**KOMATSU** ✓ June 2022

# DOWN to EARTH





# A Message from General Equipment



Jon Shilling

# Technology is transforming the construction industry



#### Dear Valued Customer:

As technology in the construction industry continues to expand, the benefits are becoming increasingly obvious — improved efficiency and production, cost savings, and increased safety. Want to track your projects digitally, and reduce paper consumption? With technology, you can.

Komatsu is already at the forefront of this change with a suite of Smart Construction customer support solutions designed to help companies digitally transform their operations throughout every phase of a project. Read about its new intelligent Machine Control (iMC) 2.0, which offers additional new features such as auto tilt bucket control and bucket angle hold control on several mid- to large-sized construction excavators, including the PC290LCi-11, the PC360LCi-11 and the PC390LCi-11.

Most of the information needed to make important fleet management decisions is now available via Komtrax telematics, which can be accessed through a My Komatsu account. Komtrax data includes machine utilization, fuel consumption and idle time. Learn how to access this information and use it to your advantage.

While technology is relatively new in the construction industry, sustainability is not. Construction has been a leader in recycling and reusing materials, as well as diverting them away from landfills. That is great for the planet, but did you know those practices are potentially profitable, too? Discover how focusing on sustainable practices can benefit your bottom line.

Plus, after enduring the hottest summer on record last year, protecting workers from the heat should be a top priority. We offer some tips to help you get prepared for the hot summer days ahead.

As always, if there is anything we can do for you, please call one of our branch locations.

Sincerely,

Jon Shilling, President & CEO

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# Large crowd attends Aggregate Expo 2022 to network and learn about today's aggregate industry



Jon Shilling, president and CEO



Don Kern, vice president of aggregate equipment sales

Often touted as a mini CONEXPO,
Aggregate Expo 2022, put on by General
Equipment & Supplies Inc. and General
Aggregate Equipment Sales in Fargo, N.D.,
in March, brought in big numbers yet again.
More than 400 attendees experienced
education at all levels, including a new
session on leadership. On top of that,
they got to see equipment in action at
the triennial, two-day event.

"We started putting on the Aggregate Expo nearly 20 years ago as a way to bring customers and other industry professionals together to meet and network, while also providing educational information to help with best practices that increase production," said General Equipment's Don Kern, vice president of aggregate equipment sales. "The event has grown each time. We started with about 150 people for the first one. I believe that we all get a lot out of it and learn something new."

Equipment from Komatsu, Superior Industries, Astec, Terex Finlay and more

was on display outside. Representatives from those manufacturers and others were on hand at booths in the large conference space. General Equipment personnel and manufacturer representatives led the educational sessions, which were held both days and covered topics such as best practices, maintenance and leadership.

A customer appreciation event that was held on the first night offered up the opportunity for the company to thank customers, but more importantly, build stronger relationships.

"I came to the Expo about nine years ago, and there is a lot more technical information today," said Ron Mitchell, pit foreman at R.A. Muecke Sand & Gravel Inc. "We're looking at newer equipment, and the Expo gives us an idea of what we want to do for the future. The information is very valuable."

Three-time attendee Cameron Moll, plant manager at Aggregate Industries, commented, "I like the networking and educational sessions. It's nice to get away

 $Aggregate\ Expo\ 2022\ attendees\ could\ speak\ with\ manufacturer\ representatives\ at\ their\ booths\ in\ the\ large\ conference\ space.$ 





during slow times and talk with others about solutions that could be used to do things differently during the upcoming season. There are a lot more vendors than in the past."

# Attendance record

An increase in vendors — as well as customers — made General Equipment's sixth Aggregate Expo the largest ever, according to President and CEO Jon Shilling.

"We are extremely pleased with the turnout, even though we had some difficulty getting Canadians across the border due to COVID restrictions," said Shilling. "We want customers to take away that we are here to be a valuable resource in their business. From equipment to support to education, General Equipment is here to help with their needs."



Educational sessions led by General Equipment & Supplies Inc. and manufacturer personnel allowed attendees to gain insights on best practices, leadership and more.

# Your busiest time of the year is near. Make sure equipment and personnel are ready for maximum production

During the winter months, your machinery may have sat for a long period of time, or you may have kept working and just had routine services done during that time. Either way, it is vital to take steps to ensure your equipment is ready for the busy summer days that lie ahead.

## Don't wait

If you have any outstanding work orders or operator repair tickets, finish them as soon as possible. Thoroughly inspect machines a few weeks before the schedule really heats up, and if you find any issues, address them right away. Remember, larger items such as undercarriages take more time to repair, so inspecting them well ahead of time is vital.

Buckets, blades, cutting edges and ground engaging tools such as teeth require attention, too. Make sure there are no cracks, chips or excessive wear that could affect safety and performance; replace if needed. Check that your attachment hoses and connectors are in good working order and ready for hydraulic fluids. Hook them up briefly, and run them to see if they are working properly.

#### **Prepare staff members**

Make sure employees are aware of schedules, procedures, emergency protocols, and

Thoroughly inspect your machinery before the busy construction season starts to ensure it is ready for maximum performance. Make sure everything is in working order and fluids are at their proper levels. Don't forget to check technology.



the dangers and signs of heat-related illnesses. Employees should also know how to report maintenance items, the functions of new machines, and how to use them to maximize production and efficiency. Plus, make sure they have all the necessary personal protective equipment and that it is in good condition.

# Stock up on parts

You should have an easily accessible store of basic maintenance items on hand such as grease, fluids, filters and belts. Having these on hand will save you from making frequent trips to the store, and decrease your overall downtime.

#### Clean the machine

Have you heard the adage that a clean machine runs better? True or not, you should wash your equipment to remove any dust and/or dirt buildup from storage or from use during the winter months. Cleaning can help you spot potential issues. Remove any debris, including from the engine compartment. Look out for rodent and/or bird nests.

Don't overlook the inside of the cabs — clean the glass, and dust the consoles and dashes. Replace missing or damaged safety decals.

#### Charge batteries

If you stored batteries, be sure to check them. Before using them, ensure proper water acid levels and fill, if necessary. Batteries that were not charged during storage should be. Coating battery connections with an anti-corrosion spray can prolong system life. Replace batteries if you believe there is any doubt about their safety or reliability.

## **Check fluid levels**

It is essential to keep fluids at proper levels. Make sure there is an operating and maintenance manual available in your machine year-round, and refer to it for guidance. Be sure to grease any points that require it.

As temperatures rise, you should switch to fluids that properly match the ambient temperatures. If the machine requires diesel exhaust fluid, draining it and refilling it with new fluids to maintain purity and concentration is highly recommended, regardless of if you used the machine during



During the busy season, your machinery and personnel work hard, so make sure both are ready ahead of time. Check your equipment's undercarriage, ground engaging tools, fluids, components and other critical items. Make sure staff members have all necessary personal protective equipment and that it is in good condition.

the cold winter months or not. Switch fuel to a summer blend such as No. 2 diesel, and drain the lines of any condensation.

# Pay attention to hoses and filters

If fluids are the lifeblood, hoses are the arteries that carry it. Check them for abrasions and leaks; replace immediately if any are found.

Cold can affect filters, so consider replacing them with new ones, including air filtration and air conditioner filters, so operators have a cleaner, more comfortable environment. Dust and contaminants affect filter performance, so keep a close eye on them, and change them as often as necessary.

# Don't overlook technology

Check the connections on your aftermarket GPS systems, as well as those that go with removable monitors. Turn the machine on, and test telematics systems to make sure you can monitor machines through your computer or smart devices. ■



KOMATSU

My Komatsu

# **Advanced Excavation**

# Proprietary iMC 2.0 promotes significant productivity gains for Komatsu's mid- to large-sized construction excavators

Productivity is the key to success on the job site, and the faster a crew can reach maximum productivity, the better. As part of Komatsu's suite of Smart Construction products, services and digital solutions, its intelligent Machine Control (iMC) 2.0 gives contractors the opportunity to take advantage of sophisticated, productivity-enhancing automation.

"Aimed to quickly lessen the skill gap between new and experienced operators — and improve the bottom line for contractors our excavators with iMC 2.0 technology can help contractors transform their job sites into highly efficient, highly productive operations," said Andrew Earing, senior product manager, tracked products, Komatsu.

Developed with input from leading construction companies, Komatsu's iMC 2.0 offers additional new features such as auto tilt bucket control and bucket angle hold control on several mid- to large-sized construction excavators: the PC290LCi-11, the PC360LCi-11 and the PC390LCi-11.

"They are an excellent match for footing excavation, trenching and slope work, with factory-integrated systems to help minimize over-excavation and empower operators to dig straight to grade quickly and accurately," said Earing.

## **Exclusive iMC 2.0 productivity features**

Auto tilt bucket control assists operators by aligning the bucket parallel with a slope, so finish grading can be accomplished without needing to align the machine with the target surface.

Bucket angle hold control helps operators reach finish grade quickly and accurately. It automatically holds the bucket angle to the design surface during arm operation, enabling operators to perform finish grading using only arm input.

Both new features build upon the semi-automatic functions that were maintained from the first generation of iMC excavators, including the ability to switch from manual to semi-automatic modes.

"Existing and new technology in the iMC 2.0 excavators has proven to increase production and efficiency while reducing costs," said Earing. "We encourage anyone looking for those attributes to test one for themselves."



Andrew Earing, senior product manager, tracked products, Komatsu



Learn more

Quick Specs				
Model	Horsepower	Operating Weight	<b>Bucket Capacity</b>	
PC290LCi-11	196 hp	70,702-72,091 lbs.	0.76-2.13 cu yd	
PC360LCi-11	257 hp	78,645-80,547 lbs.	0.89-2.56 cu yd	
PC390LCi-11	257 hp	87,867-90,441 lbs.	0.89-2.91 cu yd	

Auto tilt bucket control and bucket angle hold control are exclusive new features of Komatsu's iMC 2.0 excavators, including the recently introduced PC290LCi-11, PC360LCi-11 and PC390LCi-11. "Our excavators with iMC 2.0 technology can help contractors transform their job sites into highly efficient, highly productive operations," said Andrew Earing, senior product manager, tracked products, Komatsu.



# **Connected Construction**

# From time, fuel and maintenance savings to less paper, job site connectivity provides profit potential



Jason Anetsberger, director of customer solutions, Komatsu

Why is job site connectivity such an important consideration for your construction business? Because technologies that support connectivity facilitate better and faster communication between your field personnel and those in the office.

"The potential cost savings of connectivity are quite large," said Komatsu's Jason Anetsberger, director of customer solutions. "With connectivity comes the ability to digitally send files, pull data directly from machines without driving to the site and more. The old saying that 'time is money' really applies because connectivity saves both."

Here are six reasons job site connectivity could potentially pay off for you.

# 1. Faster responses and adjustments

Few things are worse for project managers than finding out their job site is behind schedule. In the past, they relied on field personnel to phone in daily or weekly load counts, amounts of material moved and other critical information. However, by the time they received such information, the project could be losing money.

# Job site connectivity allows field personnel to send information such as load counts, amounts of dirt moved, hours worked and more directly to the office, which reduces paper costs. Project managers can save travel time and fuel by sending design changes directly to connected machines and on-site personnel.

## 2. Less paper

Historically, superintendents, foremen and other field personnel would take a set — or multiple sets — of plans to the job site, while another set would be in the office. Today, digital plans are more the norm. With a connected job site, plan changes can be sent directly to a tablet, smartphone or a machine.

Paper timecards can also be virtually eliminated. With a connected job site, field personnel electronically log and send hours via email or with several timecard apps available through smartphones and other devices. A bonus is that this is done in near-real or real time, so your office staff doesn't have to wait for timecards to be turned in and spend hours going through them.

# 3. Time and fuel savings

In the old days, if there was a change in plans, it meant a trip to the job site. Depending on how far away the job site was, that could mean hours in a vehicle and burning several gallons of gas or diesel. When you can transfer files electronically, there is no need to drive to the job site.

# 4. Reduced equipment service, maintenance and repair costs

A connected job site gives fleet managers the ability to track machine hours more closely than ever. Hours can be accessed directly from the machine, which lessens the potential for going past scheduled service intervals. Missing scheduled service can be potentially problematic and lead to costly catastrophic failures that take big bites out of the bottom line.

A clear, up-to-date picture of machinery's current hours and a better ability to track them lets fleet managers be proactive about scheduling service, maintenance and repairs, and ensures needed parts and fluids are on hand ahead of time. Fleet managers can take equipment out of service at times when it is not needed or after hours to limit downtime, stay productive and increase profitability.

## 5. Maximized manpower

Intelligent machines have a modem that connects to the cloud via cellular, according to Anetsberger. As they track around the job site, they are essentially functioning as a



Intelligent machines have a modem that connects to the cloud via cellular. As they track around the job site, they are essentially functioning as a high-precision GPS rover that allows you to record as-built data and show progress from afar, virtually eliminating the need for a grade checker who could be used for a more profitable task.

high-precision GPS rover that allows you to record as-built data and show progress from afar.

"It virtually eliminates the need for a grade checker, so that person can be utilized somewhere else in a more productive manner such as installing pipe," Anetsberger continued. "Project managers have almost immediate information about where a machine is in relation to target elevation, and they don't have to wait for someone to phone in or drop off that information. With no guesswork, they can send personnel to perform other tasks sooner."

# 6. Increased safety = lower premiums

Connectivity goes much further than linking the office and the job site. Connectivity is also available through wearable technology. Smart helmets and safety vests that have enabled tracking and remote communication capabilities can help keep your workers safer. Smart work boots with sensors can automatically alert others if workers enter an area that has been designated as unsafe.

Safety is always a top priority for any job site, and prioritizing safety may also have side benefits including the reduction of potential costs associated with accidents. A better safety record can also lead to more work, as many entities — including governmental projects — take safety records into account when awarding contracts.

An additional advantage is that a positive safety record could also lower your insurance premiums.

"When determining your premiums, insurance companies consider the likelihood that they'll have to pay out a claim on your behalf. If the risk is lower than normal, you'll pay a lower premium and vice versa," according to Safety Management Group, a privately held safety management company.

"If you have a smartphone, you may have already made the most significant investment in hardware that you need to become connected," added Anetsberger, who also noted that if you have an intelligent machine, you already have the hardware you need to be digitally connected on the job site. "You don't have to invest in huge infrastructure. You just have to be willing to take the first step and identify a solution that will begin to transform your operations."

Anetsberger concluded, "The first step can be tough, but more than likely, it will pay off." ■

Learn more about the connected job site by contacting your General Equipment & Supplies Inc. representative or nearest branch location and by exploring Komatsu's Smart Construction suite of solutions at https://www.komatsu.com/en/site-optimization/smart-construction/.



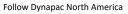


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# Contractor reaches target elevation faster with new auto tilt bucket control that can follow unique design surfaces

Bobby and Allen Tripp spent countless hours running drag lines and operating dozers for their uncle while growing up on their family's farm. In 1997, the brothers transitioned from farm work when they established their own company, Tripp Bros Inc., which has steadily grown into a turnkey site development operation.

The firm's projects range from installing new construction infrastructure to resurfacing city and town streets. For maximum efficiency, the firm completes all aspects of a project in-house. To meet tightened grade tolerances and compensate for the declining number of experienced operators, the company has turned to GPS-equipped machines.

"The knowledge and skill lost from older operators leaving the industry — and with younger operators replacing them — GPS technology has become essential to our business," stated Bobby. "We rely on the technology to help our operators reach grade. Without our GPS-equipped machines, it would take us three times as long to complete the work."

At its residential jobs, which comprise 75% of the firm's current workload, creating as-built storm retention ponds is a challenge.

"The ponds are an environmentally conscious way to treat water before it's released from the site," noted Bobby. "Because each pond is unique, you can hardly dig them without diverting extra labor and equipment to keep it within tolerances."

Bobby continued, "We've found that with our Komatsu PC210LCi excavator with the new auto tilt bucket control, our operators can build the pond to grade more accurately than they could with a person shooting grade or checking them with a rover."

# Maximum efficiency with iMC 2.0 with auto tilt bucket control

Bobby said that the new intelligent Machine Control (iMC) 2.0 technology on the PC210LCi-11, with the optional auto tilt IMU sensor, makes grading the ponds more efficient. By using Komatsu intelligent excavator auxiliary hydraulics, the auto tilt IMU sensor enables automatic control of the bucket/attachment angle to match the cutting edge of the surface.

Like all iMC excavators, the full bucket profile protects against over-excavation — even when the machine is not facing directly toward the target surface. With iMC 2.0 and the IMU sensor, the full bucket edge stays on the surface and automatically returns the bucket to a horizontal position for unloading.

"The machine is set up to tilt the bucket on its own and match a swale based on the design," explained Bobby. "We call it a 'one and done motion' because you don't have to go back and regrade the surface. The tilt bucket slopes, shapes and takes the pond to grade as you go."

"The auto tilt bucket control increases the machine's versatility and removes the need for an iMC dozer to check grade," added Alan Yoder, superintendent. "You're able to tilt the bucket instead of moving the machine to get the correct angle. Even our inexperienced operators find it easier to understand and control."

Bobby notes that the iMC 2.0 PC210LCi excavator improves Tripp Bros' efficiency contouring and crowning roads as well. "When we're undercutting a section of road, we can undercut the surface at a 2% fall and shape a crown in the road. The precision



Bobby Tripp, president



Alan Yoder, superintendent



Watch the video



# **Summer Safety**

# The heat is on. Here are some tips to prepare for the hot summer days ahead

Working with Komatsu means being part of a culture of zero harm where everyone is responsible for each other's safety.
Learn more about
Komatsu's drive to zero harm by visiting https://www.komatsu.com/en/

our-commitment/driving-

to-zero-harm/



Hot weather is particularly challenging to the construction industry because workers are often exposed to the elements, including high temperatures and humidity. After enduring the hottest summer on record last year, protecting workers from the heat should be a top priority.

# **Ounces of prevention**

Hydration plays a significant role in reducing heat illnesses and keeping your body properly conditioned for the job. Fluid intake is essential before, during and after work. Recommendations call for drinking water or electrolyte drinks such as Gatorade every 15 minutes, even if you are not thirsty — at least 6 to 8 ounces every hour. In extreme heat, it's even more important to replenish fluids lost to perspiration.

# Choose the right clothes

Appropriate clothing makes a big difference in hot environments. Choose lightweight clothing made of synthetic fabrics that wick sweat from the skin. For outdoor work, light-colored clothing is often recommended because it reflects the sun's rays. Looser-fitting clothes will also allow air to circulate and cool the body. However, job sites present hazards with

equipment and machinery that can catch baggy clothing, so be mindful.

# Sunscreen is very important

Clothing is a great help in warding off the sun's rays, but it's essential to put sunscreen on any exposed skin. Pay attention to the sun protection factor (SPF) in your sunscreen. The Skin Cancer Foundation recommends using a broad-spectrum sunscreen with an SPF of 15 or higher every day. An important fact to remember: UV rays pass through glass, so even if you are operating a machine or sitting in a pickup, use sunscreen.

# **Working times**

All job sites get hot during the summer months, especially those in urban areas where concrete and asphalt trap heat, and can send temperatures soaring. Since the sun is directly overhead at noon, the hottest part of the day is typically between 10 a.m. and 4 p.m.

Try to avoid scheduling work during those times if you can. If that's not possible, plan for more frequent breaks, and seek shade where the temperatures are cooler, such as under an awning, an umbrella or a tree. ■





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# **BISMARCK**

# **Tech Talk**

# How to integrate tech to overcome job site challenges



Jason Anetsberger, director of customer solutions, Komatsu

Job site challenges are nothing new, but today's technology lets you overcome them more quickly. Whether by providing real-time data, tracking productivity, or helping you remotely visualize a job site, implementing some of the latest equipment and management technology can help you advance solutions like never before.

#### **Start Smart**

Construction has increasingly become more digital. Building information modeling (BIM) allows various stakeholders to collaborate throughout the course of a project using a 3D model of a site or structure. All parties involved — engineers, architects, contractors and their personnel, and project owners — have access to the digital plans. Everyone can see and track progress, and make updates much more quickly than in the old days with paper plans, job site visits and phone calls.

That's a definite advantage for project managers who may be overseeing multiple jobs and can't always get to those sites but still need reliable, accurate data and the ability to communicate design changes quickly.

Komatsu already has a suite of Smart Construction customer support solutions designed to help companies digitally transform their operations throughout every phase of a project. Among them is **Smart Construction Drone**, which provides survey technology that builds an accurate topography of a site safely, quickly and easily.

"High-precision drone mapping is faster than traditional surveys, so you save time and costs," said Jason Anetsberger, director of customer solutions, Komatsu. "Preconstruction flyovers let you see things you can't with paper plans. Consistent drone flights throughout a project give you information about progress across the entire site and assist with progress tracking."

Anetsberger added that Komatsu's Smart Construction experts can work with you to get a 3D model built and help with drone flight.

"Using Smart Construction Dashboard, you can calculate takeoff quantities for bids, move from 2D to 3D for optimized machine data, and eliminate the need for paper plans," said Anetsberger. "The 3D design plans can be uploaded directly into Komatsu's Smart Construction intelligent Machine Control (iMC) excavators and dozers with the use of Smart Construction Remote, including new iMC 2.0 models that have technology upgrades to further automate earthmoving operations."

A lack of skilled operators is a huge challenge for earthmoving companies right now, but with automation, new operators can become productive faster. Komatsu intelligent Machine Control (iMC) dozers with automated features enable operators to cut/strip from existing terrain, regardless of skill level. The ability to use automatics from first pass to last, instead of just during finish grading, significantly reduces the time it takes to reach target elevation.





Accurate slope digs and changes in elevation present challenges for excavators. Komatsu iMC 2.0 excavators let you dig straight to grade using one machine with integrated GPS and uploaded 3D data models. The latest generation (PC210LCi-11, PC290LCi-11, PC360LCi-11 and PC390LCi-11) can help improve production by up to 33% and efficiency as much as 63% compared to conventional excavation and grading methods.

# **Automate dozing**

A lack of skilled operators is a huge challenge for earthmoving companies right now, but with automation, new operators can become productive faster. The ability to use automatics from first pass to last, instead of just during finish grading, significantly reduces the time it takes to reach target elevation.

Komatsu's iMC 2.0 dozers with integrated GPS feature proactive dozing control that enables operators to cut/strip from existing terrain, regardless of their experience level. This is because the machine's GPS technology decides on the action of the blade, such as whether to cut and carry, spread, fill or finish grade. The dozer measures the terrain as operators track over it and then uses the data to plan the next pass — which can improve productivity by up to 60% compared to the previous generation.

The iMC 2.0 dozers have additional technology features:

 Lift layer control helps eliminate excess fill as the automatic blade control follows the finished surface once lifts have reached target elevation. A simple press of a button optimizes earthwork productivity.

- Tilt steering control automatically tilts the blade to maintain straight travel during rough dozing and reduces operator steering input by up to 80%.
- Quick surface creation lets operators create a temporary design surface with the press of a button. Combined with iMC 2.0 functions, crews can begin stripping or spreading using automated input while waiting for the finish grade model.

# Virtually eliminate over-excavation

For construction companies, over-excavation on trench, footing and basement digs have long been an issue. This leads to extra work and more costly materials to replace what didn't need to be removed in the first place.

Accurate slope digs and changes in elevation also present challenges. Those are costly in terms of time, surveying, staking, grade checking, and the need for multiple machines such as an excavator to get close to grade and a dozer to finish.

Contractors can significantly reduce such costs using Komatsu iMC 2.0 excavators, because they can dig straight to grade using one machine with integrated GPS and uploaded

For more information about Smart Construction solutions, My Komatsu, Komtrax and iMC 2.0 dozers and excavators, contact your local General Equipment & Supplies Inc. representative and visit www.komatsu.com.



Continued . . .

# Reduce costs with Komatsu iMC 2.0 excavators

... continued

Editor's Note: This article is excerpted from a longer piece that appears on Komatsu's blog. To read the full article, visit https://www.komatsu.com/blog/2022/how-to-integrate-techto-overcome-job-site-challenges/.



3D data models. The latest generation (PC210LCi-11, PC290LCi-11, PC360LCi-11 and PC390LCi-11) can help improve production by up to 33% and efficiency as much as 63% compared to conventional excavation and grading methods.

Komatsu iMC 2.0 excavators have unique features such as auto tilt bucket control that automatically aligns the bucket parallel with a slope, so finish grading can be accomplished without needing to align the machine with the target surface.

Another feature is bucket angle hold control, which helps operators reach finish grade quickly and accurately because it automatically holds the bucket angle to the design surface during arm operation, enabling operators to perform finish grading using only arm input.

# **Remotely exchange information**

Because job sites often evolve and rarely end up finishing exactly as planned, smart businesses are increasingly performing the task of updating plans digitally and remotely with technology such as **Smart Construction Remote**.

Now, you no longer have to travel to the job site with a USB drive. You can send updates directly to connected iMC machines and field personnel from practically anywhere.

"You can also remotely support operators," said Anetsberger. "If they have

an issue with their machine or a question on the digital plans, Smart Construction Remote lets GPS managers and project managers connect with the machine and see exactly what the operator does on their monitor. That eliminates a trip, saving time and money."

Getting updates from the job site is also more convenient with **Smart Construction Field**, which can eliminate the wait for phone calls or field personnel to drop off information. It allows you to digitally track job site activities as well as aggregate personnel, machine and material costs to compare progress status in terms of schedule and costs.

## See your fleet data anytime, anywhere

Fleet managers know the challenges of getting the information they need to maintain machinery and make important decisions related to service. What if all the utilization data, parts ordering capabilities, service manuals and more were available in one platform?

"My Komatsu enables users to access and evaluate their assets," said Komatsu's Gabe Saenz, digital experience manager. "It can save countless hours of trying to track down machine information and help you be more proactive about service and repairs, when to order parts, and other critical factors related to fleet management."

Job sites evolve, and plans change. Instead of driving to the site to deliver updates, you can send design changes directly to connected iMC machines with Smart Construction Remote. Fleet managers can also remotely support operators and see exactly what they see on the monitor in their machine.







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# **Working From Afar**

# Remote job site management and operation are changing the construction industry landscape

Could one person control all the earthmoving on a job site from a remote location? While the idea may seem far-fetched, it's closer to reality than you think.

"The market sees this possibility evolving and coming to fruition at some point down the road," said Komatsu's Jason Anetsberger, director of customer solutions. "Mining has had autonomous trucks hauling billions of tons of materials for quite some time, which gives us an indication of what's possible."

Anetsberger added that remote operation, or teleoperation as it's often called, and autonomy on construction sites are "assets that customers continue to express interest in, especially considering the shortage of workers in the construction industry. Having one or a few people controlling large numbers of machines from an off-site location has the potential to lower costs and increase safety."

To a degree, the construction industry has already been using remote operation. Several manufacturers offer remote-controlled equipment that allows operators to run machines from outside

Remote control machines

have been available for

the cab. These have generally been used in highly sensitive and/or dangerous areas — such as cleaning up land mines or moving contaminated soils — but require operators to be on the site, albeit at a safe distance.

# Simulators as a prep tool

There are already tools that can help prepare operators for remote operation. Sophisticated training simulators use virtual reality to bring the look and feel of a job site task to operators and potential operators — all without stepping a foot on-site.

During an educational session (Virtual Reality, Augmented Reality, and the Future of Work: Are You Ready for the New Realities?) at CONEXPO-CON/AGG in 2020, Jim Colvin, president and CEO of Serious Labs Inc. — which offers virtual reality training solutions — said simulators continue to gain popularity in construction. He said they are more effective than on-the-job training and a good way to build skills faster, and more safely.

"There are ways of training nowadays using VR (virtual reality) and AR (augmented reality) that are more engaging, immersive, interesting and effective than traditional training methods," Colvin said.





Simulators can help trainees understand how to operate machinery before they get in the actual cab and may also be a way to prepare for remote machine operation.

# Seeing projects from a distance right now

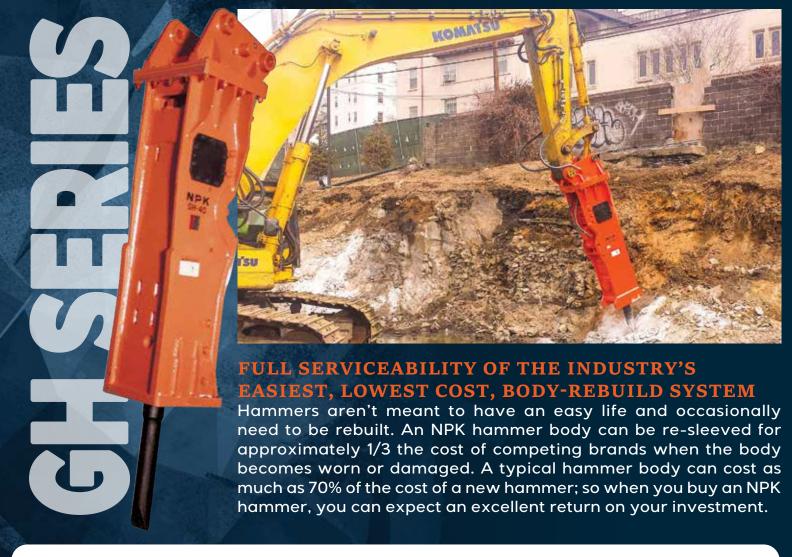
While the construction industry takes initial steps toward fully automating and teleoperating machines, projects can be managed remotely. In the past, project managers often had to drive from one location to the next, but now they can check on multiple sites from their office, vehicle or job site trailer.

Cell phones and computers ushered in the ability to communicate faster between the office and field personnel, and smartphones are making it even easier with applications designed for timecard management, productivity tracking, job site management and planning, and more.

"There are a multitude of apps available that let project managers view the job site in real or near real time right now," said Bryce Satterly, Komatsu Smart Construction solutions manager. "With digital plans and satellites, they can view an intelligent machine's monitor and see exactly where it is on a site and its relation to the final elevations. It lets project managers see productivity remotely and make adjustments faster. That can save time and money, and increase productivity."

According to Anetsberger and Satterly, virtually managing operations is a gateway to machine teleoperation and ultimately the autonomy of construction equipment.

"Virtual, or remote, machine management is a step in the right direction toward one day having fully-remote or autonomous job sites," said Satterly. "Understanding how to use that information and apply it to equipment operation and overall job site management is invaluable. It could be a key factor in full autonomy and remote operation."



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# Increase profits with sustainable practices

"Green" is a trending adjective for a practice construction companies have been following for years. Before it became the norm to recycle, construction companies were recycling construction and demolition (C&D) debris, including steel, asphalt and concrete. As an industry that works directly with the land, many have understood the importance of protecting it through sustainable practices.

While these are important practices for protecting the earth, are you aware of the increasingly wide variety of ways sustainability efforts can boost your company's value overall? Green practices can help reduce material costs, increase employee retention and ultimately boost profitability as supply chain partners and customers see you as a company worth working with for reasons beyond the traditional requirements.

Here are three ways thinking more sustainably could help boost your bottom line.

#### **Lower costs**

According to the United States Environmental Protection Agency (EPA), sustainability is based on a simple principle: Everything that we need for our survival and wellbeing depends, either directly or indirectly, on our natural environment. To pursue sustainability is to create and maintain the conditions under which humans and nature exist in productive harmony to support present and future generations.

Many new construction projects are done on sites where removing old materials like pavement, foundations, brick and concrete are part of the job. Recycling and reusing these materials on-site can provide significant savings.

Using recycled materials reduces the need to purchase virgin aggregates and the trucking costs associated with bringing them to the job site. It also reduces the need to transport C&D debris off-site, as well as the potential fees to put it in a landfill. Less fuel use as well as reduced wear and tear on trucks lowers repair and replacement costs for consumable items such as brakes and tires.

In some cases, old materials can't be reused on-site and must be hauled off. These can still have significant value. That's why numerous

companies have set up recycling yards that accept C&D waste and turn it into new products.

# Attract and retain top talent

Employee turnover is costly and is estimated to equate to 1.5 to 2 times an employee's salary when you factor in advertising, training and lost productivity, according to the article "The True Costs of Employee Turnover" published by *Built In.* While you may not have considered it, reducing your environmental impact could be key to lowering those workforce costs, retaining existing talent and attracting new employees, especially younger workers.

"There are numerous surveys that show that younger employees want to work for companies that demonstrate they are committed to sustainability," said Komatsu's Caley Clinton, senior manager – PR, CSR and content. "That includes on the job site, as well as in the office through practices such as reducing paper, water

Editor's Note: This article is excerpted from a longer piece that appears on Komatsu's blog. For more information about how focusing on sustainable practices can benefit your business, visit https://www.komatsu.com/blog/2022/increase-profits-withsustainable-practices/



Continued . . .

Studies show today's workforce takes corporate responsibility and sustainable business practices into account when choosing an employer. In this photo, Komatsu executives help plant trees for a corporate reforestation project in West Virginia. "Prospective employees want to know about your community involvement and how you're giving back...,"

said Komatsu's Caley Clinton, senior manager



# Sustainable practices stand out to prospective employees

... continued

and electricity use. Prospective employees also want to know about your community involvement and how you're giving back in ways that contribute to environmental improvements such as donating equipment, time and labor to projects like tree planting."

Clinton added that it's important for companies to highlight their sustainable practices in prominent ways so that they stand out to prospective employees.

"Having a section of your website dedicated to what you are doing to reduce your carbon footprint and water usage should seriously be considered," Clinton indicated. "Pictures showing your efforts are helpful. Icons such as the recycling symbol that show your commitment to green practices should be prominent on all your materials, including recruiting items, company brochures and other marketing items. It's an essential part of your brand's value, as long as it is actually a part of your company's culture."

## Land more jobs

Just like employees want to work for businesses committed to sustainability, other companies want to work with those who emphasize greener business practices. In many cases, companies or governments are making it a requirement to work on their projects.

"Companies that advance their approach to sustainability now can get the benefit of doing it for the right reasons, being on the forefront of the curve, and helping lead the way in their industries," Clinton emphasized. "If you wait until it's required and have to submit a report to a customer or another contractor you want to work with — and only then realize you don't have all the requirements — you may be at a disadvantage in the near future."

# Tips to get started

Clinton said measuring your sustainability is going to be increasingly more essential, and it's never been easier to do.

"There are many companies with software that help track practically everything you do related to sustainable practices," Clinton noted. "Right now, that's mostly at a nice-to-have level, but as more and more requirements are built into regulatory aspects of how companies have to do business, it's going to be essential. Those who don't have those metrics are probably going to miss most, if not all, opportunities. Those that do will likely land more jobs."

Recycling and reusing materials such as old pavement on-site reduces transportation costs, potentially increases profits and lowers emissions, which benefits the environment.





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My Komatsu

# Here's how to access Komtrax data on your registered machines through My Komatsu and use it for savings

Fleet managers know the challenges of getting the information they need to maintain machinery and make important decisions related to service. What if all the utilization data, parts-ordering capabilities, service manuals and more were available on one platform?

"My Komatsu enables users to access and evaluate their assets," said Gabe Saenz, digital experience manager, Komatsu. "It can save many hours of trying to track down machine information and help you be more proactive about service and repairs, when to order parts, and other critical factors related to fleet management."

Most of the information needed to make those fleet management decisions is available via Komtrax telematics, which can be accessed through a My Komatsu account. Komtrax data includes machine utilization, fuel consumption and idle time.

"Downloading the My Komatsu mobile app and then registering through it is easy," said Matt Beinlich, director of digital support solutions, Komatsu. "We believe, for convenience, the app is the best platform to use, because once you're registered, you can access telematics data from practically anywhere with the app."

To access Komtrax, follow these steps:

- Go to the "My Komatsu" website (mykomatsu.komatsu) and sign up for an account
- Click the "Register Now" tab; a distributor representative will contact you to complete the registration process
- Once you have an account, log in and locate the "My Fleet" tab on the homepage

For more helpful information, including videos about My Komatsu and Komtrax, visit https://www.komatsu.com/en/services-and-support/equipment-monitoring-and-analysis/my-komatsu/ and https://mykomatsu.komatsu/.



Continued . . .

The My Komatsu mobile app gives you on-the-go fleet management capabilities. "We believe, for convenience, the app is the best platform to use," said Matt Beinlich, director of digital support solutions, Komatsu. "Once registered, you can access telematics data from practically anywhere with the app."



# 'With just a few clicks, you can get monthly reports'

... continued

 Select the model or serial number(s) of the piece(s) of equipment you want information for

"If you click the 'My Utilization' tab at this point, you can get a breakdown of the machine's working status," said Eliott Hwang, Komtrax system administrator. "Easy-to-read graphs break down and simplify the information. With just a few clicks, you can get monthly reports that will show statistics of critical data. If you notice concerning trends, you can address them."

Hwang continued, "Komtrax lets you set alerts, so you are notified if those continue. Because the parameters of what you want for each machine are different, you can customize the alerts."

# How to decrease fuel consumption

A real benefit of Komtrax is using telematics data to make critical decisions, improve operations and see savings, according to Hwang. He used fuel usage as an example.

"One of a fleet manager's biggest challenges is knowing how many equipment hours are due to

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Having current telematics data from your machines lets you make more proactive decisions regarding fleet management and address potential issues such as excessive idle time. "You could set (Komtrax) up to alert you when all machines exceeded the goal percentage or stated fuel usage consumption, but a better approach would be to customize the settings because the goals typically vary by type of machine and the situations they are working in," said Eliott Hwang, Komtrax system administrator.

idle time versus production when they are not on-site," added Salvador Davalos, Komtrax system administrator. "Excessive idle time is a huge waste of fuel, and with the high cost of diesel, it's critical to conserve as much as possible."

Fleet managers have instant access to Komtrax telematics data through My Komatsu. If they see that a machine's idle percentage is beyond the stated goals they have set, they can then address the issue with the operator and field personnel.

"Fleet managers can show operators ways to reduce idle time such as shutting a machine down during lunch or when there is a long stretch between production times," said Davalos. "Any cut in fuel costs increases profitability. Setting an alert that notifies you when a machine has exceeded its idle percentage goal provides the information right away without needing to log in to My Komatsu."

To set an alert:

- Click the "Alerts" tab at the top of the machine's report page
- Create a condition you want to see, such as percentage of idle time
- Select the machine(s)
- Enter the emails of the users that you want to be notified

"You can set up Komtrax to alert you when all machines exceed the goal percentage or stated fuel usage consumption, but a better approach would be to customize the settings because the goals typically vary by type of machine and the situations they are working in," said Hwang. "For instance, you may have one percentage for all dozers and another for excavators. You can even set alerts for individual machines. No matter what you do, the idea is to proactively track idle time and fuel usage, and decrease both as much as possible."

# **Further savings ahead**

Currently, only Komtrax telematics data for registered Komatsu machines is available through My Komatsu. But soon, you will have the ability to access telematics data for other manufacturers' equipment as well, giving fleet managers even more information they can use to drive savings.

"Some of our data will be available on other OEM (original equipment manufacturer) systems as well; it's good for those managers with mixed fleets," said Saenz. "The key differentiator is that, as has always been the case, Komtrax remains complimentary. We want users to see and use the data to increase their efficiencies and production, as well as lower their owning and operating costs."





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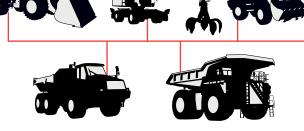
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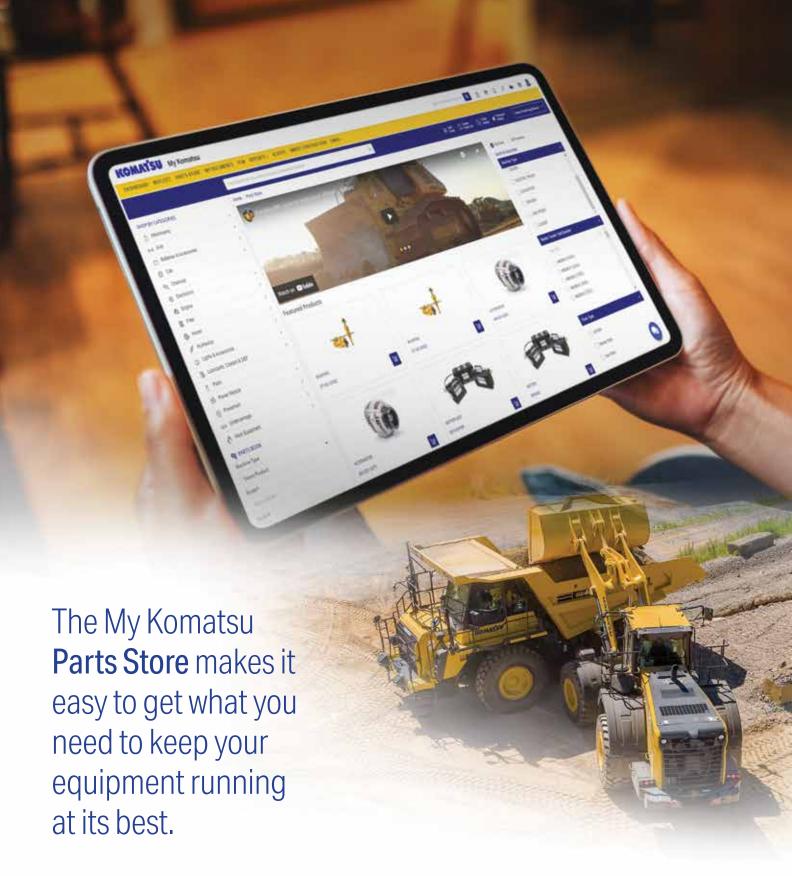


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My Komatsu

# **Insider Tips**

# Get to target grade faster

Reach maximum productivity faster. With automated features such as auto tilt bucket control and bucket angle hold control, Komatsu's 70,000-pound-plus PC290LCi-11 intelligent Machine Control (iMC) 2.0 excavator can empower operators of all skill levels to dig straight to grade quickly and accurately.

Andrew Earing, Komatsu senior product manager, said the PC290LCi-11 is well suited for nonresidential applications such as commercial developments and infrastructures. It delivers large production volumes with a relatively small footprint Learn more about iMC 2.0 and low transportation weight. Insider Tip: "Consider adding the auto-tilt bucket IMU (inertial measurement unit) field install kit for even greater levels of productivity and efficiency. This allows for expanded grading capabilities as well as auto return to horizontal,"

# Doing more with less

Looking for high production, efficiency and energy savings? The D71-24 dozer delivers with features such as variable displacement for the charge pump and variable matching to reduce horsepower loss and fuel consumption, respectively.

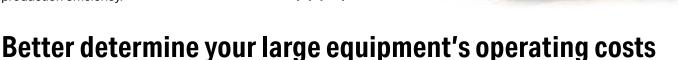
Compared to the D65-18, the D71-24 has 9% more horsepower and better fuel efficiency. It also has 13% more blade capacity, plus a 6% increase in cubic-yards-per-gallon production efficiency.

Insider Tip: "A hydraulically driven fan with electronic control also helps decrease fuel consumption," said Rafal Bukowski, Komatsu product specialist.



said Earing.

Learn more about the D71-24



Consumables such as pins, bushings, brakes, starters, alternators and serpentine belts can significantly affect your operating expenses, but it can be hard to factor them into your budget because replacement of these wear items depends largely on machine operation, according to Komatsu's Felipe Cueva, manager, Genuine Care.

With the new Komatsu Care Plus III program in addition to periodic maintenance, scheduled services and total machine repair coverage — consumables are covered through the first life of the machine.\* In most cases, that's 20,000 hours.

Insider Tip: "Plus III is the most comprehensive Komatsu Care Plus program for total machine coverage, with the added benefit of cost-per-hour billing, so customers will have a much easier time determining

their costs and budgets. They should check with their distributor for specific rates," said Cueva.





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