Advanced Manufacturing (ADM) Business

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- This is Shibazaki, General Manager of the Advanced Manufacturing Business Unit.
- I will cover the first half of today's presentation on our future operating policies and Hamid Zarringhalam, Corporate VP, who is managing the business unit with me will cover the second half.

Outline

1. **ADM business overview**
2. **Background of business unit establishment and future vision**
3. **Strategy and business plan**
4. **Additive Manufacturing market outlook and growth drivers**
5. **Global business development and application development**

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- Today, I would like to cover these topics.

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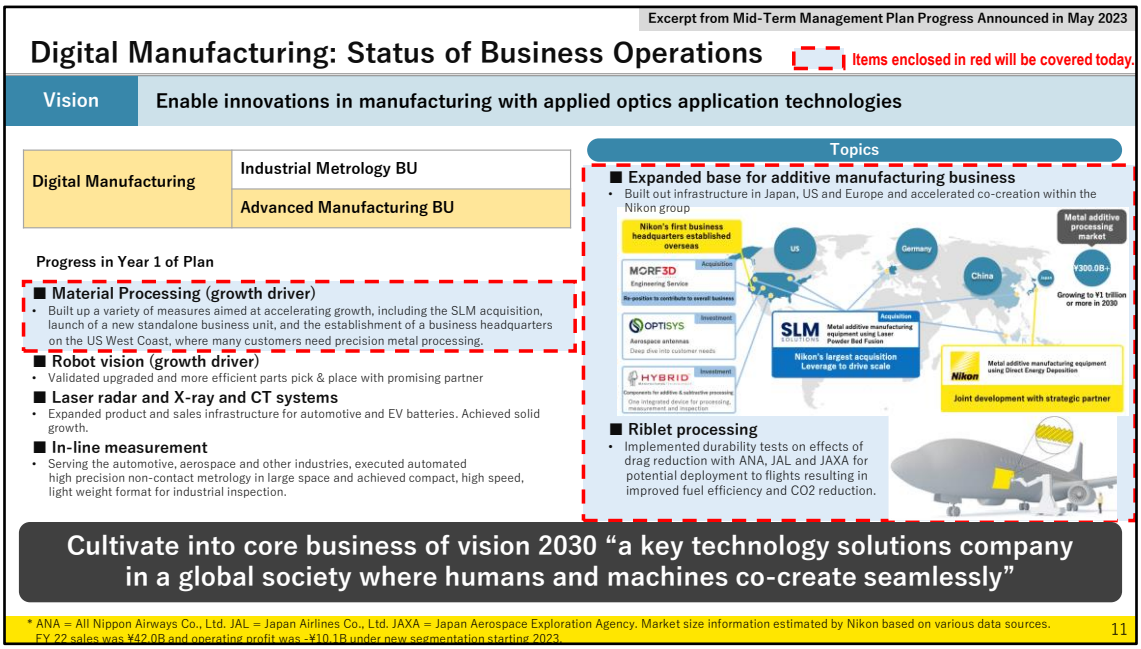
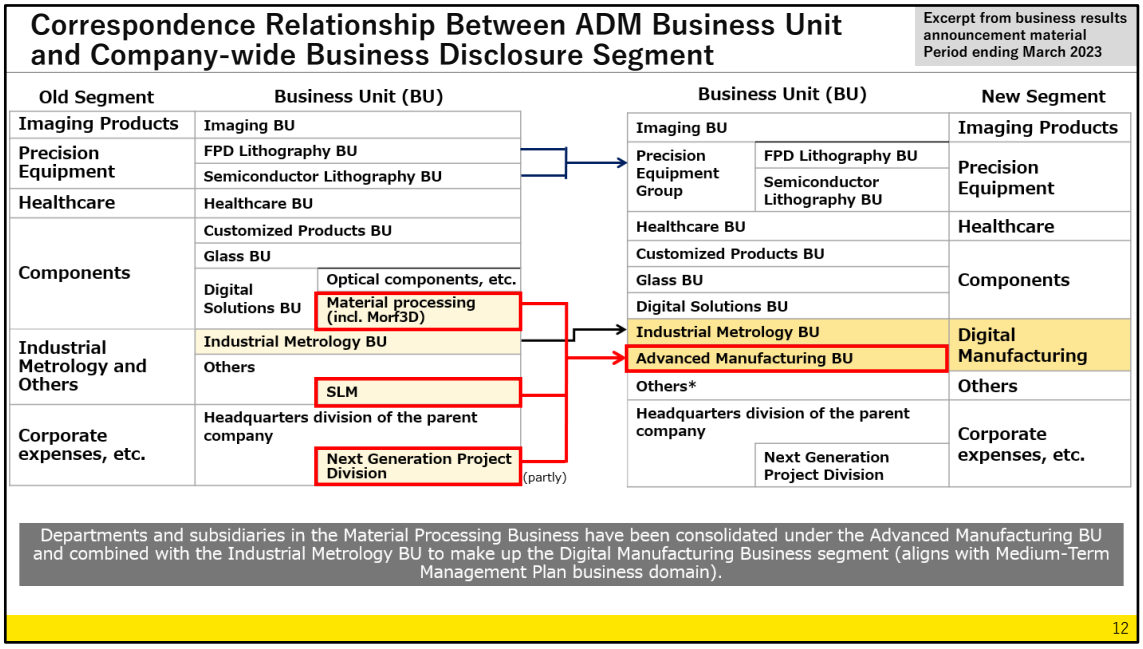
- First, I would like to start with an overview of the business unit.

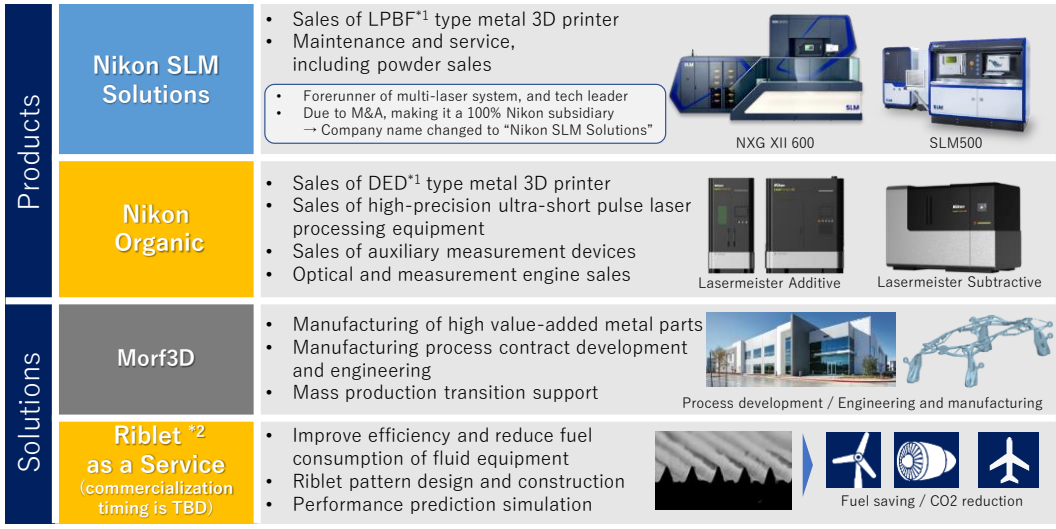


- This is a repost of the slide used in the progress report on medium-term management plan in May.
- The ADM Business Unit, along with the Industrial Metrology Business Unit, is a business unit that constitutes "Digital Manufacturing" a disclosure segment.
- Today, I will explain the items enclosed in red.



- This is also a re-posting of the reference material used when the business results were announced in May. The ADM Business Unit is a business unit made up of a group of business units mentioned in the reference material, which were spun off, and Nikon SLM Solutions Group AG (formerly SLM Solutions Group AG (hereafter “SLM”)), which is a German subsidiary that recently completed the acquisition.

ADM Business Unit: Business Portfolio and Business Description



*1) LPBF: Laser Powder Bed Fusion; DED: Directed Energy Deposition. Both are methods of metal 3D printing.
*2) The cost related to riblets is attributed to the Next Generation Project Division and is recorded to investment in growth included in corporate expenses.

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- The ADM Business Unit business domain can be divided into 2 business areas: the hardware sales business, such as metal 3D printers that are described as products, and the solution business, such as the contract manufacturing of high value-added parts.

- Products in the upper part of this slide can be divided into the company Nikon SLM Solutions, which currently accounts for a majority of business revenue, and the Nikon Organic business.

- SLM is a metal 3D printer manufacturer who is the 3rd largest in the world in terms of sales volume and boasts a highly competitive position as leader of innovation in the industry.

- Right below Nikon SLM Solutions in this slide is Nikon Organic, with sales of types of metal 3D printers and ultrashort pulse laser processing machines developed in-house that are different method provided by SLM. In the future, the plan calls for us to also work on auxiliary measurement equipment used in combination with these and the supply of optical engines and measurement engines for machines, including SLM machines.

- For Solutions businesses in the bottom part of this slide is the company Morf3D, a company that Nikon acquired in 2021. Morf3D develops 3D printing processes for high value-added parts for the aerospace and defense industry, and is also working on small-scale part production. In the future, we plan to link this to SLM and Nikon equipment to expand equipment sales during the transition to mass production.

- In addition, we are aiming to start up riblet processing, microfabrication of shark-skin-like patterns, as a solutions business. We are currently considering the timing of commercialization, but we will work on improving the efficiency of airplanes and wind power generation as a business that can make positive contributions to the global environment.

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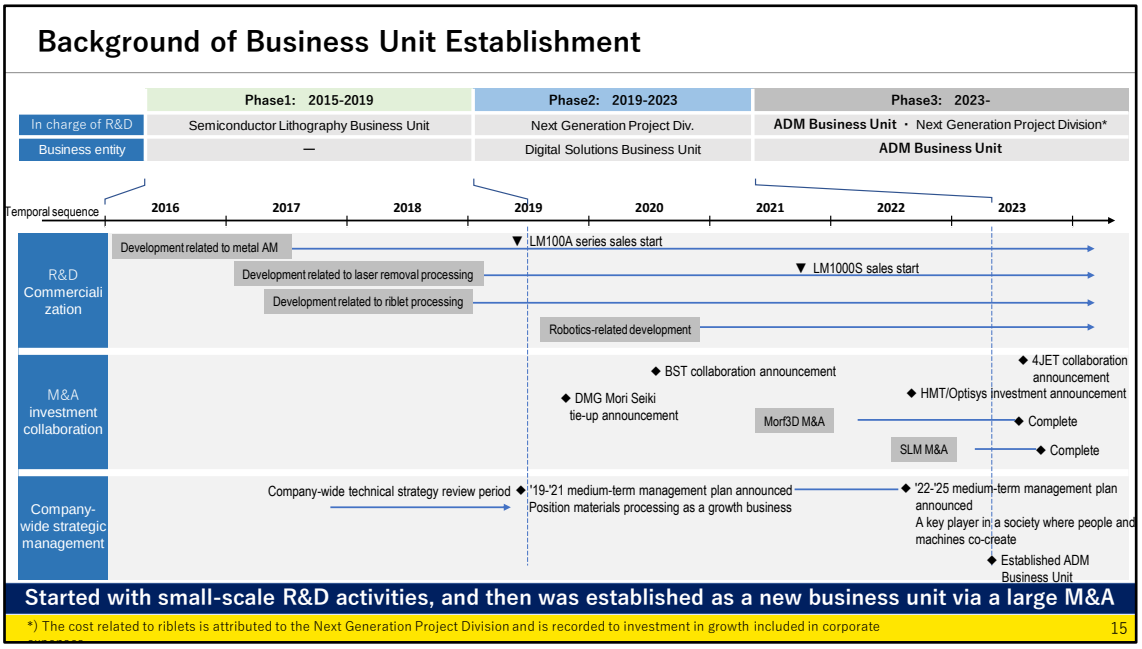
- Here, I would like to explain how and why we entered this business as well as our future goals.

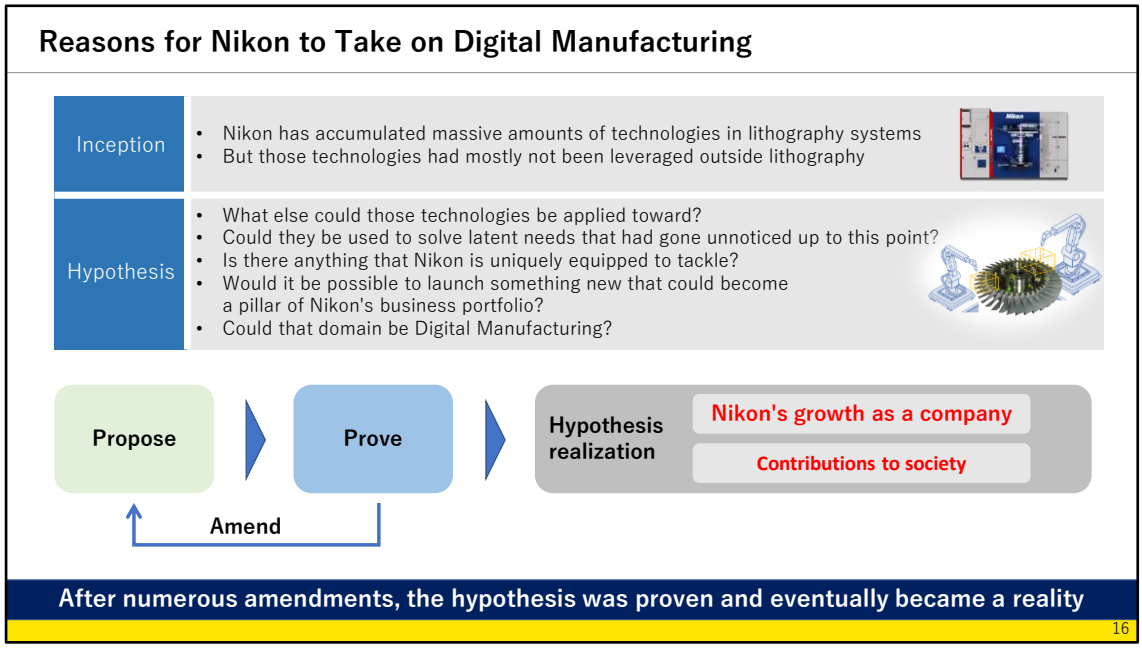


- The beginning of the project goes back to the time when I was the Sector Manager of the Development Sector in the Semiconductor Equipment Division, and I started small-scale activities to explore new businesses.

- After that, we commercialized the first product in 2019, the DED-type small metal 3D printer Lasermeister 100A.

- At the same time, the material processing and digital manufacturing businesses were positioned as growth businesses in the company-wide medium-term management plan.

- Then last year, we announced the acquisition of SLM, a leading metal 3D printer company in Germany, in order to significantly scale up our business. On April 1 of this year, a new business unit, the ADM Business Unit, was launched, and on September 1, SLM was made a wholly owned subsidiary.



- Why is Nikon engaged in digital manufacturing? We are often asked this question.
- The original idea was simply asking in the semiconductor lithography business, which was going through a difficult time, "Is it possible to apply this vast accumulation of technology to fields other than lithography systems and grow a new business?“
- A lithography system is also a machine tool that uses light to perform fine processing on the wafer. So, I wondered if as an extension of this, whether we could make other groundbreaking applications that would bring about major social changes.
- That is the background of our involvement in digital manufacturing.
- However, that alone will lead to a so-called product-out failure pattern.
- We will verify this hypothesis we established on a daily basis through various activities, including dialogue with customers, and repeatedly revise it as necessary. Through this cycle of revision, we aim to grow as a Nikon company and contribute to society by providing value by solving potential needs that have not been noticed in the world.

ADM Business Unit Vision and Aspirations for 2030

ADM Business Unit vision

- Create new markets and industries for manufacturing
- Build a high-growth businesses utilizing Nikon's internal business and technology synergies
- Through digital manufacturing, promote fundamental solutions for personnel-dependent and location-dependent manufacturing
- Through riblet pattern technology, contribute to reducing energy consumption and CO2 emissions

Vision for 2030: Revolutionize the world of manufacturing through optical application technology

- Establish a solid position as a manufacturer using "optical processing machines and solutions" and grow it into one of the pillars of Nikon business
- Applications that are only possible with optical processing machines are being realized one after another
- Optical processing machines have become widespread as tools for machining, and are used in every situation as a matter of course
- Riblet processing * for fluid machinery has been put to practical use in multiple fields, and it has become a major business as a processing service

(Optical processing machine: A generic name at Nikon for processing equipment that applies optical characteristics, such as 3D printers and ultrashort pulsed laser processing machines)

*) The cost related to riblets is attributed to the Next Generation Project Division and is recorded to investment in growth included in corporate expenses.

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- This slide is a verbalization and summary of the vision of the ADM Business Unit and our aspirations for 2030.
- Although I will not read it aloud here, when I am in doubt during my daily business operations, I always try to return to this starting point and not lose sight of my goals.

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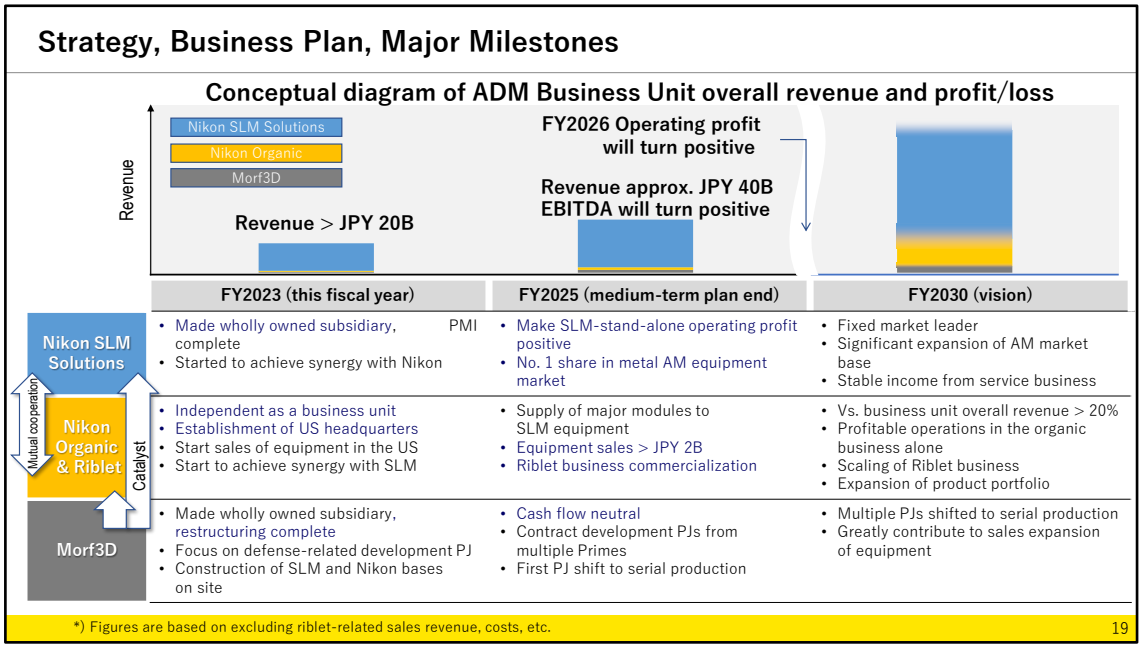
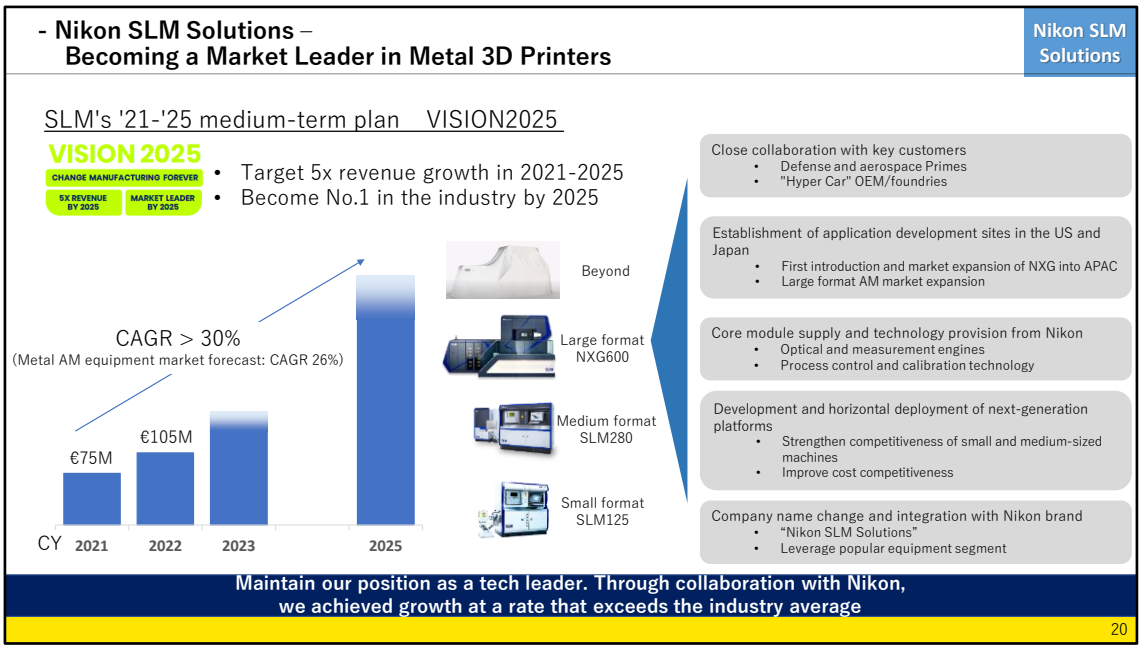
- Next, I will explain our strategies and business plans for realizing the vision just described.

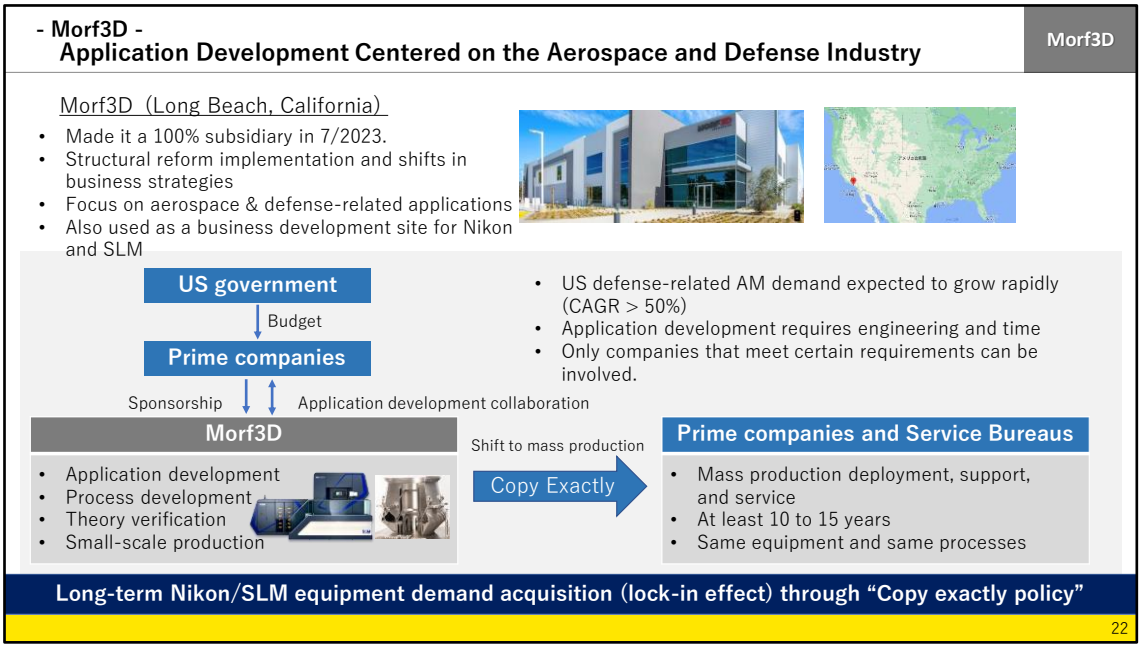


- This slide is a summary of our strategy, business plan, and major milestones looking ahead to 2030.
- The bar graph above shows an overview and breakdown of sales for this fiscal year, for FY2025 when the current medium-term plan ends, and for FY2030.
- As you can see, during the current medium-term plan period, SLM will account for most of the ADM Business Unit's sales. For FY2030, we envision growth of non-SLM sales ratio to about 20%.
- Sales for this fiscal year are several billion JPY less than the initial plan, but they are expected to be more than JPY 20B. In FY2025, we plan to double that amount to at least JPY 40B. At the same time, we are aiming to return to profitability on an EBITDA basis as well at this point. For the entire business unit, we plan to return to profitability in operating income, including amortization of acquisition costs, by FY2026, one year later.
- We'll go into more detail on our strategy by subsegment later on in the slide deck, but we'd like to touch on some key milestones here.
- First, regarding SLM stand-alone, we are aiming for No. 1 share in metal 3D printers, with both EBITDA and operating income in the black at the end of the FY2025 medium-term plan.
- In Nikon Organic business, we aim to achieve sales of JPY 2B by FY2025. We are also working on commercializing riblet processing.
- The plan for Morf3D is to complete restructuring and achieve cash neutrality in FY2025.



- I will explain the details for each subsegment.
- In 2021, SLM announced VISION 2025, a unique medium-term plan that aims to achieve 5 times higher sales and a ranking of No.1 in market share in 5 years, significantly exceeding the industry's CAGR of 26%.
- Sales continued to expand, reaching EUR 75M in 2021 and EUR 105M in 2022, and they are on track. Even after the M&A is completed, Nikon will continue to follow this ambitious plan and provide strong support as the parent company.
- I will explain the measures to achieve this.
- We will continue to collaborate closely with customers who have large use case applications such as Aerospace, Defense, and Hyper Car, and further expand sales of NXG XII 600, a metal 3D printer model that can produce large parts and has high profit margins.
- We will also establish application development bases in the United States and Japan to accelerate the acquisition of market opportunities.
- In the R&D field, specific collaboration and joint development are already underway, including the provision of optical and measurement engines, process control, and calibration technology from Nikon.
- In the highly competitive small and medium-sized machine segment, we plan to introduce a next-generation platform and expand it horizontally to different models to strengthen our price competitiveness.
- In addition, we have adopted a company name leading off with Nikon—Nikon SLM Solutions—and we plan to use this synergy to expand sales, especially in the popular machine segment.

- In Nikon Organic areas other than SLM, sales have traditionally been limited to Japan, but we are aiming to sell our equipment overseas, including in the United States. Leveraging collaboration with SLM, we plan to increase equipment sales to over JPY 2B during the medium-term plan period.
- Following the Lasermeister 100A series and 1000S, which are already being sold, we are planning to introduce equipment and solutions that realize automatic repair of turbine blades, etc., and ground-breaking DED-type metal 3D printers that achieve both high productivity and high resolution.
- Regarding application development and sales expansion for these devices, we will utilize SLM's customer base, collaborate on marketing, and utilize US bases.
- We aim to commercialize microfabrication businesses such as riblet processing, including shark-skin-like patterns, in FY2025.
- The envisioned business format is “Riblet as a Service”, a service that undertakes performance improvement, and the main application is assumed to be commercial aircraft.



- Lastly, I would like to explain about Morf3D, which became a subsidiary through M&A in 2021. Although we recorded an impairment loss of JPY 3.9B in the previous fiscal year's results, we expect to continue to be in the red for the time being as restructuring costs continue to mount this fiscal year.

- The plan is to narrow down our business areas to aerospace and defense-related development projects, which can be regarded as the large use case application for additive processing using metal 3D printers, and position this development project as a catalyst for expanding sales of SLM and Nikon equipment going forward.

- Demand for U.S. defense-related additive manufacturing is expected to grow rapidly at a CAGR of 50%, making this a very promising field.

- Although it takes a long time for one development program to move to mass production, once a process is locked, thereafter, factories produce the same devices through the same processes by applying a so-called “Copy Exactly” policy.

- By introducing SLM equipment into this development process from an early stage, we will aim to achieve recurring effects.

- The plan is to share Morf3D's facilities in Long Beach, CA as the U.S. base of the ADM Business Unit and SLM, and to use them for business development and application development.

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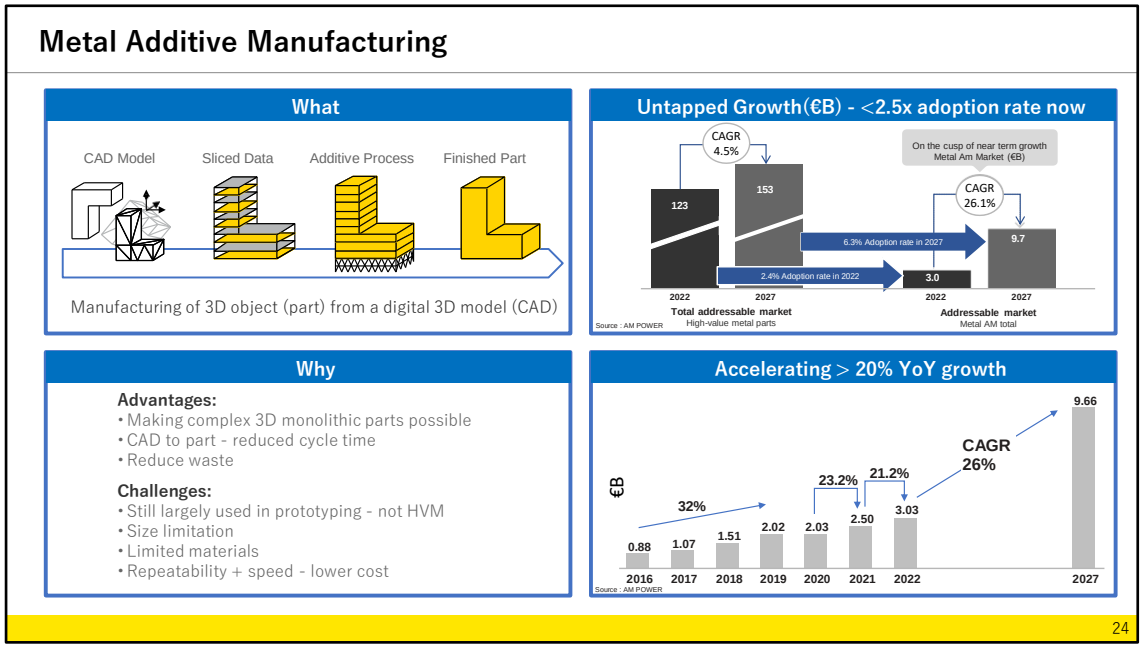
- We will now ask Corporate Vice President Hamid Zarringhalam to give a more in-depth explanation of the prospects for the Additive Manufacturing market and its growth drivers.



- As metal Additive Manufacturing (hereafter “metal AM”) is a significant part of our Digital Manufacturing initiative, I want to spend a couple of minutes to briefly explain what it is and why we think it is an attractive growth area for us.

- Simply put, metal AM or 3D printing is the process of producing metal parts directly from 3D model data like CAD, layer by layer by selectively melting powder particles using locally directed energy like from laser. This compares to conventional means which date back thousands of years like casting or forging.

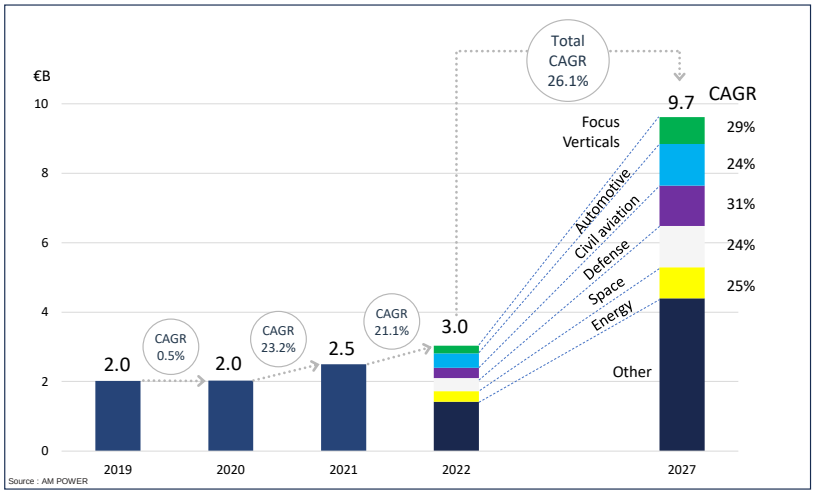
- Using metal AM, give us the potential to make complex parts that are difficult or sometimes impossible or expensive to make in a monolithic manner. It gives us freedom of design , often resulting in lighter, more sturdy parts, reducing waste, carbon footprint and cycle time.

- The challenges here are that while metal AM has large adoption in prototyping, it is not widely proliferated yet in High Volume Manufacturing. The industry has required continued innovations to address challenges in increasing size of parts that can be printed, wider availability of alloys suitable for metal AM in addition to improvements in productivity and repeatability which would create cost and quality parity with conventional methods.

- And therein lies the opportunity that we see in metal AM. Despite rapid innovations over the several years, adoption rate is still less than 2.5% - but given the pace of innovation in all the areas I cited, it is expected that this adoption will nearly triple in the next 5 years.

- Between 2016 and just before the pandemic, we saw CAGR of 32%. This growth resumed after the pandemic and the industry now expects CAGR to increase to 26% over the next 5 years, tripling growth in.

Metal AM Market Growth and Verticals



- We are focused on the fastest growing segments of an already growing market
- These segments require ultra large, high precision and very high productivity
- Our technology roadmap and portfolio matches our customer requirements

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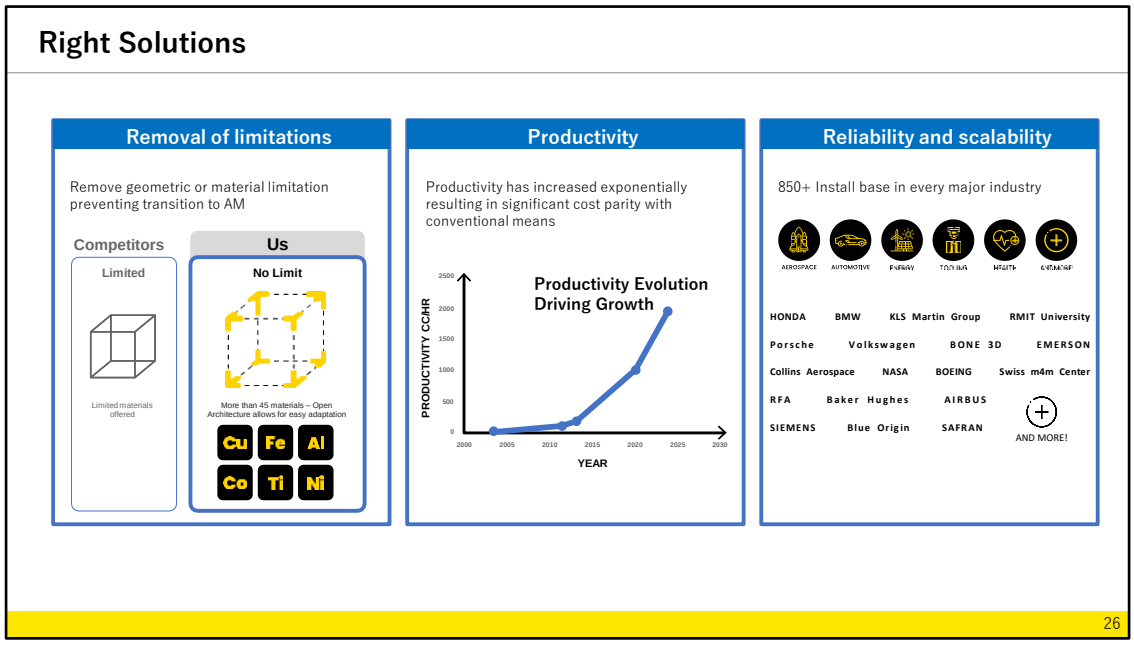
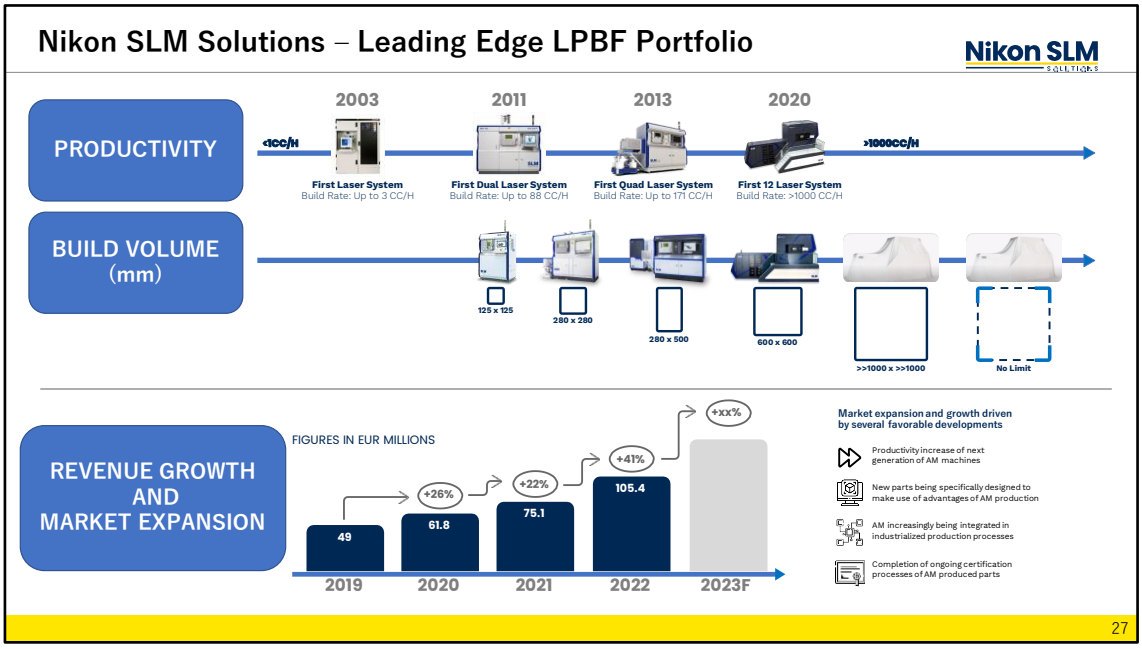
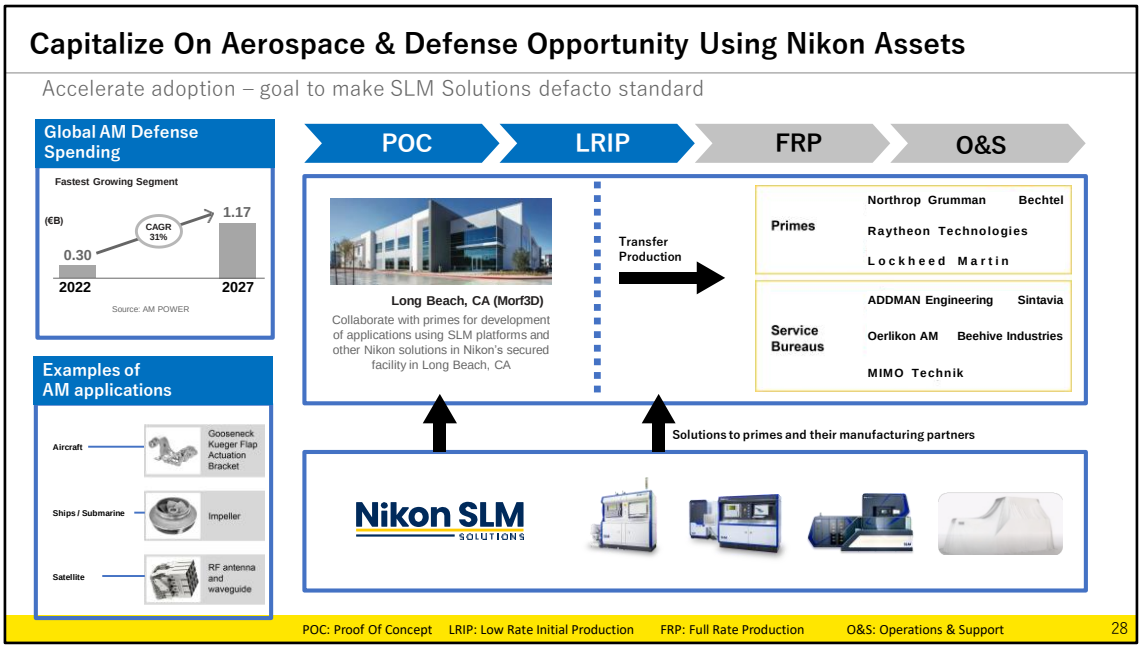
- While the entire market is growing rapidly, we are concentrating our efforts on the fastest growing segments and I will later show how we are serving these markets.
- The particular segments of aerospace, defense and automotive have been some of the adopters of this technology and they are expected to be at the forefront of both technology and demand and you can see their expected growth in this chart.
- Laser Powder Bed Fusion or LPBF is by far the largest and most widely used technology in metal AM – and as you know, last year, we acquired SLM, a global leader in this field.
- The common requirement from these segments is maximizing the build chamber to enable the largest possible parts that can be made in X, Y and especially Z direction while maintaining high precision and dramatic increase in productivity.



- I would like to show you now how we are addressing some of the fundamental challenges.
- First, we have continued to take size beyond metal AM limits – our latest machine NXG XII 600 which is already in production at several customer sites allow us to print 600 x 600 x 600mm now with 1m and 1.5m in z axis extensions already announced.
- We will continue to remove any geometric limitation so we can remove barriers for transition from traditional manufacturing to metal AM.
- We have made our machines work with variety of materials and in fact material innovation and collaboration in that arena is of our core focus areas.
- We have continued to press hard on productivity – we have the industry's first 12 laser system which has allowed us to improve productivity by a factor of 6 to date and with our innovations in the pipelines, we much more headroom.
- We are also addressing reliability and scalability by having had a large installed base to date - we have 850+ machines working in some of the world's largest companies, producing some of the world's most demanding applications.



- Here is the evolution of our story over time addressing the limitations of size and productivity through relentless commitment to innovation.
- As we have done so, our revenues have grown at a faster pace than the overall market and expect that to continue.
- As a shared commitment to technology and innovation between Nikon and SLM, we will continue to unlock the potential of metal AM and have already announced and shared with customers our future offerings that are already under development.



- I now want to spend some time talking about one of the fastest growing segments in metal AM, how we are uniquely positioned to capitalize it.
- Aerospace & Defense is one of the fastest growing segments and is growing faster than the overall market.
- The 3 most applicable metal AM segments in defense industry, we believe are Aircraft, Ships/Submarine and Satellite.
- We are indeed well positioned in these segments because we are on the cutting edge of what these segments need – size, productivity and scale.
- Our goal is simple – if it is metal and can be printed in LPBF, we want to see Nikon SLM Solutions as the de facto standard platform.
- We have our 90K facility in Long Beach, CA which is built to have the latest technology as well as the ability to collaborate with our customers for high value parts in an ultra secure setting that our customers uniquely require.
- We will work with our prime customers and their customers very closely to optimize design for metal AM manufacturing in POC (Proof Of Concept) and LRIP (Low Rate Initial Production) which can either continue or be transferred to a production facility of their choice for FRP (Full Rate Production), whether that is in house or a 3rd party service provider – in this way, we will have collaborations across several important sectors in this space.
- The intent is when design is fixed, it will be then produced on SLM tools in manufacturing.
- Through this collaboration and comfort, we believe we can even collaborate further with our customers for other applications.

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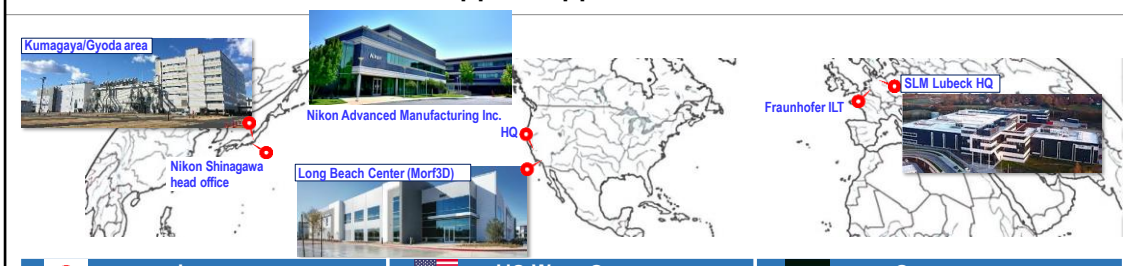
Global Presence – BD, Demo, Apps, Support



Japan	US West Coast	Germany
Kumagaya/Gyoda area • R&D overall (element development, product design) • Japan application development center (Latest technology including NXG - customer application development.)	**Nikon Advanced Manufacturing Inc. HQ** • Global headquarters of Nikon Advanced Manufacturing • Strategy, governance, management	**Nikon SLM Solutions Lubeck HQ** • R&D overall/product manufacturing/QA • Application development center • Other headquarters functions
Nikon Shinagawa head office • Sales and Marketing in Japan • Manufacturing/QA	**Long Beach Center (Morf3D)** • U.S. ultra secure facility • SLM/Nikon application development center including demo • Business Development, engineering and customer support	**Fraunhofer ILT** • Nikon DED equipment exhibit demonstrations/customer development • Application development • Joint technology development

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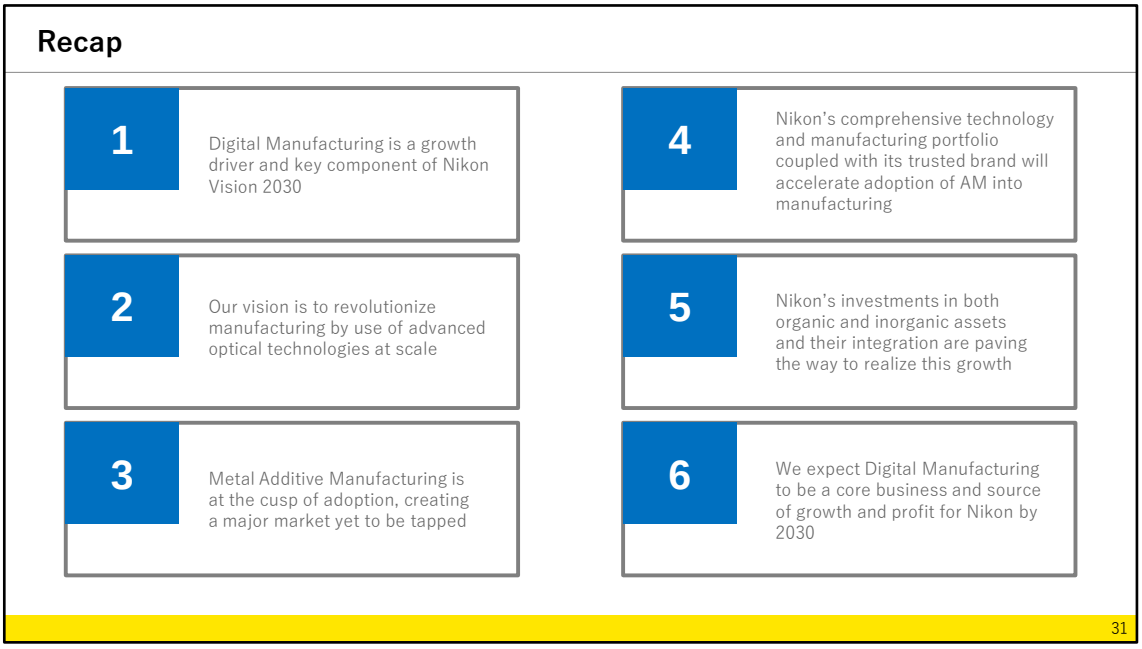
- Metal AM adoption for manufacturing will be taking place at a global level.
- Customers are looking for companies who have the strength, commitment and global footprint and scale who they can count on long term for their manufacturing needs.
- Nikon as a company with more than 100 years of being a trusting global partner is such a partner and we are betting on this market.
- We have already established California as the global HQ of Nikon Advanced Manufacturing (ADM) Business Unit so that we can be close to customers at the cutting edge – this is the first time in Nikon history that global HQ of a unit is outside Japan.
- We also have or soon will have deep global presence for demo and application centers in Japan and Germany as well as our ultra secure facility in Long Beach, CA.
- This footprint allows us to work closely with our customers and meet their needs around the world at scale.



- I will now re-cap our vision for Digital Manufacturing.
- As stated publicly, Digital Manufacturing is a growth driver and a key component of our Vision 2030.
- We intend to utilize our immense capabilities in advanced Opto-mechatronics and precision equipment to revolutionize metal manufacturing.
- It is the right time because the market is on the cusp of adoption which can be accelerated by innovations that Nikon has a long track record for.
- That in turn will unlock a large yet to be tapped market.
- We have been investing in both organic and inorganic assets to not only have a full complement of products and solutions but also accelerate adoption.
- This will then allow us to realize our stated objective of creating a new source of growth and earnings for Nikon by 2030.