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OCTOBER 2021

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VALUE PROPOSITION
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TRANSFORMATION

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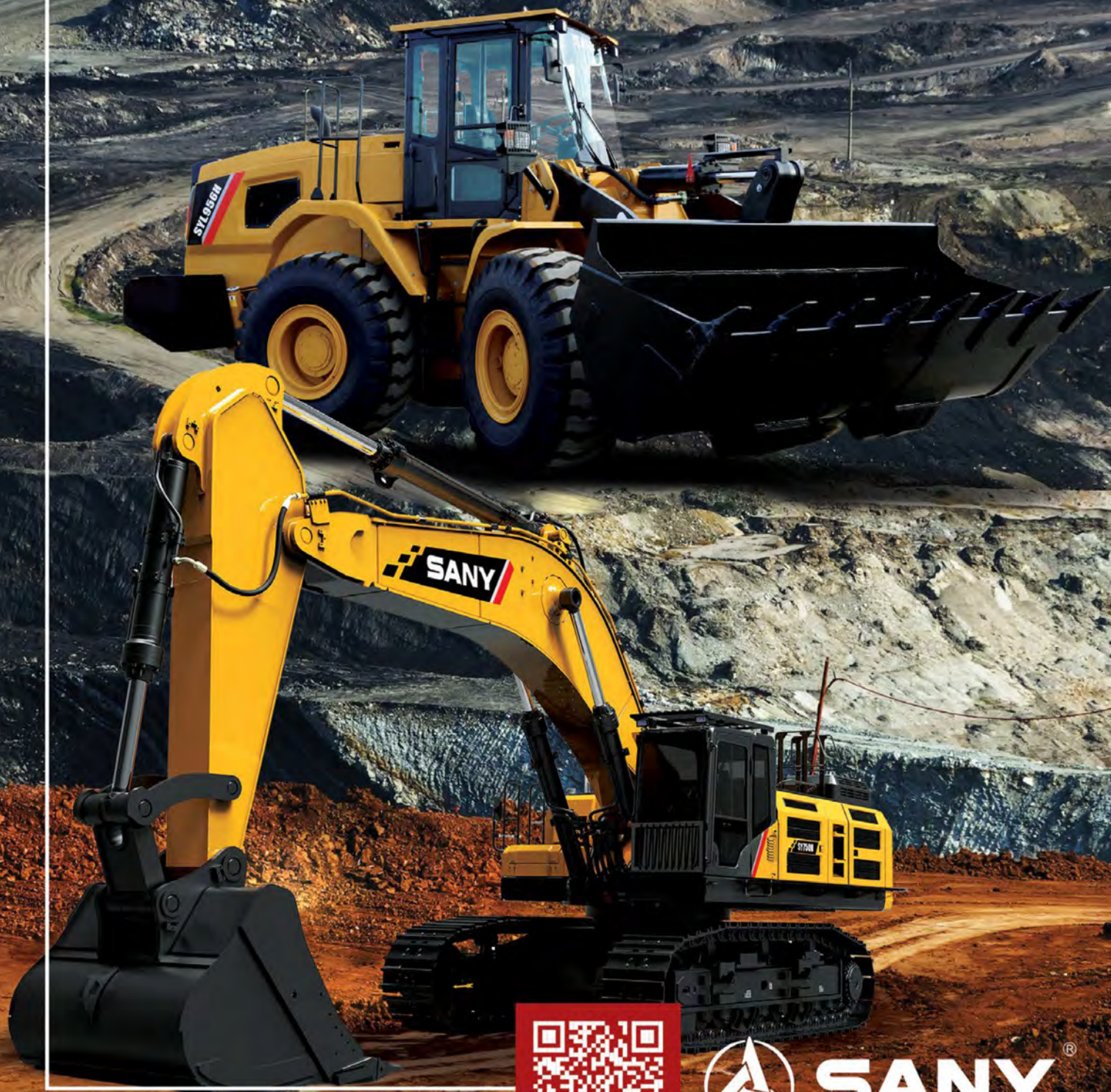
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ALL ROADS LEAD TO ZIMBABWE

I recently took a road trip to Harare, Zimbabwe, from Johannesburg, after almost a year. With the onset of the COVID-19 pandemic, it has been exceedingly difficult for me to make it home. I vividly remember the last time I travelled the Harare-Beitbridge road, and it was



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like a death trap. The derelict state of the road has been blamed for many accidents along this route over the years.

I was, however, impressed by the level of progress the so-called 'Second Republic' has made in terms of infrastructure development in the country. It starts right at the Beitbridge border post, where work on the massive US\$300-million modernisation project is forging ahead with major developments under the first phase of the project complete.

Away from the border, work on the country's main highway continues unabated. Rehabilitation of this road had been much discussed for the past decade or so. After several groundbreaking ceremonies yielded no substance over the years, I was glad to see real work progressing on the Beitbridge-Harare-Chirundu road, the country's busiest and most significant road in terms of linking countries within the SADC region. Although several detours resulted in major delays which saw us enduring an eight-hour drive on a journey that normally takes around five hours, it was exciting to see that more than 200 km of the world-class project is now open to traffic.

A drive around the capital city, Harare, was however quite a nightmare, with many major roads in serious disrepair. Nevertheless, urban roads are among those being given a major facelift under the country's Emergency Road Rehabilitation Programme (ERRP2).

Early this year, the government took over the maintenance of urban roads from local authorities – most of which are run by the

opposition – in a move seen by many as a political gimmick. Politics aside, there is some noteworthy rehabilitation work underway on some of the major roads in the city, with the most notable being the US\$3,4-billion Seke Road, a major artery that connects Harare and Chitungwiza.

Although the country's economic landscape remains tough, the government's big focus on infrastructure development projects is encouraging. The Second Republic seems to be understanding that quality infrastructure, especially roads, underpins economic activity and catalyses growth and development.

Road construction thus falls under the government's National Development Strategy 1's infrastructure cluster, where roads are classified as key economic enablers in line with the attainment of the government's Vision 2030.

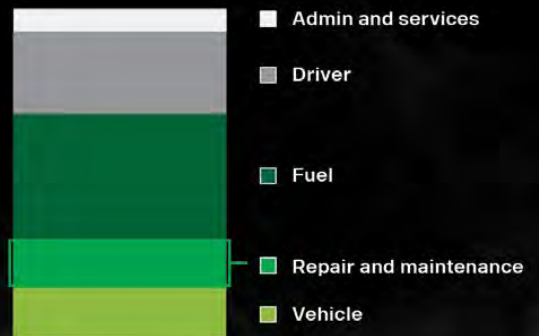
The government is said to have so far spent over US\$1-billion on road rehabilitation, gravelling and drainage structuring as part of its ERRP2 programme launched at the start of this year.

Given this continued focus on road construction, I believe Zimbabwe is an interesting market to watch for road construction equipment suppliers in the next year or two. With the 2023 election looming large, we will definitely see more of these road projects coming to light. Building infrastructure in Africa is often an inherently political act. It has been proven that elections greatly influence investment choices for governments. The flow of infrastructure funds creates winners and losers, and investment decisions often favour those in power.



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SCANIA



Liebherr Rostock has manufactured and delivered 1 300 Liebherr harbour mobile cranes since 2005.



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QUICK TAKE



Liebherr-Africa has concluded the sale of two LHM 550 Liebherr harbour mobile cranes to Ghana Ports and Harbours Authority

EXPANDING AFRICAN REACH

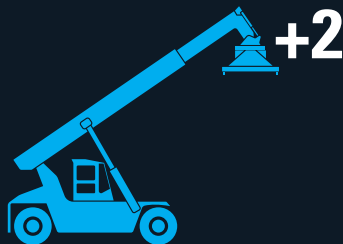
The recent conclusion of two landmark deals with two major African port authorities – Ghana Ports and Harbours Authority and the Namibian Ports Authority – has set Liebherr Africa's Maritime Cranes division on a major growth trajectory in Africa, writes *Munesu Shoko*.



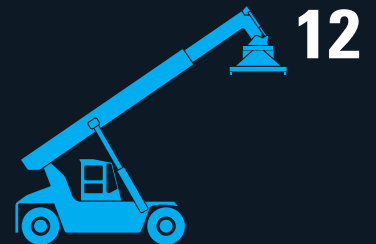
The two LRS 545 Liebherr reachstackers are due for delivery at Namport's Port of Walvis Bay in the next two months.



The GPHA deal marks the 1 300th Liebherr harbour mobile crane to be manufactured and supplied from Liebherr's Rostock manufacturing plant since 2015



As part of its fleet expansion programme, Namport has placed an order for two Liebherr LRS 545 reach stackers



The two reach stackers bring to 12 the number of Liebherr maritime machines in Namport's fleet

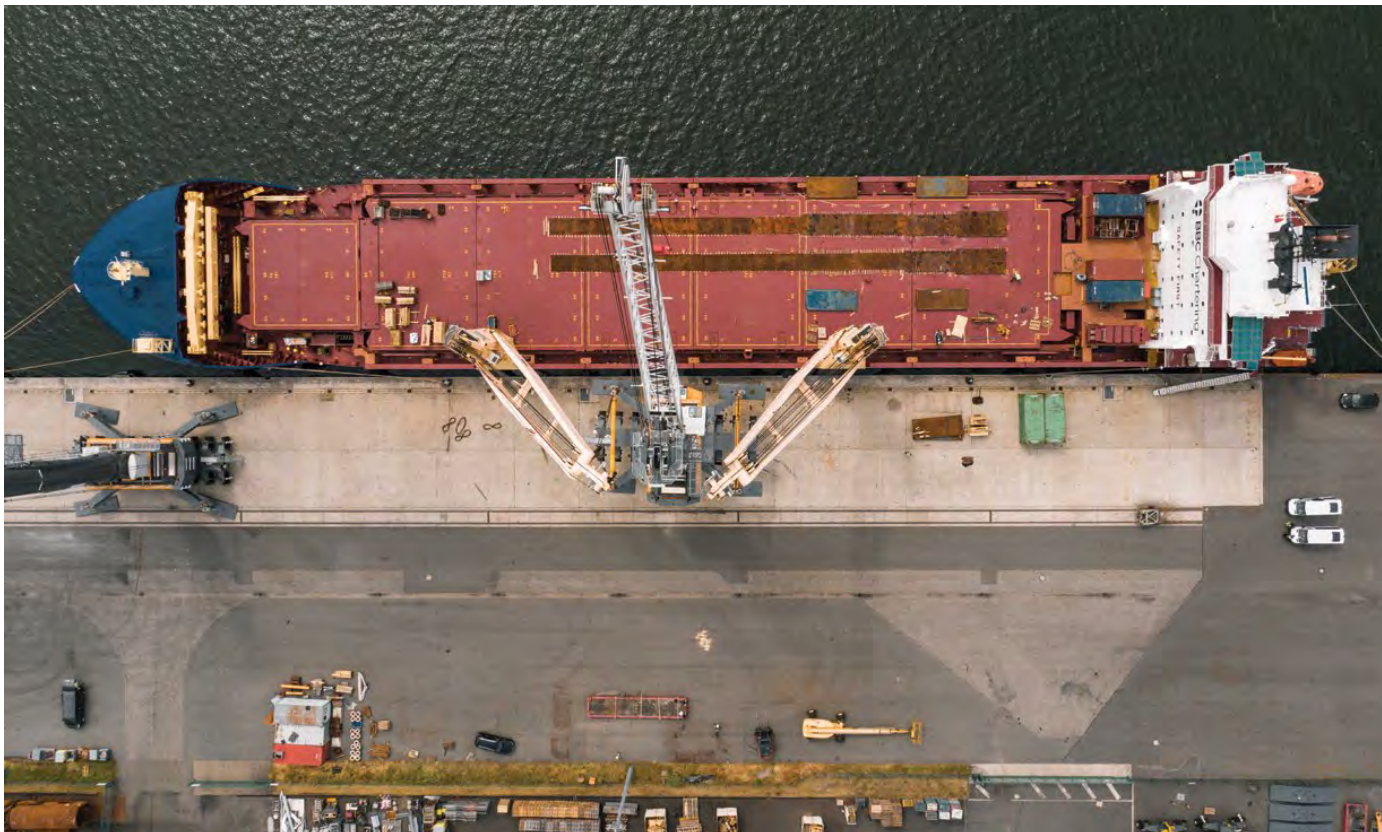
Despite the disruptions brought about by the COVID-19 pandemic and the resultant tough business conditions, Liebherr-Africa's Maritime Cranes division has recently recorded some notable successes in Africa,

following the conclusion of what sales manager Darren Jankelow terms as two landmark deals.

Right in the middle of the hard lockdown in April last year, Liebherr-Africa initiated negotiations with Alloud Company Limited for the sale of two

LHM 550 harbour mobile cranes to Ghana Ports and Harbours Authority (GPHA). The two cranes have since been delivered, with the milestone deal marking the 1 300th crane to roll off Liebherr's Rostock factory since 2015.

Following a lengthy negotiation process,



Liebherr harbour mobile crane number 1 300 was shipped from Rostock, Germany to Ghana in June this year.

Liebherr-Africa has also concluded a deal to supply two LRS 545 Liebherr reachstackers to Namibian Ports Authority (Namport) for use at the Port of Walvis Bay, Namibia's largest commercial port.

"These deals with two of the largest port authorities in Africa are testimony to our continued growth in the maritime cranes market in Africa. It also confirms the market-leading position of the Liebherr product and aftersales service in this market segment, as well as the established relationships we have built over the years," says Jankelow.

1 300th Liebherr harbour mobile crane

The Ghana deal was a milestone for Liebherr in several aspects. Firstly, it was concluded over Microsoft Teams, from start of negotiations to signing on the dotted line, which, according to Jankelow, is unheard of, especially for a deal of this magnitude. Secondly, with the sale of the two units to GPHA, Liebherr Rostock has now manufactured and delivered 1 300 Liebherr harbour mobile cranes since 2015.

"The COVID-19 outbreak showed us just how quickly things can change. One of the biggest impacts on our business was the way we work. The entire deal was negotiated and concluded on Microsoft Teams. Both parties signed on the dotted line without any need to step on a plane for a face-to-face discussion, which is traditionally how deals of this size are

concluded," says Jankelow, adding that this is testimony to how the Liebherr-Africa team adapted to new ways of working.

After long and in-depth deliberations at an executive level, Liebherr-Africa signed the contract for two LHM 550 Liebherr harbour mobile cranes with Alloud Company Limited in July 2020. Production of the cranes commenced at Liebherr-MCCtec Rostock GmbH in October last year.

The cranes began their 5 500 km journey aboard the heavy-lift vessel BBC-Russia from Rostock, Germany, to Ghana in June this year, and safely docked at the Port of Tema in July. The two units have been successfully handed over to GPHA's Port of Tema, where they have been in operation for over two months, with no issues whatsoever.

The Port of Tema is the largest port in Ghana. Situated on the eastern coast of the country, it stretches over a 3,9-million m² of land. The port receives an average of over 1 511 vessel calls per year. These comprise container vessels, general cargo vessels, tankers, Ro-Ro and cruise vessels, among others. About 85% of Ghana's trade is done through the ports (Tema and Takoradi) with shipping routes and vessel calls to and from all continents through both direct and transshipment services.

"A major milestone for us is that the GPHA deal marks the 1 300th Liebherr

harbour mobile crane to be manufactured and supplied from our Rostock manufacturing plant since 2015. To date, many Liebherr harbour mobile cranes, ship-to-shore, gantry cranes and RTGs are in use in over 100 countries across the globe," says Jankelow.

Fleet expansion

The Ghana Ports and Harbours Authority has for the past few years expanded its fleet of Liebherr harbour mobile cranes for container handling. The handover of the two LHM 550 Liebherr harbour mobile cranes to the Port of Tema marks the eighth harbour mobile crane that Liebherr-Africa has delivered to GPHA in the past six years.

"We have a longstanding relationship with Liebherr. We are impressed with both Liebherr products and their service. It is not only the individual consulting but also the fast delivery that has promoted an expansion and increase of our business," says Stephen Kwamina Owiah, port logistics manager at GPHA.

With an outreach of 54 m, the LHM 550 is the perfect crane for handling containers, bulk material and general cargo. The model also does justice to heavy-duty lifting of up to 154 tonnes.

One of the reasons Liebherr has been the global market leader of harbour mobile cranes for over 10 years is the commitment

Designed for fast handling of containers and semi-trailers, the LRS 545 Liebherr reachstacker is distinguished by its wedge shape, combined with driving comfort and powerful performance.



Growing machine population

Jankelow says the growing machine population at one of Africa's biggest ports is exciting for Liebherr-Africa. The Port of Walvis Bay is Namibia's largest commercial port, receiving approximately 3 000 vessel calls and handling about 5-million tonnes of cargo per year. Its world-class infrastructure and equipment ensure reliable and safe cargo handling.

The Port of Walvis Bay handles container imports, exports and transshipments, as well as bulk and break-bulk of various commodities. The LRS 545 Liebherr reachstacker will be deployed in a top-lift container application.

Key to success on this tender, explains Jankelow, was the close relationship Liebherr-Africa has forged with the ports authority over the past 15 years. Liebherr maritime cranes operating at Walvis Bay are supported by the company's resident engineer, who is available to the client round the clock.

"Our resident engineer is readily available 24/7 to assist the customer. This level of support has resulted in high machine availability. That was one of our key competitive edges when tendering for this particular contract. Over many years of working closely with the client, we have demonstrated our world-class product support capabilities," he says.

Jankelow says every product is only as good as its support received from the OEM. Downtime for port machinery, he says, or any other piece of equipment for that matter, is virtually out of question. "Time is money," he says. "Having 24/7 support and high machine availability has created greater customer confidence and trust."

The LRS 545 from Liebherr gives terminals a new impulse. Designed for fast handling of containers and semi-trailers, the agile reachstacker is distinguished by its wedge shape, combined with driving comfort and powerful performance. The optional Pactronic hybrid drive ensures that energy is recuperated, fuel is saved and emissions are reduced. The tried-and-tested hydrostatic drive enables continuous acceleration for enhanced driving comfort. It also ensures energy recovery for increased efficiency. The control system of the reachstacker, which was developed by Liebherr, focuses on precision, safety and productivity. These are some of the key features and benefits that influenced the client's buying decision. 🌟

to high customer satisfaction. Liebherr-Africa has continued to provide round-the-clock service to GPHA, even during times of crisis, to ensure that the port authority's ports are able to continue their operations. Despite the lockdown as a result of the COVID-19 pandemic, Liebherr-Africa's technical support team has remained functional to support the customer.

"As part of the deal, we also hosted 26 GPHA operators and technicians at our state-of-the-art Maritime Training Centre in Durban, where they received advanced operator and technical training courses over a six-week period," says Jankelow.

More reach into Namibia

The sale of two LRS 545 Liebherr reachstackers to Namibia expands the complement of Liebherr maritime machines operating at Namport. As

part of its fleet expansion programme, Namport went into the market for two reachstackers last year. The tender was however cancelled twice, explains Jankelow, largely due to disruptions caused by the COVID-19 pandemic.

"After the third round of tendering, we were successfully awarded the contract to supply two LRS 545 Liebherr reachstackers in September this year," he says. "The two machines bring to 12 the number of Liebherr maritime machines in Namport's fleet. Namport already runs seven LHM cranes and three LRS 645 Liebherr reachstackers."

The two machines are due for delivery in the next two months, followed by a handover period of two to three weeks, where a Liebherr trainer will conduct familiarisation training with Namport operators and technicians.

Scania Southern Africa is instituting some major changes to its commercial operations.



SCANIA ENHANCES CUSTOMER VALUE PROPOSITION WITH STRATEGIC TRANSFORMATION

As part of a global reorganisation, Scania Southern Africa has announced several changes to its commercial operations. This follows a global decision to implement a strengthened strategic transformation across the Scania Group's regional hubs, of which Scania Southern Africa is one, allowing the company to fortify its customer value proposition, writes *Munesu Shoko*.

While transport operators love their trucks and finding a good deal, understanding where customers place value is key to original equipment manufacturers (OEMs) being able to offer services and solutions that meet customer needs. With that in mind, the Scania Group is instituting major changes to its commercial operations that are set to strengthen its value proposition to the customer.

The changes are part of a global decision to implement a strengthened strategic transformation across Scania Group's regional hubs. This builds on Scania's think globally, act locally strategy that allows customers worldwide to benefit from the consolidated knowledge sourced from across the Scania Group, while enjoying regional flexibility suited to their unique needs.

Global reorganisation

The global regional reorganisation will see Europe split into three regions, while Asia-Oceania and EMA remain unchanged. The American structure remains the same, except for Brazil, which will now be a regional hub on its own.

These changes will allow Scania to strengthen its customer value proposition. Speed and flexibility will be enhanced, new innovations leading to increased customer profitability are under development and an intense focus on customer collaboration aims to position all the regions as strong commercial collaborators aligned to the overall global strategy and mission.

Increased regional efficiency will give Scania customers access to expanded business efficiencies, smart cost savings and faster turnaround times. Handovers between the regions will commence during the fourth quarter of 2021.

Southern Africa changes

As part of the reorganisation, current Scania Southern Africa MD Fabio Souza will move back to Brazil as regional head for that market. During his tenure, Souza implemented multiple strategic initiatives and governance processes that have significantly contributed to Scania Southern Africa's leadership position in the local transport industry.

"At Scania, we believe everything begins and ends with our people," says Nomonde Kweyi, GM Marketing and Communications, Scania Southern Africa. "It is with great sadness, but with the best of wishes that we say farewell to our current MD, Fabio Souza. During this



Increased regional efficiency will give Scania customers access to expanded business efficiencies, smart cost savings and faster turnaround times.

QUICK TAKE

Scania Southern Africa is implementing several changes to its commercial operations following a global decision to implement a strengthened strategic transformation across the Scania Group's regional hubs



As part of the reorganisation, current Scania Southern Africa MD Fabio Souza will move back to Brazil as regional head for that market



The global regional reorganisation will see Europe split into three regions, while Asia-Oceania and EMA remains unchanged



As part of the global changes, CEO roles for TRATON GROUP and Scania have been merged, with Christian Levin appointed to lead the group, effective October 1



period, changes to our local structure and processes will include the active participation of our employees and unions where applicable. We also look forward to welcoming the new MD for Scania Southern Africa, who will be appointed in the coming weeks."

Global changes

As part of the global changes, CEO roles for TRATON GROUP and Scania have been merged, with Christian Levin appointed to lead the group. Effective October 1, Levin has taken on a new role which merges his current role as president and CEO of Scania with the role of president and CEO of TRATON GROUP.

TRATON CEO Matthias Gründler and CFO Christian Schulz left the company on September 30, 2021. Annette Danielski, previously head of Corporate Finance at TRATON SE, has become the new CFO as of October 1, 2021.

"I am honoured to take on the role as CEO of the TRATON Group while continuing on as CEO of Scania. Looking ahead focus will be on transforming business into new technology areas and geographies, while leveraging further synergies through modularisation and scalability," says Levin.

"The evolution of the TRATON Group



As part of the reorganisation, current Scania Southern Africa MD Fabio Souza will move back to Brazil as regional head for that market.



Effective October 1, Christian Levin has taken on a new function which merges his current role as president and CEO of Scania with that of president and CEO of TRATON GROUP.



The changes will allow Scania to strengthen its customer value proposition.

continues and builds on the TRATON strategy which the current management team established and which is now pushed into a different gear. The strategy includes a stronger focus on sustainability not the least through e-mobility, digitalisation and connectivity; continued integration of Navistar and growth in the North American market, as well as continued investments in China over the next few years. This change will comprise of several steps over time and by the end of the year a fuller plan will be presented," adds Levin.

Leveraging each brand

On this next step of the TRATON journey, the strength, competence and business logic in each brand in the group – MAN,

Navistar, Scania and Volkswagen Caminhões e Ônibus – will continue to be leveraged.

"We were able to implement the Global Champion strategy faster than expected. This means that TRATON is now on stable footing internationally. The task now is to lead TRATON into a sustainable future beyond conventional business models and ways of thinking. With Christian Levin at the helm, the TRATON GROUP can now benefit even more from its lead brand Scania. Levin is exactly the right person for this task and I wish him and the entire TRATON team every success," says Matthias Gründler, CEO of the TRATON GROUP.

"I would like to expressly thank Matthias Gründler and Christian Schulz on behalf of the entire Supervisory

Board for the work they have done and the mutual successes achieved. Both of them pushed the implementation of the Global Champion strategy massively and thus achieved major milestones for the TRATON GROUP in a short time. I see Christian Levin as a strong leader to execute on the next chapter for the group, he has my full support to lead the journey towards stronger profitability and growth. Christian Levin and Annette Danielski will consequently implement the jointly developed new TRATON strategy," says Hans Dieter Pötsch, chairman of the TRATON Supervisory Board.

Future TRATON strategy

TRATON SE's future corporate strategy was outlined during the company's Annual General Meeting in Munich late last year. TRATON's brands are to gain more individual responsibility as the company moves forward with its efforts to achieve a return on sales of 9% throughout the cycle of the commercial vehicle industry.

The company remains firmly committed to its pledge to invest €1-billion in electrification through 2025. TRATON's brands are making rapid progress in this regard: Scania has just presented its electric line-up of series-production commercial vehicles for urban areas. These vehicles include a plug-in hybrid that can cover 60 km on a single charge and a BEV with a range of up to 250 km. Both Scania and MAN Truck & Bus plan to introduce a lineup of electric city buses before the end of the year. Volkswagen Caminhões e Ônibus is working with partners in Brazil to develop an entire network for electric commercial vehicles – from manufacturing and charging infrastructure to battery lifecycle management.

The structures and processes in the holding company are also being scrutinised as part of efforts to create more added value for the group. The aim of this work would be to further combine the group's purchasing power and to become "an increasingly attractive employer for the most talented individuals in the market".

TRATON is also acting as a driving force behind strategic issues of the future for the entire group. This includes the new strategic partnership with the United States company TuSimple that will focus on developing autonomously driving trucks and was announced to shareholders late last year. Self-driving trucks have the potential to increase the efficiency of logistics. TRATON intends to play a leading position in this field. 🌱



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It is essential that the appropriate panel or panel combinations are used to ensure maximum efficiency.

FEWER HEADACHES, MORE PROFITS WITH THE RIGHT SCREEN MEDIA

Although screen media is a minor cost when compared to larger equipment in a processing plant, several experts who spoke to Capital Equipment News agree that it is a crucial part of any operation's profit machine. Choosing the right media for the job and installing it correctly can mean less downtime, fewer headaches and more profits. *By Munesu Shoko.*

Screening is the process of sizing and separating particles to create feed envelopes for downstream processing. In a mineral processing plant, says Mohini Jingoo, capital sales manager at Multotec, screening is carried out to perform duties in various applications, i.e. scalping, sizing and product classification, drain and rinse (media recovery), dewatering and desliming.

The screen panel, she says, is considered a critical part of the screening process. For this reason, it is essential that the appropriate panel or panel combinations are used to ensure maximum efficiency.

"Multotec is committed to the ongoing development and optimisation of its screen media, not only to improve efficiencies, but also to lower the overall cost of screening. Our research and development team partners with our customers and as a result we have been providing niche screen media solutions to mineral processing plants," says Jingoo.

Francois Marais, director sales and marketing at Pilot Crushtec, says correct screen media is critical and is often overlooked by many operations. Selection of the correct screen media, he says, can increase throughput or improve product grading curves dramatically.

"We often see site managers

complaining about poor production and their analysis is usually focused on primary or secondary crushing stations when, in reality, the screening operations have thick mesh, which closes the open area and does not allow for free flow of material to be sized as end products," says Marais.

Jurgen Cneut, FLSmidth global product line manager – mid-market screens & feeders and regional product line manager – mining screens and feeders – ENAR & sub Saharan Africa, agrees, saying that the selection of the correct screen media is absolutely critical as it affects the screen's ability to work effectively.

"The composition, as well as the



Selection of the correct screen media can increase throughput or improve product grading curves dramatically.



The screen panel is considered a critical part of the screening process. For this reason, it is essential that the appropriate panel or panel combinations are used to ensure maximum efficiency



Selection of the correct screen media can increase throughput or improve product grading curves dramatically



Polyurethane is the most commonly used media and handles most applications from sizing, dewatering, desliming, as well as drain and rinse, among others



Rubber screen media is used in dry abrasive applications, and also performs well in impact applications

available open area on the screening deck, is greatly affected by incorrect selection. In other words, incorrect media selection can result in the screen not being able to handle the duty requirements," says Cneut.

Determining type of media

Commenting on the parameters that determine the type of media to be used, Cneut says the main ones are the type of application (sizing, dewatering, etc), the material being handled, clay content and moisture content, among others.

"There are many variables that must be taken into account when making a correct media selection, and for this reason it is always advisable to deal with a reputable screen panel manufacturer that is able to assess the application requirements and can recommend the most appropriate screen panels and screen deck configurations," says Cneut.

Parameters that need to be considered when selecting screen media for a particular application, says Jingoo, include whether it is a wet or dry screening application, the type of ore material being screened, whether it is a light or heavy duty application and specific customer requirements such as increased wear life or high open area.

Consideration, she says, should also be given to whether accessories such as weir bars, deflector or skid bars are required.

"It is also necessary to take the screening application into account as this will dictate the screen media requirement. This could include scalping screens, grizzlies or rotary breakers, classification screens, drain and rinse screens for media recovery, desliming or dewatering screens, trommel screens, sieve bends and screens, centrifuges and even ultra-fine screens," says Jingoo.

Pilot Crushtec's Marais reasons that there are two main areas to analyse – the production and material factors, external factors within the overall plant and the required output. For the production and material factors, plant operators would want to analyse whether or not the material is wet or dry and what the typical characteristics of the material are.

"The PSD and SG, as well as the abrasiveness of the material, also play a role in media selection. In terms of the external factors, one would want to determine where the screen is situated in the plant. The screen deck sizes and the ease of access to the screen media also influence the selection of media," says Marais.

Types of media and applications

Different materials of construction need to be considered with the most appropriate being selected for a given application, reiterates Jingoo. For example, she says, polyurethane or PU screen panels are manufactured with self-relieving apertures,

resulting in the unrestricted downward movement of any sized particle, eliminating pegging and blinding. PU panels are considered to provide longer life due to higher wear resistance than standard screen panels.

"Rubber screen panels – which absorb impact, reduce pegging and blinding, as well as improve wear life in coarse and heavy-duty applications – are suitable for both high moisture and dry applications," she says.

Wedge wire screen media, she adds, is suitable for filtration, solid/liquid separation, classification, dewatering and concentration in mineral processing applications. The longevity of this screen media is unaffected by the processing of coarse and acidic minerals, and is capable of withstanding most corrosive and abrasive applications. Materials of construction include Grade 430 stainless steel for abrasive applications and Grades 304 and 316 stainless steel for corrosive applications.

Woven wire mesh, says Marais, is generally used in the aggregate industry in non-abrasive applications. The benefits of woven wire mesh include increased open area, ability to prevent pegging and blinding. This is also a cost-effective option, as the stainless steel lasts even longer and prevents corrosion.

"Z-Slot wire cloth (zig-zag) is generally used in fine screening applications where material has some moisture and a high clay content. The screen media helps prevent pegging and blinding, and is available in a stainless steel option, which gives longer life and eliminates corrosion," adds Marais.

Polyurethane screen media, he says, is generally used in wet abrasive applications, including wet sizing and dewatering applications. This screen media, which is available in modular panels or tensioned cloth, offers flexibility of material, prevents pegging and blinding, while giving longer life and wear resistance.

"Rubber screen media is used in dry abrasive applications, and also performs well in impact applications. It is also available in modular panels or tensioned cloth," says Marais.

According to Cneut, rubber panels are used in bigger aperture sizes and handle larger impacting particles, thus protecting the screen and absorbing the impact. "Polyurethane is the most commonly used media and handles most applications from sizing, dewatering, desliming, as well as drain and rinse, among others. Then there is woven wire, which is used



"Multotec is committed to the ongoing development and optimisation of its screen media, not only to improve efficiencies, but also to lower the overall cost of the screening."

Mohini Jingoo, capital sales manager at Multotec



"We often see site managers complaining about poor production and their analysis is usually focused on primary or secondary crushing stations when, in reality, the screening operations have thick mesh, which closes the open area and does not allow for free flow of material to be sized as end product."

Francois Marais, sales and marketing director at Pilot Crushtec



"There are many variables that must be taken into consideration when making a correct media selection, and for this reason it is always advisable to deal with a reputable screen panel manufacturer that is able to assess the application requirements and can recommend the most appropriate screen panels and screen deck configurations."

Jurgen Cneut, FLSmidth global product line manager – mid-market screens & feeders and regional product line manager – mining screens and feeders – ENAR & sub Saharan Africa

in various applications; this is a cheaper option but, in most cases, less durable. For ultra-fines, we use mainly either wedge wire or specially manufactured polyurethane mats," explains Cneut.

Key trends

Commenting on some new trends in the screen media industry, Marais says various styles and custom screen media pattern designs are improving screen media open area and efficiencies. These also prevent pegging and blinding. "Various material options allow the customer to fine-tune a screen's performance in a cost-effective way and refine the output from the plant in order to meet production grades and end product requirements," he says.

The biggest trends, says Cneut, include improvements in material composition as well as the life of PU panels, thus bringing OPEX down for the end-user. Other factors that come with improvements to materials are the ability to change aperture shape, thereby increasing the open area per square metre. "This allows for the use of smaller screens for similar duties, reducing CAPEX. This is a factor the entire industry is looking to improve as it offers the end user both reduced CAPEX and OPEX expenditure," reasons Cneut.

According to Jingoo, ongoing research and development plays an important role at Multotec. The company is actively involved with the following screen media developments: increased dewatering capacity utilising improved drainage compared to conventional screen panels; considerable improvement in the wear life of wedge wire products using a hard chrome surface; new fixing methods that allow for improved safety and a reduction in installation time; an alternative product to woven wire on ROM screens; and ongoing development of screen media that will allow online, real-time monitoring of wear and other parameters.

Flagship products

Commenting on some of the flagship products the company has brought to market, Cneut says FLSmidth's XIF panel dramatically improves the dewatering throughput with its unique aperture design and open area. "This panel is truly a leap forward in screen media technology," he says. "FLSmidth is also busy with some major R&D projects to improve the life of polyurethane parts – this is not necessarily limited to screening media, so watch the space."

According to Marais, woven wire mesh will always be a good product of choice because of its open area that allows customers to select a more CAPEX-friendly screen that performs economically and efficiently. In fine screening, non-abrasive applications where more open area is required, adds Marais, "the piano wire options perform well and we have seen this media doing an exceptional job. Many customers have also been converting some of their screens to poly panels in order to increase life of the screen media panel, but the decline of open area has impacted on produced tonnages."

Jingoo says Multotec has developed a test rig for screen media product development and optimising screen media selection according to customers' requirements. "Clients can view the actual performance of the screening media products with the material from their mining operations. In addition to this, the customer can benefit from screening media field trials by proving product efficiency in a controlled environment before products are incorporated into their applications," concludes Jingoo. 🌟



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Know your equipment by regularly examining the screen box and screen media for signs of wear or damage.

DIAGNOSING SCREEN MEDIA PROBLEMS

Persistent problems with uptime and production quality can be frustrating. Aggregates and mining operations must work as quickly as they can to resolve issues and minimise losses from downtime and repairs. Common screening complications that operations face include contaminated piles, clogged screens or lower-than-expected screen media life. Knowing how to diagnose problems and find the best fix can expedite the process. By Lars Bräunling, director of product technology at MAJOR.

Many of these problems have more than one solution. Operations first need to identify the issue and potential for future problems, then look into fixing them. Material issues such as blinding, pegging and carryover likely require a new style of screen media. Screen media breakage problems may require an alternative type of screen media, but often also an examination of the vibrating screen maintenance and the installation practices of the screen media.

First step: identify the problem

While many problems are easily identifiable, it can be helpful to do a thorough evaluation of the process and look for any apparent screen media issues, in addition to the screen setup and equipment condition.

The easiest and most sure-fire way to identify problems and solutions is to work with an OEM-certified technician

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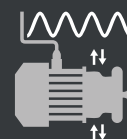
While many problems are easily identifiable, it can be helpful to do a thorough evaluation of the process and look for any apparent screen media issues, in addition to the screen setup and equipment condition



The easiest and most sure-fire way to identify problems and solutions is to work with an OEM-certified technician to complete a screening performance assessment



Vibration analysis technology is advancing to a point where simple-to-use sensors have no wires, work well with a smartphone and don't require shutting down the equipment



If the scrap pile is growing too quickly then it may be time to look into a new screen media configuration



to complete a screening performance assessment. In this case, the expert is often the screen media manufacturer or dealer. Representatives are constantly encountering operations with new problems, giving them valuable insight into solving common and unique issues. They also draw from a network of experts to help uncover solutions.

One key part of that assessment should be a vibration analysis conducted on the entire screen box. This technology is advancing to a point where simple-to-use sensors have no wires, work well with a smartphone and don't require shutting down the equipment. The process serves a dual purpose. First, it gives insight into the screen box health and has the potential to help spot abnormalities unseen by the human eye that could develop into costly problems, such as premature screen media wear. The software also visualises the setup of the machine, which plays a huge role in the performance that can be expected for each individual job.

Following a vibration analysis, step back and take a good look at the equipment. Examine the screen box and screen media for signs of wear or damage. Listen to the machine run to try

to catch abnormalities or metallic sounds that could mean loose media, worn clamp bars or broken wires.

Look also at the crusher feed belt coming off of the screen. This is an easy way to check whether saleable rock is being sent to the crusher or conveyor because the deck capacity was exceeded. It could be the result of blinding, pegging, poor open area, non-ideal vibration setup or the wrong screen media configuration.

Another good indicator is the condition of screen media in the scrap pile. Look at the underside of the spent screens to diagnose installation challenges. Black markings on the underside can show that the panels have moved and rubbed against machine supports, meaning they weren't fixed in place like they should have been during proper installation. Shiny hooks are also a sign that screen media was loose and moving back and forth during operation.

Pegging, blinding and carryover

It's no secret that operations regularly face issues with near- or odd-size material pegging screens, or fine sticky material blinding openings. The depleted open area can ultimately result

in carryover or contamination of the screened product, making this a costly problem.

The primary solution for these issues is often the choice of screen media. If using woven wire, consider high-vibration wire bonded with polyurethane strips. This setup allows wires to move independently, effectively dislodging pegged or blinded openings, such as when screening material with heavy clay deposits. The extra vibration also improves overall stratification.

Operations can sometimes also benefit from polyurethane or rubber screen media, especially with tapered openings to force material through. The flexibility of this type of media helps reduce some screening issues, while the material itself is highly resistant to impact and abrasion.

Generally, if the pegging and blinding is solved, the carryover should be reduced or eliminated, so long as the machine isn't being overloaded. The improved stratification from high-vibration wire also greatly contributes to less carryover by increasing screening capacity.

Too much wear and early breakage


If the scrap pile is growing too quickly

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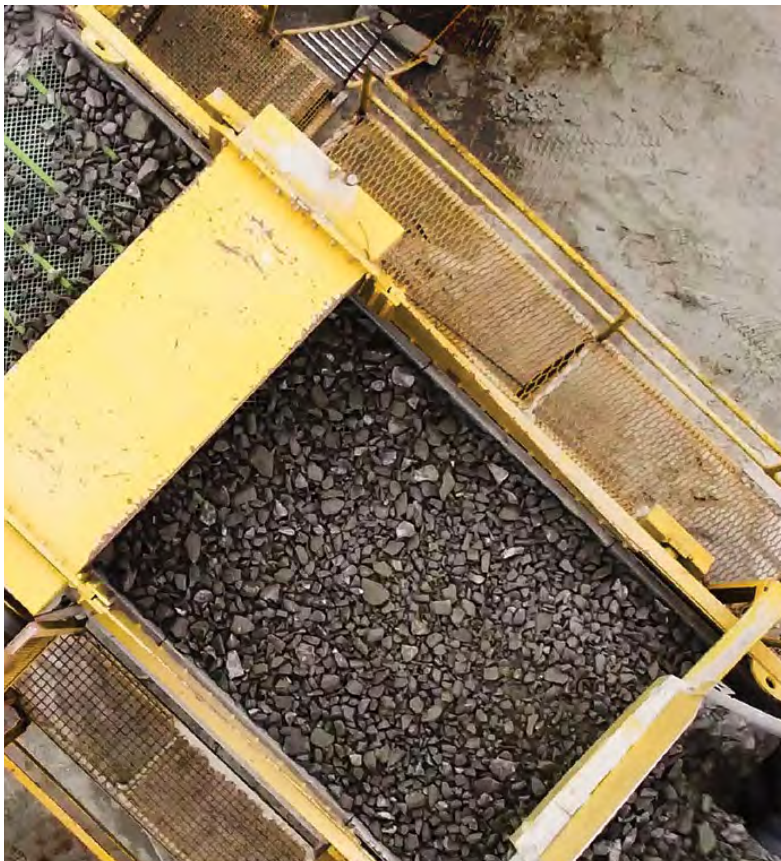
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Persistent problems with uptime and production quality can be frustrating. Knowing how to diagnose common problems can expedite the process and keep the machine up and running.

then it may be time to look into a new screen media configuration. Ideally, the screen media should complement the three main phases of screening: the feed end, the middle of the deck, and the discharge end. Many operations use mixed screen media for optimal results.

Material of all sizes hits the deck at the first phase on the feed end. For that reason, this section should be able to handle large material impacting the deck, as well as fine particles. If the screen media in this area is wearing down or breaking too often, then consider something more durable. Depending on the application, this could mean thicker wires, steel plate, rubber or polyurethane, or polyurethane strips reinforcing key parts of the screen deck.

The middle of the deck should still be durable, but may feature more open area to increase screening action. The discharge end generally features the most open area, because by this point any remaining material should be near or oversize. Near-sized particles, for example, need the most tries to screen out successfully.

Some operations feature a reinforced media on the feed end and high-vibration wire screens – or self-cleaning screen media – on the rest of the deck. As mentioned above, the high-vibration media reduces common screening problems while maintaining an increased level of durability.

Another thing to consider is whether the problems may be caused by damaged equipment or improper installation. Proper tension is key for both the performance and the longevity of the screen media. Check tensioning weekly to ensure it is proper. Improper tensioning leads to early breakage.

Replace clamp bars that are getting thin or caving in order to prolong screen media life. Rubber or polyurethane-reinforced clamp bars are another option to improve longevity. Also, confirm there is a bolt in every hole to maximise durability. Make sure to purchase any replacement components such as tension rails from the OEM. Even the smallest deviation from the original design can lead to early screen media failure.

The counterpart of the clamp rails that contributes to proper tension is the crown curve of the deck. Tension can't be achieved on a flat deck and on a curved deck any deviation will leave the screen hanging in the air, leading to improper tension and, ultimately, breakage. Additionally, check that all the support bars and rubbers are in good condition and that the panels are laying firmly on the supports.

Work with an expert

Consider scheduling a screen media maintenance and installation training either with the manufacturer or a local dealer. The benefit of a trained team is knowing media is installed correctly and will have the longest wear life possible.

Work with an expert to conduct a thorough evaluation of the screening process to identify problems and the best solutions. Make sure to choose media that fits the application and the different phases of screening. Careful thought and selection can improve the bottom line and reduce headaches associated with downtime and lost profit. 🌟

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CASTING THE SPOTLIGHT ON EFFICIENT SCREENING

The criticality of reliable and efficient screening equipment to the overall productivity of processing plants cannot be reiterated enough. Speaking to *Capital Equipment News*, a panel of experts discusses key parameters that influence efficiency in screening, factors that should motivate selection of a screen and some of the advances in screening technology in recent years. By Munesu Shoko.

The significance of screening in processing plants cannot be underestimated and often separates profitable operations from those that struggle to meet production targets. This is the view of Francois Marais, director sales and marketing at Pilot Crushtec, who says that the key lies in the efficiency and the ability of a screen to size material effectively and reliably so that the required saleable product will meet grades without having to recycle materials through the plant.

"The bottom line for many operations is sizing material for sale to market. Even an increase in production of 1% due to the selection of the correct screen in a certain application will increase revenue on a moderate production plant significantly to such an extent that it is equal to the CAPEX value of the screen," reasons Marais.

Annelize van der Walt, business development manager – mining and minerals at Kwatani, says screens are a vital element of a mineral processing operation, and need to be engineered for tonnage to ensure that the specific requirements of the

application are met. Productivity on most operations, she adds, is measured in terms of a daily, weekly or monthly production capacity.

"The best production capacity from any mineral beneficiation equipment (jigs, DMS, magnetic separators, ore sorters and mineral spirals, among others), is typically achieved within a specific feed particle size range. As soon as the material feed is contaminated with oversize or undersize material, one can expect a drop in the efficiency of the overall circuit or damage to the beneficiation equipment, which leads to unplanned equipment breakdowns or increased maintenance downtime. The use of reliable, efficient screens is critical to guarantee the best possible plant availability by ensuring the feed material to each unit process is correct," says Van der Walt.

As screens are the link between many unit processes, adds Van der Walt, they also play a significant role in balancing the production capacity between the comminution circuit and the beneficiation circuit. "By dealing with an experienced

original equipment manufacturer (OEM) such as Kwatani, operators can ensure that their vibrating screens are engineered to cater for the specific application requirements. Four decades of experience has seen Kwatani supply over 16 000 screens across commodities in more than 45 countries and it is this in-depth expertise that underpins our ability to correctly assess an application and provide the most appropriate vibrating screen solution," she says.

For Francois Fouche, senior screening specialist at Multotec, screening plays a major part in the beneficiation process. When it is considered that the feed to the various types of process equipment downstream of the screening process need to be within a specific size envelope in order for them to perform optimally, the importance of efficient screening is critical, says Fouche. The efficiency of cyclones, flotation plants, spiral circuits and jigs, among others, depends on efficient upstream screening.

"Efficient desliming in the DMS plant will not only increase the overall recovery, but it will also save on dense medium



FLSmidth's double deck vibrating screen with modular panels at the company's Delmas Supercenter.



The significance of screening in processing plants cannot be underestimated and often separates profitable operations from those that struggle to meet production targets



As screens are the link between many unit processes, they also play a significant role in balancing the production capacity between the comminution circuit and the beneficiation circuit



It is key that the duty for which a screening machine is required is correctly identified before equipment is selected or sized



Efficiency of a screen is a critical parameter that is affected by changes in the particle size distribution, an increase in moisture content, increases in feed tonnage and any material composition changes

equipment, it will also reduce expensive downtime," he says. "Efficient screening is also important for environmental reasons. Dewatering screens need to be efficient to limit water losses in arid regions."

It is thus clear, says Fouche, that efficient screening benefits the overall productivity of operations. This is true for all types of screening, whether it is accomplished by vibrating screens, trommel screens or the different types of static screens.

Jurgen Cneut, FLSmidth global product manager – mid-market screens & feeders and regional product line manager – mining screens and feeders – ENAR & sub-Saharan Africa, agrees, saying that screening is critical as it affects other equipment downstream, such as crushers and mills. "So if the screens are not working optimally, then the whole operation will be affected," says Cneut.

Selection of a screen

Multotec's Fouche says it is key that the duty for which a screening machine is required is correctly identified before equipment is selected or sized. The various duties include scalping, sizing, desliming and trash removal, among others. Once the duty has been established, the engineer will select an appropriate model to size the vibrating screen or trommel – these include VSMA, DSM or drainage curves.

"Practical factors also need to be considered. In cases where mobile equipment is required, trommels might be preferred to vibrating screens as they do not

consumption. The recovery of dense medium in the DMS plant relies on the drain and rinse screens performing optimally. The efficient removal of fines prior to flotation will save on the various reagents used in the process," says Fouche.

Furthermore, adds Fouche, as the efficient removal of the fines fraction influences the

recirculating load, efficient screening will increase the capacity of the mill or crusher circuit. While efficient screening prevents over grinding and crushing, it also saves on the electricity bill.

"Not only will the duty performed by scalping screens prevent oversize and tramp material damaging downstream process

require the same level of civil foundations due to lower dynamic loads. The plant layout needs to be considered as limited space available for installation could dictate that static screens are the only option,” explains Fouche.

The customer’s budget also plays a role in screen selection, he adds. The budget of small-scale operators could make bonanza screens the best option for a carbon interstage screen on a gold plant as opposed to cylindrical screens. “Static screens and sieve bends are more affordable options compared to vibrating screens and trommels. The required

efficiency of the screen also plays a role when an appropriate type of screen is considered. Vibrating screens and trommels are considered more efficient than static screens,” says Fouche.

Commenting on some factors that affect the selection of a screen, Cneut says the main ones include the type of material, maximum lump size, moisture content, bulk density of material and particle size distribution. “These are some of the key factors that FLSmidth takes into consideration when sizing a screen. And of course, the type of application, be it dewatering, sizing or drain and rinse, among others,” he says.

Van der Walt believes that the application should always dictate screen selection. Process characteristics, she says, such as ore size distribution and shape and density, influence the required screening mechanics suited to the application.

“In addition to the correct screening mechanics, one also has to consider the duty and placement of a screen relative to the rest of the process. Items such as single line processing scalping screens typically require selection of hard-wearing critical components and additional wear protection. This is the type of value add an OEM like Kwatani brings to the operation,” she says.

For Pilot Crushtec’s Marais, there are several production and material factors, as well as external parameters that affect screen selection. Some of the production and material factors include the application (wet or dry), the head feed rate to the screen, whether the screen will work in an open or closed circuit, PSD (particle size distribution) of the material that reports to the screen, the SG (specific gravity) and the abrasiveness of the material.

External factors, adds Marais, include whether the screen will work in a primary or secondary application, type of media that will be used, safety in the design of the screen, installation space restrictions and screen maintenance considerations.

Screen efficiency

According to FLSmidth’s Cneut, efficiency of a screen is a critical parameter that is affected by changes in the particle size distribution, an increase in moisture content, increases in feed tonnage and any material composition changes. “These are some of the key areas that will drastically change a screen’s efficiency and need to be considered. There are also other mechanical factors, however, the screen is mainly influenced by changes in the process parameters,” he says.

For Van der Walt, the two most critical parameters that affect screen efficiency



“The application should always dictate screen selection. Process characteristics such as ore size distribution, shape and density, influence the required screening mechanics suited to the application.”

Annelize van der Walt, business development manager – mining and minerals at Kwatani



“The bottom line for many operations is sizing material for sale to market. Even an increase in production of 1% due to the selection of the correct screen in a certain application will increase revenue on a moderate production plant significantly to such an extent that it is equal to the CAPEX value of the screen.”

Francois Marais, director sales and marketing at Pilot Crushtec



“I believe the future of screening technology is looking bright as we see developments in different materials of construction, as well as an increased number of drive systems to induce more efficient vibration.”

Jurgen Cneut, FLSmidth global product line manager – mid-market screens & feeders and regional product line manager mining screens and feeders ENAR & sub-Saharan Africa



“Efficient desliming in the DMS plant will not only increase the overall recovery, but it will also save on dense medium consumption. The recovery of dense medium in the DMS plant relies on the drain and rinse screens performing optimally. The efficient removal of fines prior to flotation will save on the various reagents used in the process.”

Francois Fouche, senior screening specialist at Multotec



A vibrating screen for an iron ore operation leaving Kwatani on route to the end-user.



Multotec offers SAG mill trommel screens able to screen in excess of 5 000 tph on copper processing plants.

are screening mechanics and screen size. It is the responsibility of the screen OEM to design and supply a screen that achieves the required material stratification to best possibly present material to the screen media. Once this is in place, she says, the selection of suitable screen media drives the size of screen required.

"Once in operation, screening efficiency could be compromised by a range of factors. The most apparent is usually when an insufficient screen size has been selected in a closed-circuit comminution process. When such a screen shows poor performance, the load onto the crusher is increased, which is typically counter acted by increasing the discharge opening size on the crushers. This worsens the screening efficiency achievable on the screen (or even leads to premature mechanical failure due to feed overload) and typically ends in an overall lower production capacity in the comminution circuit," explains Van der Walt.

Marais reasons that the velocity of the material over the screen deck will affect the ability of the screen to allow material to pass the screen media efficiently and allow time for the screen to bypass material accurately. The shape and amplitude of the motion of the screen also have a huge effect on the movement and motion of material, while the physical shape of the screen deck can impact the screen's performance (horizontal, inclines or varied sloped).

According to Fouche, the engineer will select and size equipment that meets the required duty specified in the enquiry. As long as the customer operates the screen within the design feed envelope, the unit will maintain its required efficiency. The operator does, however, has to guard against the following: reducing the feed water will drastically reduce the screen's efficiency; an increase in the material bed at the discharge end will also reduce screen efficiency; and "it goes without saying that poorly performing screen media results in

inefficient screening. Pegging and blinding of screen media need to be monitored".

Advances in screening technology

Like many other components of mineral processing plants, screens have over the years seen significant advances. The main ones, reasons Fouche, have been in the field of screen media where continued research and development and test work have resulted in a host of improved materials, compounds and designs.

"As far as screening machines go, the market has seen vibrating screens that are able to screen at higher capacities due to an increase in equipment sizes and stronger drives – 4,8 m wide vibrating screens are becoming a common sight on modern processing plants. Some of the screen OEMs are able to offer 4,2 m wide double deck screens," says Fouche.

Multotec has offered SAG mill trommel screens that are able to screen in excess of 5 000 tph on copper processing plants. "The application of modern FEA techniques and of wear protection options have seen an increase in the wear life of trommel frames. Meanwhile, the selection of appropriate compounds for compression moulded rubber screen panels has seen wear life in excess of 24 weeks on SAG mill trommels that screen 60 mm lump sizes at the stated capacities," says Fouche.

Another OEM that has been at the forefront of development and manufacture of large, robust and reliable screens successfully operating on mega plants is Kwatani. The design of mega plants, states Van der Walt, requires single screens to accurately classify material at a very high capacity (thousands of tonnes per hour), which means that these are some of the largest screens in the world.

"With our in-house engineering team, we are able to engineer vibrating screens capable of performing reliably under the

harshest conditions, while still achieving high throughput tonnages. Kwatani screens are known to be engineered for tonnage," says Van der Walt.

Digital developments, she adds, such as real-time condition monitoring, are actively incorporated on vibrating screens and feeders, and that has given a new evolution to the customisation of equipment for greater process efficiencies.

For Marais, the majority of improvements have come in the form of improved drive mechanisms that are maintenance friendly, resulting in longer life expectancy of screens. "We have also seen major improvements in screen deck design, which allows for easier access to screen media and a reduction in standing time during replacements. The choice of screen media has expanded extensively and helps to prevent pegging, blinding, improving open area and overall screening efficiency," he says.

According to Cneut, some of the significant advancements in the past decade have been the elliptical motion screens and changes to the drive angles while running. FLSmidth has also made major improvements in its screen media by changing the aperture shape. A case in point are the XIF screen panels that have increased dewatering throughputs drastically as a result of the company's patented aperture shape.

"I believe the future of screening technology is looking bright as we see developments in different materials of construction, as well as an increased number of drive systems to induce more efficient vibration. And then the leap forward in digitalisation will be interesting to watch. This is one of FLSmidth's key focus areas," concludes Cneut. 🌟

USING KNOWLEDGE TO BUILD A MORE SUSTAINABLE FUTURE

Moving towards a low carbon future for the heavy industries is a hugely challenging endeavour. But it is an area in which we can make great progress towards limiting the worst impacts of climate change and meeting the goals set out by the Paris Climate Agreement. Mammoet's head of Sustainability, Erica Gray, discusses engineered heavy lifting's role as an enabler of this transition.

On the road to making the heavy industries carbon-neutral, our biggest hurdle is not the technical challenge, but the need to let go of “the way we have always done it”. I believe embracing change, taking risks and becoming truly entrepreneurial in our approach is the route to creating a low carbon future.

Over the last couple of years there have been increasing calls for the world to switch to more sustainable economic models and practices. However, there is a big gap between this demand and what is currently practically possible.

According to the United Nations' annual ‘emissions gap’ report, global temperatures are currently on pace to rise as much as 3.2 degrees by the end of the century. This is significantly higher than the two degrees many countries have pledged to stay “well below”. Yet, in the five years since the Paris Agreement carbon emissions have continued to rise.

Organisations such as the World Economic Forum and the development banks are urging governments to support the post-coronavirus economy by investing in infrastructure projects that are sustainable – through ‘green stimulus packages’. There has been much speculation that this is our big chance to re-launch economies on a more sustainable footing.

However, there are many practical hurdles to overcome in satisfying an energy-hungry planet with limited resources. The kind of massive infrastructure change required to meet the Paris targets does not happen quickly and the reality is we will need to continue to satisfy the demand for power as we transition to low carbon solutions.

Plans for the future

To navigate this transitional period many of the world's leading energy companies are setting out their plans for the future. Recent legal and shareholder actions are adding extra pressure to this process by demanding that the energy sector sets out more ambitious low carbon strategies and roadmaps.

The good news is we are not starting



Working with low carbon fuels, such as biofuels or fuels derived from waste products, can reduce carbon emissions further.

from scratch: there is much knowledge and experience that can be ‘reused and recycled’ for more sustainable applications. In this way, Mammoet's expertise from the traditional heavy industries can help our customers to meet their strategic sustainability targets and to create a whole new ‘greener’ infrastructure.

For example, the experience we have built up in load-outs and heavy lifting offshore can be utilised for the efficient execution of wind projects – particularly floating wind, where foundations will reach over ten thousand tonnes. Modularisation techniques – used to deliver more efficient construction for conventional industrial projects over the last three or four decades – will also enable the renewables sector to enjoy faster, safer and more cost-effective projects with potentially lower carbon footprints.

The wind industry can particularly benefit from expertise from conventional industry. As hub heights increase and wind turbine components grow ever-larger, technologies developed with different industries in mind will make a big difference. Super heavy lift cranes will help to broaden participation in wind energy by making more ports viable for offshore wind projects, while on land they will allow assembly of huge turbine structures and support the provision of the necessary infrastructure for power distribution networks.

And it doesn't end there. New facilities

such as waste-to-energy plants, biofuel facilities or co-located steel and energy production plants can all benefit from highly efficient modularization techniques, supported by the heavy lifting know-how and equipment that have moved modules of over 40 000 t.

Opportunities abound

Besides new construction, there are also opportunities for existing facilities to upgrade to more efficient techniques or to include carbon capture. The extensive experience our colleagues have accumulated on how to work in active, busy and constricted plants can be a huge benefit here – not to mention the highly-specialized gantries and cranes that have been developed for this purpose.

In addition to enabling new infrastructure through more efficient solutions, heavy lifting and transport companies can help EPCs and owners to bring down the impact of their own operations by switching to low carbon equipment.

Cranes and transport solutions that are hybrid or electrically powered, such as the electric SPMT or more efficient systems such as our Trailer Power Assist, can help bring more sustainable infrastructure online while reducing a project's carbon impact. This is of growing importance in the civil sector, where carbon emissions are closely monitored in line with governmental requirements to reduce the carbon footprint of publicly-funded projects. 🌱

TAKE ANY ROAD WITH ON & OFF-ROAD TBR

Make the seamless switch from gravel to tar and back with Dunlop's mixed service application TBR tyres. With on and off-road capabilities, these all-wheel position tyres adapt to suit your needs.

SP281

The SP281 is an all-position tyre with a premium tread depth of 19.2mm. Designed for short-haul, on and off-road steer applications. The tyre is also well-suited for short to regional-haul, on and off-road trailer applications. The 4-rib, wide shoulder block pattern, with wide tie-bars, provides excellent resistance to shoulder rib failures in tight turns and scuffing on tri-axle trailers. Stone ejectors prevent stone trapping and stones drilling into the casing for improved retreadability.



SP571

The SP571 is an all-position tyre well-suited to mainly on-road or smooth off-road conditions, in short to medium-haul, steer and drive applications. It features a 4-rib design with a special high wear-resistance compound. The SP571 also works well on short to regional-haul, on-road or smooth off-road trailer applications.



SP581

The SP581 is a 4-rib design tyre with a premium tread depth of 18.9mm, made for short to medium-haul, on and off-road conditions on steer and drive applications. It can also be used in short-haul, off-road, trailer applications.

The tread pattern design enhances wet grip and includes a special tread compound for cut and chip-resistance with stone ejectors fitted in the grooves for improved retreadability in harsh conditions.



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Daimler Trucks & Buses Southern Africa has seen an increase in sales to larger fleet and corporate customers.



THE IMPACT OF THE COVID-19 PANDEMIC ON THE USED TRUCK MARKET

In tough economic times, fleet owners often turn to used trucks to service their contracts. This feature explores new trends in the used truck market and takes a look at the disruption caused to this industry by the COVID-19 pandemic. *By Mark Botha.*

When asked about the disruptions caused by the COVID-19 pandemic to the used truck industry, UD Trucks Southern Africa manager: Used Trucks Ruben Dempers notes a lowering in stockholding for new trucks. "This directly affects the supply of trade-ins to the used truck market," he says.

Annelie van Rooyen, head of TruckStore, a division within Daimler Trucks & Buses Southern Africa, adds that the decreased stockholding has also driven demand for used vehicles: "With most manufacturers experiencing stock

shortages due to various external factors caused by the pandemic, the demand for used vehicles has increased over the last year and a half."

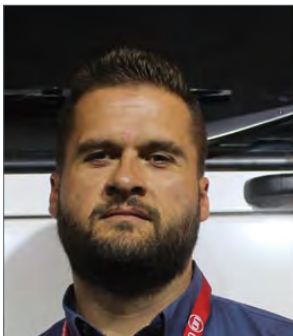
On the negative side, however, few customers are currently in a position to trade vehicles in or return their contract lease vehicles, placing even more pressure on used vehicle stock levels in the market.

The positive impact, says Van Rooyen, is an increase in the value of used vehicles in the market, making it a very competitive environment at the moment.

"Export sales have declined since the pandemic started due to border closures and other travel restrictions implemented by South Africa's neighbouring countries. This resulted in lost opportunity for many used vehicle traders."

Used truck trends

Dempers notes that, in terms of new



"The industry driver at the moment is predominantly stock availability, as good used trucks are in very high demand."

Ruben Dempers, manager: Used Trucks at UD Trucks Southern Africa



During the pandemic, many customers who would normally buy new trucks are turning to low-mileage used vehicles.

QUICK TAKE

A reduction in stockholding for new trucks is directly affecting the supply of trade-ins to the used truck market



With most manufacturers experiencing stock shortages due to various external factors caused by the pandemic, the demand for used vehicles has increased over the last year and a half



Export sales have declined since the pandemic started due to border closures and other travel restrictions



Many customers who would normally buy new trucks are now considering buying low-mileage used vehicles



trends during the pandemic, many customers who would normally buy new trucks are now considering buying low-mileage used vehicles.

"The industry driver at the moment is predominantly stock availability, as good used trucks are in very high demand," he says.

Van Rooyen says Daimler Trucks & Buses Southern Africa has seen an increase in sales to larger fleet and corporate customers.

"Many customers' financials are under pressure due to the negative impact of COVID-19 and, with financial institutions implementing more stringent requirements, customers often turn to the used vehicle market as an alternative."

Customer profile

She says Daimler Trucks & Buses Southern Africa has seen an increase in salaried and private customers applying for finance, and large fleets diversifying their vehicle fleets.

"This indicates a need for risk distribution," she says. "Customers are also seeking more flexible finance options including payment holidays and lease options instead of outright purchase. This will give them flexibility in respect of their financial obligations and limit risk caused by the uncertain economic environment."

Adapted business models

In terms of changes to business models in response to the pandemic, Van Rooyen says Daimler Trucks & Buses' TruckStore division is being "more proactive" in terms of building strong customer relationships, and works closely with its new-vehicle sales division to ensure that customer expectations are met.

"This helps to keep clients' fleets on the road," she says. "Tailoring transactions to meet our customers' demand and requirements is our top priority. Ensuring that the products we offer are superior has given us as a competitive advantage which we believe will sustain us through this challenging period."

Despite the challenges posed by the pandemic, the company is expanding its used vehicle business even further. TruckStore will soon be located across South Africa and be incorporated into key areas of growth potential.

"This is a clear indication that we not only believe in our TruckStore brand which has grown successfully over the last few years, but that we also believe that our products and new-vehicle sales support will bring us closer to our customers," says Van Rooyen. 🌟

"With financial institutions implementing more stringent requirements, customers often turn to the used vehicle market as an alternative."

Annelie van Rooyen, head of Daimler Trucks & Buses Southern Africa's TruckStore division



Unlike ADTs featuring compression brakes, aggressive downshifting is not required on the 310E to achieve truck retardation.



JOHN DEERE UNVEILS NINE NEW MACHINES FOR MINING AND CONSTRUCTION

Since the announcement in March 2021 of its construction equipment expansion into sub-Saharan Africa, John Deere Africa and Middle East has added an additional nine machines to its existing lineup of 17.

The new arrivals include backhoe loaders, wheel loaders, dozers and a skid steer range, as well as two completely new articulated dump truck models. *By Mark Botha.*

TALKING POINT



"We have elected to introduce the full product line in batches. These models are the second batch of new machines we are bringing to market. The launch is an indication of what the market is yet to see from John Deere."

Griffiths Makgate, John Deere sales manager, Construction and Forestry AME

According to John Deere sales manager Construction and Forestry AME Griffiths Makgate, the introduction of these nine new units forms part of the company's expansion plans into the market.

"We have elected to introduce the full product line in batches," he says. "These models are the second batch of new machines we are bringing to market. This launch is an indication of what the market is yet to see from John Deere."

310L backhoe

In addition to the 315SL backhoe loader which is suited for operations in confined spaces, the company has added the 310L backhoe, a more general-purpose machine which sports a 63 kW engine; 4-speed PowerShift transmission; digging depth of 4,2 m; loading height of 3,1 m and a bucket capacity of 0,96 m³.

744L wheel loader

John Deere has also added the 744L

wheel loader to its existing stable of five models in the market. Designed with the mining and quarrying customer in mind, this model features a 236 kW engine; a 3,8 – 5,25 m³ bucket capacity range and an operating weight of 25,3 tonnes.

Makgate says that, while the company's existing five wheel loader models are smaller and more in line with its construction customer product line, the 744L "caters for the mining customer as this is a production class machine able to handle bigger operation and production requirements."

750J-II, 950K and 1050K dozers

The company also added the John Deere 750J-II dozer in addition to the already available John Deere 850J-II dozer.

"We did not hold back this time, and also introduced the 950K and 1050K dozer models." Makgate says these machines are designed "big enough" to handle mass-excavation and road-building tasks, yet are equally adept at fine grading and site development.

"You will get more done without much



The new 310SL backhoe from John Deere.

QUICK TAKE	
The introduction of the nine new units forms part of the company's expansion plans into the market	
The models are the second batch of new machines the company is bringing to market	
The 744L wheel loader caters for the mining customer as this is a production class machine able to handle bigger operation requirements	
John Deere announced in July this year that subscription to its JDLink telematics system is available free of charge to users	

extra effort due to the dual-path hydrostatic (HST) transmission featured on these dozers. HST allows the operator to push a full load through turns without losing material, unlike with torque-converter transmissions."

He says dual-path hydrostatic transmission offers benefits such as infinite speed control and efficient and easy operation.

"It allows the operator to focus on blade control as opposed to the transmission system, in order to maximise productivity. The most important hydrostatic feature on

these dozers is the ability to change the decelerator mode of operation from engine mode to transmission mode at the push of a button on the sealed-switch module (SSM)."

He says the 1050K, like all other John Deere crawler dozers, has the ability to run in transmission mode to prevent affecting the engine's revolutions when using the decelerator pedal.

"This is advantageous, especially when using auxiliary hydraulics. Slowing the machine down will not result in reduced hydraulic flow and power as it would on non-hydrostatic machines."

316GR and 318G skid steers

Another new introduction to the John Deere portfolio are the 316GR and 318G model skid steers, which Makgate describes as "general-purpose machines that might be small in size, but big on results."

He says the bigger, more powerful 318G with a vertical-lift boom offers more lift height and reach at the top of the lift path, for improved stability and truck-loading capacity.

"More than 100 John Deere attachments available to these skid steers enable you to service a truly wide spectrum of applications," he says.

310E and 460E ADTs

The newly introduced John Deere 310E and 460E ADTs which feature a transmission retarder with low, medium and high settings, are "built for the long haul," says Makgate.

"Unlike ADTs featuring compression brakes, aggressive downshifting is not required on the 310E and the 460E to achieve truck retardation. This results in a predictable response during operation. The 'aggressiveness' can be selected to match the terrain, jobsite, or personal operational style."

He says all daily service check items can be completed from the ground as there is no need to climb ladders in order to perform daily service checks.

"This provides an additional level of working comfort for the operator when performing daily service checks. It reduces the time needed to perform service checks compared ADTs where ascending a ladder to check similar items is required.

In addition to these new launches, John Deere also announced in July this year that subscription to its JDLink telematics system is available free of charge to users. JDLink allows owners and managers to connect to their machinery remotely, to help monitor and track operations and productivity. 🌐

Caterpillar excavators from Barloworld Equipment feature electro-hydraulic functioning to reduce hydraulic oil capacities.



UNDERSTANDING THE TOTAL COST OF OWNERSHIP FOR EXCAVATORS

Factors that determine total cost of ownership (TCO) of excavators are wide-ranging and can include the method of purchase as well as operating costs, insurance coverage, operator training and machine wear and fuel usage, among others. *Capital Equipment News* spoke to two local excavator suppliers on this subject. **By Mark Botha.**

Sany Southern Africa GM Samuel Zhang points to two key factors in terms of the TCO of excavators: acquisition and life-cycle costs.

He says acquisition or purchase cost includes the purchase price of the machine, as well as transport, insurance and financial cost. In the case of imported equipment, the initial capital outlay also includes the costs incurred for clearance, as well as for differences in exchange rate.

"Examples of life cycle costs," he says, "include management, loading and unloading, warranty, maintenance and repair costs, fuel and the cost of consumables, downtime and the cost of disposing of used equipment, to name a few."

Anda Ncemané, GCI product manager at Caterpillar dealer Barloworld Equipment,

highlights five additional factors that affect TCO.

Ground-engaging tools or GETs must be selected correctly to shorten the time needed to fill the bucket while the excavator burns fuel.

"Improper operating techniques, too, will wear the attachment prematurely and increase fuel burn. Incorrect machine configuration will also affect the work cycle and increase cost."

He says machine tramping over long distances and the use of the wrong tracks for the application will impact heavily on the undercarriage while, in terms of fuel efficiency, he recommends matching the equipment to the job at hand to minimise operating cycles. The operator's skill further influences TCO, as does the

capacity of the excavator.

Also contributing to the TCO of excavators are regular services and the frequency of oil changes.

"Blocked filters will restrict air flow to the engine, causing the machine to burn more fuel," says Ncemané. "Old oil will lose viscosity and allow metal-to-metal contact."

He describes operator efficiency as the measure of how effective the operator is at using the technology at their disposal to work productively while minimising unplanned downtime.

"Unskilled operators are a huge liability to any company. Many operators have no understanding of owning and operating costs, which is why their contributions to restricting TCO is so much less."



Sany Rental's fleet is fully equipped with the EVI telematics system.

QUICK TAKE

Machine tramping over long distances and the use of the wrong tracks for the application will impact heavily on the undercarriage



Many operators have no understanding of owning and operating costs, which is why their contributions to restricting TCO is so much less



Next to ground-engaging tools, the undercarriage is in all probability the most expensive wear item on any excavator



Excavators should travel as little as possible and positioning the machine correctly while digging could minimise expensive repairs



Minimising TCO

He says Barloworld Equipment gathers as much information as possible about the operation, including site assessments and production requirements, and then specifies the most suitable ground-engaging tools.

"Caterpillar offers a range of GET suitable for various applications that will assist in reducing these tools' cost per hour while improving bucket penetration into the material in order to improve bucket fill factors."

Next to ground-engaging tools, the undercarriage is in all probability the most expensive wear item on any excavator, meaning that minimising machine movement will reduce TCO.

"Barloworld Equipment therefore performs site assessments and will advise on the best position for the excavators; the type of support equipment required to transport the excavator to areas where it can be serviced, or the type of equipment required to service the excavator in the core operation.

"Excavators should travel as little as possible and positioning the machine correctly while digging could minimise expensive repairs down the line."

He says operator assessment will identify operators' training requirements and proper training will allow them to use the technology on the machines correctly in order to be productive and minimise



Upon delivery of a new machine, Sany Rental's mechanics remain the customer's site for two to seven days.



"The market has become very competitive with regards to industry rates. Customers are looking at every opportunity to reduce hourly sell rates and, because contracts are sometimes risky and shorter, there is a tendency for some to still look only at the sticker price."

Anda Ncemane, GCI product manager
at Barloworld Equipment



"Customers should take a careful look at the TCO instead of simply focusing on the sticker price when looking at new machines."

Samuel Zhang, GM of Sany Southern
Africa

TALKING POINTS

unexpected downtime.

"The training we provide at Barloworld Equipment ranges from daily walk-around inspections to the most optimal use of the machines' onboard technology offerings."

Barloworld Equipment and Caterpillar also offer various options to extend oil change intervals, depending on the applications.

Zhang notes Sany excavators' competitive sticker prices and the fact that the company's excavators feature "long-life" components.

"The Isuzu engines and Kawasaki

hydraulic systems in our excavators are very reliable and durable. They are tailor-made for Sany and therefore match each other perfectly to deliver optimal efficiency thanks to the R&D cooperation between Sany, Isuzu and Kawasaki.

"We manufacture our own components such as booms, sticks, frames, slewing bearings and undercarriages, which saves customers substantially in terms of replacement cost. Automated manufacturing, ultrasonic defect detection and a strict fatigue testing regime ensure

longer service life for these components."

He says Sany's self-diagnosis system does not only alert operators by displaying failures on the onboard monitor, but also explains the failures in text. Other excavators need to be connected to professional computers to decode failures – a headache for customers in terms of time and cost.

"This unique feature saves customers time and cost in terms of troubleshooting while greatly reducing expensive downtime," says Zhang.

Customers' understanding of TCO

He says that, although Sany's larger customers mostly understand the importance of TCO, many customers need to be made aware of and educated on the implications of TCO.

"Customers should take a careful look at the TCO instead of simply focusing on the sticker price when looking at new machines." Factors to consider when purchasing new excavators include the planned duration of ownership and whether it would be more economical to rent the equipment as opposed to purchasing it.

"Ask as many suppliers as possible for their input to compare warranties, service intervals, the expected life of key components, and the cost of parts and services."

He encourages clients also to ask for other, existing customers' feedback to compare reliability and the parts and service availability for different excavators, as these greatly affect downtime.

Ncemane agrees that established customers are conscious about TCO, including resale value.

"The market has become very competitive with regards to industry rates," he says. "Customers are looking at every option to reduce hourly sell rates and, because contracts are sometimes risky and shorter, there is a tendency for some customers to still look only at the sticker price."

"Together with CAT Finance, we are able to package service plans, customer value agreements (CVAs) and extended warranties or enhanced protection policy (EPP) warranties into a financed monthly payment option."

Technological advances and TCO

He says Caterpillar excavators are equipped with Vision Link and, depending on the subscription level, Barloworld Equipment can set up alerts for the customer or advise them on machine alerts, operator abuse or sudden drops in fuel levels, which could indicate fuel theft.

"Our machines have different operating modes that help to reduce fuel consumption,

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**Barloworld
Equipment**





Caterpillar excavators are equipped with the Vision Link telematics system.

depending on the application. Caterpillar excavators are also equipped with telematics technology that can provide functions such as geofencing and collision prevention.”

He says excavators from Barloworld Equipment feature electro-hydraulic functioning to reduce hydraulic oil capacities. The air filters on the company’s excavators are designed to be serviceable and certain oils can be run for extended periods, so reducing maintenance costs. More efficient engines also mean improved fuel consumption.

Zhang, too, refers to the fact that major excavator OEMs nowadays feature telematics to help customers control their TCO.

“Sany is no exception,” he says. “We also have our own telematics system called EVI. It alerts customers to abnormal conditions such as water, fuel and oil temperature; engine oil, hydraulic and fuel pressure; solenoid status; fuel level, and others. Sany Rental’s fleet has been fully equipped with EVI to better service our customers.

“In the near future, we will further integrate artificial intelligence technology, big data and cloud computing into our existing telematics systems to help customers control their TCO intelligently and create more value”. He says that, despite the advances in technology, the “good habits” of customers’ operators and mechanics are of paramount importance as bad operator habits and negligence in daily maintenance can incur very high costs.

“To help in this regard, our Sany Rental’s mechanics will remain on the customer’s site upon delivery of a new machine for between two and seven days to ensure that bad habits are rectified and good ones are formed.”

He says Sany Rental also adheres strictly to its service commitment whereby service requests are responded to within 15 minutes, and service technicians depart for the customer’s site within two hours, on a 24/7 basis. 🌟

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CTRACK HAS SOLUTIONS FOR AN EVER-CHANGING BUSINESS ENVIRONMENT

The global business environment is ever-changing and at a rapid pace, especially in the wake of the COVID-19 pandemic. To survive during these troubling times, businesses and their partners must continually adapt to survive and give themselves an edge over their competitors.

Own and operating vehicles efficiently, no matter the industry, is reliant on information. Having the correct information in a tangible format is imperative to making the right decisions.

"No matter what industry your business operates in, if you use vehicles or moveable assets, then Ctrack can help. During Ctrack's 30-year history, we have developed cutting edge tracking and fleet management hardware and software solutions. We can also tailor-make analytics to aid with short and long-term decision making," comments Hein Jordt, MD of Ctrack SA.

A comprehensive fleet management solution ensures that elements including safety and security risks such as dangerous driving, safety, driver fatigue, theft, hijackings and area management can be mitigated.

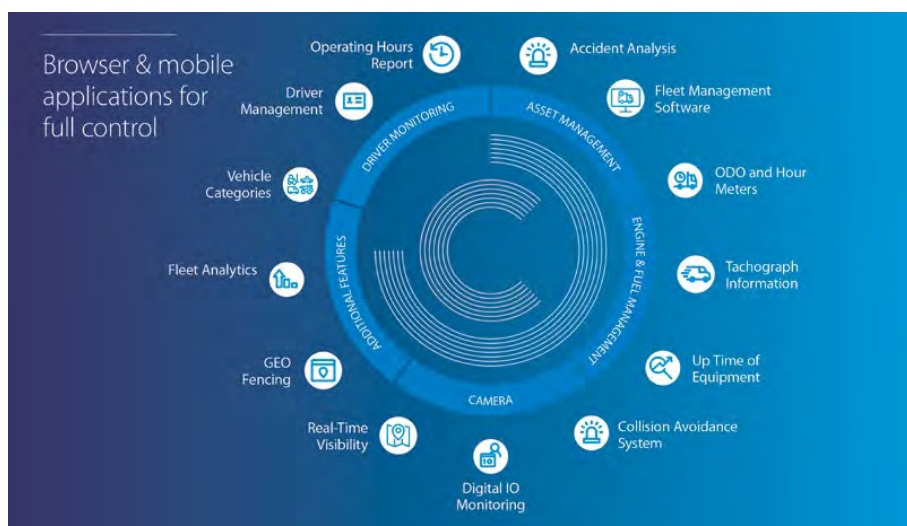
Improved productivity is guaranteed when business owners know how their vehicles are being used. Efficient fleet management will ensure the avoidance of unnecessary costs incurred by factors such as speeding, accidents, fuel consumption and harsh driving.

Bespoke solutions for every industry

Whether your fleet consists of motorcycles or mining and yellow equipment or whether you operate within airports or the agricultural sector, Ctrack has developed and perfected bespoke tracking and fleet management solutions for a wide variety of industries. Compact, battery-operated tracking devices mean that anything can be tracked, from combine harvesters to small packages.

"Ctrack's continued emphasis on researching and developing next-generation products ensures that we remain ahead of the market, meeting demands for value-added, flexible, feature-rich, and cost-effective technology that keeps everything, Always Visible no matter your industry of operation," says Jordt.

Testament to this is the fact that Ctrack also provides integrated solutions with third parties and products that are not normally seen as true tracking products. This one-stop-shop for fleet managers



A comprehensive fleet management solution ensures that elements including safety and security risks such as dangerous driving, safety, driver fatigue, theft, hijackings and area management can be mitigated.

provides solutions such as a state-of-the-art camera solution, Ctrack Iris, where transport and asset managers can view live camera footage of dash-cams and up to 6 cameras fitted to trucks, trailers and inside cargo bodies. In-cab devices that assist drivers with multi-tasking and route management are a result of years of development of software reports that are easily accessible via mobile devices and cloud-based platforms.

Using data effectively

Cutting edge hardware relies on rock-solid software to operate effectively and to provide users with the necessary information in a tangible format.

Ctrack can help any business, big or small, take the guesswork out of running fleets. Realtime, weekly or monthly reports analyse the data and highlight where an action or decision needs to be made, whether that is regarding driver behaviour, route optimisation or vehicle maintenance.

Ctrack's Bureau Service is the complete outsourcing of fleet control room activities, backed by highly proficient hindsight, insight and foresight data analytics and reporting.

Furthermore, easy to use software solutions include Ctrack's Driver Centric

Mobi application. Using Ctrack Mobi, assets can be monitored from almost anywhere using a smartphone or tablet with an internet connection.

In addition to vehicle locations, Ctrack's real-time visibility software, including mobile applications and website dashboards, provide valuable information on drivers, points of interest, ground coverage, upcoming tasks and even a live productivity dashboard.

The culmination of real-time visibility, proactive notifications and infographics ensures optimised and efficient asset utilisation and ultimately a more profitable operation across a variety of industries.

Africa focus

Ctrack believes that the next frontier for growth is Africa because ICT is critical to the future of the 1.3 billion-plus people with the youngest population globally.

Growth opportunities continue, and together with digital transformation trends, the youth demographic presents an incredible opportunity for Ctrack.

With a presence in Africa stretching from South Africa as the base and representation in Zimbabwe, Namibia, Zambia, Ghana, Nigeria, Mozambique, Malawi, Senegal, Benin and the DRC, Ctrack is well-positioned to keep assets "Always Visible." 🌐

DTBSA to honour truck drivers during Transport Month

This year's transport month, an initiative of the Department of Transport under the theme "Together, let's speak transport", once again sees Daimler Trucks & Buses Southern Africa (DTBSA) demonstrate its steadfast allegiance to the industry. In collaboration with its dealer partners, DTBSA is extending a hand of appreciation to honour truck drivers across the country. Through this kind and thoughtful initiative, a total of 1 000 truck drivers will receive special hampers at truck stops nationally, in recognition of their tremendous and valuable contribution to keep Africa moving, and most importantly the country's economy. Michael Dietz, president and CEO Daimler Trucks & Buses Southern Africa, comments on the initiative: "It is without a doubt that truck drivers to a notable extend remain to be the unsung heroes that play a critical role in ensuring that we truly keep Africa moving. I am particularly thrilled to have together with our dealer partners rolled up our sleeves to express the depth of our gratitude to every truck driver on our road. From moving various goods and services across multiple industries daily, it's important to remember that almost every item consumed in South Africa is loaded in a truck eventually. There is therefore no better time like the present to celebrate and appreciate our brothers



From left: Dean Keyser and Dan Meyers.

and sisters, for undertaking one of the most demanding and crucial jobs that contribute to the economy."

"As a DTBSA Dealer Partner we are privileged to join forces with head office on this praiseworthy initiative, especially at this critical juncture in our country. The transport industry is undoubtedly the backbone of the economy, and it is for this reason that we have set aside October to salute and support all our courageous truck drivers for working tirelessly to ensure economic success. Their commitment and great sacrifice for the industry does not go unnoticed," says Cornél Oelofse, Franchise Executive Commercial Vehicles Division

Orbit Commercial Vehicles.

The DTBSA participating dealers will select a truck stop within the regions they operate in throughout October, and will dedicate a day to distribute at least 100 hampers to truck drivers. The driver hamper consists of essential items to support truck drivers while they are on the move delivering goods daily, and these include; a branded Buff, Facemask, Branded bag, Stainless steel flask and a Trucking Wellness information leaflet. Further to this, some dealers have also partnered with the Trucking Wellness Programme to assist drivers with onsite health screening during the handover events. 🌟

Imperial and Sasol to co-develop hydrogen mobility ecosystem

Imperial Logistics (Imperial) and Sasol South Africa (Sasol) have entered into an agreement to collaborate in exploring options and solutions for improving freight sustainability and efficiency in southern Africa. The two companies will also be evaluating potential cross-border collaboration.

South Africa's transition to a low carbon future requires bold innovation and investment in transformative technologies. A green hydrogen sector holds promise for growth and development in the country's primarily coal-based economy and will contribute to South Africa's international climate change commitments.

Sasol's aspiration is to play a leading role in the co-creation and development of hydrogen ecosystems, which aims to decarbonise hard to abate sectors such as transportation, using green hydrogen produced at its operations facilities leveraging existing process equipment and proprietary technology. Decarbonising heavy-duty long-haul trucking using fuel cell electric (FCE) trucks is an area of interest to both Sasol and Imperial.

Imperial, as one of southern Africa's

major fleet operators aspiring to zero harm to people and the environment, plans to reduce its carbon footprint by exploring a range of alternative truck technologies. For heavy commercial vehicles travelling long distances, FCE trucks hold promise as a viable zero-carbon solution. Sasol's expertise in hydrogen production and refuelling infrastructure combined with Imperial's expertise in fleet management, its extensive transport footprint and superior end-to-end supply chain solution capabilities, are expected to deliver good synergies from the collaboration.

"One of Imperial's strategic pillars is integrating environmental, social and governance practices into our business activities," says Mohammed Akoojee, Imperial's Group CEO. "This strategic partnership with Sasol, a long-standing and valued Imperial client, helps cement our commitment to a just transition to a low carbon economy, and is another step towards positioning Imperial at the fore-



Imperial plans to reduce its carbon footprint by exploring a range of alternative truck technologies.

front of alternative energy fleets. We also welcome the opportunity to work together with Sasol to develop viable and sustainable greener supply chain solutions that will not only benefit our clients and principals, but the broader logistics and supply chain industry."

In welcoming the partnership Priscillah Mabelane, executive VP of Sasol's Energy Business, says that, "Green hydrogen can help tackle various critical energy challenges and is positioned for rapid global growth as the pathway of choice to decarbonise, amongst others, the long haul transport sector. This partnership is yet another milestone in Sasol's aspiration to play a leading role in the development of the green hydrogen economy of South Africa." 🌟

Liebherr Mining introduces advanced Assistance Systems & On-board Analytics

Liebherr Mining has developed advanced Assistance Systems & On-board Analytics to further assist site operations to achieve a high level in safety, maintenance and overall equipment effectiveness. By combining hardware and software, as only OEMs can do through the in-depth knowledge of their machine, Liebherr is increasing the performance of its mining equipment.

Liebherr has presented the world premiere of its new Mining Technology Product portfolio at MINExpo 2021, which defines the company's interoperable and scalable approach to their equipment, technology, and service product offerings. The Liebherr-Mining Technology Product portfolio includes Assistance Systems & On-board Analytics, Machine Automation, and Digital Services product lines, providing customers with flexible scope of supply solutions to increase safety and asset operational effectiveness.

Together, these products will support operator's performance, optimise diagnostic processes, and automate machine functions, whilst integrating machine data and OEM expertise within the customer's chosen technology landscapes.

The Liebherr Assistance Systems are advanced products and applications designed to support operators to become more efficient through analytics. The solutions further assist site operations to achieve a high level in safety, maintenance, and overall equipment effectiveness.

By developing its Assistance Systems and On-Board Analytics, Liebherr Mining continues to add value to customers' new equipment and existing fleets through available retrofittable solutions. This equipment embedded technology also supports Liebherr Digital Services with the on-board generated and processed data providing further customer added value by combining with other Liebherr data and information.


The Assistance Systems product line for Liebherr excavators currently comprises of two product suites, the Operational Excellence and Operational Analytics – both will have additional solutions added to extend the suites' products and features in the near future.

The Operational Excellence Suite consists of on-board systems that support the operator to achieve optimal productivity and efficiency from the machine.



The Truck Loading Assistant helps the operator to achieve optimal truck payloads and avoid truck under- and overloading.

Currently, this suite consists of the Truck Loading Assistant that helps the operator to achieve optimal truck payloads avoiding truck under- and overloading. The on-board system computes the best truck loading strategy for efficient loading. The assistant measures the instantaneous bucket payload by means of a payload monitoring system (with 99% measurement accuracy) and provides real-time information to the operator of the truck loading progress. 🌟



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Turnkey solutions for the valuation and disposal of repossessed equipment

Specialising in the import and export of mining and construction equipment, MHS Plant & Equipment of Midrand, Johannesburg, has an extensive international network covering Africa, Australia and the Americas.

"We have 20 years' experience in servicing international clients, from mining houses to contractors and civil contractors," comments owner and founder Conrad Smith. Apart from supplying both new and quality used equipment, the company also assist banks in both the valuation and disposal of any repossessed equipment, specialising in turnkey solutions for construction companies and mine closures.

Explaining how such a typical process works, Smith says MHS is initially approached by a seller like a mine, whereupon it pays a visit to the client's site in order to best understand its specific requirements. Here the client has the choice of opting for a physical inspection or a desktop valuation.

An important first step is to request full information for each asset to be disposed of, including a component and maintenance history and the number of hours worked. The site visit involves physical inspection of the assets themselves, including verification that the full inventory is accounted for. Here meetings will be held with

workshop managers, for example.

In order to determine a fair market-related value for every asset, the following important factors have to be taken into account: The supply and demand factor (the quantity of similar equipment available on the global market, which influences the value) and the actual replacement cost of the asset (the dollar-based value).

Another important factor is the build specification of the asset (different regions of the world have different requirements, with Africa, South America and Asia having lower-specified equipment. This includes the type of engine, which is important in terms of fuel quality and emissions control regulations. There is EPA certification in the US and CE certification in Europe. This is critical in determining in which areas or regions the equipment can be sold, and can often result in a higher value of the asset).

MHS will research the current used asset availability worldwide in order to check the



MHS Plant & Equipment assists banks with the valuation and disposal of any repossessed equipment.

overall values. The final factor that influences these values is, of course, the location.

"We then take into consideration the cost of dismantling the asset and transporting it to the nearest port," says Smith.

"Once we have the above information, we give our clients a market-related value for their approval. After this we then approach our extensive international client base to offer the said equipment. We also have the option of marketing the specific equipment to the specific region that we know where that particular asset is popular and in demand," concludes Smith. 🌐

Autonomous Cat 794 AC makes its MINExpo debut

Since the Cat 794 AC electric drive truck debuted at MINExpo 2016, the global fleet has logged more than 780 000 hours of field operation, averaging physical availability of 90%. Offering up to 8% better payload and faster speed-on-grade, the 794 AC delivers up to 10% more productivity than competitive trucks.

The 794 AC truck field fleet has tripled over the last two years to more than 150 units with the highest-hour truck logging more than 52 000 hours. They are working in coal and hard rock, deep pit and flat haul sites at low and high altitudes and operating in poor underfoot conditions in nine countries covering four continents.

In 2021, the Cat 794 AC returned to MINExpo, as the latest autonomous mining truck equipped with Cat MineStar Command for hauling, an autonomous hauling solution. The 794 AC is the first electric drive model to join the expanding Command for autonomous haulage fleet, which includes the Cat 789D, 793D, 793F and 797F models.

Autonomy is rapidly emerging in the mining industry as essential for improving

safety and productivity and lowering cost. The 794 AC, equipped with Command for hauling, enables total autonomous operating of the mining trucks, interaction with other equipment, and integration with customer mining processes and systems, all managed by MineStar.

A Caterpillar designed technology, Command for hauling is a complete system integration offered from the factory. The software, systems, individual components and engine of the 794 AC are designed and supplied by Caterpillar and supported by the Cat dealer network. This integration ensures that the entire truck from body to bumper and engine to electronics can be fully optimized to deliver the lowest cost per ton.

Demonstrating up to a 30% productivity improvement over operator-driven models at mine sites around the world, Command addresses many mining challenges,



The 794 AC, equipped with Command for hauling, enables total autonomous operating of the mining trucks.

including labour shortages and the demand for higher machine utilisation. Autonomous trucks using Command for hauling recently surpassed 3-billion tonnes hauled with no lost-time injuries associated with automated truck operation, enhancing safety at the site. Command also supports the mine's sustainability efforts through lessening infrastructure needs and reducing truck fuel burn, machine downtime and wear parts replacement. 🌐

Atlas Copco celebrates 75 years in SA

In modern business environments it is fundamental for businesses to pivot and for organisations to be extremely agile in their responses to market change. Companies must remain flexible in terms of their responses to market forces such as increased competition or new customer demand. Swedish multinational, Atlas Copco demonstrated that ability and agility since being founded in 1873 in Stockholm. This year the company is celebrating an incredible 75 years of impact in South Africa, where it has had local presence since 1946.

Internationally, Atlas Copco was founded to serve a specific goal, namely to provide Swedish Rail with all of its equipment needs for building and running the country's new railway system. A pivot occurred by the mid-1880s to produce more advanced offerings such as steam engines and boilers in order to cater to the needs of the First Industrial Era.

Locally, that spirit of innovation and agility in its business processes also took hold as the company started by manufacturing equipment like components for service rifles and aircraft engine parts amongst other products during 1947, before pivoting to offer clients a wide range of industrial equipment.



Atlas Copco offices in Jet Park, South Africa.

Atlas Copco has grown the local business and entered many new sectors through regional expansion and acquisitions, and consequently expanded its breadth of product and service offering to its clients. The organisation's impressive history of innovation not only resulted in productivity, environmental, cost and operational efficiency benefits for its clients, but has also translated into numerous awards for the company.

These awards include receiving an outstanding award for its Leadership Role in the Green Building Economy during 2017. In addition, Atlas Copco also won a slew of prestigious Red Dot Design Awards for products such as the 8 Series range of portable compressors and the HiLight H5+

LED light tower in 2017. Atlas Copco Industrial Technique also came up tops in the Good Practice Awards competition, which focused on the safe handling of hazardous substances, with the award recognising the company's focus on improving air quality in laboratories.

In 1999, Rand Air became part of the Atlas Copco Group, offering customers rental services of compressors. Founded in 1973 Rand-Air has built an excellent reputation as an industry leader when it comes to the provision of portable air and power rental. The Rand-Air range varies from oil-free compressors, industrial air compressors, diesel compressors, electric air compressors (all screw compressors) to diesel generators and lighting towers. ☀

Babcock's national parts distribution centre streamlines supply chain

Babcock Africa has established a new national parts distribution centre to enhance efficiency of its supply chain process across all the company's operations.

The streamlined central warehouse will stock spare parts and components for all of Babcock's business units and will facilitate the swift dispatchment of items to all its national and regional branches.

Babcock delivers engineering support services to the energy, process, mining and construction industries, and is the exclusive regional distributor for many leading international brands.

The wholesale distribution centre is located at what was previously Babcock's construction equipment warehouse in Johannesburg, and is already in full operation under the experienced guidance of Hans Roos, head of Supply Chain, Babcock Africa. He says that combining an integrated warehouse with a supply chain function is in line with the 'one Babcock' ethos that promotes collaboration within the group, and will enhance the business's operational capabilities and potential.

The warehouse currently holds parts and supports the logistical requirements for DAF Trucks and Babcock's full suite of construction equipment brands (Volvo Construction Equipment, Tadano, Sennebogen, SDLG and Winget). Plans are underway to incorporate Babcock's other business units into the national parts distribution centre.

Roos says that the centralised facility is part of Babcock's new operating model to improve productivity and efficiency. Preparations for the move began last year, and had to take into consideration the challenges of establishing a central warehouse that



The streamlined central warehouse will stock spare parts and components for all of Babcock's business units.

would incorporate all of Babcock's existing logistical network lines across the various business units.

Two different computerised management systems were integrated to receive and dispatch stock, while point of sale systems were incorporated into a single platform to efficiently control and manage parts supply.

Marius Barnard, MD for Babcock's Transport Solutions business, comments that Babcock customers were not affected by this consolidation as the supply chain continued to run smoothly during the move and over-the-counter collection services continued from all Babcock branches as usual.

"Our customers will benefit from the improved synchronicity of our services as we create a constant supply chain and improve communication between our centralised parts distribution centre and our branches," adds Barnard.

ASSET MANAGEMENT: MORE PREDICTABLE THAN EVER

Traditional maintenance strategies continue to lack real insight into the actual condition of an asset. A slightly controversial statement but backed by real-world data that shows that time and money are often spent on unneeded maintenance as opposed to mitigating possible critical equipment failure. By Quintin McCutcheon (digital transformation leader) & Patrick Kazadi (marketing & business development director Field Services) at Schneider Electric.

DC's Field, Digital and Consulting Services Survey underscores this sentiment, highlighting that equipment performance is increasingly important, especially to mission-critical facilities. The researcher, however, points out that many organisations overestimate their ability to accomplish this.

The good news is thanks to the ability to capture, consolidate and analyse asset performance data and condition-based monitoring (CBM) – combined with advanced analytics – plant and facility managers can gain unprecedented insight into critical asset behaviour.

To this end, we are seeing more organisations moving beyond preventative maintenance, which allows them to identify an event long before it materialises. That said, the move towards predictive and CBM does entail a number of critical steps to realise an optimised asset management posture.

Steps to towards optimised asset management

The first step is to perform a self-assessment of where your organisation falls on the current maintenance spectrum. Most industrial organisations practice one, or a combination of, the following asset maintenance methodologies:

- **Reactive** – maintenance resources are only deployed after a failure occurs. This strategy can be extremely costly and disruptive; problem solving is often urgent and downtime costs can escalate in no time;
- **Preventive** is based on pre-established calendar dates, regardless of whether the equipment really needs servicing. This strategy has been in use for decades and has proven to be effective, although costly;
- **CBM** monitors the actual condition of an asset and identifies the nature of maintenance required. It dictates that maintenance should only be performed when certain indicators show signs of decreasing performance or upcoming failure. This approach saves on cost



Quintin McCutcheon, digital transformation leader at Schneider Electric.

and improves uptime – a win win so to speak; and

- A predictive strategy utilises advanced analytics to mitigate accelerated aging due to usage and challenging environmental conditions. It optimises both productivity and Overall Equipment Effectiveness (OEE). Furthermore, it utilises analytics to predict abnormal asset behaviour and enables corrective action long before a problem materialises.

Putting it to the test

With Industry 4.0 and subsequent use of sophisticated plant data equipment, organisations are now seeing increased value in data performance and ultimately its contribution to advanced maintenance strategies.

Digital technologies leverage machine learning methodologies to continuously refine asset performance insight and operational performance thereby improving plant productivity and profitability.

BASF, the world's largest chemical producer, uses a cloud-based version of CBM at one of its manufacturing sites which monitors electrical equipment to verify the health of a portfolio of 56 electrical distribution assets.

In addition to identifying equipment pre-failure abnormalities, the CBM service also generates a risk assessment



Patrick Kazadi, marketing & business development director Field Services at Schneider Electric.

criticality matrix which helps BASF to determine which assets are at a greater health risk relative to how critical it is to the process at hand.

At Schneider Electric we understand the journey towards optimised asset management and are well equipped (with proven methodologies and frameworks) to assess each organisation on its own merit, digital maturity level and strategy to define the most appropriate roadmap.

We enable organisations to anticipate and address risks before becoming critical, mitigating safety incidents, avoiding unplanned downtime, operational losses and costly maintenance interventions.

"By using a partner that has a deep understanding of your industry and operations, it's possible to speed time to value and avoid potential pitfalls by leveraging the collective learning of others," underscores the IDC survey. 🌐

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Asset management is nothing without control – know your fleet's utilisation and location, geo-fence activities for added peace of mind.


Know your machine's service status, whether fault codes have occurred or are active, and what fault-finding steps to take to maximise machine availability and maintain peak condition.

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