Tech Innovations Drive Increases in Heavy Equipment Leases and Rentals

From the team at Purchasing.com

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First, a brief backstory

Innovation is often recognized as one of the leading methods of reducing costs for modern businesses (not to mention the fuel for breakthrough products and services that lead to revenue and profit gains). Across the industrial spectrum, people are doing more with less while, at the same time, working safer and with fewer repetitive strain injuries. But technology can be cost-prohibitive, a fact that is especially true of heavy equipment. This restraint leads many buyers toward used machinery, multifunction equipment, and alternative means of financing – but not all in the same measure.

To better understand the exact needs and motivating factors of those interested in heavy equipment, Purchasing.com conducted the first two parts of an ongoing survey, polling a comprehensive and diverse group of buyers from 2011 through 2014. We addressed the types of machinery and class sizes currently in demand, the specific features that are driving their popularity, and financing preferences. Providing decision makers with an in-depth look at past purchase activity and insight into future trends, our research and editorial team analyzed more than 71,000 inquiries related to the financing and condition preferences of the following heavy construction machinery:

- Backhoe Loaders
- Bulldozers
- Compact Track Loaders
- Excavators
- Rough Terrain Forklifts
- Skid Steer Loaders
- Wheel Loaders

Before diving into the specifics of our findings, here's a quick rundown on the Purchasing.com Heavy Equipment Survey itself:

Who we surveyed

We compiled our data from business owners, CEOs, managers, and procurement professionals across a 4-year time period to measure purchasing trends in the following industries:

- Agriculture
- Construction
- Forestry
- Industrial
- Waste management
- Facilities maintenance (landscaping, etc.)

Part One: January 2011 to August 2012 – 43,222 respondents

Part Two: January 2013 to August 2014 – 27,907 respondents

What we asked

For the above dates, respondents were asked the same two questions regarding their purchasing preference:

1. How do you plan to finance your machine?
2. Do you have a preference for a new or used machine?

What we learned

Professionals within construction and equipment financing circles are optimistic that local non-residential construction projects will continue to increase in number in the final months of 2014 and on into 2015, according to findings published in the 2014 Wells Fargo Construction Industry Forecast. Notably, the "Optimism Quotient" (the survey's main standard for gauging the outlook of construction industry executives) is at a historic high of 124, up 18 points from 2013 and up 42 points from the recession low in 2009. This rate of growth is driving an increase in heavy equipment use. But as we discovered, that does not mean purchase. Nor did all of the previously-mentioned machines hold onto their popularity among industrial consumers.

Our survey uncovered two notable shifts. The first is a drive toward rental equipment. Companies and individuals continue to make use of multiple options when financing heavy equipment, including leases and rentals as well as outright purchases on wheel loaders and similar machines. Often mixing and matching finance options, such as renting before purchase, financial alternatives in combination with environmental regulations were shown to impact the condition and type of machine the buyer would be acquiring. With only three exceptions (skid steer loaders, excavators, and rough terrain forklifts), rental preference soared in popularity across the board among our survey respondents. One notable example is an increase of 400% for consumer interest in renting compact track loaders.

Track loaders are also at the center of the second trend we spotted: a jump in requests for multifunction equipment adaptable to a variety of tasks. Increasingly preferred for the cost-saving versatility they provide, compact track loaders are being used to replace larger single-function items like bulldozers. In our survey, compact loaders took a leap in popularity among buyers (up 69.6%) due in large part to their ability to accommodate an extensive selection of tools and accessories. Notably, there was also a 52.8% decrease in the number of bulldozer requests between parts one and two of our survey, dropping from 2,199 requests in part one to 1,037 in part two.

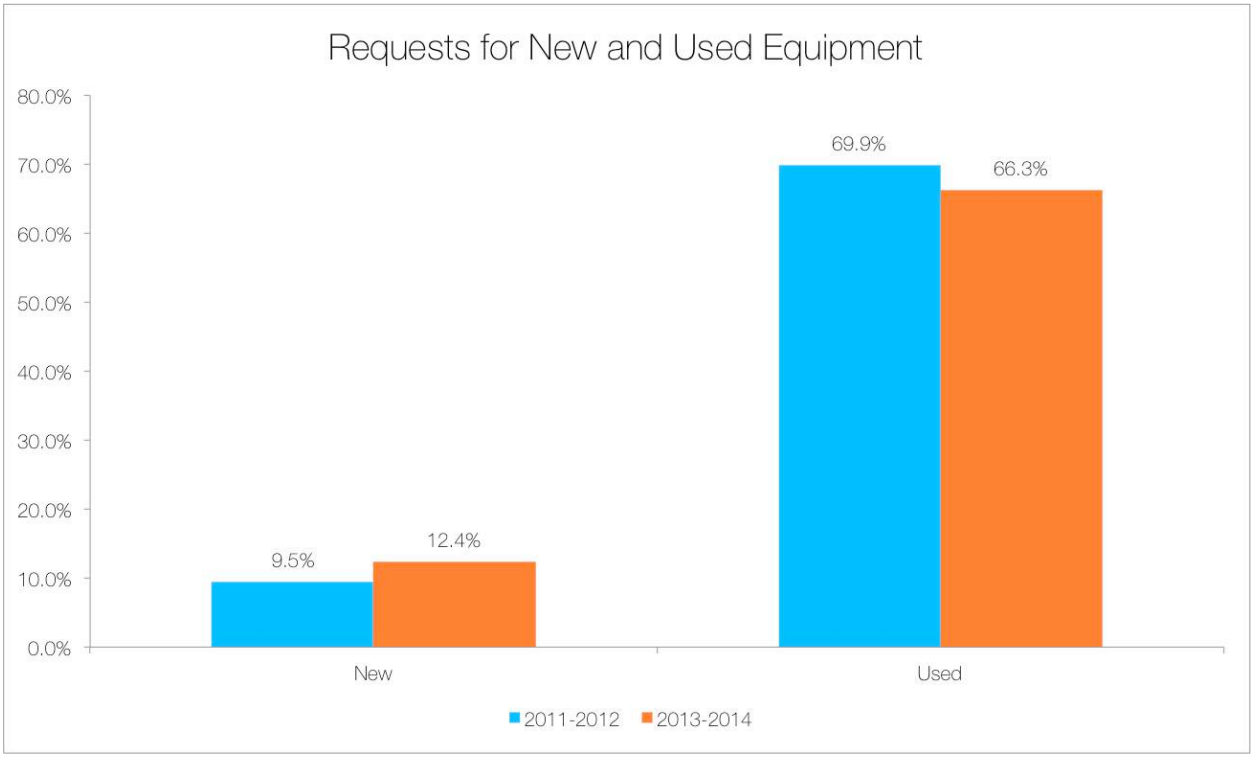
These are just a few of the examples we found in the equipment analyzed, encompassing both full-size and compact models. Overall, individual products have seen drastic fluctuations due to a number of economic, industrial, and technological changes affecting these purchase decisions.

Condition of Equipment

Year after year, technological advances improve machinery, enabling it to better assist the operator through enhancements to comfort and safety. In doing so, these machines increase the level of operator efficiency, helping companies beat deadlines

and budgets. These developments also had a direct impact on another major shift: companies began requesting new equipment over used machines during this 4-year period.

- From 2011 to 2012 there was a 31% increase in requests for new equipment
- From 2013 to 2014 there was a 5% decrease in requests for used equipment
- Machinery most affected includes wheel loaders (up 5%), skid steer loaders (up 5%), and excavators (up 2%)



So why this considerable shift? The condition of equipment requested has changed over time largely due to Tier IV engine regulations, new technologies, and more flexible options for financing. These three developments factored into the shift in the following ways:

Tier IV Engines and Clean Diesel Fuel Technology

Tier IV refers to a set of engine requirements, dictated by the EPA, that reduces emissions for new and non-road diesel engines. Starting in 2011, Tier IV non-road diesel engines were phased into heavy machinery as part of the EPA's initiative to reduce the carbon footprint of many types of construction equipment.

Depending on a business's location, not having a Tier IV compliant fleet affects the company's ability to bid on and perform work – a significant disadvantage, to say the least. Companies, in turn, have had to purchase new equipment that meets Tier IV emissions standards, and in some cases switch over entire fleets due to these restrictions.

During the time period encompassed by our survey, government restrictions were imposed on the replacement engines for non-compliant Tier IV engines as well. Companies that suffered mechanical failure in 2013 were forced to buy a newer compliant model. This had an immediate impact on manufacturers who could no

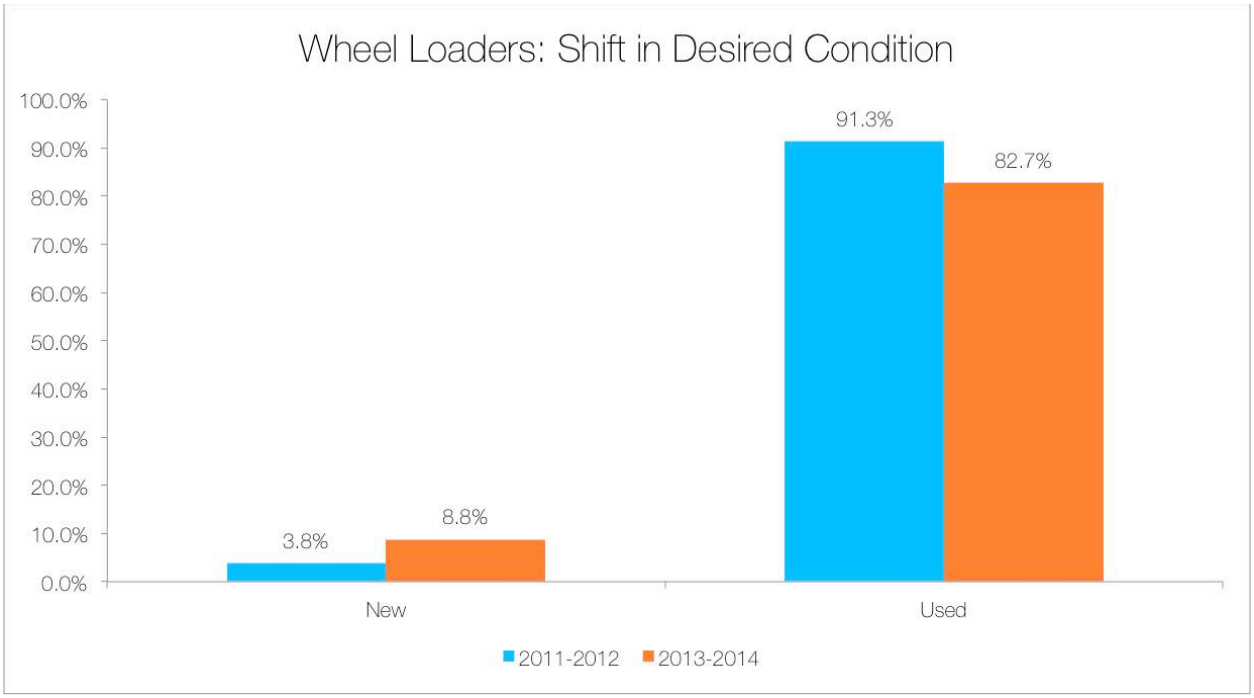
longer sell new equipment that didn't meet the newly established criteria for diesel emissions.

Tier IV off-road diesel emission standards are broken down by engine rated horsepower (HP). Based on this measurement, they began rolling out across different types of machinery in 2008. To simplify the transition and ensure a more cost-effective process of adaptation for buyers and sellers alike, equipment was converted in three stages.

1. 2008: Less than 25 HP (e.g. grass mowers, utility vehicles)
2. 2011: 25 to 75 HP (e.g. compact track loaders, skid steer loaders)
3. 2012 - 2014: 75 to 100 HP (e.g. larger earth moving equipment, excavators, backhoes, wheel loaders)

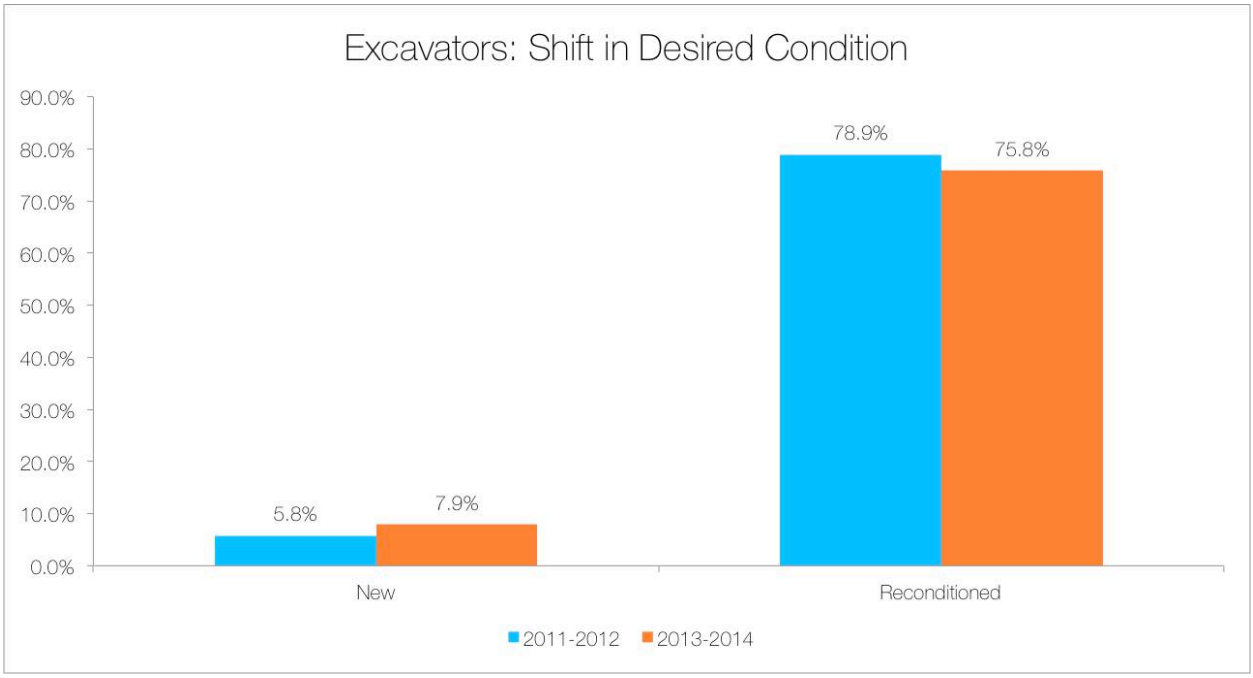
It came as no surprise that this systematic rollout was reflected in the purchasing habits of businesses and individuals. Specifically, it produced a distinctive shift in requests for new machines as the Tier IV models were released.

In our survey, wheel loaders saw a 5% increase in the purchase of new equipment from 2011 to 2012 compared to 2013 to 2014, highlighted in the graph below. This significant increase is directly linked to Tier IV diesel engines being phased in, as any new equipment purchased from 2012 onward had to meet the EPA standards.



Within the heavy earth moving category, excavators saw a 2.1% increase for new equipment requests in this 4-year period. Though small, this finding is significant as,

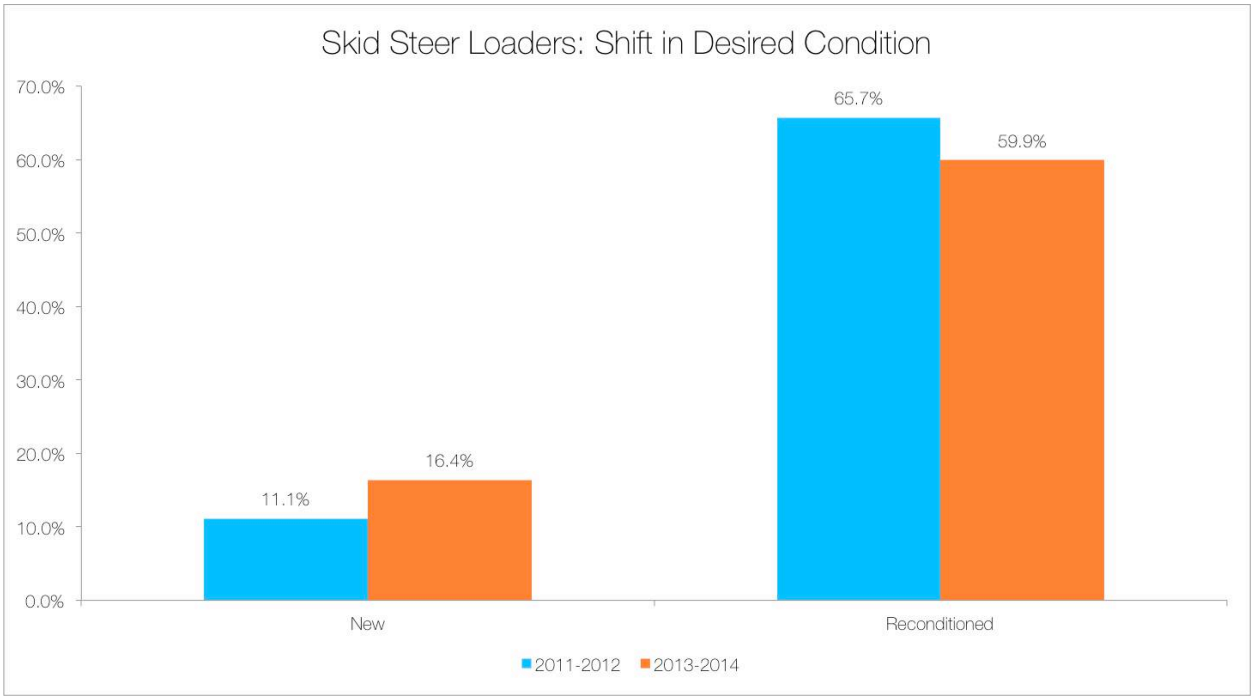
overall, the number of requests for excavators decreased substantially by 27%, dropping from 4,614 requests in part one of our survey to 3,349 in part two. This seems to indicate that buyers within this niche are looking more toward ownership over leasing and respond more to technology and specific improvements to efficiency and productivity than issues related to cost.



New Technologies

Another reason for the recent shift toward new equipment relates to technology. Through ergonomic joystick controls, quick-change attachment couplers, and cab designs that lessen operator fatigue, technology has made earth moving machines more comfortable for operation while simultaneously bolstering the versatility and efficiency of the machines themselves.

These innovations resulted in cost-savings to the consumer by allowing individuals and smaller businesses to purchase a single machine capable of performing a wider spread of earth moving tasks – which continues to be ideal across many uses, including localized farming applications, landscaping, and construction firms. This cost-effective adaptability led to increases in requests for new skid steer loaders (up 5.3%) and excavators (up 2.1%) between our initial survey (2011 to 2012) and the follow-up (2013 to 2014).



The variety of technological innovations within each subcategory also had an impact on consumer interest and sales. Taken as a whole, these advancements enabled operators and crews to significantly reduce the time and labor required to complete associated jobs through developments that improved operational efficiencies and extended the productivity of a single operator. For example, radio remote control systems and remote monitoring were two advancements in earth moving equipment that both helped influence the shift in requests for new machines.

Radio remote control system: In 2008, Bobcat unveiled a new loader radio remote control system. This technology enabled skilled operators to maneuver any skid steer or compact track loader equipped with Selectable Joystick Control (SJC) or All Wheel Steer (AWS) through the use of a radio remote control. When this technology was first released there were only eight models that included the remote control tech. Today most models throughout their line feature SJC or AWS options or upgrades, reportedly boosting productivity while allowing the operator to work safer and more comfortably.

For example, the radio remote control system is popular within military applications where the security of an on-board operator is questionable. Concrete demolition and highway maintenance also frequently use machines like this in environments where operator safety may be a concern. And finally, some of the dirtier cleanup jobs related to livestock in agriculture and farming have the potential for improved efficiencies and operator safety with this technology.

Remote Monitoring: John Deere has a service called "JDLink" which combines remote monitoring and preventative maintenance functions to improve the quality and life of equipment. They offer a few different levels of service, each with varying features. The basic plan offers the following added service elements that are contributing to the shift toward new purchases:

- Machine location
- Geo-fencing (a GPS location-based service that alerts users when equipment enters or exits the pre-defined “fence” area)
- Machine hours
- Maintenance planning
- Service ADVISOR Remote (alerts your dealer to maintenance issues, providing more timely responses when service is necessary)
- John Deere Remote Display Access, which can provide:
    - Live connection into the cab display
    - Real-time view of machine settings and performance data
    - Assistance with setup, ability to make adjustments remotely, and optimize performance

These features allow John Deere equipment to last longer, save on costly repairs, and get more work done cost-effectively through a real-time database of locally available machinery that is geo-fenced within a company’s fleet. Technological improvements like this are turbo-charging the shift towards purchasing new equipment as they offer the potential to save thousands on parts and labor over the life cycle of a single machine, not to mention costly shipping and transportation fees upon purchase. They also help track and assign machines effectively among multiple jobsites.

As a result, competing manufacturers have introduced similar features on recent models and will continue to do so in the coming months and years – Volvo and Komatsu being two notable examples.

CareTrack Fleet Management

Volvo construction equipment has technology similar to JDLink remote monitoring. Many of the same preventative maintenance options exist in Volvo’s CareTrack, but they also incorporate a number of additional reporting and security features. These enhancements seem to make new machines even more attractive among our buyers, in particular, for the following features:

- Geo- and time-fencing
- Fuel monitoring
- Reports highlighting use and utilization (options that help identify operator training needs)
- Maintenance scheduling
- Machine diagnostics
- Anti-theft tracking system

KOMTRAX for Construction Machines

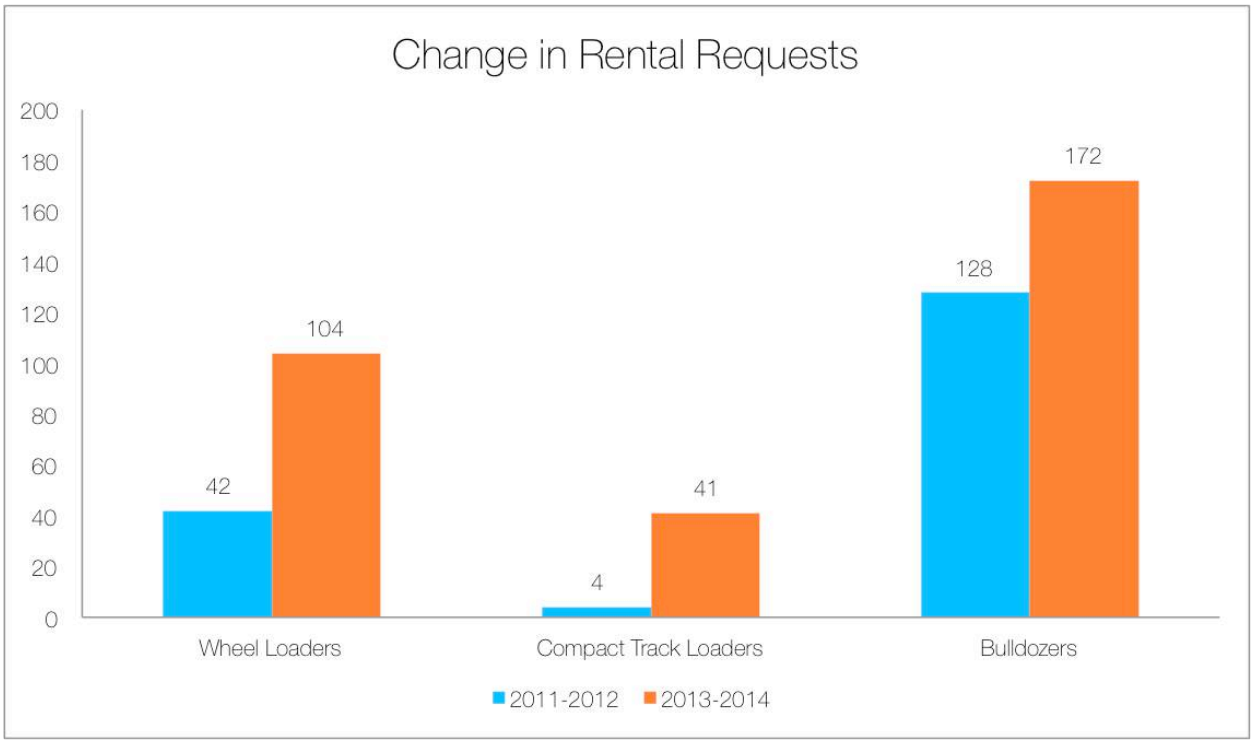
KOMTRAX by Komatsu offers another advancement designed around remote monitoring. As a leading manufacturer within the industry, they've invested heavily in the research and development of the previously mentioned remote monitoring features that allow for data-based decision making. Their focus is centered on live data provided to the operator and fleet manager, allowing for more efficient equipment use, increased productivity, and smarter equipment management. Notable features include:

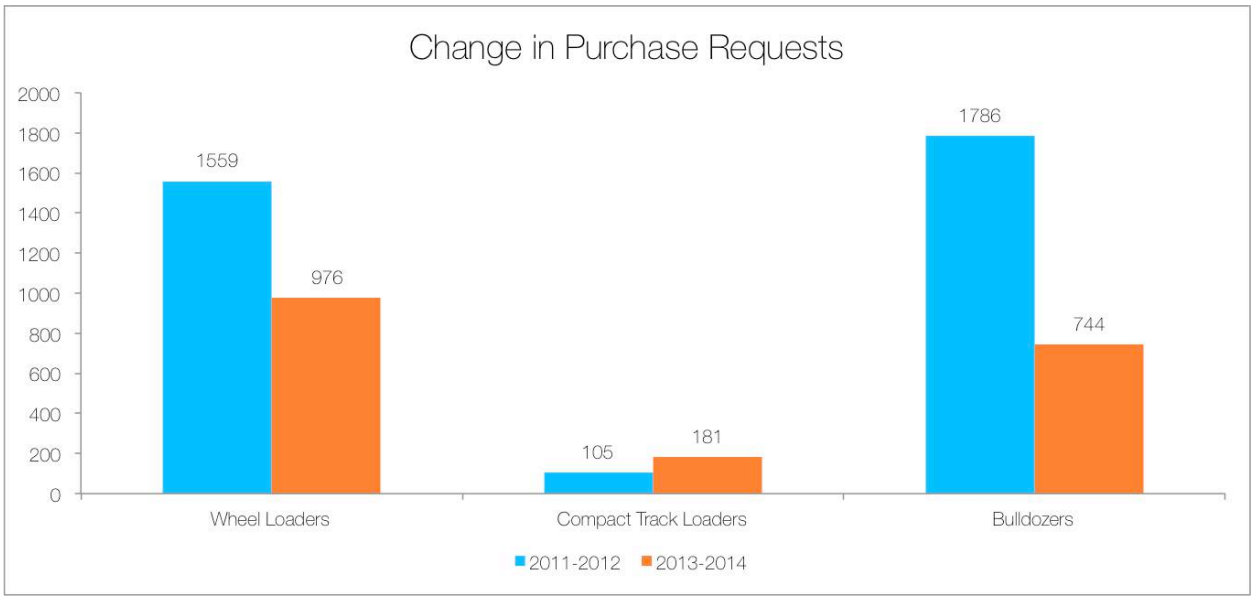
- Service meter reading
- Operation map (detailing times of day machine is on/off)
- Movement position alerts
- Performance metrics (operation hours, digging hours, hoisting hours, attachment working hours, load frequency

	Lease	Rent
Definition	It is a contract renting machinery to another for a specified period.	Renting is an agreement where a payment is made for temporary use of a property owned by another.
Flexibility	Not flexible - Long-Term financial commitment with penalties (if cancelled before contract expires).	Flexible - Can be cancelled anytime with no or limited penalties.
Time	Long term	Short term

Equipment Financing

Although leasing continues to be the top financial option for construction owners (with 59% of participants choosing it in 2013 to 2014), decision makers are increasingly renting construction equipment more than they were in the past. Overall, rentals jumped up by 75% in 2013 to 2014 in our survey, with specific equipment categories enjoying even larger increases in rental frequency – including requests for renting forklifts that went up 90%, wheel loaders that went up 273%, and compact track loaders that went up 925%!

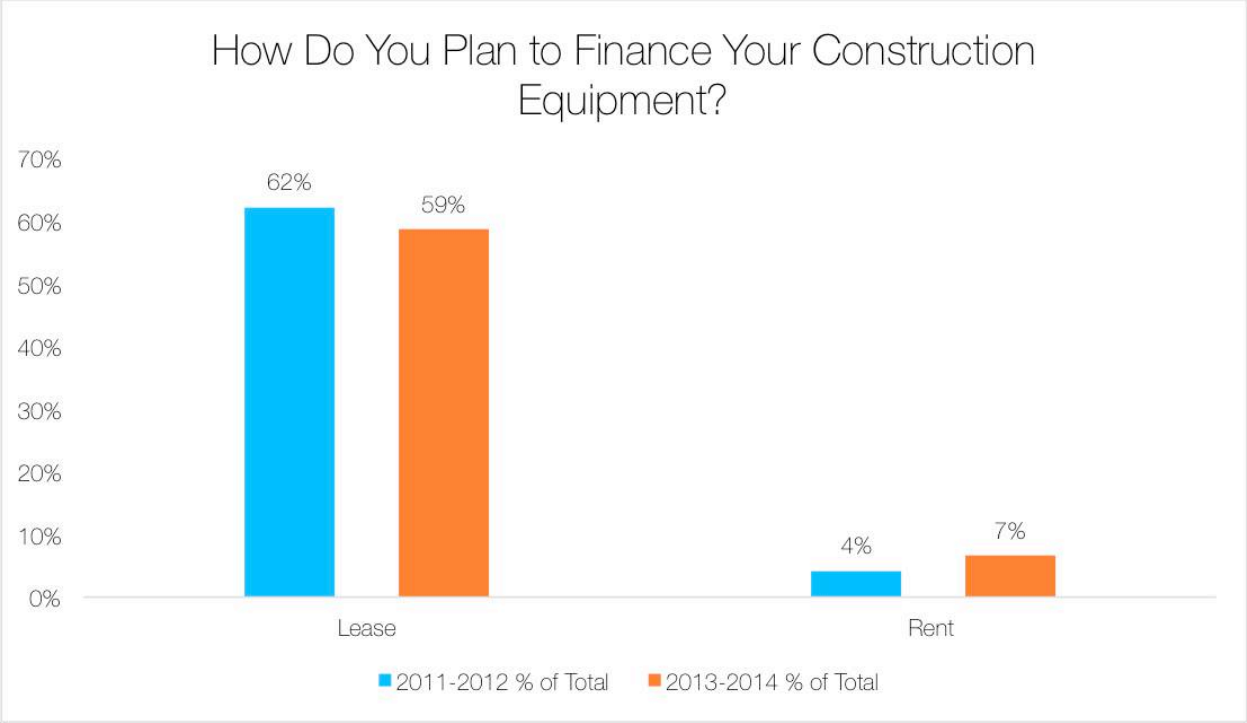




These findings echo similar trends reported in the ARA Rental Market Monitor, published by the American Rental Association (ARA). Tracking rental market metrics on a wide range of heavy construction equipment, they forecast more than $51 billion in rental revenue by 2018. Specifically, the rental market for 2014 is expected to be worth $35.8 billion (up 7.6%), $39.6 billion in 2015 (up 10.5%), and $43.6 billion in 2016 (up another 10.2%).

This data may further support the move toward new equipment, with dealers required to provide ever greater levels of inventory for rent, and individuals and large

companies alike using rentals as a means of test-driving specific models on a jobsite before committing to an outright purchase.



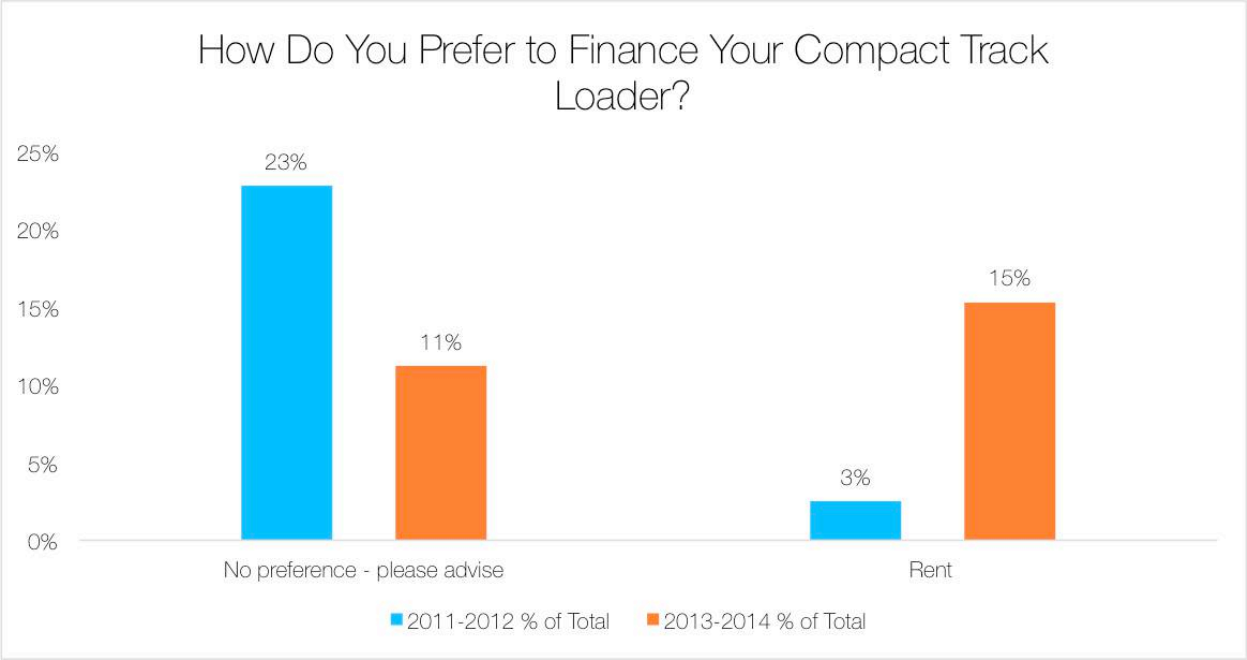
Earth moving equipment in particular has seen the biggest shift. Data taken from the two time periods in our survey reveals the biggest changes in financial preference for the following equipment:

- Compact Track Loaders
- Wheel Loaders
- Bulldozers

Compact track loaders

Over the years, compact track loaders have increased their value due to performance improvements and a practically limitless range of adaptability. Lifting capabilities and an all-terrain ability to go in more places have made them a good alternative to skid steer loaders whose steel tracks limit the environments they can operate in without damaging sensitive surfaces.

In the Purchasing.com Heavy Equipment Survey, 15% of respondents indicated a desire to rent compact track loaders. This represents a 400% increase from 2011 to 2012 and exemplifies their ongoing position as a leader within their class. At the same time, buyers who were unsure of how to finance the purchase of their equipment (23% of respondents in the current survey) shrunk dramatically, down by 51% in 2013 to 2014.

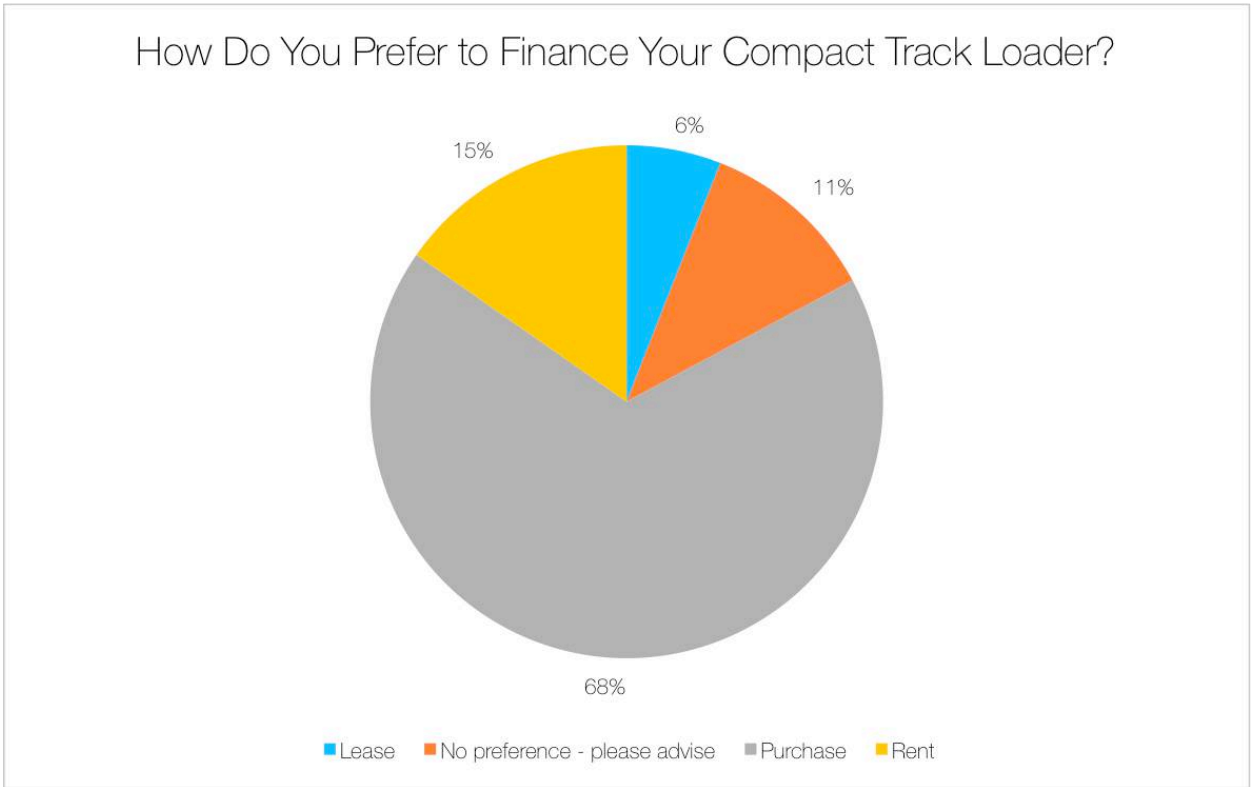


Compact track loaders are popular for agricultural, home improvement, and landscaping tasks. Given the short-term nature of many of these jobs, this may explain why some buyers choose to rent them. In fact, the biggest demand for compact track loaders is for harvest – a rental period of usually 2 to 3 months.

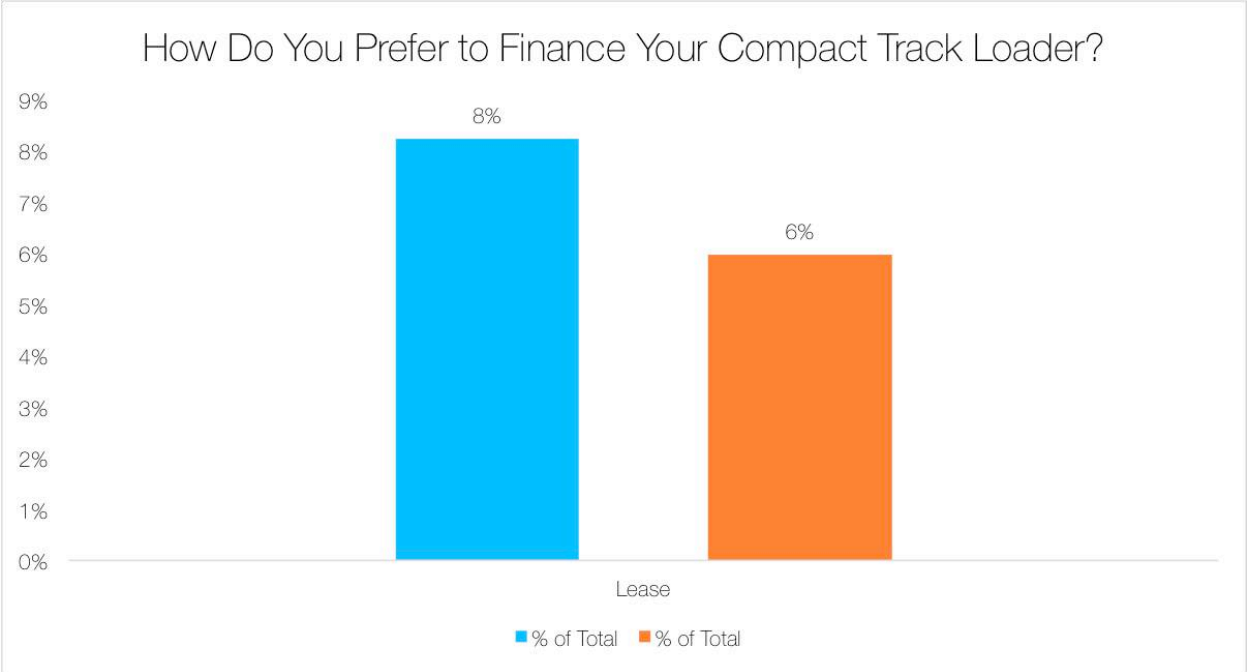
Add to that the fact that, on average, the initial purchase price for a compact track loader is between 20% and 35% more than a comparable piece of equipment (a skid steer being a prime example) due to the additional undercarriage components on a track loader. Ownership expenses, including maintenance and repairs, can elevate the operating cost to between $30 and $40 per hour for a compact track loader according to *ForConstructionPros.com*. In comparison, renting the same piece of equipment can cost as little as $20 per hour without factoring in the cost of the operator (largely based on the model selected). According to our findings, more and more buyers are drawn to the substantial savings achieved by eliminating additional expenses required for service and part replacement.

As previously mentioned, rentals are also advantageous for jobsite and fleet managers who are either not ready to commit long-term or lack the necessary budget to buy one or more pieces of equipment. For these individuals, renting is even more cost-effective as typically 100% of the rental rate is applied to the purchase price. This enables them to recoup most or all of their rental fees if they intend to purchase the machine.

For example, if the term is 12 months and the purchase price is $40,000 with a “rental rate” of $2,000 per month, $24,000 will be applied to that $40,000 after one year of payments, with no interest for the first year. After 12 months, you can walk away or finance the remainder (in this case $16,000) of the balance.



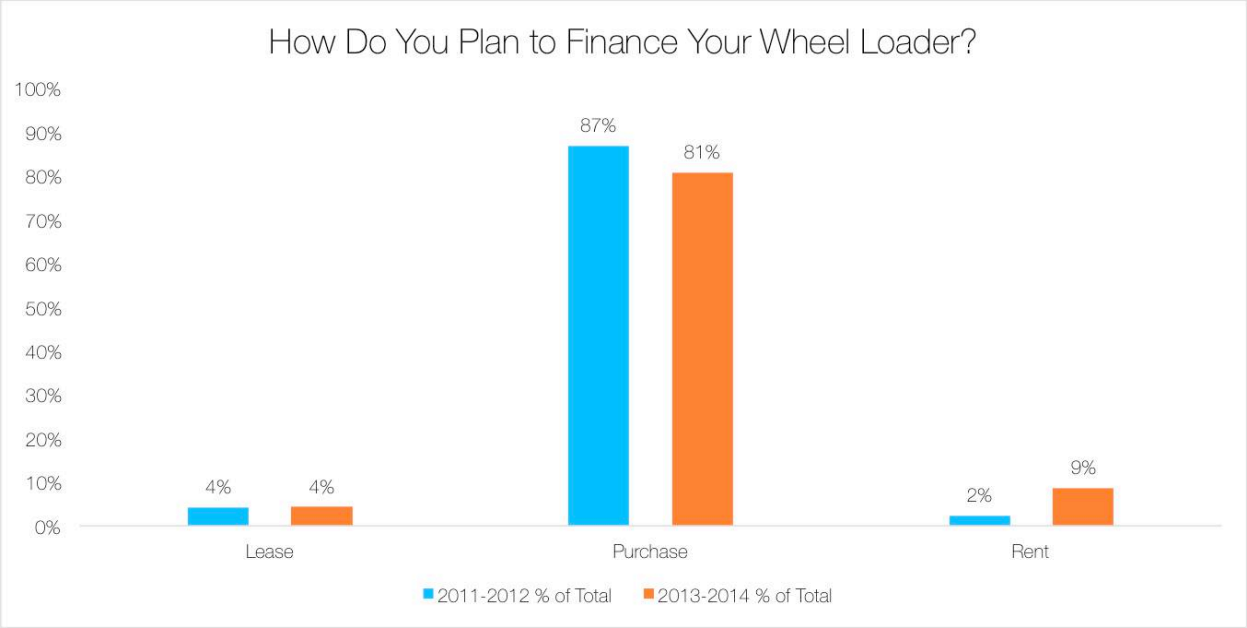
Leasing a compact track loader continues to be a gamble as monthly payments are typically based on service hours. While this approach may work for smaller operations with low or part-time usage, larger companies often run into high overage costs when jobs exceed the budgeted hourly estimate. So it came as little surprise when the Purchasing.com survey turned up a 25% drop in leasing as a financial option for compact track loaders:



Wheel loaders

When it comes to wheel loaders, the choice between leasing and renting comes down to two things: (1) how long you intend to use the wheel loader, and (2) what you will be using it for. Traditionally, leasing a wheel loader is a better option if you plan to keep it for a long period of time, such as months or years. The total cost per month is often lower under a lease and may also qualify for expense-related or bonus depreciation tax credits under certain conditions. For short jobs, renting is the best choice as it simplifies delivery and pickup of the machine and, more importantly, encompasses any maintenance or repairs needing during the rental period.

In our current survey, 9% of respondents indicated their intent to rent wheel loaders, a 268% increase from 2011 to 2012. Furthermore, while renting a wheel loader was the least favorable financial choice in 2011 to 2012, it is now the second most requested option, surpassing lease inquiries almost three to one.



Although purchasing continues to be the most popular way to finance wheel loaders (with 81% of respondents choosing it), the option did see a 7% drop since part one of our survey (2011 to 2012).

Monthly rental rates are typically higher than leasing rates, with leases capable of saving between 25% to 50% on the monthly cost of a machine overall. However, leases do not typically cover the cost of service and upkeep, requiring additional fees associated with a maintenance agreement or service level agreement (SLA) which can be expensive. The potential of these added costs explains why the lease option has been losing ground to rentals – especially when considering buyers needing equipment for short-term jobs or operations that only require machinery part time. With this in mind, flexibility also seems to be a major plus factor for rental agreements, enabling individuals or companies to simply return the machine to the rental house during slow periods and avoid unnecessary monthly rental fees – not to mention the overhead expenditures required for storage and upkeep.

Depending on the power output and options of the machine, a lease can cost anywhere from $3,900 to $8,900 per month, with stiff penalties for breaking it early. So what about the landscaper, local farmer, or seasonal construction outfit that only needs a loader sporadically throughout the year for a few days or a week max?

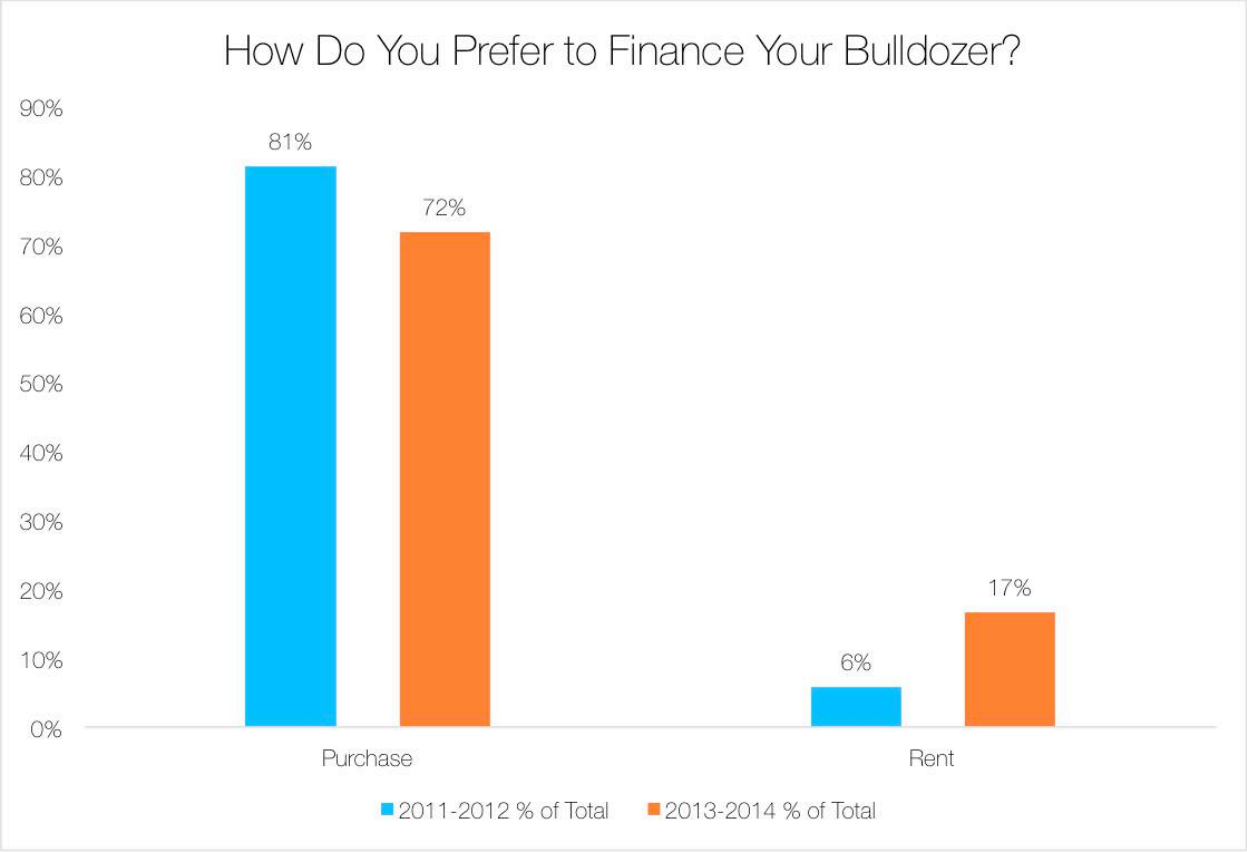
The cost-saving potential of the rental option continues to be a beneficial financing solution for many business owners. For example, consider the following average of rental costs, broken down by machine size:

Size	Daily rental rate	Weekly	Monthly
Small wheel loader	$200 - $400	$600 - $1,200	$1,800 - $3,000
Medium wheel loader	$500 - $1,000	$1,500 - $3,000	$4,500 - $8,000
Large wheel loader	$1,000 - $3,000+	$3,000 - $9,000+	$9,000 - $15,000+

Bulldozers

With bulldozers, renting or leasing the equipment is a favorable option as each job determines the bulldozer type and size. In fact, renting or leasing can actually save money for landscaping companies, construction outfits, and similar businesses.

In our survey, 17% of respondents indicated they wanted to rent bulldozers – a 183% increase from 2011 to 2012. Although purchasing continues to be the most popular way to finance bulldozers, there was an 11% decline in the number of respondents who chose it as their preferred way of financing the machine.



And the motto "try it before you buy it" still holds true. Many contractors rent a bulldozer to test drive the machine and discover whether or not it's suited to a specific jobsite. Renting is considered a trial period before purchasing or committing to a long-term lease. As with other earth moving equipment, these costs are often rolled into the purchase price should the renter decide to buy the machine down the line.

Due to the nature of common bulldozer applications, which are typically seasonal, renting is ideal for quick jobs that avoid storage and maintenance of the machine year-round. This is a big plus as costs associated with maintenance can be expensive, especially for new parts and repair fees.

Overall, purchasing a bulldozer is becoming less favorable, dropping 9% between our survey for 2011 to 2012 and the follow-up for 2013 to 2014. Oddly enough, this is where technology could be said to have a negative impact. With a price tag that ranges between $79,000 and $300,000 for machines manufactured after 2010, it's becoming increasingly difficult to keep pace with innovation on new machines. Every model includes new features geared toward operational efficiencies as well as technology in the control and internal systems that typically shift every five years. While this remains highly positive for productivity, it simultaneously puts older machines out to pasture, eroding resale value faster with each progressive generation.

Summary and Forecasts

The 2009 recession brought residential and commercial construction to a standstill. As recovery continues around the world, one of the strongest markets for heavy equipment is the United States, commanding more than 70% of the market share by some industry estimates. This data from Report Buyer is further supported by findings released by the U.S. Bureau of Labor Statistics which forecasts a rise in the number of jobs for construction laborers by as much as 25% before the year 2022. Faster than average when compared to other industries, it represents an increase of more than 325,000 jobs and a sure sign that the construction industry is rebounding.

With this rebound comes a need for heavy equipment. Select industries, like natural gas drilling, are currently enjoying a boom, both in terms of interest and profitability. Many of these processes are highly equipment-driven, requiring multiple types and sizes for operations that include digging, lifting, and hauling. Add to that the expectation for increases in infrastructure and residential development, both domestically and abroad, and the upticks reflected in many of the classes we polled may be just the beginning of the trend. But as we've seen, that doesn't necessarily mean purchase.

Based on our findings, manufacturers and individual dealers should prepare for continued and possibly growing interest in rental and lease-to-own options over straightforward sales. While the various types of machinery reflect different purchase preferences within their respective classes, overall, leasing remains the primary method of financing construction equipment among our respondents. In fact, 58.6% preferred it over purchase and rental in the 2013 to 2014 survey. Interestingly, purchase came in second, with 27.6%, and rentals trailed with 6.7% (those with no preference comprised the remaining 7.1%).

Additional trends and purchase motivators

Financing. As mentioned above, leases are the favored method of financing heavy equipment. But some of that preference may be attributed to tax credits previously offered through Section 179 of the U.S. Tax Code – a bonus depreciation credit on capital expenditures that expired in 2013. Currently allowing expense write-offs of $25,000 with a phase-out of assets costing over $200,000, the max deduction for qualified assets is a fraction of the previous allowance of $500,000 (subject to a phase-out of assets that cost over $2 million).

However, a proposal to extend the deduction is currently before Congress after being passed by the House of Representatives earlier this year. Some sources are optimistic that previous deduction levels will be restored. If they're not, expect to see shifts in both purchases and financing methods.

Condition of equipment. The influences here are two-fold. First is the condition itself. A run on recently manufactured equipment with low operating hours has been reported by dealers and used equipment sellers alike. Due in part to EPA requirements, buyers are looking to rebuild their fleets after a freeze on purchasing through the recession. In an attempt to avoid the high cost of a new sticker price, many businesses are scouring local and national sources for used high-quality heavy

machinery that provides a good value yet remains compliant with Tier IV regulations (a critical aspect of cost-savings if major repairs are required in the future).

The other aspect that influences the condition of construction equipment is the real-time analytics that are increasingly built into almost every type and size on the market. Demand for these functionalities is expected to increase, with buyers leaning toward technological innovations that provide insight into both the health of the machine and the way it's operated.

Tracking, monitoring, diagnostics, and similar data not only allow fleet managers to proactively schedule service and repairs, avoiding costly downtime, they also provide the opportunity for additional training by identifying inefficiencies in the operation of the machine itself. For example, is the machine operating over or under its max weight capacity? Is the duty cycle sustainable or is the machine routinely running too hot? Answers to these questions – and more – are now just a click away.

It's worth noting that the preference for real-time data is primarily limited to those buyers interested in leasing or purchase. Renters are reportedly concerned primarily with the condition of the machine upon delivery as well as features and accessories that extend its capacity.

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