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Westinghouse Air Brake Technologies Corp. (WAB)

Investor Day

CORPORATE PARTICIPANTS

Kristine Kubacki
Vice President-Investor Relations, Westinghouse Air Brake Technologies Corp.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

Eric Gebhardt
Executive Vice President and Chief Technology Officer, Westinghouse Air Brake Technologies Corp.

Gina Trombley
Executive Vice President-Sales & Marketing & Chief Commercial Officer-Americas, Westinghouse Air Brake Technologies Corp.

Gregory Sbrocco
Executive Vice President-Global Operations, Westinghouse Air Brake Technologies Corp.

Rogerio Guimaraes Mendonca
President-Freight Equipment, Westinghouse Air Brake Technologies Corp.

Pascal Schweitzer
President-Global Freight Services, Westinghouse Air Brake Technologies Corp.

Mike Fetsko
President-Freight & Industrial Components Group, Westinghouse Air Brake Technologies Corp.

Nalin Jain
President-Digital Electronics, Westinghouse Air Brake Technologies Corp.

Lilian Leroux
President-Transit, Westinghouse Air Brake Technologies Corp.

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

OTHER PARTICIPANTS

Justin Long
Analyst, Stephens, Inc.

Courtney Yakavonis
Analyst, Morgan Stanley & Co. LLC

James Monigan
Analyst, Citigroup Global Markets, Inc.

Jerry Revich
Analyst, Goldman Sachs & Co. LLC

Allison Poliniak-Cusic
Analyst, Wells Fargo Securities LLC

Ivan Yi
Analyst, Wolfe Research LLC

Rob Wertheimer
Analyst, Melius Research LLC

Ken Hoexter
Analyst, BofA Securities, Inc.

Matthew Elkott
Analyst, Cowen and Company, LLC

Steve Barger
Analyst, KeyBanc Capital Markets, Inc.

MANAGEMENT DISCUSSION SECTION

Kristine Kubacki

Vice President-Investor Relations, Westinghouse Air Brake Technologies Corp.

Good morning, everyone. Welcome to Wabtec's 2022 Investor Day. I'm Kristine Kubacki, Vice President of Investor Relations. We're happy to have you here with us today. Before we get started, just a few reminders. This presentation is being carried live on the Internet and is being recorded for replay. Presentation materials are available for download on the Investor Relations tab at wabteccorp.com.

Some statements we're making are forward-looking and based on our best view of the world and our business today. For more detailed risks, uncertainties and assumptions relating to our forward-looking statements please see the disclosures in the appendix of this presentation. We will also discuss non-GAAP financial metrics and encourage you to read our disclosures and reconciliation tables carefully as you consider these metrics.

Okay, with that, let's start the program for today. I'm joined by several members of Wabtec's leadership team. We'll start with Rafael Santana, our President and CEO, who will give us an overview of the industry and Wabtec. After prepared remarks, we'll take a 10-minute break and prepare the dial-in queue for Q&A.

With that, I'd like to welcome Rafael.

Rafael O. Santana

President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

Thanks, Kristine and good morning, everyone. I'm Rafael Santana, President and CEO of Wabtec and thanks to everyone joining us on this morning's webcast. We hoped to do this event in person, but as COVID persists, both your health and safety remain paramount. So, we appreciate everyone joining us virtually. Today, we have a full agenda and you'll hear from a cross-section of our leadership team. We will start by sharing the progress we've made since our last Investor Day. We'll take you through a deep dive on the company, our investments in technology, our competitive advantages and our disciplined approach to really driving long-term shareholder value. We feel really good about the progress we continue to make. And as a leader in rail, we have been really at the forefront of shaping and transforming this industry for over 150 years. We have a unique portfolio. We have a leading position to deliver long-term profitable growth.

Our strategy is built on our expertise as innovators and breakthrough solutions that will drive value for our customers. Our global scale, commitment to continuous improvement and investments in rail technology will continue to differentiate Wabtec to drive margin expansion and to drive strong cash generation. By executing on this fundamentals, we will further maximize our value creation going forward. Leading us in this efforts is an exceptional team who embraces our values and are dedicated to our performance, driving execution and delivering results. Our leadership team, many of whom you will hear from today, bring a broad and diverse perspective. They have a deep expertise across our key markets. They are at the heart of building a culture of accountability, trust, teamwork and integrity. And more than that, they're at the heart of accelerating the future of rail transportation.

Today, rail is the cleanest, the most efficient and the safest mode of moving both freight and people on land. Current trends indicate that freight and passenger rail activity will more than double by 2050, leading to an increased demand for sustainable transportation of both people and goods. This means cleaner, greener, smarter and safer transportation. We are ready to continue to meet this need and live up to our purpose which is to move and improve the world. In fact, that's what our ESG strategy is all about. At Wabtec, we see our environmental, our social and really governance framework as critical to our long-term success. And it's also the right thing to do for the company, for our employees and for the communities we serve.

Today, we are uniquely positioned to shape a more sustainable future by inventing and developing technologies that provide customers with fairly adaptable and efficient solutions to meet their ESG goals. Ultimately, we will help lead the industry to a zero emissions rail network, and we have already started that by laying the path to get there with the advancements in battery and hydrogen and digital solutions. And internally, we're taking action as well. We are working to slash greenhouse gas emissions, increase energy efficiency and really conserve water across our operations.

Last year, we reduced greenhouse gas intensity from our own operations by 12% and we drove an 18% reduction in energy intensity. So when it comes to the S of ESG, we are committed to creating a safety-first culture and also improving diversity and driving inclusion across all levels of our organization. We are confident that having employees with a diverse background, perspectives, experiences and cultures will guide us to our continued success.

With that, let me turn to the next slide. While today's discussion is a long-term view, I do want to take a moment to really look back at some of the achievements we've had over the last three years. Since the GE Transportation merger, we have delivered over $250 million in run rate synergies. And we did that 15 months ahead of schedule. Across the portfolio, we achieved 90 basis points of adjusted margin expansion and over 300 basis points of margin expansion in transit. That's a significant churn around by the team. We continued to invest in the future with the strategic acquisitions of both Nordco, Relco, MASU, which provide really great opportunities to drive profitable growth and international expansion.

Our adjusted net debt leverage ratio of 2.5 is right about where we said it would be when we closed the GE Transportation transaction. Over the last three years, we drove about $3 billion in cash generation, driving us the liquidity and flexibility to grow shareholder value. And we proudly returned nearly $800 million in cash to shareholders through share repurchases and dividends. Through these achievements, we have created a solid foundation in challenging times. We have merged and integrated three leading multinational rail companies. We have positioned Wabtec as a diversified technology and services franchise with strong recurring revenue.

And you know what this is just the beginning. We are continuing to transform the company by embracing a culture of accountability and continuous improvement. Meritocracy, diversity, integrity, those are some of the key cornerstones of who we are. Against challenging headwinds, we continued to bring the full strength of Wabtec to really navigate market dynamics and the pandemic, and ultimately manage what's in our control. This includes leveraging really our strengths to combat supply chain disruptions, increasing metal and commodity costs, labor shortage. Our team continues to take action to mitigate the impact of these pressures, while triggering price increases escalation, surcharges to ultimately protect the margins as well as ultimately driving operational efficiencies wherever we can. Through these actions, we're well-positioned to continue our recovery into 2022 and beyond. Ultimately we can capitalize on the technology investments we have made and we're continuing to make across our portfolio.

I just took you through the last achievements we've had in the company over the last three years. Now, and it's really our time to build from that foundation. We will leverage the continued growth we expect across both freight and transit end markets. We're going to invest in the next-gen technologies that will transform and lead the future of sustainable rail.

To do this, we will lean into the opportunities we're seeing across our end markets. Market conditions continue to improve after a multi-year freight rail recession. We believe we have the opportunity to build significant momentum ahead with growth in both modernizations, in locomotive sales, in railcar builds and rolling stock. And we are continuing to build our pipeline of international opportunities where we have been growing our fleet mid-single digits in average or just over the last five years. We're also seeing significant opportunities in North America as our customers increase investments into their aging fleet.

In services, locomotive parkings in North America continue to decline, and we expect demand for reliable, productive and fuel efficient power to continue to increase. This continues to place our services business and modernization portfolio in really a position of strength. Finally, our digital portfolio continues to transform the face of the rail industry.

So, transitioning to Transit. Ridership trends continue to be uneven in various markets and operators continue to face budget constraints. However, infrastructure spending for green initiatives continue to be a bright spot, especially as governments globally invest in rail for both clean, safe and efficient transportation. Overall, the long-term market drivers for both freight and passenger transport are strengthening. And the team is committed to driving growth across our segments.

So, how do we build a better future? Across the world, our railroad customers are asking for solutions that address fundamentally three critical priorities. That's productivity, growth and sustainability. Let me start with productivity. As you know, railroading is a capital-intensive industry. Customers are looking to get the most out of their locomotives, railcars and their infrastructure investments. This is true whether you're talking to a Class 1, to a mining operator or to an international railroad. Productivity is key. That's why demand for solutions that improve train performance and employee safety are increasing and so is the need for automation tools, digital solutions for both main line and yard operations.

Second, customers are looking for growth. They want the best-in-class reliability, and they want a partner to upgrade their aging fleet. Just take North America, locomotive fleets are approaching 20 years of age. This is where our investments in technology that make installed base really more efficient, more reliable and more productive are so valuable. We have an unmatched track record of reducing fuel consumption and increasing really the haulage ability of our customer fleet.

As you'll hear from Rogerio Mendonca, Wabtec's locomotives are 4% to 7% more fuel efficient than the competition. And it's up to like 30% more fuel efficient when customers operate their fleets really utilizing Wabtec's digital technologies. As a result, we are best positioned to deliver fleet renewal plans to our customers that include both Tier 4s, FLXdrives, modernizations and biofuel solutions. These solutions offer attractive returns.

Finally, our customers are looking for sustainable technologies that reduce greenhouse gas emissions. Railroads in North America, in Europe and those operated by mining companies have set aggressive decarbonization targets by 2030. Our solutions are helping them really address these challenges by bringing to market more efficient engines, more efficient trains with cleaner braking and with better HVAC systems and ultimately a more efficient rail ecosystem. Alternative fuels and technologies like battery or hydrogen fuel cells are also helping them harness clean power. We are confident that these dynamics will allow us to increase share across these three priorities and diversify our growth.

And with that, when it comes to long-term shareholder value, we will continue to drive a focused value-creation framework really anchored around five strategies for growth. This includes accelerating the creation of scalable technologies that are high margins. They're innovative products that help our customers.

Next, we will use these technologies to grow and refresh our expansive global install base. This means increasing our share across the asset lifecycle, from locomotives to mining to freight cars and to transit systems.

Third, we will continue to lead the decarbonization of rail by developing innovative and low carbon technologies and solutions.

Fourth, we will continue to expand our high margin recurring revenue streams, which will help us reduce our exposure to economic and to industry cycles.

And finally, and most importantly, we will continue to drive continuous operational improvement. This means accelerating really our lean transformation, driving cost competitiveness and driving disciplined capital allocation to build a stronger and better Wabtec.

Now, let's spend some time on each of these levers for a moment, starting with technology, in particularly new technologies that will help lead the charge on decarbonization with digital solutions. We have a tremendous opportunity to drive innovation in these areas and across our existing installed base.

To accelerate innovation across the industry, we are annually investing about 6% to 7% of sales to enhance our existing products, but also to bring the next generation of really products to market. Just in 2022, we are focused on three customer-centric areas of innovation. The first is really zero emissions operations. This means accelerating the shift to really more energy efficient systems as well as repowering and upgrading existing assets.

Second is automation. This is all about really moving from what I'll call supervised automation to really full automation at key points across the network. This will help customers be more productive and to really avoid ultimately unpredictable downtime.

The third one is really focused on reducing congestion across the rail network. We are building and enhancing technologies that really move goods and passengers in a more seamless and sustainable way. These investments and orders will position Wabtec and our customers for success.

So, next, let's talk about growing and refreshing our installed base. Wabtec's technologies serves as the backbone for freight transportation globally. Our regional footprint, which really spans almost every continent, will continue to grow our installed base, especially as volume grows from both mining, agriculture and intermodal. Our growth comes from our commitment to ultimately deliver value every day to our customers. The heart of that commitment is really our field services organization. This is a customer-facing team of nearly 2,000 certified both freight and transit technical advisors. They really work across hundreds of locations worldwide, many of which are co-located with our customers.

Think about these guys, every single day, these colleagues, they review the status of operations, they look over every failure, they review the maintenance program for the day and for the week ahead and they make sure that the necessary parts are available to serve our customers. Our team is a key differentiator when it comes to supporting customers, especially in a time of crisis.

Our next-gen technology, that's another key lever to our customer success. This is one of the reasons we have one recent orders with Rumo, with Egyptian National Railways, with Pacific National and we also have expanded our installed base of new offerings like the FLXdrive with Union Pacific, with Canadian National, with Roy Hill, Rio Tinto and BHP.

As the diesel locomotive installed base for main line and yard operations continue to age, especially in markets like India, North America, Brazil, our fleet renewal strategy will be critical to delivering the financial and operational outcomes for our customers. But it also opens up new opportunities for both digital and component pull-through, all of which are really essential to creating a simpler, cleaner and more productive fleet.

This makes a good transition to really our third focus area, which is to lead the decarbonization of rail. I shared earlier global demand for rail is expected to double by 2050. So the freight rail sector, which is already the most sustainable way to move both people and goods over land is in a unique position to contribute to this endeavor. Wabtec is leading the charge to increase utilization across the rail network. We are developing solutions that really have the potential to significantly reduce emissions by up to 300 million tons of greenhouse gas per year, all while increasing safety. And the best part is that our customers realize double-digit returns on their investments while we're improving the environment.

That brings us to our fourth focus area, which is to really expand high margin recurring revenue streams. We have the leading portfolio in the rail industry spanning from original equipment and aftermarket. And our installed base of products that serve railroads and passenger transit authorities is a competitive advantage for parts and services to the aftermarket. Our customers really look to modernize their fleets with new products that improve safety and efficiency and it is critical that these products are interoperable with existing equipment. Today, 41% of our sales are recurring, and that generates roughly 60% of our profit.

Finally, our teams are passionate about winning. They strive to make things better every day. We call it continuous improvement. Last year, Wabtec launched the next phase of our Lean transformation model, really focused on driving process improvement, on implementing tools to really deliver greater efficiencies, cost improvements and ultimately on-time delivery. Through these efforts, we expect to increase the speed in which we serve our customers through really every process that we touch. This grows from my quotation to order entry throughout the cycle of really manufacturing; and with Lean, our operations are more cost competitive at the end of the day and this will help drive growth and margin expansion.

Since our merger with GE Transportation, we have simplified our business. We have driven more than 30% reduction just in site. Today, more than 25% of our sites and 30% of our engineers are located in what we call best-cost countries. We have delivered about 5% manufacturing variable cost productivity improvement year-over-year. Looking forward, our efforts are to drive continuous improvement. This will lead to increased profitability in a more efficient use of the company's capital. And underpinning these strategies and efforts is the Wabtec operating system. It drives every aspect of our culture and performance. It starts with our people developing strong operating plans. And then it goes to executing on them really using what I'll call world-class tools and sustainable processes to deliver performance. We use this operating model to guide what we do, to measure how we are executing and ultimately really to tackle where we need to improve.

Last year, the company showcased its strategic, operational and financial agility as we continued to navigate the pandemic, the supply chain and the labor disruptions while quickly reducing our fixed cost base. We are able to move more decisively because of our established operating system. And really that ultimately drives the rigor and the strategic alignment and efficiency. Greg Sbrocco will share more with you on this model in a few moments and how it's creating really operational efficiencies across both our supply chain and the broader company.

And when it comes to capital allocation, we remain focused on really driving strong shareholder returns and delivering on our capital allocation framework. Over the last three years, we have done exactly what we said we were going to do. We generated strong cash flows and we applied that cash towards maximizing shareholder return. We have strengthened the balance sheet, we have invested in the business for future growth and we have secured strategic acquisitions. And we did all of this while returning cash to our shareholders through share buybacks and dividends. This speaks to our ability to ultimately optimize our mix of investments and those goes between technology, CapEx, M&A, share repurchases to ultimately generate strong returns for all of our stakeholders and this includes our employees and shareholders.

Looking forwards, our priorities remain clear. Our capital allocation framework will continue to strengthen our financial position. It will drive growth. It will improve returns on invested capital and it will create significant value for our shareholders. And this all underpins our five-year growth plan. Leveraging our leadership position in rail, we expect to grow faster than the industry and to deliver mid-single digits top line growth. We are committed to driving over 250 basis points of margin expansion throughout the further implementation of Lean, continuous improvement and really by executing our Integration 2.0 plan. We remain focused on expanding total shareholder returns and executing our disciplined capital allocation framework. Finally, we expect to achieve double-digit EPS growth over this period. Our goal is clear. It's to unlock the full potential of our company to drive total returns to our shareholders.

And with that, I'd like to turn the program over to Eric Gebhardt to discuss the technology strategy.

Eric Gebhardt

Executive Vice President and Chief Technology Officer, Westinghouse Air Brake Technologies Corp.

Thanks, Rafael, and good morning, good afternoon everyone. I'm Eric Gebhardt, Wabtec's Chief Technology Officer. At its heart, Wabtec is a technology company and draws upon its history of excellence in engineering and innovation to develop environmentally-efficient and solution-oriented products that are designed to meet the individual needs of our customers. Before I dive in to a few specific technologies, I would like to start with a discussion of the breadth and depth of the technical capabilities within Wabtec. Our 4,000-person strong engineering team is globally diverse which allows us to leverage regional tactical capabilities and enables us to be closer to our customers.

On top of the tactical breadth, we also have depth, which is demonstrated by our leaders' experience at the average of over 25 years in the industry. In addition, we have a robust patent portfolio, which is over 7,000 deep. And what's great about this team is our ability to share and enhance our technologies across the teams. The battery electric locomotive, for example, utilizes a pantograph and thermal management units from our Transit team, and a compressor and parking brake from the components team.

Additionally, the teams extend the boundaries of technology together in areas like braking distance management with the team in Italy, is leading the development of an innovative anti-slide system which can significantly reduce braking distance and low adhesion conditions like wet or icy tracks. This will improve safety and also apply to shortening distances between trains and moving block systems, allowing for higher capacities on the track. This can be applied across both transit and freight applications, and Lilian will discuss more about this in his presentation.

A couple of other examples are remote monitoring diagnostics as well as analytics and artificial intelligence, where the teams are really working together to advance the state of the art. I'm proud of this team's ability to extend upon Wabtec's 153-year heritage of innovation, beginning with our founders Westinghouse, Edison, Faiveley and now being demonstrated through products like our Metroflexx braking system and FLXdrive battery locomotives.

Now we'd like to focus on our technology strategy through the end of the decade and dive a little deeper into a few of our technologies. Let's start with our focus on driving productivity and sustainability for our customers. Operating ratio has been one of the primary objectives for a long time. Now, on top of that, CO_2 reduction has become a visible commitment. We want to make sure we're reducing CO_2 and other emissions while improving economic viability. So, this is an and rather than an or challenge.

Our customers have aggressive goals when it comes to CO_2 reductions. And these numbers are in the 20%, 30%, 40% ranges over the next decade. Choosing the right path to decarbonize is very important. On the right side of the page, you can see that we have options that are already available, such as Trip Optimizer and modernizations. And our customers have been implementing these for several years. Now we're layering newer technologies on top of this to help our customers reach their climate goals. These include different types of biofuels, battery electric locomotives and hydrogen. These are exciting technologies. But as these are developed, we want to understand what is the impact on CO_2 and then what is the impact in the total cost of ownership.

You can see that various technologies have different scores on this. Trip Optimizer and modernizations have good impacts on CO_2 reductions and are very cost effective. This is why TO has high customer penetrations and modernizations are growing quickly. We look at biodiesel and renewable diesel. Biodiesel does have a lower impact on CO_2, but its economic viability is better, though availability of supply may be an issue. Renewable diesel has more of an impact on CO_2, but the overall cost of renewable diesel is significant and, in our opinion, will remain more expensive than diesel for the foreseeable future. Our FLXdrive locomotive and next-gen hydrogen locomotives will have significant impacts on CO_2. FLXdrive is economically viable today, whereas hydrogen is expensive today, but in the future will be more cost effective.

Now we'd like to start digging into these technologies. The first of these is digital solutions. This is a suite of technologies that is available today and can be added to existing locomotives to improve fuel usage and emissions. Our digital suite of products, which has been available since 2009, can reduce fuel usage and emissions by 22% today, and has enabled our customers to save more than 400 million gallons of diesel fuel and reduce CO_2 emissions by 4.5 million tons.

These savings are achieved by an intelligent cruise control system through forward-looking, proactive planning for every twist and grade on the track in the most energy efficient way possible. We're working on expanding this with new solutions to cover more of our customers' operations and plan to have an additional 10% reductions in emissions and fuel use within next few years.

Now, I'd like to discuss engine upgrades. We've had several upgrades available in our history. Our FDL Advantage engine is the latest and produces the 5% fuel improvement for our customers through technologies like enhanced fuel delivery systems and others. And we still have a significant number of units that this could be applied to and each one of those getting a 5% fuel savings.

The next phase of the engine upgrades is focused on our EVO product line. These are our Tier 3 and Tier 4 engines. We have several solutions, such as electric turbo that we will be putting into our EVO products that'll have a similar 5% fuel savings in the near term. And these will be layered in between 2023 and 2025. Then, beyond 2025, we have concepts that will give us another 3 points on top of this to give us an 8% fuel savings within the decade. Our customers can take existing products, upgrade the engine and have significant fuel savings, significant cost savings and have CO_2 reductions as well.

When you put these technologies together at the system level, it will create differentiation for Wabtec solutions versus our competition. Our approach has always been to keep the system level engineering design in-house so we can push our products to their physics-based limits for efficiency, emissions, reliability and tractive effort. And we optimize these at the engine, locomotive and the train level. We have significant advantages over our competition in each of these areas. For example, for fuel consumption, we have a greater than 5% advantage at the engine level, a 7% advantage at the locomotive level and a 30% advantage at the train level. This is a direct correlation to a 30% improvement in fuel cost and emissions.

Continuing with the concept of helping our customers reduce emissions, biodiesel and renewable diesel both are important in the future. We already have approved biodiesel at 5% and renewable diesel at 30% in our engines. Our next step is to bring this to 20% biodiesel and over 55% renewable diesel. We are working very closely with our customers on this and we have partners for the tests that will be run throughout this year. We have engine test running this quarter with both biodiesel and renewable diesel. And the next step is a field test with our customers Union Pacific and BNSF later this year. This is exciting because we can reduce emissions with minor modifications to the engines. We are excited to work with our customers on this testing which should be ongoing throughout this year and then we'll be able to make our recommendations to our allowable limits next year.

Our FLXdrive product is one that we're very proud of. As we have discussed in the past, our FLXdrive 1.0 was the first battery electric locomotive to operate main line revenue service and was very successful in its 13,000 miles of operation. We now have a 7 megawatt hour version of the FLXdrive, which has been sold and we'll be expanding to over 8 megawatt hours by 2024. When this is combined with our Trip Optimizer solutions, it can reduce the conscious level fuel consumption and emissions by 30%, and we are working to expand this to 40% later in this decade.

Another exciting part about this is we have signed a partnership with General Motors last year. And now our teams are working side by side through the details of how to obtain higher energy densities as well as focus on safety, reliability and maintainability. All of these are key as we move forward with this new technology and moving forward with a partner like GM helps us accelerate this process because of all the great work that they've already done in the automotive industry.

Lastly, I would like to discuss hydrogen. Hydrogen is getting a lot of airtime in the industry right now and is an area where we also plan to lead. We are working on a dual technology strategy with fuel cells being one path and enhancing our existing internal combustion engines to burn hydrogen being the other. We are developing both paths on this, since both will likely be used in the future. We are working with GM on fuel cells since they are highly experienced in the space. On the internal combustion engine portion, we are working with the Department of Energy and the Oak Ridge and Argonne National Labs. We project that the economics on hydrogen will be viable later in the decade and will be commercialized as both a retrofit and a new unit option. This is based on the cost and performance of fuel cells dramatically improving over the decade and the cost of green hydrogen reducing and being more available over the same period. So, we are investing to lead the rail industry and hydrogen, as we have with the Tier 4 and with the battery electric.

On this last slide, you can see our path to helping our customers reach their sustainability goals and the variety of solutions to address their fleets. Each of our customers has a different fleet mix, so there are different technologies that will be utilized depending on the way their routes are run, their terrain and their energy needs. We are working with our customers to lay out the best path to meet their goals.

Next, I will turn the program over to Gina Trombley to discuss how we are partnering with our customers to support their fleet strategies and unlock new growth.

Gina Trombley

Executive Vice President-Sales & Marketing & Chief Commercial Officer-Americas, Westinghouse Air Brake Technologies Corp.

Thanks, Eric and hello everyone. I'm Gina Trombley, EVP, Sales and Marketing and Chief Commercial Officer here at Wabtec. My team and I are responsible for driving strategy and sales. We face the market and our customers, and I'm going to spend a few minutes sharing our perspective on the market and highlighting key dynamics that will shape both our customers' and Wabtec's prospects for future growth.

As you all know, the pandemic has had a significant impact on both freight and passenger transportation operators, but beginning in early 2021, we saw a strong rebound in the demand for goods and services. And governments have leaned in and committed trillions of dollars in stimulus to try and soften the impacts of the pandemic. The emphasis on cleaner, more sustainable energy and transportation solutions is at an all-time high. All of these changes are going to positively impact our business as we look toward the next few years and beyond.

The chart on the right takes a global look at freight and passenger volumes indexed to 2007, out to 2024 and beyond to 2030 and 2050. Considering the positive growth in the last 15 years, the forward outlook over the next 15 years is optimistic. We expect both freight and passenger to return to 2019 levels, a high watermark over the course of this year and to continue to grow through 2050 with freight more than doubling. The growth is likely to be driven by a number of factors, including sustainability and infrastructure investments as well as the adoption of digital technologies to drive productivity and efficiency, growth in urbanization globally and the increased demand for freight and passenger transportation.

As you can see, the growing demand for the mobility of people and growing government investment is driving transit to outpace freight. While transit is a competitive space, we're well positioned to support car builders with current and very cool next-gen technology that provides a robust aftermarket revenue stream to us for years to come. Lilian will get into more details later in the presentation.

For the remainder of my presentation, I'll dig into the freight rail market, and in particular, address the dynamics of North American Class 1s and how we're engaging with them. Today, despite service and reliability pressure, rail remains the most efficient means to move passengers and freight over land, 3 to 4 times more fuel efficient than by truck. By themselves, the factors I mentioned before will drive growth for both the railroads and suppliers like Wabtec that serve them. However, through continued improvement in productivity, efficiency, sustainability and service, we believe the railroads have an opportunity to capture an even larger share of this growth by increasing their competitiveness versus trucks.

The chart on the left takes a slightly different look at freight volumes from the previous page. We estimate that approximately 22%, that piece in the middle, or more of freight traffic is what we're referring to as flexible, meaning that shippers have a choice whether to move it by train or by truck. This is the intermodal battleground and a key driver of growth for the railroads. This 22% is big. It equates to about 50 million carloads through 2050, over $400 billion in revenue if moved by rail versus road.

By aligning our portfolio and capabilities with our customers' initiatives, Wabtec is well-positioned to play a major role in the pursuit and the shift from road to rail. Our rail customers have three business imperatives: Greater productivity, volume growth and a more sustainable future. I've been in this industry since 1998, and I can tell you that rail productivity has been the bread and butter of Wabtec's technology for decades, supporting the continued improvement of operating ratios for our customers around the globe.

At this point, we're more than a decade into the broad deployment of precision scheduled railroading in North America. And the question we need to ask is, where will the Class 1s find the next tranche of productivity. We'll dig in on the following pages, but the bottom line is they can find it with us.

So let's go back to that 22% that's up for grabs between the railroads and trucking. We all had a front row seat to port congestion and supply chain disruption in 2021. There's a clear opportunity for a more fluid flow of goods and more reliable service. But first, you must be able to see into the supply chain. Visibility is job one. Our digital solutions are imports, inland intermodal terminals, they're in dispatch systems, meet past planners and, of course, onboard our fleet. Wabtec is a strong technology partner that can help the railroads to grow faster and more profitably.

Finally, sustainability is the mantra for railroads and miners alike. At 3 to 4 times more fuel efficient than truck, rail already has a clear advantage. We're leaning in and taking a moonshot at zero emissions rail.

Let's talk about the fleet. The Holy Grail of any heavy asset revolves around how much work it can do, how efficiently it gets it done and how reliably it operates. The reason 80% of the active fleet in North America was built by Wabtec is because across the board, our locomotive technology is just better than our competitors. We burn less fuel, are substantially more reliable and have partnered with our customers to drive a step change in revenue, ton-miles, haul per locomotive, that is, how much work any given locomotive can do decade after decade. All of this is before we wrap the locomotive in our digital products that optimize [indiscernible] (00:43:11) trips and train handling.

So, where do we go next? It's still about the fleets. Some of our customers have squeezed every bit of performance out of their fleets. Others still have room to grow. There are still over 4,000 1990s air units out running in North America every day. The next step function in productivity won't come only from squeezing, it will come from investing. The returns are good, performance, fuel, carbon reduction, labor, reliable service. If the fleet is the what, our digital portfolio is the how. Nalin Jain will highlight how our digital solutions will unlock new levels of safety, efficiency and productivity for our customers.

As you've heard throughout this morning, sustainability or ESG is the latest entrant on our customers' key priorities. Let's start with the E, environmental. Eric shared that large rail operators across the globe have set aggressive science-based targets for decarbonization, with several of our mining customers setting net zero goals. In North America, all of the Class 1s have signed on, with the most aggressive at 43% reduction by 2030. This is both a lever for sustainability and growth. The question is how can they get there? Let me be very clear. A locomotive is not a locomotive and each fleet is different. In the battle to be the mode of choice for the transportation of goods, the railroads are the heroes of the story. Every week my team and I, we sit down with customers digging in on their installed base of locomotives and how they use them. It's a discussion about what's possible, what is the right mix of products and solutions that will let them realize their goals, productivity, sustainability and growth. When you're talking about fleets of thousands of assets, it gets complicated. We bring our smartest women and men to the table. We talk with the railroads about their mix of traffic. How they're using the fleet today. What type of locomotive they're putting on. What type of train, coal, grain, intermodal, iron ore. And finally, where do they want to go in the future. Our goal is building a fleet plan in absolute partnership that allows them to squeeze every drop of productivity out of their fleet, positioning them for growth.

As one of the railroads like to say, it's not a silver bullet, it's a silver bucket of solutions. New units, modernizations, tractive effort upgrades, fuel efficiency upgrades, wrapped with a digital technology wrapper that enables longer and longer trains and better train handling and finally, next generation locomotives. The returns are compelling. The railroads get productivity. They get efficiency. They get sustainability. And ultimately they move the needle on their operating ratio. Transportation is a very local game.

We hit on the E of ESG. Let's pivot to the S, social. Yards, terminals and ports are other areas where we can have a major impact. Emissions come in two flavors. The ones that negatively impact the planet like carbon and the ones that impact local air quality like nitrogen oxides and particulate matter. In North America today, there are over 200 rail yards with over 4,000 switcher locomotives. Those locomotives burn more than 170 million gallons of fuel and produce 1.7 metric tons of carbon. Additionally, locally, 29,000 metric tons of nitrogen oxide. Many of these yards are in densely populated urban areas that are designated as environmental justice zones. That means that not only is there a great opportunity to reduce emissions, but there's also a great opportunity to positively impact the communities in which the units are located.

Internally, we call this [ph] flip my yard (00:47:51). It involves helping our customers to reduce yard emissions, reduce noise, improve safety and increase productivity and utilization. In a typical yard with 20 older technology switcher locomotives, we can eliminate 10,000 tons of carbon plus another 4 tons of particulate matter and in 190 tons of nitrogen oxides in any given year. As impactful, we can reduce noise from the locomotives in the yard by 70%. Our goal is to cast a wide net to partner with these communities, trade schools and local disadvantaged business entities to have the best possible impact on the community. With our 10-unit order from Union Pacific, we're just getting started. Our customers across the globe are investing in a future where rail is the clear mode of choice for the transportation of freight over land, we love where they're going and we are right there with them.

With that, it's my pleasure to turn the program over to Greg Sbrocco to share how we're driving productivity, efficiency and progress across our own operations. We touched on the E and the S of ESG. Greg is the perfect guy to hit on the G, governance. Thank you.

Gregory Sbrocco

Executive Vice President-Global Operations, Westinghouse Air Brake Technologies Corp.

Thanks Gina. And hello everyone. I'm Greg Sbrocco. And it's great to be with you today. I have the pleasure of leading Wabtec's Global Operations, which includes manufacturing, sourcing, supply chain, quality, EHS and operating excellence. Today, I plan to share a deeper look into Wabtec's operating model and how it drives value creation and repeatable outcomes for our customers and shareholders.

As Rafael noted, Wabtec's operating model was designed to drive rigor, strategic alignment and efficiency across the organization. At its core is our commitment to customers and shareholder value, supported by areas of excellence that include people development, finance, product and project management, all of which are enabled by our culture or our common values and continuous improvement mindset, cadence or our focus on accountability and teamwork and driving our alignment and prioritization with strategy deployment.

As we turn to the next page, you can see how this model is implemented across our global operations and centered around four key tenets, safety, quality, delivery and cost. Across these tenets, we are standardizing our business models and deploying them on an enterprise-wide basis enabled by governance and technology. I'll share several examples from across each in just a moment.

Supporting these efforts are the enablers or the how we are optimizing. This starts with our Lean transformation focus on driving continuous improvement and management systems to maximize value for our customers, remove waste, empower employees and optimize the enterprise. It also includes the efforts we are driving around planning and materials sourcing excellence, along with investments in digitization and Industry 4.0 to improve visibility across our supply chain, which makes us more agile and lean. All of this is anchored by the foundational elements we discussed earlier with clear strategy alignment and prioritization throughout our organization.

The other two foundational elements rounding out this model are common and key performance indicators and our Wabtec management system, which allow us to measure outcomes and drive policies and processes, leveraging best practices and standards from across the company. We have a mantra in the global operations team, and that is we deliver.

Over the next slides we will discuss the what and the how aspects of this model that enable us to do just that. We will begin with our most important tenet, safety and sustainability. How we deliver on this front has many elements, but it all starts with a culture of leadership engagement. We utilize a strong tone from the top that drives sharing of best practices and issue resolution. We invest heavily in employee awareness and training, and work to continuously foster a culture of proactively addressing hazards, taking appropriate protective measures and implementing tools, systems and processes to help eliminate or mitigate hazards. The results of these efforts are impressive, including 12 of the last 13 years with injury rate reductions across Wabtec's vast operations, along with meaningful progress against our ESG goals to reduce greenhouse gas emissions, increase energy efficiency and conserve water.

Turning our focus to quality and reliability, these are two areas that directly impact customer satisfaction. Across Wabtec, we continuously strive to deliver best-in-class performance in this area by focusing both on prevention and responsiveness. We utilize a dedicated team of professionals that wake up each day with a focus on driving solutions and improving our products. We penetrate deep into our customers' operations with our field technicians along with our sensor-enabled products providing real-time monitoring where we're able to provide prognostics to predict, eliminate or mitigate failures that would cause operational disruptions for our customers.

All this leads to being the product of choice with our customers. For example, 95% of our locomotive fleets are exceeding customer expectations. Additionally, we have reduced our quality losses by 15% on average this – over the last three years. Quality and reliability are vitally important to our customers, and we view our approach as a differentiator in the industry.

In addition to having high quality, reliable products, our customers require we deliver products on time. Over the last two years, it has been a challenging environment given the supply chain disruptions, labor availability and the global pandemic that has impacted the entire globe. Despite these challenges, we have leveraged our processes and our tools to drive strategic, operational and financial agility while continuing to deliver for our customers. We strive to be best-in-class at business planning and specifically had detailed rigor around our production planning and forecasting, and maintain a robust project review and execution cadence to ensure ongoing execution delivery.

However, even the best detailed plans will encounter headwinds and hurdles. That is where we employ ongoing scenario planning to game plan out the risks and associated actions required to allow us to be nimble and pivot to new or different realities. Pivoting and flexing is what we have been doing over the past two years. In this new environment, we ensure that we spend an equal amount of time on risk identification and mitigation as we do on initial strategy and planning. Strong planning and forecasting, along with a robust what-if playbook, have contributed greatly to our ability to meet greater than 90% on-time delivery to our customers.

When it comes to delivering on cost optimization and productivity, we employ a series of tools and processes to drive results. To drive competitiveness, we live by a Lean and continuous improvement mindset. We leverage new breakthrough technologies such as additive, machine learning and we utilize deep analysis to make key decisions like make-buy, localization and rooftop optimization. We have a similar process on our procurement side, utilizing various processes and tools like should-cost, supplier collaboration, long-term engagements and localization to drive ongoing cost reductions.

Additionally, we ensure to have a streamlined and connected development cycle that drives efficiency from initial quote, through design, to testing, through production and cumulating with delivery. Through these efforts, we have achieved manufacturing productivity of 3% to 5% year-over-year, a 30% reduction of rooftop since 2019, and roughly 2% to 3% deflation on our buy.

Turning to the next page, I wanted to go a bit deeper into two topics, the first one being Lean. We view Lean not only as a tool on costs, but driving our culture, our alignment as a business and to drive velocity. Lean is not a project. It is a business attribute of Wabtec. We utilize it in everything we do. It's not just the tool you use once and don't revisit. We aim to apply Lean principles continuously across our entire enterprise. However, true transformational Lean is targeted across 90% of our cost of goods sold.

To date, we have begun transformational Lean across 33% of our cost of goods sold. In the past year alone, we have had 46 Kaizen transformational Lean events across our sites. These major events have driven numerous changes in our overall product manufacturing cycles. A few examples of the power of Lean in action include double-digit productivity in our Fort Worth locomotive plant; a 45% reduction in cycle time in our radiator business; and a greater than 70% improvement in inventory returns at our India locomotive plant.

Another area we have driven significant progress is on our integration and synergy efforts, delivering what we said we would do, $250 million of run rate synergies 15 months ahead of plan. The major elements of these synergies were tied to consolidations, service agreement exits, sourcing leverage and Lean. By successfully exercising this muscle over the last three years, we've identified numerous other areas for optimization and integration across Wabtec. These mainly revolve around further footprint rationalization and the enablement of continued manufacturing and engineering efficiencies.

Over the next three years, we will implement a restructuring program comprised of capital investment and one-time expenses that will yield incremental run rate synergies by the end of 2024. We are calling this effort Integration 2.0. The details of this effort are seen on this page and will focus on simplifying, streamlining and consolidating our operations, leveraging best-cost countries for capacity expansion and driving systems enablement across the company. To achieve these goals, we will leverage our strong execution, planning, continuous improvement mindset and strategic rationalization to deliver $90 million of additional run rate savings from these projects by 2025 and position Wabtec for growth.

With that, I'd like to turn the program back to Rafael.

Rafael O. Santana

President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

Thanks, Greg. As I shared earlier, the last few years have really been transformational for the company. The result is a stronger Wabtec with deep roots in freight and transit and with a diversified set of businesses in terms of the segments and the regions and the aftermarket and OEM mix, all of which helps balance the cyclical nature of the global rail business. We have grown the company to $7.8 billion in revenues. Two-thirds of our revenues are driven by our Freight segment and one-third by our Transit segment. We have more than 25,000 employees in over 50 countries. They are really building on a strong track record of customer delivery and satisfaction.

Over the years, we have continued to build on our leadership position across both Freight and Transit. We are the world's largest Freight locomotive manufacturer with the world's most wide-ranging Transit product portfolio. And we have a leading market position across many of the Freight and the Transit end markets we serve. So, whether it's freight cars or locomotives, modernizations or critical systems and subsystems in Transit and Freight, we lead the way. Our solutions increase efficiency, it reduces cost and it slash emissions and it allows us to move at scale and with the speed and quality to deliver for our customers.

The stats speak for themselves. On any given day, Wabtec moves more than 20% of the world's freight by rail. We do that in over 100 countries and 80% of the freight by rail in the US. On average, these locomotives travel nearly 1.5 billion miles per year, and they do that in some of the world's really harshest conditions. This reinforces our leadership position in reliability with one in five freight cars in operations having Wabtec products on them.

And when it comes to digital solutions, since 2009, we have helped customers save $1.3 billion in fuel to-date. They've done that while slashing by 4.5 million tons of CO_2. And across Transit, we deliver products such as doors, brakes, components to virtually every major rail transit system around the world. And with the strong projected growth in the industry, there's so much more we can do. You'll hear from our Group Presidents, Wabtec serves a broad end market with a very significant international portfolio that is high in aftermarket and recurring revenue products.

Our strong, stable and diversified portfolio helps offset market cyclicality and is well-positioned for profitable growth. In fact, over the next five years, we expect to accelerate revenue growth faster than the industry's growth. We have the strategies, we have the operational and financial assets, we have the technologies and experienced know-how to accomplish these objectives. Our competitive position will help lead the rail cycle and expand internationally while winning share.

Our scalable, innovative technologies will continue to drive customer productivity, capacity and safety better than anyone else in the industry. I'm confident that we can expand our margins through our relentless focus on productivity and integration. We have the financial resources to further optimize our portfolio and to deliver on accretive M&A.

Finally, as we look forward, we expect to deliver mid-single-digit revenue growth. This will be fueled by accelerated growth coming from our equipment group, the industry focus on ESG and the need for fleet renewal. We also expect significant growth in our digital electronics portfolio, which is already on pace to outperform the industry.

And with that, I'd like to turn the program over to Rogerio Mendonca, to really dive into our business strategies, starting with Freight Equipment.

Rogerio Guimaraes Mendonca

President-Freight Equipment, Westinghouse Air Brake Technologies Corp.

Thank you, Rafael. Good morning. My name is Rogerio Mendonca. I'm the President of Wabtec's Freight Equipment business. It's a pleasure to be here with you today to tell you more about our business and strategy.

Wabtec's equipment business has a very diversified portfolio. We offer the world's most comprehensive and competitive locomotive portfolio leveraging core technologies such as a diesel engine, drive systems, motors and turbochargers and applying these to adjacent industries like mining and marine, for example. This diversification covers not only the product portfolio, but also industries, geographies as well as specific technology requirements that allow us to navigate various cycles within the industries and markets we serve.

We're very proud of our customer base, and we have a close relationship and a very collaborative approach to the new product introduction and continuous product improvements. This helps us to remain a relevant part of their operations and strategies. The equipment business portfolio ties in very closely with several industry macro trends that are poised for growth, rail intermodal and mining being two examples of these.

In addition to the growth trends, there is also a significant advancement in the sustainability and electrification in the locomotive and in the mining industries that drive our competitive advantage. These trends also allow us the opportunity to drive organic growth beyond industry growth and beyond our existing markets to grow the installed base while we continue to maintain and differentiate in existing markets with more efficient products, focus on short- and long-term customer productivity. We're executing the above strategy, keeping modularity as the key pillar to drive and facilitate scalability and profitability for our business.

Our growth levers are sustained in the reach of our portfolio. International growth driven by fleet renewal and growth in commodities has been and will continue to be a critical growth path for Wabtec's Freight Equipment business. We've been the supplier of choice in growth market like India, Australia, Kazakhstan, South Africa, Brazil and our strategy is aligned to continue to scale our presence internationally.

In North America, the aging fleet and intermodal growth are driving our discussions with customers about fleet planning and we're also feeling the signals of growth driven by our customers' targeted carbon reduction goals. These new technologies will also allow us to expand our reach to yard operations with shunting locomotives, for example, as well as entered new regions like Europe with scalable freight rail technologies.

Elaborating a little bit more on the international growth, we have continuously expanded our market reach and scale. And I believe we have significant opportunities for future market penetration and growth across the international fleet. We're executing this strategy by leveraging the investments we have historically driven for North America, and taking our newer and more efficient technologies globally. A good example of this is the Evolution Series engine, a proven global platform. We've extended this platform to Latin America with customers like Rumo and MRS; in Australia, with Pacific National. This wins are delivering more fuel efficient, reliable solutions with reduced operational cost for our customers compared to their current fleets while also leveraging our advantage with partnerships and significant local presence to these critical regions.

Moving to North America, our customers are revisiting their fleet planning, taking into consideration the need for increased operational efficiencies and carbon reduction. The customers are operating a fleet that is on average 20 years old, with over 6,000 units older than 20 years and a significant portion of them having older DC technologies. We currently have the largest and the most reliable fleet including Tier 4 engine emissions technology and we're planning with our customers for their fleet refresh with more efficient and clean technology assets.

That growth in North America is also supported by enabling alternative fuels, reducing fuel consumption and future-proofing the architecture to support next-generation technology adoption. As we prepare for the future, most countries are setting a net zero target for 2050 and very aggressive carbon emission reduction targets by 2030, as elaborated by Gina, which will drive a solid rate of replacement from older to cleaner technology assets. And we're actively working with them on their fleet strategies to achieve these goals and align to market trends.

One of the most exciting technologies we have invested in recently to address the carbon reduction objectives is our FLXdrive product. As you heard from Eric before, we successfully tested the FLXdrive in revenue operations in California last year, completing a pilot with an opportunity to drive up to 40% fuel and carbon emissions reductions, allowing us to move through the commercialization phase of this product. We've been successful in the first steps of commercialization of this technology with recent wins in North America and Australia, and our portfolio is ready to support decarbonization and the industry pass to zero-emission operations.

As the technology adoption evolves and markets transition to the new technologies, we continue to invest in our current efficiency, larger energy capacity, a hybrid portfolio and the whole battery ecosystem. Our FLXdrive design has been developed, taking into consideration three fundamental proposition – value proposition elements. First one, a rail-purpose battery that will guarantee safety, reliability and serviceability along with the flexibility and modularity that will allow continuous improvement to this technology.

Second, the train-level energy management and the path to automation, which you'll all hear more about from our Digital Electronics President, Nalin Jain. We're building decades of experience with train control and train optimization systems to deliver a state-of-the-art energy management system working to optimize the operation of the assets, making the FLXdrive ready for the next steps toward main line automation.

And third, the overall FLX360 ecosystem was designed to deliver optimal efficient around charging time, battery life, recycling among other elements that will help our customers achieve a smoother integration of the FLXdrive into their fleets while still improving their operating models.

So, in summary, Wabtec has a leading and unique portfolio ready to support the optimization of the current fleet as well as support a safe and efficient transition to alternative fuels and new technologies. Our investments are closely linked to our customer needs, driving scalable and differentiated technology. From the most reliable and fuel-efficient diesel power existing locomotives to Tier 4-compliant assets, alternative fuels and new technologies, we've been strategic partners for our customers for decades; and looking forward, we'll continue to focus on the partnerships and maintain a balanced portfolio that will help us manage the industry cycles, continue to invest for the future and delivering solid returns.

And our technologies are scalable. When it comes to our mining portfolio, for example, electric propulsion has been at the core of what we do since the 1950s and that mix shift from – as that mix shift from mechanical to electrical trucks, things turned very favorable to Wabtec. Our battery technology also positions Wabtec to capture the growth driven by further electrification of the power source and enable clean operations from our mining customers. Our electric drive systems are not only the most cost efficient existing alternative while diesel remains the prime mover of the trucks, but they are uniquely positioned to support hybrid and full electric assets through our controls, battery expertise and the trolley technology leverage from our Transit segment. Our historical position was built on the fundamentals of proven technologies based on safety, reliability, productivity and reduced emissions. Our business model has sustained on the strategic partnerships that will continue to drive the development and adoption of these technologies.

In closing, Wabtec's Freight Equipment business is uniquely positioned to capture the growth opportunities of current and future cycles of the industries we serve. This includes mining and rail and supporting the much needed fleet renewal and new technologies to accelerate our customers' transition to cleaner operations and transportation.

Thank you for taking the time to learn more about the equipment business. I will now pass things over to Pascal, who'll talk about our global service business.

Pascal Schweitzer

President-Global Freight Services, Westinghouse Air Brake Technologies Corp.

Thank you, Rogerio. Hello, everyone. I am Pascal Schweitzer, President of Wabtec's Global Freight Services organization, and I'm really pleased to be with you today. So at the heart of this business is Wabtec's locomotive fleet that we are supporting from cradle to grave. We are talking about roughly 24,000 units in operation across the most strategic freight corridors in the world. These are all heavy oil main line locomotives whose performance is critical to the success of our customer operation. These locomotives must be safe, reliable, available, fuel efficient and delivers the best attractive effort while obviously complying with all environmental regulations. This fleet, which covered 1.5 billion miles in 2021, has an expected useful life of 25 to 30 years.

Now, the foundation of our service business is our field service organization. We rely on a team of more than 1,000 service specialists, spread across more than 100 locations worldwide, co-located with our customers. Every single day, these colleagues review the status of railroad operations with our customers. Together, they go through every failure, they review the maintenance program for the day and the week ahead, and they make sure that the necessary parts are available to execute on this work plan.

Throughout the COVID pandemic, this team remained on the frontline, supporting our customers without missing a single shift. For me, beyond contractual arrangements, I believe that this is a best reflection of the passion of our people and of the level of intimacy that we have developed with our customers. As the youngest, most productive, reliable fleet with the latest technologies, our locomotives get dispatched with priority, ahead of the competition, limiting the impact of parking initiatives. Over the years, as railroads have reduced their assets, they are running the remaining ones harder and Wabtec locomotives utilization has increased by more than 15% since 2018.

What also makes our fleet unique is that all the most critical and vital systems are designed and manufactured by Wabtec and are highly integrated, from the diesel engine, traction motors and propulsion technology to the control system and onboard software solutions. These differentiate us in the industry and positions us ideally to help our customers optimize the performance of their assets over time. It also makes us a natural partner for their maintenance, resulting in demand for aftermarket parts. To perform well, these locomotives require significant maintenance. On average, over 25 years of life, a railroad will spend 1.5 times the value of the new locomotive to optimize its performance without counting major retrofits or modernizations that come on top.

Now, today, 80% of our revenues are generated in North America. And our international portfolio is our fastest growing segment, which we will discuss later. We have a high share of recurring revenues, independent of long-term contracts, and we are extremely proud to serve our vast customer base.

Now, as you heard this morning, there are couple of key trends that are shaping our industry. So, first is our customers' relentless focus on safety, efficiency and productivity improvement. This is a global phenomenon. It will remain a competitive world that rewards the best supplier. ESG is fast becoming a top priority as customers look to reduce their carbon footprint. And finally, railroad hungry for share and for volume. And we are seeing an increased focus on growth and intermodal in order to shift volume away from trucks. Now, the good news for Wabtec is that we are ideally positioned to address these trends, and have organized our strategy around these priorities. We continuously develop modular technologies that dramatically enhance the performance of the installed base. This has allowed to increase our share of the active fleet globally, and in North America in particular, where Wabtec locomotives represent more than 80% of the active mainline fleet today.

Second, as you have heard from Gina, we are actively working with our customers on their strategic, multiyear fleet strategies and implementing solutions to build and to operate trains differently and gain efficiency by leveraging the latest technologies while reducing fuel consumption and carbon emissions. The improvement potential that we've observed is dramatic. And it will translate into significant multiyear fleet transformation campaigns, combining different flavor of locomotive modernization, together with new unit and with digital solutions. Our focus on lean and on cost productivity runs deep. We do leverage dedicated teams and processes across every segment, sharing benefits with our customers and further reinforcing the performance of our fleet. Finally, we are leaning heavily into maintenance of way in order to unlock new productivity pools for our customers. Our acquisition of Nordco is increasing our presence in this space. We are now addressing the engineering department of railroad where the potential to leverage technologies to gain productivity and efficiency is substantial. I will share more in this in a moment.

Looking forward, we have the right drivers to accelerate our growth trajectory further. We supply the best technology to the installed base in the industry. We build upon our deep domain to develop compelling products and increase the performance of the installed base through modernization or performance upgrades. The remaining addressable market is considerable. Second, we offer a unique suite of innovative service and maintenance technologies. Today, 80% of our locomotives are connected to our remote monitoring and diagnostic center where we are able to anticipate more than 50% of road failures, sometime by days. For our digital and productive maintenance algorithm, we defined maintenance work scopes at the individual asset level based on its specific condition, reducing shop dwell by 50% and significantly improving availability.

Third, we have the best remanufacturing and logistics operation in the industry. We've a truly global footprint. Today, more than 90% of our components are reused. Nordco is our springboard to significant revenue synergies and the platform to gain share. Finally, over the past decade, we have consistently increased our international market share with new locomotives and we see significant opportunity to grow further our service footprint.

Next, let's focus on a few of the specific growth drivers, starting with modernizations. We have developed a portfolio of modular technologies for a variety of retrofit solutions for middle-aged locomotives. This has been done in a strategic way, analyzing roughly the needs of our customers. The outcome from such programs are significant. Our modernizations are creating a lot of value for our customers and they represent a very compelling investment proposition. This program has been a tremendous success in five years. We went from a handful of mods to over 1,000 units in operation across multiple customer. So, performance of the product is exceptional and customer feedback has been extremely positive. We have a record backlog giving us visibility and allowing us to focus on execution quality and on continuous improvement.

The potential to significantly grow this segment of the business remains strong. The pool of locomotives eligible for modernization is huge and we have converted less than 10% at this stage. As we continue to evolve this portfolio, we are working on a strong pipeline of technologies that will apply to younger locomotives, delivering similarly exciting outcomes and increasing the addressable pool. In the near future, we are considering the potential to incorporate batteries and create hybrid modernizations, develop upgrade for our more recent EVO engine and develop new variations of our control architecture to create the next generation of modernizations.

So we are very bullish on this segment, which has become a key part of fleet management strategies for most railroads. This success story is a great illustration of how we create demand, pull through our best content across the corporation and grow our addressable market. In short, this is what we mean by being the leading provider of technologies for the installed base. We leverage our integrated design and our intimate knowledge of the vital organs to develop solutions to improve the performance of the fleet. Today, we have more than 150 service products in our catalog.

Now, looking at our pipeline of solutions and our development, I am very excited by the opportunity to create value for our customers and continue to grow in the coming years. When it comes to international expansion, our market share for new locomotives outside of North America is consistently growing. Our solid service model is one of the reasons for this success. We stay close to these assets. We hire local technicians, we train them, so that we can ensure customers get the most out of their Wabtec locomotives. And we leverage our global remanufacturing footprint and logistics operation to provide good parts availability. These actions are paving the way for repeat orders and support our fleet and service expansion, particularly in markets like India, Australia, and CIS countries. In the coming years, we will see a growing fleet of battery locomotives. This is important and exciting for services.

First, like for any new product introduction, relying on a strong support organization with local presence is key. This is a muscle we have developed with an ability to ensure smooth product introductions. As Eric and Rogerio shared, our FLXdrive locomotive has been designed with safety and maintainability at its core with service engineers involved since the very beginning. We know that it will be a product convenient to operate for our customers. This product will support further growth of our service business. While the total cost of ownership of the asset for customers will come down through fuel savings, the demanding operating regime of freight locomotives will require batteries to be replaced at regular intervals to maintain their performance. This maintenance schedule will in parallel create a great opportunity to develop upgrades as energy density continues to improve. Just like with any of our vital organs, Wabtec is ideally positioned to partner with railroads, to optimize our battery electric assets over their entire lifecycle. In short, we see FLXdrive as a key growth driver for our service business.

The appetite of railroad for safety, productivity, and efficiency does not stop with train operations. We see a significant potential to leverage technology to increase productivity and efficiency of maintenance of rail activity around the world. We have a pipeline of exciting innovations that will be introduced over the next three years, further automating tie replacement and offering an expanded surfacing and [indiscernible] (01:24:30) set of solutions. These products will create demand from our customers and will accelerate the replacement of the installed base. We also have prioritized international expansion around key markets and we are rolling out this strategy right now.

So, let me conclude, our Freight Services business is a fantastic asset for Wabtec and for the industry at large. Our installed base is serving as the backbone of freight railroads all around the world, providing a stream of high-quality earnings throughout the different cycles. From service to upgrade or modernizations, we have demonstrated our ability to partner with our customers and deliver outcomes in terms of reliability and availability, productivity, fuel consumption, and CO2 reduction. This innovating approach is allowing us to create demand and grow the business. We have several new and exciting solutions in our pipeline that will continue to fuel the growth of the business in the years to come in locomotive services and in maintenance of rail.

With that, I will turn the program over to Mike Fetsko who will talk about our Components business.

Mike Fetsko

President-Freight & Industrial Components Group, Westinghouse Air Brake Technologies Corp.

Thanks, Pascal. Good morning and good afternoon. My name is Mike Fetsko, and I'm the President of Wabtec's Components Group. I'm pleased to be here with you today to tell you about our strategy and how we will capitalize on numerous growth opportunities across our business segments. Let's first take a quick look at the evolution of the Components Group. It started with George Westinghouse Jr., who in 1869 patented a braking system that used air pressure to stop trains. Wabtec took that vital and critical braking technology and grew it into offering customers a full freight car package with key products like trucks, coupling systems, and our latest shutter gate technology. Those core freight car products opened an opportunity to develop critical locomotive components like compressors, radiators, pneumatic valves, and air dryers. Today, our freight locomotive and wayside portfolio makes up 60% of our Components revenues.

But it did not stop with freight cars and locomotives. Wabtec applied those core capabilities and technologies to grow in adjacent industrial markets like oil and gas and power generation. Now, we are applying our technologies to grow even further in emerging markets to help our customers in their quest to decarbonize. Those industrial segments account for 40% of our Components revenues. It is an exciting story to see how Wabtec is taking the air brake invention and continue to drive innovation and growth across our core adjacent and emerging markets.

Looking at our business dynamics, the industry is experiencing growing demand for freight car and locomotive builds. Wabtec is well-positioned to leverage our extensive product portfolio to not only grow our strong North American market share, but to also increase our international share content of freight car and locomotive products. Second, industrial end markets are improving with a focus on cleaner energy sources and overall decarbonization. We will continue to expand our core competencies and technologies into new industrial applications and products. One example of how we'll capture this growth opportunity is through our investment in advanced material technologies for our engine cooling business.

Third, we will continue to increase our international share of freight car, locomotive and industrial components as our regional leaders pull through Wabtec content. Finally, our Components team drives operational rigor to simplify our business and continually drive cost out. Since the merger, we closed six of our component sites to consolidate redundant footprint and simplify business operations. We have played a key role in Wabtec's achievement of integration synergies, while continuing to deliver for our customers. In line with emerging trends across the industry, we're focused on four key strategic growth drivers.

First, we will continue to execute on our freight car product packages with car builders to strengthen our core in North America and drive aftermarket products. In a similar fashion, we use a consolidated industrial go-to-market strategy to maximize Wabtec product content in both traditional and emerging end markets. Second, our diverse engineering team drives innovation through new products and solutions to drive growth over the business cycle. This includes innovations in freight braking to minimize excessive shoe wear and reduce the potential for wheel damage on the railcar and sensing digitization and health monitoring to improve product performance. It also includes our application of advanced material technologies to our engine cooling platform to provide low lifecycle cost solutions for applications in power generation and renewable energy.

Third, we expand globally using our One Wabtec network. Our regional country leaders are strong and fully focused on our components growth strategies. We are increasing our presence and share of market in Latin America, Asia Pacific, India, Europe, Middle East, and Africa.

Finally, our culture drives continuous operational improvements via our extensive network for low cost sourcing, consolidating our footprint to minimize duplication, and simplifying our business structure to grow profitably. Our freight car products business is the core of the Components Group. Our strategy focuses on maximizing Wabtec's comprehensive product content for both freight cars and locomotives. We maintain strong relationships across OEM builders and end users to maximize market share.

As a critical supplier, we offer the broadest range of state-of-the-art components to support both new freight car builds and the aftermarket. We have developed strong market positions with our most comprehensive freight products portfolio.

We are seeing growing demand in the North American freight market. Today, North American railcars and storage are below pre-COVID levels with about 19% of the fleet in storage, and industry orders for new railcars are continuing to improve. The industry delivered just over 29,000 railcars in 2021 and the outlook for 2022 is more than 40,000 cars. Our team has managed well through the down cycle and Wabtec is well-positioned for profitable growth.

Another key segment in components is our locomotive products business. For every locomotive order, our goal is to showcase the power of One Wabtec. For example, on our New York City hybrid locomotive project, our Components Group supplies the air brake equipment along with heating, ventilation, and air conditioning. The control system components come from our Digital Electronics team, and our Transit team is supplying air compressors, low-voltage power supplies, bogie brake equipment and couplers. As you can see, in addition to being instrumental in product innovation, our world-class engineering team is a huge enabler of Wabtec content pull through in the locomotive space. Together, as One Wabtec, we are securing more deals and showcasing our vast portfolio to customers in ways that were simply not possible prior to the merger.

In the industrial segment, we continue to grow by extending our core competencies and technologies into adjacent markets. With the global shift to renewable energy and a growing demand to cool large data centers and power generation systems, we are winning orders with our innovative heat transfer and energy – engine cooling technologies. And our next-generation turbocharger technologies creates significant opportunities for Wabtec to grow in various end markets. As I shared earlier, our investment in advanced material technologies will create new international market opportunities in heat transfer, engine cooling and energy solutions. Our Components team has done a tremendous job developing strategic partnerships and alliances with key customers that are delivering industrial systems to generate renewable energy and accelerate decarbonization. Our industrial growth strategy is working as evidenced by our double-digit revenue growth last year. Our goal is to drive value and margin accretion.

As international demand increases in both freight and industrial segments, we are well-positioned to grow in regions outside of North America, where we maintain strong regional leadership. In the freight segment, 15% of our revenue comes from regions that accept products approved by the Association of American Railroads. We will continue leveraging our regional leadership and One Wabtec approach to develop strategic partnerships as demand increases with a focus on APAC, LATAM, India and EMEA. In the industrial segment, 48% of our revenue comes from international customers. We have made tremendous progress to strengthen existing partnerships and develop new opportunities with original equipment manufacturers in power generation, oil and gas, clean energy and renewables.

As we look to the future for this growing business, I would like to leave you with four key takeaways. The performance of our strong cost focused management team positions us well to drive profitable growth over the emerging freight car and locomotive demand across global regions. We will continue leveraging our industrial go-to strategy by consolidating Wabtec product packages to maximize share in traditional and emerging markets, both domestically and internationally. We strive to improve safety, enhance productivity or even disrupt the market by maintaining a strong innovative product development pipeline with a goal of helping our customers. Continuous improvement is embedded in our components operational mindset across all business units. We constantly look at how we can take cost out. That mentality coupled with our initiatives to drive lean remain a key foundation behind our drive for profitable growth.

Thank you for your time and attention to learn more about the tremendous growth opportunities for Wabtec's Components Group. I will now turn the program over to Nalin Jain.

Nalin Jain

President-Digital Electronics, Westinghouse Air Brake Technologies Corp.

Thanks, Mike. Good day, everyone. I'm Nalin Jain, President of our Wabtec's Digital Electronics business, and it's a great pleasure to be talking to you all to tell you about our digital business. In particular, I want to highlight three areas that will drive our future growth: the first one, our road map to automation; second, our pillar apps that will allow us to deliver strong recurring revenues and penetrate new enhanced products; and finally, our road map to drive international expansion and growth in adjacent markets.

At the outset, let's talk about what problem we are trying to solve. The rail logistic network is a complex and dynamic system from shipper to receiver, from ports to intermodal terminals, main line locomotives and railcars to train yards and operation centers. All these elements should work in harmony to move goods safely, on time, and cost effectively from point to point, but this can only be achieved by connecting the physical and the digital rail logistic network.

In the last few years, Wabtec's digital solutions have changed the face of freight rail industry whether it is onboard technologies like LOCOTROL, which have enabled longer trains or our Trip Optimizer which has helped reduce fuel and carbon or our PTC solutions which have helped trains become safer. It is our back office software applications which have helped reduce congestion on the network, ports and terminals. Our digital solutions are uniquely positioned to impact every aspect of the rail network.

Now, let us look at how Wabtec is positioned to growth. Our key business segments are train automation. This is all about technologies on the train and areas where we are undoubtedly the market leaders, back office and wayside solutions which form the backbone of our network operations in both freight and transit applications. And, finally, the adjacencies. In the logistics segment, we are market leaders in the terminal operating systems for main line and transportation management systems for the short lines. We are leveraging our technology to expand into new areas like Port Optimizer, which is deployed at the Port of Los Angeles and asset management solutions like Track IQ to monitor rolling stock.

Finally, our strong presence in the mining industry with our Collision Awareness System, which serves similar safety purpose to the mining vehicles like the PTC for trains. Geographically, North America is by far our largest market. We account for a significant share of the technology spend of our Class 1 customers. Internationally, we are growing presence in Asia and Latin America. We are continuing to grow our recurring revenues from our very strong installed base. Since the merger with GE Transportation, our recurring business has accelerated to become 30% of the revenues today. Unlike the physical world, where gains are normally mid to small single digit, our digital solutions are at the forefront of transforming, delivering double-digit productivity gains to the rail industry.

Now, let's talk about the business dynamics we are experiencing. As you all know, industry will continue to drive productivity improvements by increasing use of digital technologies. You also know that rail industry is stepping up to not only becoming more and more carbon-friendly, but also focusing on significant carbon reductions. With the shift in mix away from coal, intermodal continues to be a fantastic opportunity. Last year was the second highest intermodal volume in the US history. Finally, railroads are placing greater importance on asset availability, by making their assets smart.

In this environment, our strategy is simple. We are building on the strong installed base of existing products by delivering powerful new enhancements. We are leveraging our strong installed base to drive more recurring revenues. Beyond penetration in existing markets, we continue to look at expansion opportunities in adjacent segments and international markets. Looking into the future, we are focused on driving R&D investments in the space of automation. And to further accelerate, we will continue to look at bolt-on M&As. Now, let's bring this all together and dive deeper into our portfolio and future road map.

There are four Wabtec core platforms that will help the industry achieve its productivity and sustainability goals. These are the Trip Optimizer, LOCOTROL, Positive Train Control, and our network optimization solutions. The Trip Optimizer platform is like your car crew system, which helps you optimize fuel and speed depending on the gradient on which the train is running. The Trip Optimizer has been the industry-leading fuel optimization tool since 2009. Since its launch, the Trip Optimizer has enabled our customers to save anywhere from 6% to 15% of fuel costs, equivalent to a carbon reduction of close to 4.5 million tons on the Wabtec locomotives.

Irrespective of which part of the world you are in, if you want to run a long, heavy train, you are more than likely using our LOCOTROL technology to increase throughput and reduce operating costs. With PTC, we are onboard every main line locomotive in the USA, which is foundational to delivering rail automation. Railway network operations are complex, with hundreds to thousands of trains running on the network at the same time. Our network solutions like Movement Planner and Precision Dispatch help railroads plan the movement and automate the dispatch of these trains to help improve network velocity and reduce dwell time. As you heard from Eric, our digital solutions can help customers achieve significant fuel and carbon reductions.

With established platforms, we are now connecting these pillar technologies to help our customers achieve their goals for a fully autonomous rail system. Let's talk about how these pillar technology platforms will enable our future growth. Our PTC platform allows us to introduce the technology internationally. And then in the US, we can introduce new functional capabilities like precision reference and moving block technologies. Our Trip Optimizer platform is being expanded to new capabilities like the SmartHPT to match horsepower with tonnage on a train to Zero-to-Zero, which allows operators to stop cruise control from the start of the train to the final stop. As you heard from Rogerio, we're also enabling new locomotive technologies like FLXdrive and alternate fuel locomotives to the market.

With the ever evolving communication technology landscape, we are leveraging our LOCOTROL platform to an expanded architecture that can function over the PTC communication network, and bring new solutions like remote control locomotives and drone trains for higher crew productivity. We are migrating our Precision Dispatch to the cloud, and integrating with the onboard technologies like Trip Optimizer to create products like Pacing, which based on network condition, situation can pace the train by providing directions to the Trip Optimizer. Further, we are using our technology stack to grow into adjacent segments, like collision avoidance systems for mining and transport management port and terminal optimization solution for the logistics space.

Now, let me share with you how our strong platform presence and growth drivers translate into numbers. As you can see, our four platforms have achieved significant penetration in North America.

It is fair to say that our technologies today equip a vast majority of freight trains operating on the network. This really sets the table for Wabtec to build on the highly penetrated base with new product enhancements. I discussed on the previous page such as SmartHPT, Zero-to-Zero, Road RCL, and so on, so forth. Similarly, processing power and communication technologies are evolving rapidly. Therefore, creating hardware renewal and upgrade opportunities for us. Just to illustrate, PTC processor cards are being upgraded. Similarly, our onboard data communication capabilities are being upgraded to 5G capability for enhanced video analytics and higher data downloads. These products create a significant opportunity for us to grow at 2 to 3 times the industry growth rate over the next five years.

Now, let's briefly discuss how we are enabling autonomous rail. Automation is not just a destination. It is a journey. Through incremental phases of technology development, we will help our customers realize their automation goals. To-date, we have completed the first two phases of our automation journey. From our pillar platforms to getting to attended automation which happened because of integration of PTC with Trip Optimizer, the launch of Zero-to-Zero, and SmartHPT. And we are making rapid progress to enable single-person crew and beyond. Technologies such as vital standalone, moving block, 5G communication, situational awareness are some of the new technologies we are now focused on to progress towards full automation. Now, that is what we call at Wabtec moving and improving the world.

Before I wrap, I would like to give you a sneak peek into how we plan to double our international business. As I mentioned earlier, we are taking PTC International as illustrated by some of our recent wins in Africa and Latin America. Unlike the US, where we provided only the PTC onboard scope, in international markets, we provide PTC-led integrated solutions, creating a pull for other Wabtec core technologies in the form of turnkey projects. Besides PTC, we see some exciting growth opportunities for our adjacent technologies like rolling stock monitoring technologies, mining solutions, and so on, so forth.

In closing, our plan is to achieve two to three times the overall rail industry growth rate. Our highly penetrated pillar platforms give us the opportunity to grow our recurring revenues as well as enhance product offerings to drive growth. The international markets will continue to be a growth engine for us. We are particularly excited about opportunities in Europe, India, Brazil and Australia, which would cut across both the freight and the transit segments. And lastly, we will be targeting bolt-on acquisitions to identify synergistic opportunities to continue to create value for our customers and our shareholders.

Thank you so much for giving me the opportunity to share the story of our Digital Electronics business. With that, I would like to pass things over to Lilian. Thank you.

Lilian Leroux

President-Transit, Westinghouse Air Brake Technologies Corp.

Thank you, Nalin. I'm Lilian Leroux, President of Transit, and I want to share with you our profitable growth strategy in our segment. I trust you have seen our commitment. We have delivered more than 300 basis points EBIT improvement in the last three years, a real turnaround in profitability and competitiveness. And we do remain committed to take this effort further.

We're also providing one of the key solutions to addressing climate change. In fact, we are the center of it, developing the largest portfolio of environmentally-friendly solutions to capture this momentum in passenger rail transportation. By leveraging our technical differentiation and our operational turnaround, we will continue to help transit authorities gain efficiencies while fueling our segment profitable growth. Transit is about $2.6 billion revenue, and we are designing, delivering, maintaining some of the most critical and vital systems for passenger trains. Our brakes, our doors, our passenger information systems, air conditioning, couples, just to name a few, are essential for car builders and for the performance of their trains and will support our system directly with the transit operators. Here, we do benefit from more than 60 services center around the world. Our specialized experts have a deep understanding of the local operator's maintenance practices, needs and challenges.

Based on the strength, aftermarket represents 54% of our revenues. This also explains why our percent of profitable recurring revenue is that high. Europe historically is our largest market, and we have significant opportunities for expansion in other markets, including India and Australia. You may not know, but we are the world's leader in pantograph and power collection for trains. And we are using our expertise and technology in adjacent markets and across industry. This includes electrification and charging solution that are being extended for marine or mining. This is one of our strongest growth markets actually.

Now, let's look at the overall business segment dynamics. First, the significant infrastructure investment by governments and the positive pro-rail polices around the world are very obvious tailwinds. Second, the push for advanced technologies that accelerate the pace for automation, unlock efficiency gains, and reduce operating costs and risks remain paramount for both transit operators and car builders alike. These transit operators in parallel need absolutely to reduce their operating cost and better utilize their assets.

Ridership. I know this is a question in North America, but that's not the case in the rest of the world. Ridership is coming back with different peak travel patterns than before, requiring indeed higher level of flexibility for operators. At Wabtec, we are positioned to address this shift. The advancement we've made in our environmentally friendly solutions, in productivity and safety over the years will continue to drive measurable outcomes across our customers' operations post-COVID.

We also continue to invest in new technologies that support automation, digitalization, and optimizations. Areas where we can help drive innovation adoption across the transit rail sector. Our recent nomination as a founding member of the €1.2 billion Europe rail research program is an evidence of it. Finally, we will continue to drive lean continuous improvements across our operation to drive growth and improve profitability. We are deploying the Wabtec operating model and are fully part of the Integration 2.0 program, and these are essential initiative that Greg already mentioned.

So, what does it mean for transit? We will continue on the road map defined; differentiate through technologies, ESG, and digitalization; and continue our journey to mid-teens EBIT. Let's spend a few minutes now discussing how we will capture this profitable growth. First, the transit market has demonstrated a great resiliency over the last two years, but the coming years will be years of investment. Our portfolio and our geographical footprint means that we are in the right place at the right time to capitalize on these drivers. When it come to the technological shift, we are not only improving continuously the performance of our products. We are also providing new technologies that will help transit operators in their daily operations.

We have heard about the importance of ESG from Gina, and it is very similar in transit. Here, we have developed a suite of solutions that will help operators reduce their carbon footprint, reduce pollutants, and drive greater energy efficiency. Of course, we take the benefit here of our significant installed base and access to all transit operators around the world providing spare parts, maintenance, upgrades, but also condition-based maintenance solutions like we do right now in platform screen doors in Hong Kong or predictive maintenance solutions like we are doing in England.

So, next, let me take you deeper into some of these elements, and let's start here with government's funding. As you have already heard, rail is second to none when it comes to decarbonizing passenger transport. Not only the CO_2 emissions that you see here, but also ridership capacity 20 times better than a car, energy efficiency 9 times better, and safety at least 6 times better.

What has changed recently is that global warming is now fully part of the political agenda. Today, the transportation sector accounts for 37% of the world's carbon emissions. Rail is the solution to decarbonize the transportation industry, and the shift to green is going to positively impact our industry moving forward. There are numerous examples around the world where government investment is flooding into clean rail from the US to Europe, as well as India, which when you look at India, represent a 50% increase in investment for rolling stock.

The time is attractive for us to be in our sector. Sizable investments are being launched in many regions where we do have a strong position.

Let's move to technology now. When we think about our portfolio, we address 15 product lines. Our new generation of brakes, doors, air conditioning, couplers, passenger information systems will generate significant savings for transit authorities. When we think about weight reduction for a train, this result in energy savings and reduced CO2 emissions. But we do not stop here. We work on the maintenance cost as well as the energy consumptions of our equipment and are offering this solution for new trains, but also on existing ones. We know that today 30% of the worldwide transit train fleet is [ph] 30 (01:55:48) years old or older. 50% of the trains in operation are more than 20 years old. As you can imagine, there is a significant market need to upgrade and improve the comfort of passenger, the performance of these trains and their integrated equipment. We are offering the same suite of solutions for fleet announcement as we are doing for the new trains. And with the new digitalization solutions we provide, we will further help transit operators with condition-based maintenance, predictive maintenance, intelligent asset management, helping them to reduce lifecycle cost by an additional 20%.

A few concrete and patented examples are noted here that are directly related to sustainability. First one, Green Friction. We have worked in partnership with Paris metro RATP to develop a new generation of friction projects that reduces particle emissions by more than 90%. Friction breaking is an important contributor to particle emission internals, and this innovation reinforces the green agenda of operators and improve the safety for train drivers and passengers. And these pads, they need to be replaced less frequently than the commonly used ones, thereby improving efficiency in the maintenance activities of the transit operators.

Our new brake control systems, Metroflexx and Regioflexx, reduce weight, improve performance. These projects were designed with recyclability in mind. 95% of the project can be recycled after its useful life. Our new refrigerant, Green Air, is significantly reducing the environmental impact of traditional refrigerants while reducing the energy consumption. This is gaining traction with many operators and we won recently an award with Siemens Mobility, thanks to it. Finally, BlueFilter, which removes contaminants from the air, meaning virus, in no time. It will prove essential to bring back confidence to passengers.

Another illustration here with our Distance Master solution, the only option to increase passenger capacity is to run more trains per hour on existing tracks, which in turns would generate a better utilization of the assets. For this to be a safe and viable option, rail operators need to overcome the challenge of braking performance limitations. This is coming from the adhesion between the wheel and the rails when the tracks are full of leaves or ice or polluted for example. Today, the distance kept between two trains takes into consideration these worst case scenarios, the braking distance degradation that you see here. Thanks to our latest innovation in brake control, we reduce this elongation of braking distance by more than 50% in field demonstration, and we're going to start field testing to demonstrate it up to 90%, respecting all safety conditions. Not only can it create better utilization of the asset for operators, but it will reduce maintenance costs and disruption significantly as a result of this improved adhesion during braking. It's a massive gain for transit operators and a massive growth opportunity for Wabtec.

One last element I wanted to share on our green solutions is our charging and electrification capabilities. As we discussed earlier, Wabtec transit industry product lines, which they represent a growing percent of our revenue, is a market leader in electrification and charging. We are using a lot of the technologies we have developed in transit vehicles. Remember, we are the leader in pantograph and power collection in rail transit. Here, we apply it on ferries as well as shore power solutions to allow in harbors to operate without using the diesel engines. Our Wabtec teams in marine and mining that Rogerio mentioned previously are strongly supporting our market entry and our technical integration here.

In addition, you may not know that we are the leader in North America for bus doors, and we are using our industry access here to further contribute to the electrification of public transport by providing charging solution to buses. This is a booming market and we are the heart of it. Well, of course, technology is not enough if we do not have efficient operations and processes. So, confirming that not only we have delivered more than we committed two, three years ago, but we are continuing our efforts towards a mid-teen EBIT and a lean and more competitive company. Our numbers speak for themselves. Besides this great EBIT growth, our backlog margin is 27% higher than two years ago. Our manufacturing hours in best-cost countries have increased by 20% and even 37% for engineering.

How are we doing it? Well, first, we drive prudent project governance and the strict risk management process. Second, we are deploying the Wabtec operating model for a significant transformation project in transit, leveraging our footprint in India, in Eastern Europe, together with a lean culture. It comes with a continuous improvement mindset and accelerating the implementation of best practices across our business. And we are building a pipeline of competitiveness initiatives as part of the Integration 2.0 efforts Greg talked about previously.

As you have heard and in conclusion, we have a clear strategy built on the transformation and the Wabtec operating model I just mentioned to support this lean culture and permanently improve our performance in profitability and competitiveness. Of course, the benefit from strong [indiscernible] (02:02:00) policies with investments all over the world, the transit industry is a key focus area in climate change, and we are at the center of it. We have developed innovations around sustainability and productivity for operators. And our installed base is massive. Our footprint is global. And this is how we are addressing transit operators to deploy our innovation and capture this profitable growth.

With that, it's my pleasure to turn the program over to John Olin, John.

John A. Olin

Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

Thanks, Lilian. I'm John Olin, Chief Financial Officer for Wabtec, and I couldn't be more excited to be here with you to talk about how we're creating value for our key stakeholders. You've heard a clear message today from our leaders and our vision, our mission, our strategies and our growth drivers. And we are on a clear path to deliver attractive, sustainable growth, a level of growth that is fitting of our strategies and competitive strengths, which include a resilient installed base, leading products and services across our five business groups, differentiated technologies, and best-in-class productivity. We are well-positioned to deliver the future of rail while growing shareholder value.

Earlier, Rafael introduced our five-year growth plan in which we expected mid-single-digit top line growth, which means we will largely double the industry's expected growth rate. In addition to top line growth, we're committed to driving 250 to 300 basis points of margin expansion through the growth of our value-added products, continuous improvement culture, and flawless execution of Integration 2.0. Through these results, combined with our disciplined capital allocation framework, we expect to achieve a double-digit EPS growth CAGR over this period. Our goal is clear, to unlock the full potential of our company and drive strong returns for our shareholders.

Now onto the how. I'm going to talk about our strategy and path to create and maximize shareholder value over the long term. This comes through three key strategic pillars. First, invest in the business. This will support and drive the growth strategies you heard from each of the business leaders while driving margin expansion through our lean and cost initiatives, and Wabtec's operating model.

Second, we will invest in the future. Wabtec has a rich history and M&A. We will continue to look for M&A to augment our profitable growth that is a strategic fit with our business and that drives accretive returns.

And finally, we will return value to our shareholders. With our continued focus on strong cash generation, our disciplined capital allocation framework will drive improving returns on invested capital and return the cash to shareholders through rising dividends and share repurchases.

Now let's dive into the framework of how investing in the business will deliver long-term profitable growth. The formula is simple and starts with driving alignment across our organization on a handful of strategies that provide clear and powerful direction and to fuel our growth with targeted actions and the appropriate levels of investment. Today, you've heard from leaders about the strategies we will deploy to drive our organic growth over the industry's growth rate. These strategies include scaling new and innovative technologies that increase our customer's productivity, capacity and safety. Our ecosystem of products like FLXdrive, Zero-to-Zero and Metroflexx are uniquely positioned to lead the decarbonization of rail. We will also drive growth through the expansion of our international businesses, increasing our share of market, expanding our high margin recurring revenue streams, and delivering margin expansion through continuous improvement.

The next step is the focus on and invest in our growth drivers which include our relentless focus on increasing customer productivity, international and market share expansion, and margin growth through the best-in-class productivity. When discussing our overall growth plans, you cannot have a conversation without talking about our backlog. In the near term, our rolling 12-month backlog, which is a subset of the multiyear backlog, was up 13.5% versus 2020 and is at the highest level since the fourth quarter of 2019.

Our confidence for 2022 is built on the fact that we have about 75% of our sales at the midpoint of guidance covered in backlog. In the midterm, our growing backlog continues to provide us with not only visibility for future growth, but resiliency against market dynamics in our existing businesses. We have strong momentum and a good view of the convertibility of our backlog. While our growing backlog provides a tailwind as we look to the next five years, our mix of sales will generally be a headwind. To take a step back, mix is an element of our earnings performance in every quarter and certainly year-over-year. To understand the impact of mix on our earnings, you have to start with the general margin structure of our five business groups.

As you can see, Digital and Services command the highest level of profitability and Transit and Equipment, while very profitable, garner a lower margin than the other groups. Now, let's look to our five-year growth expectations. We expect that equipment will lead our growth over the next five years. The world's aging locomotive fleet, combined with our customer-stated 2030 greenhouse gas targets, land itself to a period of locomotive fleet renewal, which will drive equipment sales at a much faster rate than the industry, creating mix headwinds.

And make no mistake, we believe that this mix headwind is very positive for the company and our future earnings growth. As equipment sales grow, so does our installed base of locos. As Rafael discussed, our installed base drives higher margin sales for our Services, Digital, and Components businesses for decades to come.

Critical to enabling our growth strategies, we need to invest a portion of our cash that we generate every year back into the core business. Investment in our existing businesses typically are the highest IRR opportunities we have and will drive higher overall sales and profit growth. Aligned with our previous framework, we expect to continue to invest about 2% of sales in capital expenditures to fund our core business. As our sales grow, we will aggressively manage working capital investments to be below 20% of sales.

Looking ahead, we continue to invest about 6% to 7% in sales technology as we develop innovative, new next-generation products that will lead the future of rail and decarbonization and digital technologies. Our investments in capital expenditures, working capital, and technology will result in high returns on capital redeploy and will drive future long-term profitable growth.

Through my vantage point of being a relatively new CFO at Wabtec, one of the several things that have stood out to me since joining is the company's ability to drive productivity and synergy savings. The opportunities to continue to drive productivity throughout the organization are abundant. And our execution and focus by the team are quite impressive. As Greg discussed, we have delivered strong results and continuous improvement and still have a lot of runway to advance lean throughout the supply chain and our support areas. In addition, we will invest in Integration 2.0 to drive an additional $75 million to $90 million of savings through consolidation of our footprint, streamlining manufacturing, and simplifying our operations through systems enablement. Our efforts will not only offset annual inflation, but they will expand our margins.

Now, let's spend a minute on discussing what we expect our investments in the business to drive in terms of revenue growth, incremental margin and profitability. Starting with revenue growth, we expect our revenue to grow at an average annual CAGR of mid-single digits over the next five years. We see three stepping stones to reaching this mid-single-digit growth. First is drafting off the industry's organic growth rate of roughly 2% to 3%. Second, we believe that the combination of the aging fleet and impending greenhouse gas targets will accelerate locomotive sales over the next five years, contributing another 1 to 2 percentage points of annual average growth. Finally, we see another percentage point of accelerated growth due to share gains, international expansion, and digital growth of 2 to 3 times the rate of the industry.

With volume growth comes the opportunity for incremental margin as a result of leveraging the fixed cost structure of the company. With an incremental dollar of revenue produced from our factories, on average, over time, we would expect an incremental margin of 25% to 30% based strictly on our fixed cost structure. Our fixed cost structure from the cost of goods sold is 15% to 20%, while our SG&A spending is roughly 80% to 85% fixed. So, what do we expect in terms of margin expansion over our five-year horizon? By combining revenue growth in the mid-single digits with a strong focus on aggressive cost management and capital investment in high return projects, we expect to drive margin improvement of 250 to 300 basis points over the next five years.

The largest driver of margin improvement is from cost improvement, net of inflation. Key movers of driving net cost reductions are: number one, a continuous improvement mindset and the advancement of lean across our manufacturing system; number two, savings from Integration 2.0; and number three, fixed cost absorption in the 25% to 30% range. Additionally, revenue growth will benefit from opportunistic pricing, partially offset by unfavorable mix.

Disciplined investment of our capital and planned technology investments are also expected to expand margins over the next five years. Growing our business in mid-single digits while expanding our margins will result in significant and growing annual operating cash flows. So, let's talk about how we will invest this cash to deliver on a better and brighter future for our company and our shareholders.

It starts with investing in the future. This is all about growing our company and capabilities through M&A opportunities that exhibit a strong strategic fit and deliver on accretive earnings and returns. Wabtec has a rich history in M&A, completing nearly 50 acquisitions over the last 15 years. These acquisitions have unlocked new adjacent markets, positioned the company for profitable growth and have been accretive to earnings. Finally, we also have a long history of successfully integrating our acquisitions into Wabtec's operating model and delivering on both revenue and cost synergies.

When we talk about M&A, the concept is simple, find the right asset in the right market at the right price. While the concept is simple, to find the right companies requires discipline and patience. Each acquisition or divestiture must make the core business stronger while providing for future growth opportunities. We follow three avenues when looking to invest in M&A. First, we look for attractive markets that leverage our core competencies, our customer base and technologies, or markets to expand our presence in attractive product segments or geographies. Second, we search for attractive assets that complement our existing businesses and/or provide significant growth opportunities. And third, we look for compelling valuations that enhance our earnings in the near term and improve our company growth returns over the years to come.

Let me give you an example of an acquisition that meets all three of these criteria. The acquisition of Nordco in the second quarter of 2021 is an excellent example of how we are creating value through inorganic bolt-on opportunities. Nordco provides Wabtec the opportunity to drive long-term profitable growth in the $5 billion maintenance of way market within the rail industry. It complements our existing business with a similar supply chain, customer base and aftermarket business. Nordco holds a differentiated portfolio of highly engineered products and technologies with a significant installed base, and has been immediately accretive to earnings, cash flow and return on invested capital. So far, we have talked about how we will invest in the business to garner strong growth and profitability. We have talked about how we will invest in the future through strategic M&A.

Now it's time to talk about how we will return value to our shareholders through disciplined capital allocation. Looking at our capital allocation strategy, we remain focused on delivering superior total shareholder returns and executing our disciplined capital allocation framework. As you can see, we have a very straightforward capital allocation prioritization with five priorities aimed at driving shareholder value and cash returns to our shareholders.

Our priorities are clear and well-aligned with our shareholders. Let's go a little deeper on each. Priority number one, maintain a strong balance sheet to manage through economic cycles and world crises. We have brought our adjusted net leverage ratio down from 3.0 times to 2.5 times which is in line with our objective of being at 2 to 2.5 times ratio. And we remain committed to maintaining our investment grade credit ratings. Priority number two, invest in the business. This means fueling our growth with high return R&D and capital investments such as the new products, digital technologies, and the decarbonization of rail.

Priority number three, increase our dividend. The targeted dividend payout ratio of 10% to 15% of adjusted net income thereby growing our dividend in line with earnings over time. We couldn't be more pleased with the board of director's recent increase in our dividend by 25%. Now, priority number four, to supplement organic growth with M&A. we will actively manage our portfolio of businesses through bolt-on and adjacent acquisitions and through divestitures of non-strategic lower return businesses. Priority number five, return excess cash to our shareholders through share repurchases. Again, we are very pleased with the board's authorization of a $750 million share repurchase program initiated in Q1 of this year.

So how will we measure our success and progress in investing shareholders capital? First, our investments will drive improved fixed asset productivity. In 2021, we got a good start, but much opportunity remains to become more profitable with the investments in fixed assets. Next, our discipline around capital deployment will improve our adjusted return on invested capital. Over the last couple of years, we have driven 130 basis point improvement in ROIC as a result of solid execution by the team, three accretive bolt-on acquisitions and the repurchase of over $500 million of our shares. While this improvement is off a very low base, we are committed to executing our growth strategies, expanding margins, and deploying our capital allocation framework in a manner that will drive significant improvement in our return on invested capital over the next five years.

I want to remind everyone of the sizable tax benefit that Wabtec received from the GE Transportation transaction as well. The benefit is driven by the stepped up basis of assets on the balance sheet at the time of acquisition. We expect an average cash tax benefit of roughly $150 million that results in an NPV of about $1.1 billion over the next 13 years. At the time of acquisition, we agreed to pay the first $470 million of the cash tax benefit to GE as part of the purchase price. And as of today, we have paid off $214 million. The result of this benefit includes a substantially lower cash tax rate of about 9 percentage points versus the effective tax rate that you see on our income statement. This is a significant benefit to our cash flow, which will drive increased total shareholder return over the next decade.

Earlier in our conversation, I mentioned productivity as one of the areas I felt the company did an outstanding job on. Another area is the company's unrelenting focus on generating cash and on driving high cash conversion rates. Case in point, our recent results demonstrate very strong cash flows in 2019 through 2021. 2021 marked a record year with $1.07 billion in operating cash flow generated with a cash conversion rate of 102%. We are focused on continuing to drive strong cash flow into the future. Our goal remains to be above 90% conversion cash rate over the next five-year period.

Finally, how does this story end? This story ends with a growing level of free cash flow over the next five years, cash delivered from a strong and growing base business and through compounding investments in our future. We will deploy the growing pool of cash that we generate over the next five years according to our capital allocation priorities. This speaks to our ability to maximize our mix of investment priorities between investing in the core business for future growth, CapEx, inorganic opportunities, and share repurchases to improve returns.

Looking forward, our priorities remain clear, and our capital allocation framework will continue to strengthen our financial position, drive growth, improve returns on invested capital, and create a significant value for our shareholders.

With that, it's my pleasure to turn the program back over to Rafael for closing thoughts.

Rafael O. Santana

President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

Thanks, John. You have heard a clear message from our leaders today on sustainable growth. We have a resilient installed base in attractive end markets. We have a leading market position. Our teams are laser-focused on our customers, and we have the best-in-class technologies. For these reasons and more, we are confident about 2022 and beyond and the culmination of everything we've outlined today is simple. We are creating shareholder value and we expect to outperform the industry. We will do this by delivering mid-single-digit top line growth, driving over 250 basis points of margin expansion, executing our capital allocation framework and by achieving double-digit EPS growth.

With that, let's turn to the last slide. We've covered a lot of ground today, but the message is clear, Wabtec is well-positioned for long-term, profitable growth. Our innovative, scalable technologies and next-gen solutions will continue to drive value for customers. Our commitment to continuous improvement and investments in markets with attractive growth drivers will further differentiate Wabtec in the industry, all of that driving strong cash generation and margin expansion. These fundamentals continue to maximize our value creation going forward, and we will unlock the full potential of our company to deliver strong returns to our shareholders.

With that, thank you for your time this morning. We are going to take a short 10-minute break.

as we transition to Q&A and we'll be back momentarily. Thank you.

[Break] (02:23:34-02:33:38)

Unverified participant

Ladies and gentlemen, welcome back to the Wabtec 2022 Investor Day. Please welcome President and CEO, Rafael Santana.

Rafael O. Santana

President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

Thank you. Welcome back. I'm joined here today with John Olin, our CFO, and Eric Gebhardt, our Chief Technology Officer. And before we jump into our first question, I'd like to address really a topic that's on everyone's mind, which are the events unfolding in both Ukraine and Russia. First, I'd like to recognize the tragic situation that we have happening in Ukraine. Our hearts are with the people of Ukraine and certainly, the employees that we have located within the region. Our paramount concern is to protect the safety of our employees, but also to abide by really all sanctions that are being instituted.

With that, since the start of the conflict, we have not made any shipments to Russia. We also recognize that this situation is ever evolving and we'll continue to monitor it. In addition, for 2022, our plans projected about 5% of our business in Russia with our heaviest earnings plan to be in the first quarter. With that, we're continuing to evaluate the situation and will provide further updates accordingly.

With that, operator, let's take the first question.

QUESTION AND ANSWER SECTION

Operator: Thank you for joining the Wabtec Investor Day event. All participants are in listen-only mode. [Operator Instructions] Please note this event is being recorded. We will now begin the question-and-answer session. [Operator Instructions] Our first question comes from Justin Long from Stephens. Please go ahead.

Justin Long

Analyst, Stephens, Inc.

Q

Good morning.

Rafael O. Santana

President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Good morning, Justin.

John A. Olin

Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

A

Good morning.

Justin Long

Analyst, Stephens, Inc.

Q

So maybe long-term guidance, the outlook for double-digit adjusted EPS growth, does that assume a contribution from acquisitions and buybacks or should we be thinking about double-digit EPS growth absent those items and those items would be incremental?

John A. Olin A
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

Yeah, Justin. This is John Olin. As Rafael talked about, we got our revenue line item growing at double digit. As that moves down the P&L, we'll pick up 250 to 300 basis points of margin expansion. And by the time that gets to EPS from our core business, we will be at double-digit growth. Now on top of that, we'll be the arsenal of cash that we'll have over the next five years. And as we've talked about in capital allocation, a lot of that will be invested in M&A and in share repurchases. Both of those will add to our returns from that double-digit base.

Justin Long Q
Analyst, Stephens, Inc.

Okay. Got it. So it sounds like those would be incremental items.

[indiscernible] (02:36:57)

John A. Olin A
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

Yes.

Justin Long Q
Analyst, Stephens, Inc.

And I guess, following up on the outlook for mid-single-digit organic growth and revenue. I was a little bit surprised to see that just given where we are in the OE cycle. We're at a trough here. You've got the battery electric locomotive opportunity on the horizon. So, is there any way you can kind of help us think through how much of a cyclical recovery that you're baking in and how much of a contribution you're baking in from the battery electric opportunity as well within that mid-single-digit output?

Rafael O. Santana A
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

Yes. So, Justin, I think the way to think about it, so I think there is, number one, a good momentum in terms of the pipeline of opportunities we have out there. I'd say a lot of the numbers here are certainly less about battery electric than just as you think about some of the international markets, we continue to see opportunities there and the pipeline is robust.

I think if you come into the North American market, if you think about where we are at the cycle in some of these different businesses, if you think about trade components, we have less than 30,000 cars last year, going up to mid-40s this year. If you think about locomotive cycle, we've had zero delivery, so significant opportunities there. Even on the Services business where maybe a year ago we thought we might have hit the cap in terms of the opportunities with modernizations, we have in the pipeline some significant opportunities to continue to grow that business.

I think Digital which is really not important part of the business, we certainly see the growth internationally there. But as you ship new equipment in North America, that will also pick up on that. The other one that I want to mention is for sure Transit. In that regard, we see the opportunity to accelerate our growth in transits. And one of the reasons we see that opportunity is we continue to be very focused on making sure that we continue the turnaround, continue to improve those margins in the business. That's ultimately making us more competitive, so can go after the projects and we can win share out there. But we aim at growing really profitably that business.

Justin Long
Analyst, Stephens, Inc.

Q

Okay. Perfect. And then just last quick one, and then I'll pass it on. But when we think about the margin improvement that you outlined, it implies 50 to 60 basis points of margin improvement annually. Any way you can help us think through the pace of margin improvement in the Freight segment versus the Transit segment? Do you expect the pace of improvement to be similar? Maybe you could provide a little bit more color on a segment level.

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

A

Hey, Justin. We're not breaking out the separate segments in terms of overall margin growth. But I don't think that the growth percentages are largely dissimilar between the two segments. We got a lot of focus on them. Integration 2.0 is spread across both the Freight and the Transit segment, so not a lot of difference between the two in terms of the speed of growth.

Justin Long
Analyst, Stephens, Inc.

Q

Okay. Great. I'll leave it there. I appreciate all the time today.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Thanks, Justin.

Operator: The next question comes from Courtney Yakavonis from Morgan Stanley. Please go ahead.

Courtney Yakavonis
Analyst, Morgan Stanley & Co. LLC

Q

Great. Good morning, guys. Maybe if I can just follow up on the question about the contributors to the double-digit EPS growth, obviously, that's a open-ended range. Could you give us any maybe guardrails on whether you're thinking – what would get you to a mid-teens level versus a very low double-digit level or potentially even on the high end closer to the high-teens 20%? Just help us to understand how you're thinking about the different variables going into how big the range for double-digit EPS growth could be?

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

A

Courtney, I'm not going to provide an array of options that can happen. Certainly, with the core business, we believe we'll be at double digit and then the excess cash will be on top of that. All kinds of things could drive that to be higher or lower depending on how actual volume growth works out and the margin expansion. But we're confident that we can deliver the mid-single-digit growth, as well as the 250 to 300 basis points. And then, how the excess cash is used is just going to have to play out over time depending on the opportunities that we have in M&A or if we move more to share repurchase.

Courtney Yakavonis
Analyst, Morgan Stanley & Co. LLC

Q

Okay. Great. Thanks. And then, just on the color that you gave on the backlog increasingly significantly by 2026. Can you give us any insight into the components of that backlog, whether it's Freight versus Transit and also Aftermarket versus OE? And then, where do you feel that you have the most conviction about the incremental upside with orders that you have visibility into but haven't necessarily been converted into the backlog at this point?

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Let me start, Courtney, and maybe John can complement. But what I would say is it's good to see the strength of the pipeline out there and it's in different parts of the business. Certainly on the Equipment side, I think we see an opportunity here to grow that business. And it's not just tied to the elements of demand for new locomotives. Also, mining is in a good spot from that perspective.

If I go next into our Services business, I think the opportunity to continue to expand on especially the modernizations is certainly there. We have one now international contracts in Brazil, Australia, Egypt, Algeria. And we can continue the moment there. But even in North America, where we thought we were maybe out of cap, there's still an opportunity to potentially grow that faster. There's always going to come with really some choices in terms of between you versus mods in that context. There's a number of fleets that we're about to operate in international markets. They're out there. If you think about how our fleets grew in the international markets over the last five years, it grew in average 5% per year. So, that's a good really start in terms of some of the services really starting kicking in for some of those fleets.

I've made already the comments in terms of Freight Components and some of the opportunities there. Digital will ultimately benefit from this. But one thing we're happy to see is the momentum on Digital. We've just signed this week a significant contract, above $50 million with Indian Railways, where we're going to be monitoring their assets. So, that's a good progress on the top of a lot of the things you had heard before. And with the continued improvement on the margins for Transit, that just provides us really a better way of growing that business more profitably as we look forward.

Courtney Yakavonis
Analyst, Morgan Stanley & Co. LLC

Q

Great. Thank you.

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

A

Thank you.

Operator: Our next question comes from Chris Wetherbee from Citi. Please go ahead.

James Monigan
Analyst, Citigroup Global Markets, Inc.

Q

Hey, guys. James on for Chris. Just wanted to get a better understanding of the lifecycle revenue difference between a FLXdrive and a diesel locomotive. Are we thinking about like a 2x difference? And then also in line with that, I see that Equipment is basically at the high end of the stack for projected growth and Components are at the bottom end. Both of them are essentially pretty economically cyclical. So just wanted to understand what drove the delta between the next-gen of [indiscernible] (02:45:43) Components, just trying to get a sense.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Okay. Let me start and I'll probably ask Eric to complement here just on how we think about our products and as we develop them. But as you think about it, we see the options with battery as we introduced what are called new systems and subsystems into the locomotive, really as part of how we think about the lifecycle cost of these products. And it's not just about thinking of how are we going to introduce it, but it's over time how you guarantee the life, how you think about really innovating through that time. So, 10 years from now, you're not necessarily replacing those components with the same components that you have it out there.

We see certainly an expansion in terms of the markets that we support because a part of the fuel now becomes part of what you sell with that piece of equipment. So, think of the batteries being partially in part a large chunk of the fuel. We don't expect change necessarily in the rate of profitability in the business, but we certainly expand when you think about the absolute dollars that come with the business. But Eric?

Eric Gebhardt
Executive Vice President and Chief Technology Officer, Westinghouse Air Brake Technologies Corp.

A

Yeah. I'd add that we take a complete systems approach as we do this. So, as we're designing the battery electric locomotive, we're looking at the energy management, how do we drive that as hard as possible, how do we look at the overall locomotive with regenerative braking and such. And then, we look at the train level where we have our Trip Optimizer, the products that we would put on there to drive value for our customers. And each time we go into an outage on this and we're changing out the batteries, it's an opportunity for an upgrade at that point because the batteries will have higher energy density, higher volumetric density, and better performance at that point. So, it's going to drive tremendous value for our customers.

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

A

James, you had asked the difference between – and our array of growth drivers. Equipment was at the top and Components were at the bottom. And they're both highly connected to the cyclicality or the sensitivity to the cycle. The reason for that disparity is when we look at the Equipment business, that's being pulled forward by 2030 and all of the targets out there that our customers have for decarbonization. The only way they can get to those targets is through our products, and we would expect that to be a sustainable growth period as they deliver their targets whether that be through increased mods, Tier 4 locomotives, battery electric, or biofuels.

James Monigan
Analyst, Citigroup Global Markets, Inc.

Q

And presumably, that increase in revenue that you talked about in terms of the lifecycle might potentially lead to larger pull-through on Services versus Components as well or the lifecycle of the FLXdrive rather?

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

A

Yeah. I think that's a good way to think about it. Yes.

James Monigan
Analyst, Citigroup Global Markets, Inc. Q

Okay. Got it. Thank you.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp. A

Thank you.

Operator: The next question comes from Jerry Revich from Goldman Sachs. Please go ahead.

Jerry Revich
Analyst, Goldman Sachs & Co. LLC Q

Yes. Hi. Good morning, everyone.

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp. A

Good morning.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp. A

Hey, Jerry.

Jerry Revich
Analyst, Goldman Sachs & Co. LLC Q

I'm wondering if you could just expand on slide 94, the autonomous product stack that you folks laid out and the opportunity for Wabtec. What does that look like in terms of content per locomotive or content per system that you folks will ultimately have with your sort of suite of products on a fully autonomous basis and how does that compare today? Can you just expand on prepared remarks there and just help us understand the upside over an extended period of time? Thanks.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp. A

Let me start and we can complement here. But as you think about it, we have talked since the beginning on the opportunity to integrate more Wabtec technology into some of the products that we manufacture within the company. I think a great example of where that really comes together is when you start talking about battery electric, you now really have the opportunity to integrate all that suite of products, maximizing value for the customers really with a good understanding of how those operate and translating that into more reliability, more availability, and more ultimately value for our customers.

We continue to make progress as we spoke earlier during the merger in terms of the opportunity to expand some of the, I'll call, share of those products and some of the products that we manufacture. Of course, when you start to manufacture something new, it just provides you a greater opportunity to do that. We have expanded share in some of these products, and a piece of that is just tied to the footprint that we've had and the opportunity to actually have customers test those products and progress it. We used to talk about a number that could be north of $200,000, up to $250,000 when we're doing less than $100,000. So we have made progress on that. But I think more significant progress, you're going to see with the new products that we launch.

Eric Gebhardt
Executive Vice President and Chief Technology Officer, Westinghouse Air Brake Technologies Corp.

A

Yeah. And if I could add on to that, on that specific page, Nalin had talked about with the technology foundation, PTC, Trip Optimizer, Distributed Power, those types of things. We do have very high penetration and then with the attendant automation, we have the ability to build off of this. And we're looking at things with combining the PTC and the Trip Optimizer, linking those together to Zero-to-Zero, so we can get more mileage – miles under control for Trip Optimizer, the SmartHPT, so that we're really balancing out how that energy is used to make it even more efficient. And these are the steps that we're taking. That category is where we're going right now and then we have some of these more advanced things coming later on. So it's really layering on to this foundation that we already have. And it really creates a great opportunity for our digital products.

Jerry Revich
Analyst, Goldman Sachs & Co. LLC

Q

Okay, great. And maybe on a similar vein, when you look at the full suite of products that you folks have laid out for the customers push towards zero emissions, as we think about the order outlook five years out, what makes battery electric versus hydrogen versus biodiesel products, do you expect the locomotive order board to look like it? And I know it's going to be a wide range, but can you just help us get a feel based on what you're hearing from customers and what that mix might look like? And I didn't hear you talk about a margin headwind related to zero emissions product. So it does sound like you're able to maintain the percent margins on higher ASP. I'm wondering if you can just comment on. Did I understand that correctly from your prepared remarks? Thanks.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

So let me start with [indiscernible] (02:52:47) headwind from what I call eco-friendly products, that's not what drives it. What's driving it is ultimately just the growth you have on the Equipment business overall. With that in mind, as you think about adoption of battery electric, first, significant process since we've started talking about this. If you think about the orders we've gotten and customers are seeing the value and going to be applying this into closed loops, they're going to be looking at yards, they're going to be looking at ports.

So, there's a number of applications where this already makes sense and we're going to continue to evolve with the technology. So, more power density. You're going to be able to package more batteries, life expands, costs coming down. So think about some of those really tests expanding into broader adoption. And I think that's why we're going through it here. If you were to think about how we generally see that progressing, it generally goes with some of those units being tested, really getting a sense for how much of your operations needs to change and that's when you go into the larger orders in terms of having had the validation of how the product performs and how it suits your operations.

If you think in terms of broad adoption into a market like North America, I'd pause there because some of that's going to really have to do with the interoperability of those different trains. So, that could happen ultimately with, what I call, the hybridization of some of these products. So, think about a Tier 4 unit, that also has batteries on it. You're able to operate really seamless – in a seamless way; at the same time, you're gaining significant fuel savings as a result of that. So, there could be more of a step towards that. So, it's going to be a little bit different depending on the customers. But there's going to be adoption in some of the close loops as you think about it. And you have those in North America as well as you have them internationally.

Jerry Revich
Analyst, Goldman Sachs & Co. LLC

Q

Okay. Thanks.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Thank you.

Operator: The next question comes from Allison Poliniak from Wells Fargo. Please go ahead.

Allison Poliniak-Cusic
Analyst, Wells Fargo Securities LLC

Q

Hey, guys. Good morning. Just keeping on on the Digital Electronics piece, when you're thinking about your customers' objective, are there certain return hurdles that you need a payback period that they're asking you to drive a little bit more before it's deploying? And I guess along with that, if they're not deploying some of this technology which seems very advantageous to them, what's the primary reason that they're sort of pushing back at this point? Thanks.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Allison, I don't this is a pushback per se. It's really to what you said, the pace of adoption and how they look into while allocating their investments. But make no mistake, when you think about decarbonization with fuel efficiency, at the top, I think there is – this is the best investment you can make in terms of the returns you can generate. And certainly, with diesel now and above $4, I think there's – you're just going to see a greater sense of the economics that those products ultimately drive. And as Eric mentioned here, I think there's a whole element of how you connect some of these platforms and drive even significant – more value to customers through that process. So, I don't think there's a pushback per se. I think there's an element of pacing and we are driving value for the customers. We want to make sure we're driving value for ourselves through that process as well.

Allison Poliniak-Cusic
Analyst, Wells Fargo Securities LLC

Q

Great. And then, just going back to the margin expansion, John, you talked about some obvious headwinds with the mix there. Is there a cadence to think about that over the next five years or some of that mixed headwind more in the front half of that, the sort of the five-year plan or balanced, how should we be thinking about that?

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.

A

Over the five-year period of time, I think we're going to see it throughout the period. We talked a little bit in 2022, right? Mix will play a role in our financials in 2022 as well. So, I don't think that there's a cadence or a dip or anything. It's just a constant drumbeat as our customers replace their fleets and move toward their decarbonization goals. We should see equipment grow faster than the others.

Allison Poliniak-Cusic
Analyst, Wells Fargo Securities LLC

Q

Got it. Thank you.

Operator: The next question comes from Scott Group from Wolfe. Please go ahead.

Ivan Yi
Analyst, Wolfe Research LLC
Q

Yes. Good morning. This is Ivan Yi on for Scott Group.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

Good morning.

Ivan Yi
Analyst, Wolfe Research LLC
Q

First, can you provide a little bit more color on the size of the near-term ramp of battery electric locomotives? How big can this be by, say, 2025? Are we talking 100 locomotives, something like that? Just want to get a sense of the size.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

As I said before, I think the way to think about this is some customers are testing it now. So, by the time we deliver some of those units, you're going to be in the 2024 timeframe. I think that year is a critical year in terms of validating and testing a lot of that. So, we continue to expect orders building out of that – on that, on some of the orders you've already seen, but that's probably the year. You'll see orders really moving to what I call the hundreds in terms of a broader adoption, as you look at it. Between now and then, it's really an element of working with various customers along some of the applications I described here earlier.

Ivan Yi
Analyst, Wolfe Research LLC
Q

Great. Thank you. And my follow-up, recurring revenues are about 41% of the business. Is this growing – how big can this be in, say, five years as a percent of the mix? Thank you.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

It's – number one, I'll start, John can complement. But as I think about it, it's one of the areas of focus we have. Not – really if you think about it in terms of Software as a Service, I think that's a good example of what we've done in the digital business, what we want to see more in our business and I think we have the opportunity to do that as we're looking to more, I'll call, service-oriented revenue streams, as you're looking to more opportunities here in terms of digital and electronics.

And that's not just a function of how we grow the business organically with – we're looking at some of the business models that we can apply with customers that maybe don't see a payback on fully buying a product today when they're only going to be using it 50% of the time. So we are discussing some of those business models with them. But think about inorganically as well as we think about bolt-ons. You saw us with acquisition we did with Nordco. So that's – those are some of the opportunities to further expand on that. So I think a good goal here is to be above 50% as we continue to progress. John?

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.
A

No, I'd just point out the digital example. We went from 20% two years ago to 2021, which was at 30%. So a pretty good clip of growth there. And it's one of our core five strategies, and we've got all of our business groups focused on how we drive recurring revenue business, one, because it's a higher profit business in general.

Ivan Yi
Analyst, Wolfe Research LLC
Q

Thank you.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

Thank you.

Operator: The next question comes from Rob Wertheimer from Melius Research. Please go ahead.

Rob Wertheimer
Analyst, Melius Research LLC
Q

Hi. I have two questions on energy cost and Rafael, you just touched on this a minute ago, but what has been the reaction of your customers to the rising diesel prices and hopefully some of the dynamics are temporary but it does seem like we've entered into a different era on energy cost. And so I'm a little bit curious is it uniformly positive? I don't know what diesel price or oil price you might have embedded in the look that you're doing, but do higher oil prices structurally drive faster mods and faster replacements? That's the first question I want to call as well.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

Yeah. So, I'll start with certainly with diesel above $4. I think just the economics of shipping by rail versus trucking. I mean those are strongly going to play out more and more as you think about that. I think there is clearly the fuel advantage that we have as rail. But I want you to think about also the fuel advantage we have with our products, not just at the engine level where we're generally 4% to 5% more fuel efficient. If you think about locomotive level or at the train, by the time you add all the digital platforms, where we are like 20-plus-percent as you saw. So, I think we've got some core products here that can really help customers drive efficiency in a critical time and make no mistake some of that comes with some of the digital electronics platform, but you've seen the age of the fleet. So, investments on those fleets are paramount and are critical to take advantage of that. And I think that's why we're seeing also some robustness here in terms of the pipelines of opportunities that we're working through it. So, exciting to see from that perspective.

I think one thing to keep in mind also is rail has the advantage I think from a labor perspective, especially thinking the dynamics that are playing out in the North America market. Ultimately, I want you to think about the infrastructure advantage rail has overall. And certainly I'm not – I mean, there's some short-term things taking place right now, but if you think about longer terms in terms of how some those flows of commodities could change, I think it'll also be an element that can certainly benefit us. So, think about retrofits, the agri business or mining commodities and how they move to serve different parts of the world. We see rail really playing a key role here on that regard.

Rob Wertheimer
Analyst, Melius Research LLC

Q

Perfect. I mean, just for clarity, if oil stays at $100 and maybe we hope it doesn't, does that drive faster mods and faster replacements? Sorry. Go ahead.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

I think it drives faster growth for rail overall. Demand being there, there's certainly the need to invest on a reliable fleet. And to some extent – I mean, if we look at where we are right now, we've just gotten back to what I'll call pre-COVID levels in terms of the fleet utilization. So, as you put demand on the top of that, you're going to need a reliable fleet to be able to drive that. And that's true to North America, but that's true internationally as well. So, we're certainly looking at that.

Rob Wertheimer
Analyst, Melius Research LLC

Q

Got it. Thank you. And I apologize, on coal, it's been a long sort of slow bleed on volumes in US rail anyway and perhaps, again, importing coal from Russia and the Europe is going to change. Any change in your expectation of coal volume, either in the US or Australia, or any impact you see on that in your business? Obviously, coal price is through the roof. And I'll stop. Thank you.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

We've certainly seen coal growing this year in terms of what's being transported by Class 1s in North America. So, that's probably going to accelerate some. And there's certainly – again back to my earlier comments to think about the flows of commodities around the world and the demand [indiscernible] (03:04:45) significant potential here of those changing. And rail will benefit from that.

Rob Wertheimer
Analyst, Melius Research LLC

Q

Thank you.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Thank you.

Operator: The next question comes from Ken Hoexter from Bank of America Merrill Lynch. Please go ahead.

Ken Hoexter
Analyst, BofA Securities, Inc.

Q

Hey. Great. Good morning, Rafael, John and team. Thanks for the deep overview. Just a general question before I jump in. Are there any new KPIs out of this for the segment in terms of regular data for drivers like whether it's locomotive production or mod numbers or miles driven by locomotives or better electric numbers so that we should see going forward from this on the five year just to track to your targets or is it just the kind of top line and margin targets?

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.
A

We're not introducing any new metrics that you haven't seen already or the industry does not follow. Again, we've got a very diverse product portfolio. What we try to do is to explain each group so you understand some of the drivers within each group. But each group's got different drivers that they follow that translates into some of their growth drivers and opportunities to drive revenues forward, but nothing new that we're introducing.

Ken Hoexter
Analyst, BofA Securities, Inc.
Q

Okay. Yeah. I just ask obviously you got a lot of segments and great detail on those today, but just want to know if there was anything ongoing that we can track it. Thanks for that, John. I don't know if Rogerio is on, but you talked about the path for the FLXdrive. And so, Rafael, you talked about the delivery of [indiscernible] (03:06:22) starting in 2024. Any thoughts on kind of the cost to the railroad for those versus a Tier 4 locomotive? And I guess the math now at the end of PSR your thoughts of how the economics of modernizations of the thousands of stored locomotives versus kind of replacement, maybe what's more beneficial for Wab, do you want to see the move to modernize those or is there a cost benefit to just replacing them in scale, maybe just talk about that?

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

So, let me take it in steps here. First, when I talk about the locomotives, and orders we've gotten now are going to be mostly delivered in 2024. So, when you talk about [indiscernible] (03:07:03) the orders on 2024 being a critical year of those locomotives being tested and customers looking at ordering to us moving forward. So, I just want to clarify that. With that, we're continuing to have significant dialogue with customers in terms of testing those units and ultimately adopting them in some really, I'll call, specific routes that make sense, so that's first.

Second piece, in terms of the economics, it's going to vary quite a bit, the pricing of those units, and that's based just on how much power you put on those. So, that's why you have a big range. We call it, I think, 2 to 3 times, but those could be even 4 times as we progress here. And keep in mind that even the products that we're selling today, by the time we're delivering, you're almost into the next-gen of battery technology with the next level of power density, a different, really competitiveness elements that are going to be playing out through this. So, really want you to keep that in mind. I might have missed one piece to your question.

Ken Hoexter
Analyst, BofA Securities, Inc.
Q

You might want to share a bit the economics for our customer. They're paying 2 to 3 times the sales price...

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

Perfect.

Ken Hoexter
Analyst, BofA Securities, Inc.
Q

...why would they do that?

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

Right. I think one of the things we shared was even the tests that we did earlier on, with probably one of those units running on a [indiscernible] (03:08:27) in California, and what the customer saw there, with that specific unit that was really equipped with a little bit over 2 megawatts was at an 11% reduction in terms of fuel. So if you add to that, not the 2.4, but we're actually able to drive that on levels of 7, 8 megawatts already today, you're going to be looking at levels of 30% of fuel efficiency.

So, as you think about the paybacks on some of these routes that we've mapped, there's certainly, what I'll call double digits, so clear IRR for customers, especially as you stack that against buying potentially a Tier 4 unit. I think the challenge that might come is do you have a closed loop where you're able to maintain that fleet or you've got to make that interoperable. I think those are some of the discussions and elements that customers will need to decide.

The other piece to keep in mind, you're asking about specifics on the modernization business. That business got a compelling story. It's going to be dependent on, again, the discussion you have customer by customer, so it's very specific. There're still going to be a lot of opportunities here where Tier 4s are going to make more sense for the customers. And those are the types of discussions that Gina described here during her presentation that we're having with customers. So the economics are there. It's just which one you pick and some of those are really defined by the types of trains you have, the types of routes you're trying out to grow volume and that's a very active dialogue. I think the good news is, we have the advantage on the installed base to continue to progress and there's certainly the need to invest on, I'll call, improving that fleet as you look into the elements of growing.

Ken Hoexter Q

Analyst, BofA Securities, Inc.

Yeah. Those 30% numbers are great numbers toward their ESG goals, and they definitely are all talking about your locomotives when they highlight their outlooks. So, Rafael, I think it's kind of surprising we don't hear more from the carriers on autonomous running routes, yet the trucks are constantly pushing for that in commercialization as soon as 2024. Maybe just talk a little bit about now that you've got all the PTC investment in there and you kind of talked about linking things like fuel optimize with PTC and others, what is the path, from your point of view, towards getting to full automation or autonomous trains within the system?

Rafael O. Santana A

President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

It's – the first comment I would make is not going to be one giant leapfrog and you're going to become autonomous tomorrow. It's going to come with the continuous adoption of some of the tools that we have, which a lot of those tools will be built from, I'm going to call, fundamental platforms, foundations that we have in today. You hear about, like, Trip Optimizer, you hear about Smart HPT, LOCOTROL, those are ultimately the critical products that will enable that level of automation now, and I think there's a broader set of things to take into consideration. Certainly, technology is not going to be a bottleneck here in terms of how fast we can ultimately automate. There's going to be elements of regulation. There's going to be elements of, really, if you think about specific routes and profiles and element of risk.

But what I'll tell you is as you look at the world evolving, as you think about rail, we've got the fuel advantage, we've got labor advantage, we've got the infrastructure advantage to ultimately be able to move things in about a way. I mean if you add those pieces up, I mean just amount of productivity and efficiency you can drive through rails with existing infrastructure, I think is a significant opportunity here for us to continue to grow the share of rail in terms of commodities being moved and I think price of fuel, decarbonization, all of that just adds to that momentum.

Ken Hoexter
Analyst, BofA Securities, Inc.

Q

[indiscernible] (03:12:31) I can just squeeze one last one in. You kind of mentioned there was interest – I don't know who mentioned it earlier, but the meet/pass plans for the rails, is there something technical in Canada that's different than US when you think about inter-switching? Obviously, we're coming up on hearings at the STB. Is there a cost to enable that in the US on those kind of meet/pass systems? Is that something that can be achieved with the technology that's out there just in case we get a ruling that that kind of flows against what the rails want? I just want to understand the technical aspect of it from your point of view.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

So, two things. If you think about Canada, I think a lot of the systems and a lot of the things that were built here I think they can serve as I think a backbone to continue to expand on it. So those are certainly part of our discussions with customers and how we've continued to evolve. It's more than just, I'd say, even a North America story. I mean, we've seen that playing out into other countries where customers are looking exactly the same way. The adoption of certain systems by one railroad, how you ultimately connect it by a broader adoption so you can facilitate to a lot of the elements of interoperability. But ultimately what I'd say is we've got those critical systems. And you can build from like strong backbone where we've had, I think, a successful implementation, challenging one but successful [indiscernible] (03:13:52) Canada but if you think about Mexico and build that into other markets.

Ken Hoexter
Analyst, BofA Securities, Inc.

Q

Great. Appreciate your comments.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Thank you.

Operator: The next question comes from Matt Elkott from Cowen. Please go ahead.

Matthew Elkott
Analyst, Cowen and Company, LLC

Q

Good morning. Thank you Rafael, and I think most of the synergies you guys have gotten from the GE Transportation acquisition so far have been cost synergies because you did inherit a kind of a book of business and given the fact that the locomotive market has been non-existent in the last couple of years, I'm wondering what – if you do start getting orders for diesel locomotives in North America, is there a content-boosting opportunity from Wabtec legacy into those locomotives?

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Yes. There is. I mean if you remember I think one of the things we talked about was some of the critical components that legacy Wabtec provided to the legacy GE Transportation business. And I mean that has certainly come together so that demand will ultimately, well, mean demand for some of the products that we have core expertise in-house. So, that's a key element and just taking advantage of your question, some of those products are also products that we've taken that technology to apply to adjacent markets and we continue to expand on those adjacent markets, so I think that's another element of how you think about the industrial portfolio that we have like on the freight components business. You've heard a lot about the mining portfolio which is actually also an element of how we play in adjacency with the technology that we have in rail.

Matthew Elkott
Analyst, Cowen and Company, LLC

Q

Got it. That's helpful and then just one follow-up question. I think you guys mentioned that, correct me if I'm wrong, but 1.25x times the price of the locomotive is usually spent by the railroads in the 25 years after they first buy it on upgrades and modernizations and services. Can you give us some insight into how much of this is typically done in-house by the railroads, and how much of it by the manufacturer and is there a trend – is there is a change in trend or a historical trend, the breakout between the in-house and the manufacturer, how is that trending going forward?

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

So, that's 1.5 times. It's largely, I'd say, done with us. And let me give you an example because we've had, I think, some, I'll call, trends going on and I think the relevance is and I think what our customers are seeing more and more is I think when we do a lot of those modernizations and when we do a lot of those overhauls, I think, it comes with an outcome which translates to ultimately reliability and availability that's been greater than when done internally. I think that's – if I was to speak to any elements of at least what I've experienced and seen and heard from customers over the last four years, it's certainly that element of how ultimately I think we've been able to drive better outcomes because we're looking not just at that set of units, we're looking at a broader set of application for various customers. We're applying best practice and learnings. And if you think just about what we've done in mods, I mean this is something we've been on it for years, right? It took time to actually get to the point that you define standard processes and that you're able to really track down and drive continuous improvement in terms of the outcome you have for this product. So, I feel like we're at a mature level for these and we'll continue to drive that forward.

Matthew Elkott
Analyst, Cowen and Company, LLC

Q

Got it. Thank you.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

A

Thanks.

Operator: Your next question comes from Steve Barger from KeyBanc Capital Markets. Please go ahead.

Steve Barger
Analyst, KeyBanc Capital Markets, Inc.

Q

Hey. Good morning. On slide 116, you show the industry itself is growing 2% to 3% and you're driving 1% to 2% from long term fleet renewal. That basically gets you to the mid-single-digit organic growth. Listening to your comments today, it's clear you see a lot of opportunity, so two-part question. First, if the cycle is more of a tailwind than you anticipate and your customer uptake for new products is good, could this be high-single digit or even low-double digit organic? And then second, if that were to happen at high-single digit, it implies $12 billion in 2026 revenue, do you have the capacity for that?

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

So – go ahead, John. You start and I'll...

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.
A

Yeah. So, the underlying growth of the industry at 2% to 3%, if that grows faster, yes, we would expect that to translate to a higher overall piece of it. When we look at the – I mean fleet renewal, that's coming at us, right? And that's out through 2030 as we're renewing the oldest fleet that North America has seen at 20 years, 19 years internationally. So, the assets need to be replaced, they need to be replaced with decarbonization in mind. So that is a layer on top of it as well as some of the digital and share gains, international growth that we have. So, yes, that would translate to higher overall growth if the underlying industries were growing faster.

The second question was with regards to – I can't remember, $12 billion?

Steve Barger
Analyst, KeyBanc Capital Markets, Inc.
Q

Yeah. If it comes in – if you do grow at high-single digit organic, just running it out through 2026 based on current consensus, it implies about $12 billion in 2026 revenue. Would – if that were to happen, do you have the capacity for that or would you need to make significant investments to be able to deliver against those numbers?

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.
A

When we look at our plans and the mid-single digit, [indiscernible] (03:19:57) what our guidance is. Through mid-single digit, we have the capacity to deliver that over the next five years. Of course, Steve, we'll see bottlenecks that we have to invest in, but we don't foresee any large investments in capital to get to that capacity through mid-single digit growth over a five-year period of time.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

So, Steve, I think one of the things we've done is...

Steve Barger
Analyst, KeyBanc Capital Markets, Inc.
Q

[indiscernible] (03:20:21)

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

Go ahead.

Steve Barger
Analyst, KeyBanc Capital Markets, Inc.
Q

Sorry, go ahead.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

No, I was just going to complement. One of the things we have done certainly is, as we looked at our footprint, we made sure to also protect some critical elements here to provide us the ability to do that and support the market as we move forward. As we think about the business is number one, we're ultimately committed to continue to expand margins, to drive efficiencies, to improve the business every day. I think we've also demonstrated the commitment in terms of investing the technology. So we have the leading product, whether the customer decides to go towards new or towards mods or maintaining an existing fleet, so we continue to stay ahead of that. And if volume comes at a greater pace than what we see, I feel we're better positioned than anybody to serve this. And it's not just an element of the installations we have in North America, but also the capabilities that we've built internationally to be able to support that elsewhere.

Steve Barger
Analyst, KeyBanc Capital Markets, Inc.
Q

Understood. And then one quick one, slide 20, the Uses stack shows M&A and share buyback as the biggest box, and I know buyback will be dependent on what deals you can find, but is there a mix that you consider optimal there or do you have an internal target for wanting to add some M&A growth contribution over the target period?

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.
A

Well, Steve, we would choose M&A provided it's the right market, the right asset at the right valuation. We would certainly prefer to invest in M&A because we believe that will drive the longest or the greatest returns for our shareholders, right? And that's leveraging all the assets that Rafael just talked about and our core competencies and our facilities, our customer base and those types of things. So our preference would be for M&A. If we do not have M&A, we're not going to chase it. We will return those funds to our shareholders in the form of share repurchases and just as we did in the back half of 2021 where we repurchased $300 million of our shares.

Steve Barger
Analyst, KeyBanc Capital Markets, Inc.
Q

And just given how you think about cash generation going forward, would you theoretically engage in sizable M&A or do you prefer bolt-on?

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

So, if you think about M&A, I mean, we're certainly – if you think about our focus is number one, bolt-on. If you think about it, we would like to really see recurring revenues as a function of that, services based and also think about digital electronics. That would be the, I'm going to call, focus of the priority moving forward. With that being said, I think there's an element of us looking at opportunities that are out there, understanding the kind of returns, kind of synergies and ultimate returns we can provide to our shareholders. And those decisions are going to be based on those returns, just going back to that framework and maximizing returns to our shareholders in that process.

Steve Barger
Analyst, KeyBanc Capital Markets, Inc.
Q

Great, thank you.

Rafael O. Santana
President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.
A

Thank you.

John A. Olin
Chief Financial Officer & Executive Vice President, Westinghouse Air Brake Technologies Corp.
A

Thank you.

Operator: This concludes our question-and-answer session. I would like to turn the conference back over to Rafael Santana.

Rafael O. Santana

President, Chief Executive Officer & Director, Westinghouse Air Brake Technologies Corp.

Well, thank you. First, I just want to thank everyone here for participating on this. We feel very strong about the company we're continuing to build. We're strongly positioned with good exposure to attractive end markets. We have the installed base that really provides us here the opportunity to continue to invest in. We have been investing in technology to stay ahead. We're committed to margin expansion. We're committed to continue the cash generation you've seen. And with that, we feel very strong about being able to continue to drive long-term value creation for our shareholders. Thank you and I look forward to staying connected.