary to collect the debt before turning it over to a collection agency. The term *incentive basis* means that employees are compensated on the amount of the debt collected; the collection is then split between the debt collector and the company claiming to be owed the obligation. However, the debt collector employee gets to pocket all the gains over and above the debt collection terms. Therefore, the incentive to break the laws is enormous in a risk versus rewards scenario. The Consumer Financial Protection Bureau ([CFPB](#)) found the collection process aggressive and abusive and that debt collectors routinely violated collection laws.

However, the lack of oversight becomes seriously dangerous and problematic here. RealPage is a Money Service Business (MSB). According to the U.S. Treasury, an [MSB is](#), by definition, a financial institution. Thus allowing RealPage unprecedented access to financial information. The conflicts of interest and the breach of fiduciary this scenario poses are unprecedented. Think of it this way: the Platform gathers tenant data for the property managers. However, RealPage, as a financial institution, not only accesses and shares data during the eviction process but also has access to the tenants' bank accounts.

### **Experian and the Platform Form an Embargo to Housing Improving Debt Collections**

The Platform provides the data, completes the eviction documentation, and monitors the evicted tenant afterward. Managers connected to the Platform support each other's debt collection efforts by not allowing tenants to move without the "group's" consent. Landlords have formed a debt collection-driven embargo against tenants who owe them money. It works like this. They hold those tenants in the streets—this pricing program prohibits other landlords from renting to any applicant owing money to them until their former landlords have been paid in full and without due process. The homeless are those locked out of housing indefinitely.

Unsurprisingly, property management firms have seen a 61% decrease in tenants attempting to move while owing their previous landlord money, and they have collected half a billion dollars in bad debt annually. On the other hand, in Metro areas like Seattle, the homeless population has nearly doubled.

### **d) Pricing Step 4: The Rental Rate Recommendation---how the Platform sets the rates of rent**

Historically, when a property manager embarked on the rate-setting process, it typically began with formulating a rental survey by calling would-be competitors and asking them to divulge their trade secrets, the dollar amount they had set their rent rates at for each rental unit type. However, it was a laborious and time-consuming ordeal. Worse yet, there was no reasonable method to verify that the quoted rates were actual or fictitious. Of course, then, with the advent of the internet, employees could scour the internet for comparable properties and their advertised rent rates. However, these rates are also erroneous because they lack detail, such as added fees or discounts. Property flaws or hidden improvements also posed barriers to adequately comparing like properties. Ultimately, most property operators agreed on one issue: the older method wasn't very reliable. In fact, it was a dubious process prone to flaws and errors, costing the industry billions of dollars annually in lost revenue. Thus, it comes down to who provides the rental rate recommendations: the property operator or the pricing technology. Did the operator create their own rental surveys and perform their own applicant screenings? Or do they rely on technology to accomplish these steps by providing their rental rates?

Today, the pricing process has been automated using price-enhancing technologies, i.e., the RealPage YieldStar algorithm. Step 4: The Rental Rate Recommendation--- describes how the Platform and each PMS within the Cartel set the rent rate using the rental rate recommendation process. Once the Platform has balanced the market, YieldStar claims it can calculate the right price at the right time for every unit in the portfolio. Therefore, in the final step of the process, the system generates recommendations that optimize profit rather than revenue. To better understand the price-setting process, the technology calculates each unit type's rent performance daily relative to its competitive peer group in the submarket. It will not take rents lower than the minimum historical position. Thus, once a price floor has been set, the system simply won't recommend price decreases. In the final step in the process, the database is updated each night, providing onsite staff with a matrix of rent recommendations for new leases and renewals for each apartment. Here, we ask the question, how widespread is this practice? On any given day, for instance, LRO, before their acquisition by RealPage, was providing over a billion recommendations each day.

The process then allows those operators to accept or reject those recommendations. But we ask the question, can they reject those recommendations? The answer is not likely. Those property management contracts are incentive-based, meaning their compensation is directly tied to their profits, a massive conflict of interest. The study provided some instances of how the Platform artificially increases rents to provide context to the property managers' conflict of interest. One of the examples used was on a single 226-unit property that generated an additional \$1.98 million in profits, which would create a baseline bonus of about \$59,000 for the property manager. The typical property manager manages some 200 properties, which means the property manager generated an additional bonus of about \$12 million. The likelihood of an operator walking away from that much wealth is very low in a risk vs. rewards scenario.

**5) Summary and Conclusions The Motive---Massive Profits**

However, at the end of the day, the question that arises is why? Why would an entire industry collude and place its independence into question? The answer is simple: Occam's razor—it's the massive profits that can only be generated by their working together. To adequately measure the profitability and efficiencies side of the equation, a model was created to measure the artificially increased profits created by the Platform see Figure 5. In step 1, for example, there are 413,841 rental units in the Metro Seattle Market, and up to 95% of them are priced through the Platform or 394,266 units that receive those benefits. The model assumes 244 rental units per property. Therefore, the model contains 1,745 properties containing 226 rental units.

In step 2, the model details the increase in revenues over the stated rate and its artificially increased asset values per property unit based on high, medium, and low estimates. In example 1, the low end, we saw revenues increase by \$1,043,697 or 12%; in example 2, the high-end revenue increased by \$1,979,040 or 34.76% with a median of \$1,511,369 (average). Multiplying the increased revenue by the 'Number of Participating Modeled Property Units' yields the 'Total Combined Increase in Profits All Participating Properties' is determined to be between \$1.82 billion on the low end and \$3.45 billion on the high end with a median of \$2.6 billion. Then, to calculate the Conclusion, the 'Total Combined Increase in Asset Value Metro Seattle Market,' we use the NOI [approach to value](#), using a 5% CAP Rate. This equates to an asset value increase of \$36.4 billion on the low end to \$69 billion on the high end, with a median of \$52.7 billion. Concluding that the real benefits are the increased values of their portfolios gained by those artificially increased rents. In the Seattle Market, they are providing massive increases in values nearing \$70 billion.

**Figure 5 Total Combined Increase Profits and Asset Value Metro Seattle Market**

<b>Step 1</b>	Total Rental Units in the Metro Seattle Market	413,841		
	Total Participating Units Priced through the Platform	up to 95.27 %		394,266
	Average Number of Units Per Property Per Chapter 6 Model	226		
	Number of Participating Modeled Property Units	1,745		
<b>Step 2</b>		<u>Low</u>	<u>Range Median</u>	<u>High</u>
	Average Increased NOI Per each Property Unit	\$ 1,043,697	\$ 1,511,369	\$ 1,979,040
	Total Combined Increase in Profits All Participating Properties	\$ 1,820,772,461	\$ 2,636,644,680	\$ 3,452,516,900
	Increase in per Model Property Unit Value using the NOI Approach to Value at a 5% CAP	\$ 20,873,940	\$ 30,227,370	\$ 39,580,800
<b>Conclusion:</b>	Total Combined Increase in Asset Value all Participating Properties	\$ 36,415,449,214	\$ 52,732,893,603	\$ 69,050,337,993

