

Manufacturing Solutions Business Strategy

June 10, 2021

Seiko Epson Corporation
Manufacturing Solutions
Operations Division

■ Disclaimer regarding forward-looking statements

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■ Note regarding business profit

Business profit is calculated by deducting cost of sales and SGA expenses from revenue. Although not defined in the statement of consolidated comprehensive income, this indicator is very similar to the concept of operating income under J-GAAP. Epson will present this information as a reference, as the Company believes users of financial statements will find it useful when evaluating Epson's financial performance.

■ Numerical values presented herein

Numbers are rounded down to the unit indicated. Percentages are rounded off to one decimal place. Years mentioned in these materials are fiscal years unless otherwise indicated.

1. Goals

- (1) Achieving the Epson 25 Renewed Corporate Vision
(announced in March 2021)
 - (2) Manufacturing innovation
-

2. Growth strategy

- (1) Market size
 - (2) Epson's strengths
 - (3) Issues and actions
 - (4) Financial targets
-

3. Examples of initiatives

- This is today's agenda.
- First, I'm going to talk about the goals of the manufacturing solutions business. After that, I will explain the growth strategy. I will end with specific examples of initiatives being pursued.

1. Goals

- (1) Achieving the Epson 25 Renewed Corporate Vision (announced in March 2021)
- (2) Manufacturing innovation

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- Before begin talking about the goals of manufacturing innovation, though, I want to go over the Epson 25 Renewed corporate vision, which was announced in March of this year.

Achieving sustainability and enriching communities



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Corporate vision
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Market size
Strengths and Growth strategy
Issues and actions
Financial targets
Examples of initiatives

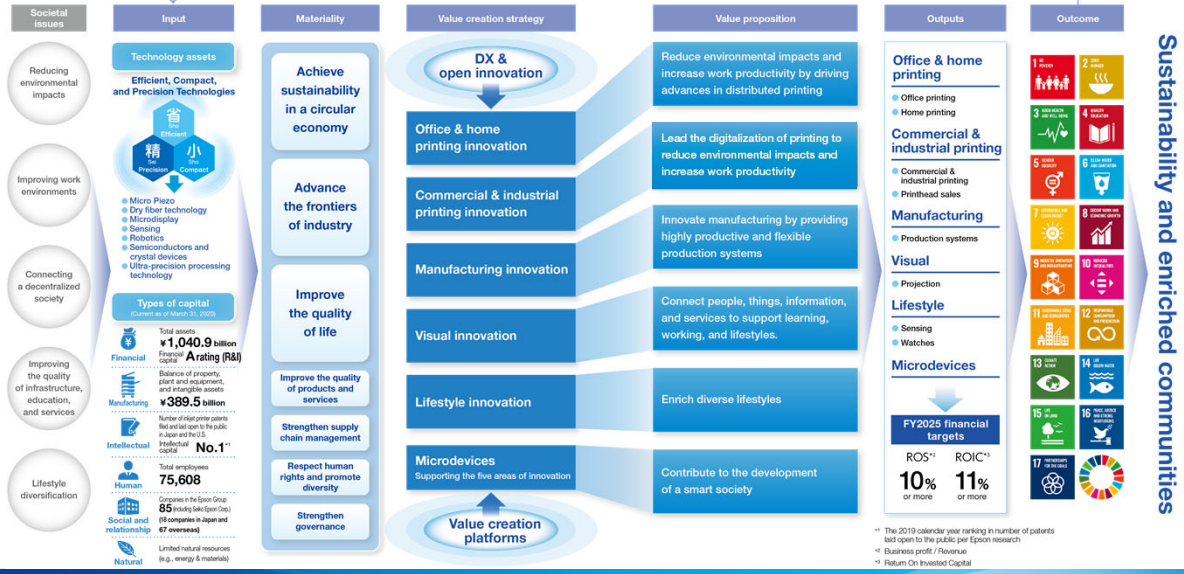
- We aspire to achieving sustainability and enriching communities.
- Sustainability is a fundamental requirement for enriching the rest of the world and the global environment.
- That's why we at Epson let societal issues and customer expectations direct our actions.
I want us to approach the development of our business by asking ourselves what we can do to solve these issues and in what way we can contribute to society.

Value creation story

2050 Environmental Vision 2050

2030 SDGs

2025 Epson 25 Renewed



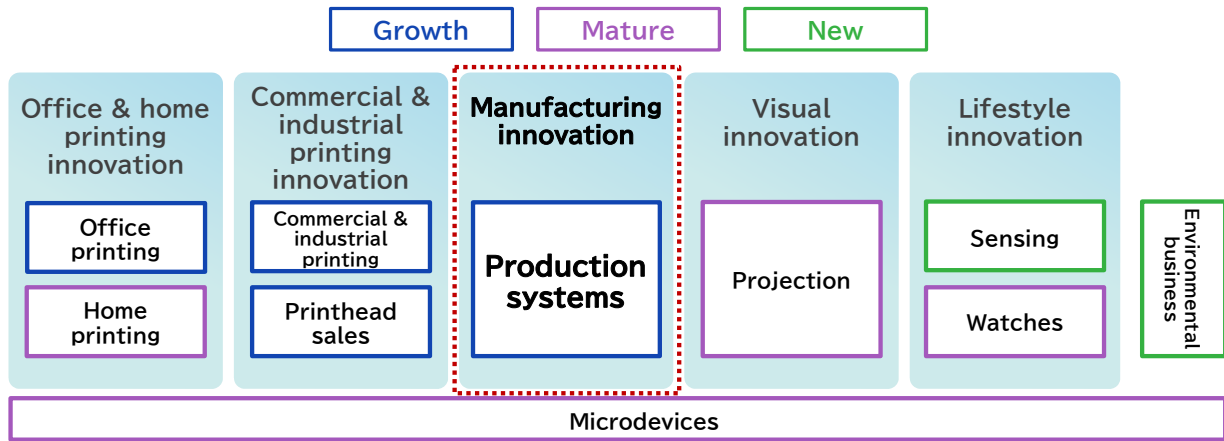
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- When we renewed Epson 25, we also amended the value creation story.
- We have identified certain materialities, or important issues, that Epson should help to solve. These include societal issues such as high environmental impacts and labor shortages.
- Achieving sustainability in a circular economy, advancing the frontiers of industry, and improving the quality of life are seen as key materialities.

Positioning of manufacturing innovation

- Positioned as a **growth area** in our business portfolio to achieve the goals of our Epson 25 Renewed Corporate Vision
- We will invest and spend in the near term to ensure we take advantage of the significant growth potential



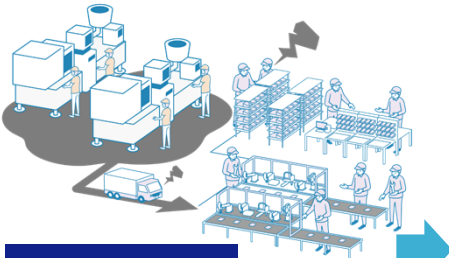
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- We have identified five areas where we will drive innovation to address these issues.
- In the manufacturing solutions business, we want to provide innovative production systems that contribute to sustainability and enrich communities.
- Manufacturing solutions is an area with a lot of growth potential, so we will be allocating more management resources, including human resources, to this area for the time being.

Manufacturing innovation

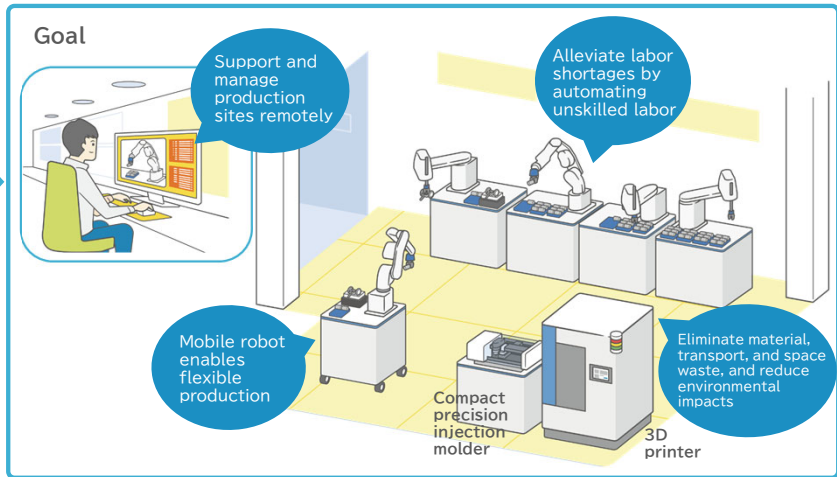
Innovate manufacturing by co-creating flexible high-throughput production systems that reduce environmental impacts

-  Achieve sustainability in a circular economy
-  Advance the frontiers of industry
-  Improve quality of life



Value proposition

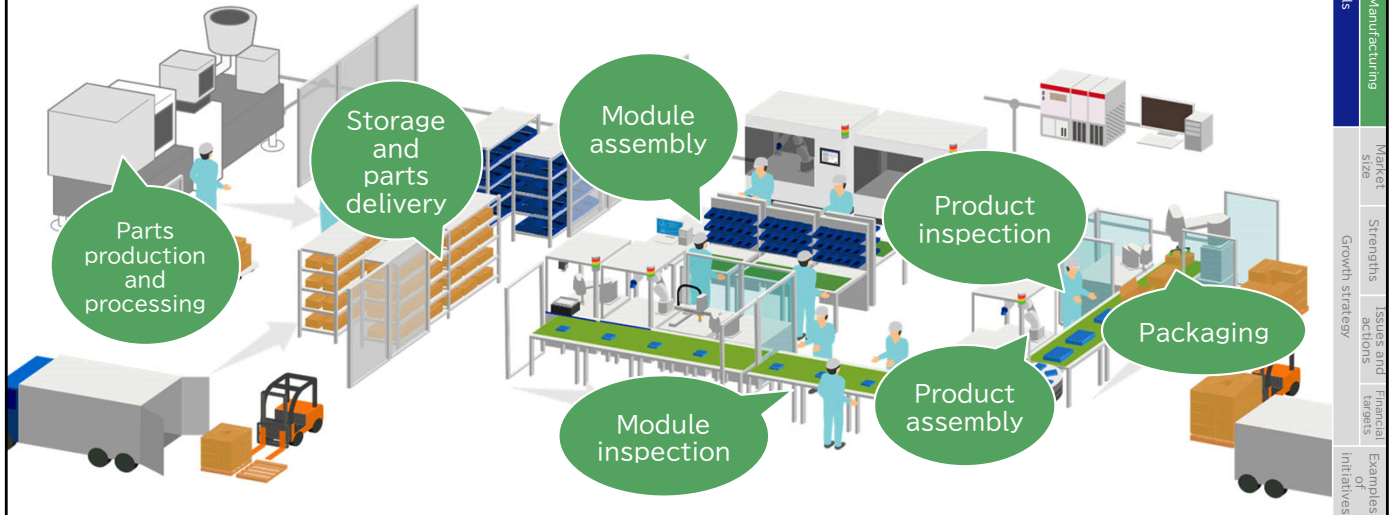
- Accommodate low volume, high mix production
- Alleviate labor shortages
- Distributed production, and local production for local consumption
- Reduce environmental impacts and close the resource loop
- Save space
- Reduce burden for system building



- This slide depicts our manufacturing innovation goals.
- As is indicated on the top of the slide, the goal is to innovate manufacturing by co-creating flexible, high-throughput production systems that reduce environmental impacts.
- I will explain the reasons for setting this vision on slides that follow.

Typical factory process flow

- ▶ Most products are delivered to customers after going through a variety of processes
- ▶ Factories operate with many types of industrial equipment

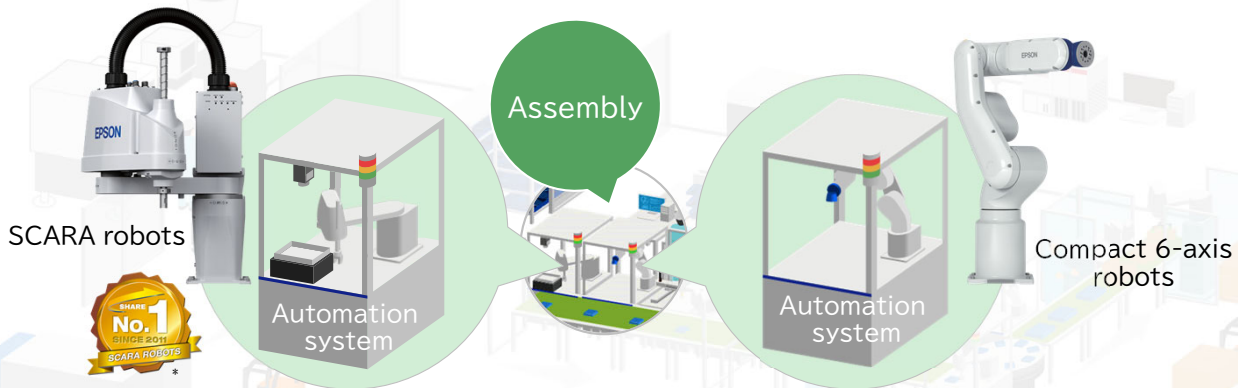


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- First, let's examine the typical flow of work in a factory to give you a better idea about what goes on at a manufacturing site.
- Most products go through a variety of factory processes before being delivered to customers. Typically, many different types of parts are produced, transported, and assembled to create finished products that are then inspected and packaged.
- Manufacturing is supported by countless industrial equipment and people.

Main focus area: Previously

- ▶ Robots are important equipment often incorporated in automated systems used in assembly processes
- ▶ Epson owns the top share* of the global market for SCARA robots



*Epson was No. 1 in industrial SCARA robot unit shipments from 2011 through 2020.
(Source: Fuji Keizai "2012-2021 Worldwide Robot Market and Future Outlook").

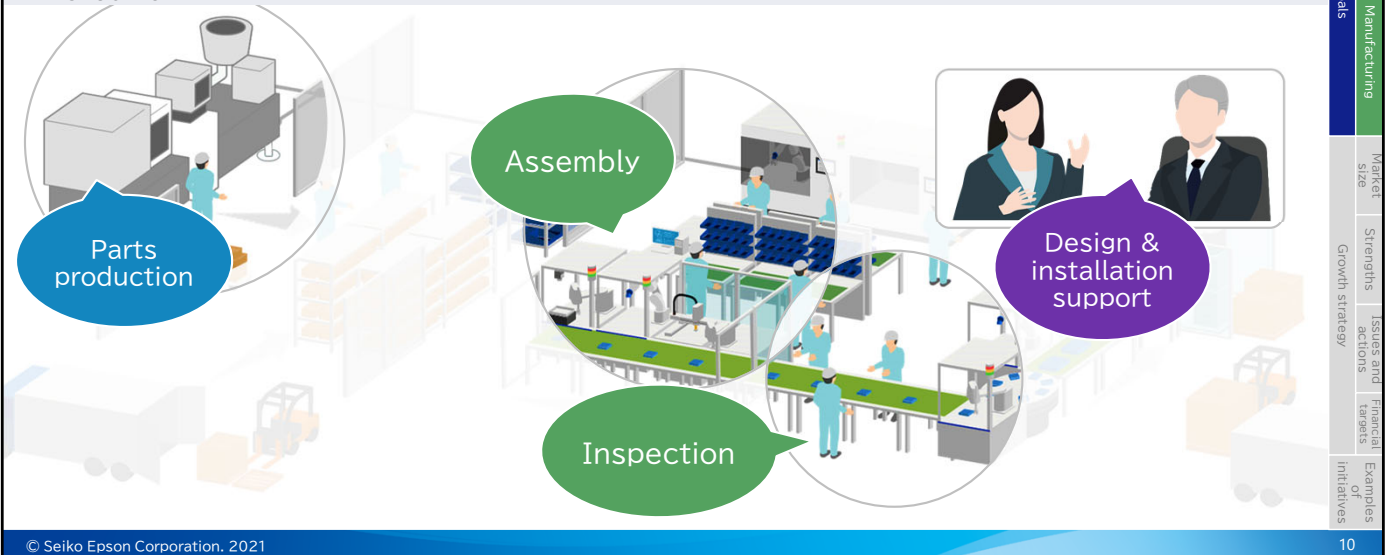
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- Automated systems are used in the assembly processes in such a factory flow.
- A robot is usually at the heart of these systems, which also included various other units in different combinations in order to transfer and assemble parts and perform other tasks.
- Epson has been producing and selling such robots since 1983.
- Our SCARA robots, which we use in watch assembly, perform high-precision tasks at high speed. They have earned a reputation for excellence the manufacture of small products making Epson the global market share leader in this category of robots.

Main focus area: Current and future

- ▶ Expand into parts production and inspection processes in addition to the current assembly business
- ▶ Build new business around design and installation support, including production line creation



- With so many robots in the field, we have many customer touchpoints that we can leverage along with our technological capabilities to expand our target markets.
- In addition to assembly processes, we are targeting expansion in the inspection and parts production processes.
- We changed the name of our wholly owned subsidiary Shinko Sellbic to Epson TcForm Corporation on June 1st. This is an important part of our strategy to expand robot sales in parts production processes. The management of Epson TcForm will be further integrated with Epson. We intend to make serious inroads in the parts production market primarily by leveraging the strength of compact injection molding machines produced by Epson TcForm.
- In addition, we will build a business around design and installation support. When factory managers build a production line that integrates robots, they expect more than just the delivery of robots. They expect to receive the design ideas and support they will need to transform manufacturing itself.
- So, in addition to driving advances in compact injection molding machines and compact robots used in parts production, assembly, and inspection processes, we intend to assist our customers with total design and installation support.

Customer expectations

- ▶ Customers are seeking factory innovations that allow them to respond to things such as environmental issues and changes in consumer trends

Parts production



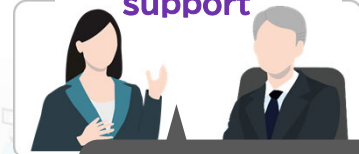
Mitigate environmental impacts while also improving economic feasibility

Assembly & inspection



Flexibly and stably produce high-quality products

Design & installation support



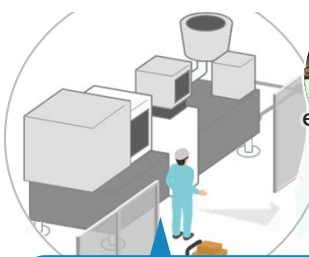
Introduce new processes quickly and with minimal investment

- Before talking about the actions we are taking in these three priority areas, I want to explain the expectations of customers in each. Factory managers are seen as our main customer.
- For assembly and inspection, factory managers want to produce high-quality products flexibly and stably, since these processes have a substantial impact on the quality and cost of the final products shipped. On the other hand, many tasks are performed by hand and are difficult, causing workers to leave or avoid factory jobs altogether. In addition, factories need to keep production going even in a pandemic or natural disaster.
- Next, let's consider parts production. It is still very common for manufacturers to use large machines to produce even small plastic parts. Large injection molding machines use large molds and have long paths through which the resin material must pass, resulting in the use of more plastic material than is necessary. Most large machines also consume a lot of power. Customers want to reduce these environmental impacts while ensuring economic feasibility.
- So, factories require transformative innovation, but it is not easy for customers to install new processes. Customers have a variety of concerns. For example, they may wonder who to consult or whether they can introduce new processes with a small investment. They may worry that installing a new process might take too much time. Factory managers can consult system integrators who design and manufacture systems. But if the system integrator has no experience of developing the process, it may be necessary to develop technology from scratch. This would make the construction period longer and increase costs.
- We have strong technical capabilities and experience automating our own factories, so together with system integrators and other partners, we can be a one-stop consultant to meet customers' expectations when implementing a factory transformation.

What Epson provides

- ▶ Mitigate environmental impacts, improve work environments, and respond to diverse customer needs

Parts production



Parts production with lower environmental impact

Molding machines that reduce material, electricity, transport, and space waste



Reducing environmental impacts

Assembly & inspection



Highly flexible and productive production systems

Versatile robots, peripheral equipment, and software that automate manual tasks



Improving work environments

Design & installation support



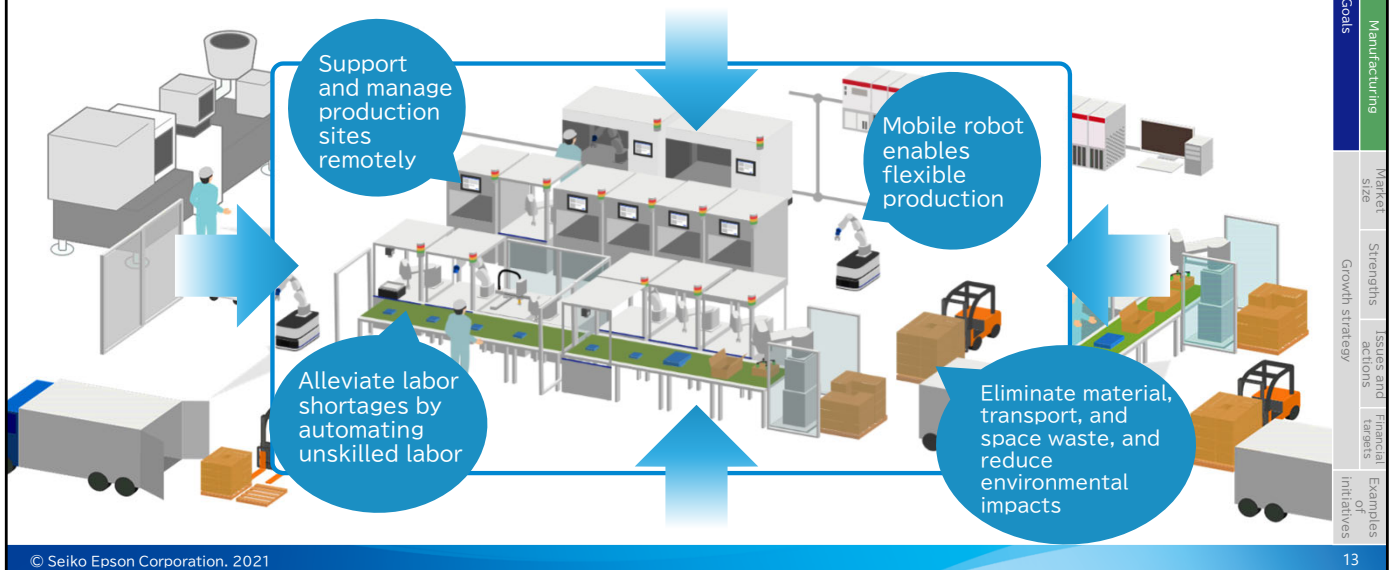
Reduce the burden for building production systems

Together with partners, propose manufacturing equipment that utilizes expertise in production for precision and information products

- This is how Epson intends to meet customer expectations by transforming factories.
- First, we will provide flexible, high productivity assembly and inspection systems with robots capable of performing difficult tasks that used to be done manually.
- Next, for parts production processes, we will provide compact molding machines that reduce wastes of materials, electricity, and space.
- In the design and installation support area, we will use our own manufacturing knowledge as we work with system integrators and other partners to ease the burden on factory managers when building production systems.

What Epson provides

- ▶ Increase personnel and space productivity and reduce environmental impacts by driving innovations in manufacturing



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- Our goal is to create compact factories that use smaller equipment and reduce reliance on unskilled labor.
- Most manufacturing is a cooperative effort among multiple companies, each responsible for different processes. Large trucks are used when transporting parts from one factory to the next for processing. The environmental impact of this is heavy. If manufacturing facilities become more compact and parts production, assembly, and other processes can all be performed within the same factory, waste associated with transportation and packaging can be eliminated, and environmental impacts can be reduced.
- In addition, by automating the simple tasks, the productivity of people in the factory as a whole will increase.
- Epson wants to drive manufacturing innovations that fundamentally change the way factories are and how they operate.

Old

Robotics innovation

Sell robots (sell technologically superior products)



New

Manufacturing innovation

Innovate manufacturing by answering the expectations of customers in factories

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- Because of these strategies, we have decided to change the name of our innovation area to manufacturing solutions.
- Until now, the main focus was on selling technologically superior robots. From now on, however, we will pivot in a different direction and seek to drive manufacturing innovations that meet the expectations of our factory customers.

2. Growth strategy

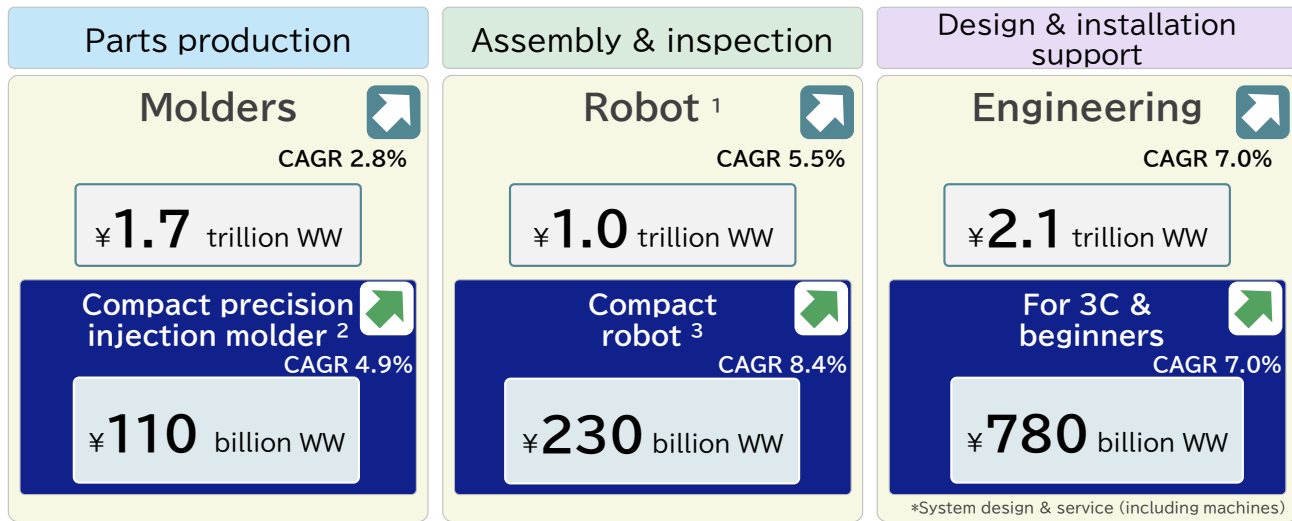
- (1) Market size
- (2) Epson's strengths
- (3) Issues and actions
- (4) Financial targets

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- In the next part, I will explain our growth strategy and how we intend to achieve this goal.

Market size

▶ Epson will target the *compact* segment of the market



Monetary amounts are for 2020. CAGR is for 2020-2025
Seiko Epson estimates

¹ Including peripheral equipment (hardware that connects to robots) ² Mold clamping force 40tons and under ³ Payloads up to 20 kg

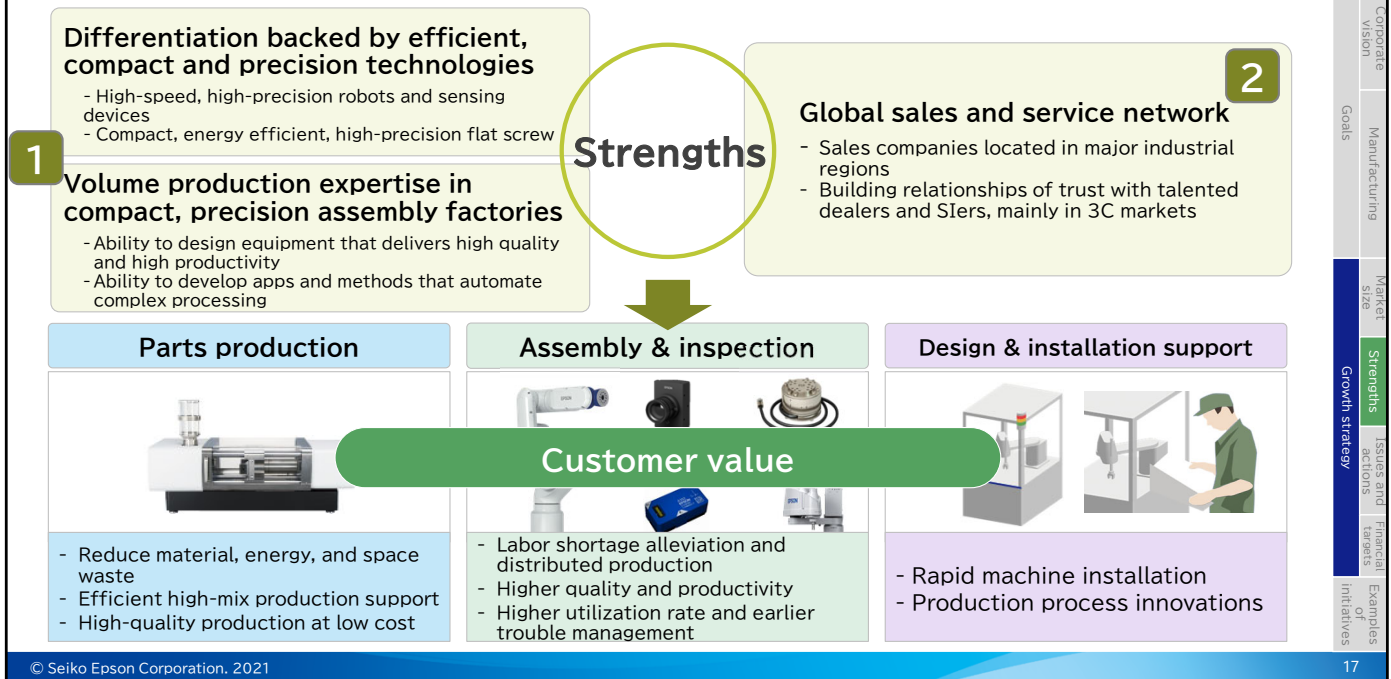
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- First, let's look at the market size.
- On this slide, the yellow boxes indicate the size of the overall market in each category. The dark blue boxes show the size of the markets that Epson is targeting.
- The total market for molding machines, robots, and engineering is about 5 trillion yen, but this includes equipment for producing large items such as vehicles and the market for equipment engineering and design.
- Epson will target the *compact* segment in these markets, indicated in dark blue. In 2020, compact injection molding machines were a 110-billion yen market, compact robots were a 230-billion yen market, and engineering for the 3C and beginner markets was 780 billion yen. So, we anticipate a high rate of growth out to 2025.

Epson's strengths



- We have many strengths in the compact segment.
- Efficient, compact, and precision technologies are the source of Epson's strength in the manufacturing solutions business because they allow us to differentiate our products. We also have volume production expertise from having developed manufacturing systems for everything from watches to printers and projectors.
- Our global sales and service network is another strength, one that is essential for executing our strategy. Having a solid foundation for delivering different kinds of value to factory customers is an important resource for driving innovation.
- We will maximize the value for our customers by capitalizing on these strengths in the three priority areas.
- I will expound further on these two areas of strength from the next slide.

- ▶ Our strengths are efficient, compact and precision technologies and mass production expertise in compact precision-assembly factories. These strengths enable us to automate tasks formerly only performed by humans

A collection of strengths



Fast, accurate robots



High-precision sensing devices

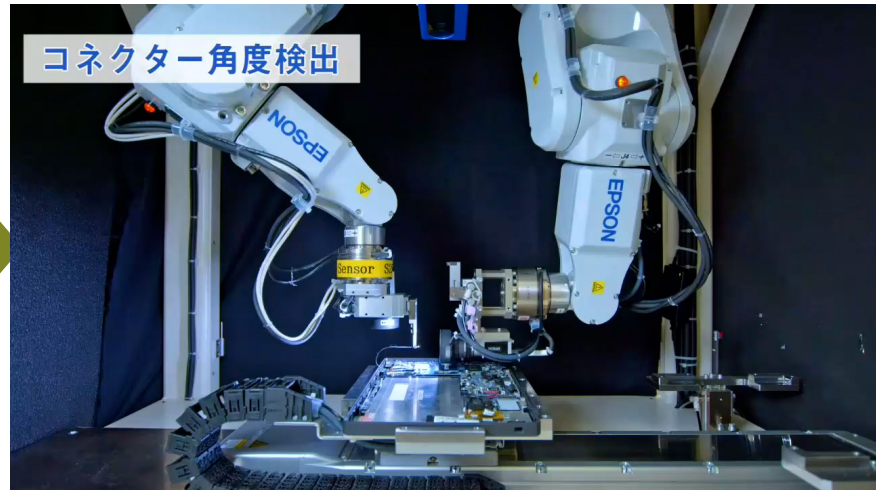


Software optimized from a factory floor perspective



Equipment development capability to automate complex processes

Use of sensing devices enables insertion of soft and flexible items like flexible flat cables



*Caution: Several scenes have heavy flashes of sensor lighting

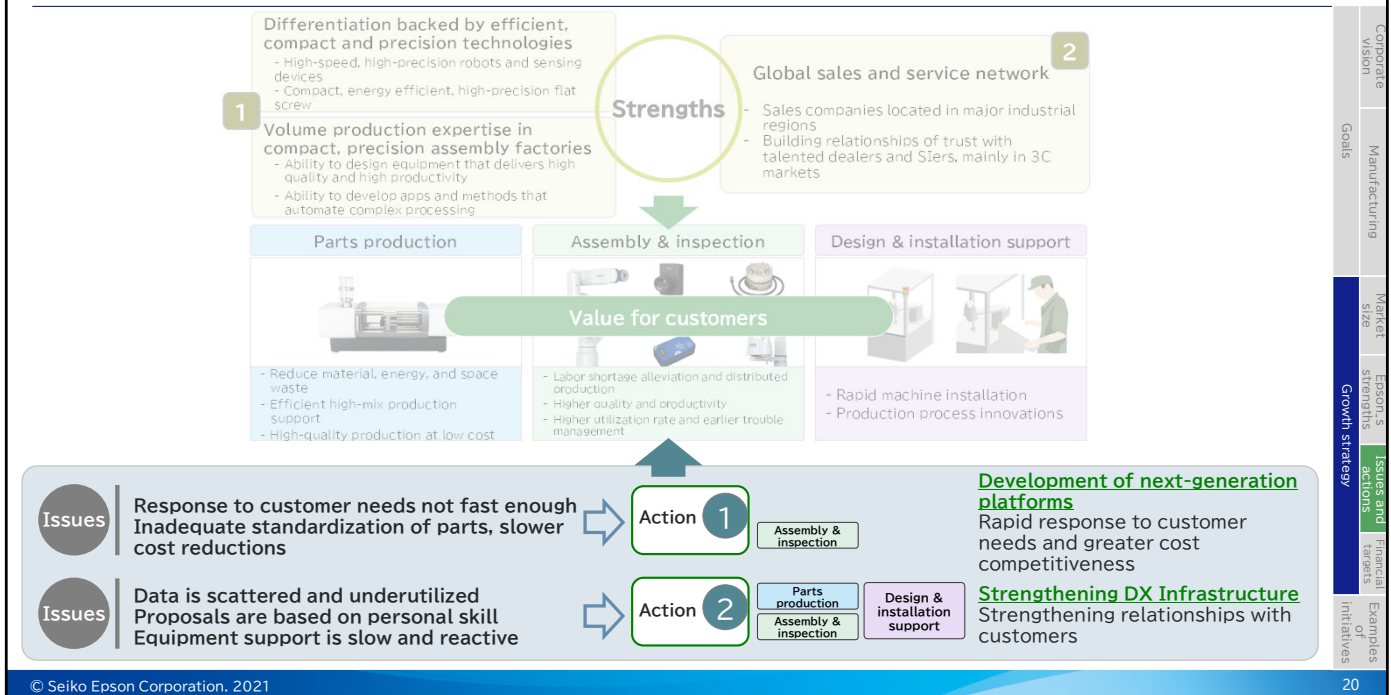
- This is the first area of strength.
- I will show you an example in which we utilized our strong technology and volume production expertise.
- This video shows an extremely common task in the production of devices, that of connecting cables to boards. Cables formerly had to be connected by hand because although robots can perform precise tasks, they were not good at tasks that involved a lot of variability, such as picking up and accurately inserting flexible cables into connectors whose installation positions varied.
- We succeeded in automating cable insertion by detecting positions with a camera and making subtle adjustments to the insertion force with a force sensor attached to the end-effector, which acts as a hand.
- So, by providing technology and expertise along with high-speed, high-precision robots, we are easing the burden on customers who want to automate factories.

- ▶ Our sales and service network spans the globe
- ▶ Leverage the advantage of owning the No. 1 share in the global SCARA robot market along with talented dealers and SIers to meet diverse customer expectations in assembly processes and in other parts production and inspection processes



- The second area of strength is the global sales and service network that we built in the printer business.
- We have used this sales network to capture the No. 1 share of the global SCARA robot market. Having so many customers in the SCARA robot market means that we have expansive customer contacts in the so-called 3C markets for communications, consumer electronics, and computers, where SCARA robots are widely used in the assembly process.
- But manufacturers are also interested in and expect to automate other processes, such as parts production and inspection. We will continue to meet these expectations and expand our business footprint.

Issues and actions



- So, as I have said, we will leverage Epson’s strengths to expand our business footprint, but there are two things we must do.
- One is to develop next-generation platforms for assembly and inspection processes. The other is to strengthen the digital transformation infrastructure that all three priority areas have in common. We believe that these are indispensable for us to create new customer value and continue to build competitive advantage.
- The reason is that we recognize that we need to respond more rapidly to customer needs and need to get better at proposing solutions to customers.
- I will explain these two issues and specific actions being taken to address them on the slides that follow.

Action 1 | Development of next-generation platforms

Rapid response to customer needs and greater cost competitiveness

Parts production
Assembly & inspection

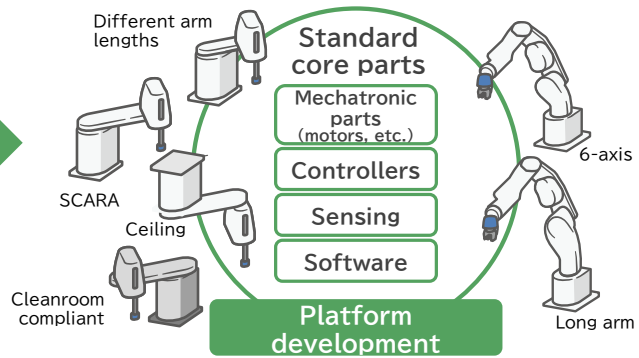
Design & installation support



Current robot lineup



Next-generation



* More shared, standardized core parts will facilitate lineup expansion.

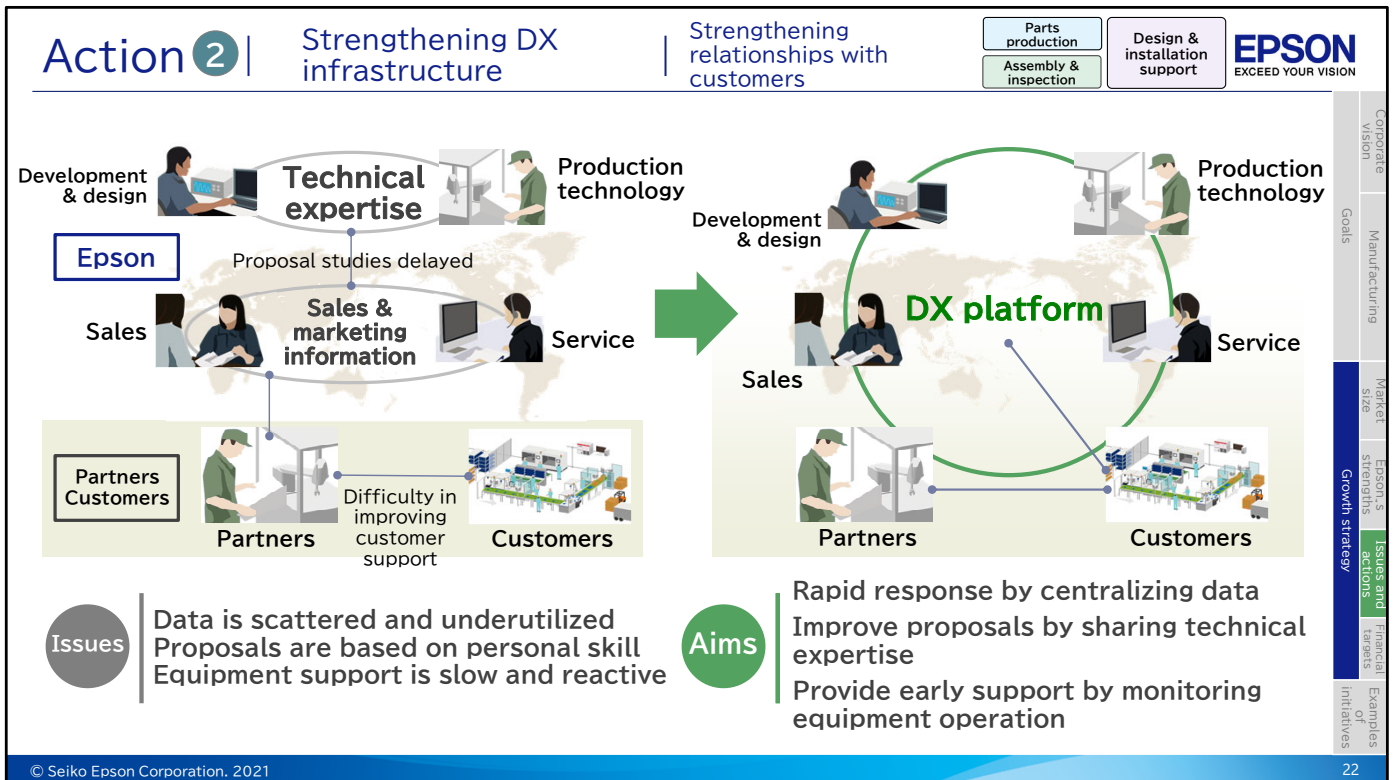
Issues

Response to customer needs not fast enough
Inadequate standardization of parts, slowing cost reductions

Aims

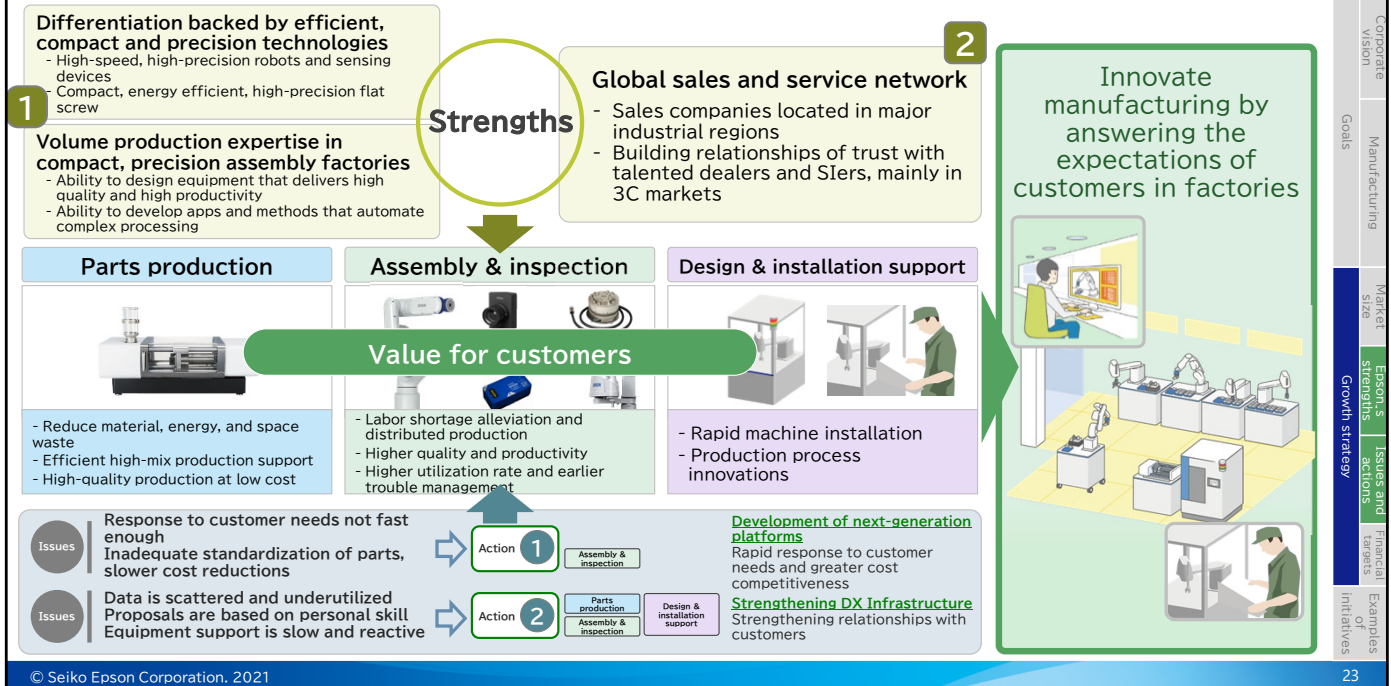
Rapid response to customer needs with standardized platforms
Strengthen cost competitiveness by using standard parts

- The first action is to develop next-generation platforms.
- Epson currently owns the top share in the global market for SCARA robots used in assembly and inspection processes. We have achieved this by assembling a broad lineup of fast, accurate robots. On the other hand, since these robots are custom engineered for maximum performance, it took time to expand the lineup and tailor the design to the customer's needs. The robots did not share enough standardized parts, and this made it difficult to reduce costs when procuring parts.
- To counter this, we are developing next-generation platforms that can be used for a long time. Increasing the number of standardized core parts will put us in a position to expand the lineup efficiently and flexibly. This will make it possible to quickly meet diversifying customer expectations and strengthen cost competitiveness.
- Initially, we will invest primarily in the development of next-generation platforms and will begin launching new products from 2023.



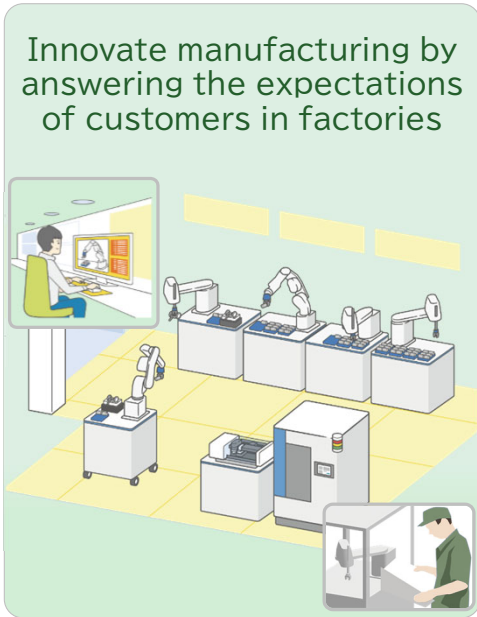
- The second action is to strengthen digital transformation infrastructure and build strong customer relationships.
- In the past, our ability to propose solutions to customers depended on the skills of individuals because customer information and technical data were dispersed. As a result, operational support for equipment was delayed or became passive, and we were unable to flexibly propose and respond to the expectations of customers.
- To address these issues, we are strengthening our digital transformation infrastructure. By centralizing data and sharing technical knowledge, we will improve our ability to make proposals without relying solely on individual skills. In addition, we will enhance our corrective maintenance services so that we can monitor the operational status of equipment and proactively meet customer expectations.
- This will allow us to reduce regional disparities in sales and services, increase customer satisfaction together with our partners, and build strong relationships of trust along with Epson brand loyalty.

Summary

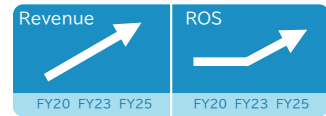


- To sum up our growth strategy, we intend to drive innovation in manufacturing by capitalizing on Epson’s strengths, including factors for differentiation backed by efficient, compact and precision technologies; volume production expertise in compact, precision assembly factories; and a global sales and service network. We will also address recognized issues by developing next-generation platforms and strengthening our DX infrastructure.

Financial targets



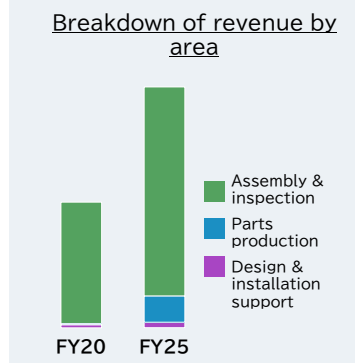
FY2020 to FY2025 revenue
CAGR **+15%** or better



Expand the business footprint

- Parts production
- Assembly & inspection
- Design & installation support

Build next-generation platforms to
- rapidly respond to customer needs
- increase cost competitiveness



- These are the performance targets we expect to achieve from our growth strategy.
- First, as announced in March of this year, the manufacturing solutions business has set a compound annual sales growth rate target of 15% or more out to 2025.
- The two graphs break down this target further.
- The graph in the middle of the slide shows the percentage of revenue by area. I said that we are going to expand our business footprint. We will expand beyond assembly processes and into parts production and inspection processes, as well as into design and installation support. In 2025, we want the graph to look something like this.
- For the time being, investment in SCARA and 6-axis robots used in assembly and inspection will be concentrated on the development of next-generation platforms. As illustrated by the graph on the right, we want new products to account for the large majority of revenue in 2025.
- We are not providing specific figures in these graphs.

3. Examples of initiatives

Innovate manufacturing by answering the expectations of customers in factories

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- On the slides that follow, I will provide specific examples of actions being taken to realize the growth strategy.

Example 1

Robots

Molders

Sensing

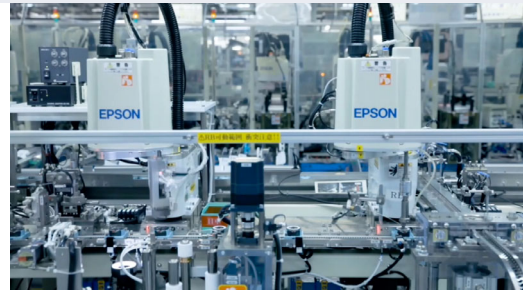
Software

IJ heads

Installation

EPSON
EXCEED YOUR VISION

▶ Build production line in Epson to accumulate knowledge and experience



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- First, let's take a look at a production line in one of Epson's factories.
- Akita Epson Corporation produces watch movements, inkjet printheads for printers, and other modules located in the heart of Epson products. Manufacturing in this facility is supported by several hundred Epson robots.
- Because we have our own manufacturing sites, we understand what our customers expect and are able to understand what they need to innovate their manufacturing processes.

Example 2

Robots

Molders

Sensing

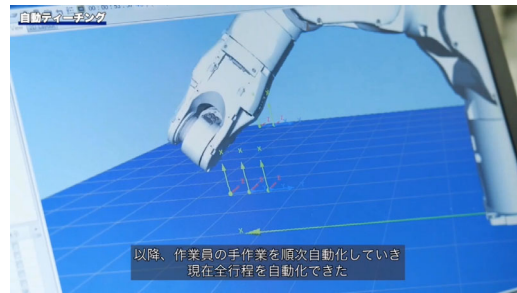
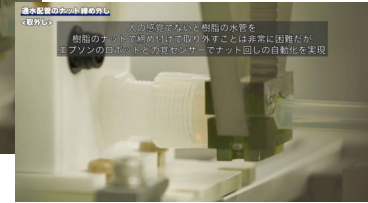
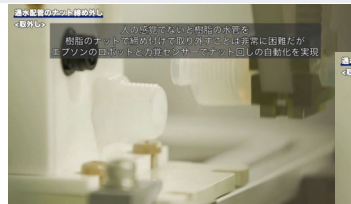
Software

IJ heads

Installation

EPSON
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▶ Understand customer expectations and propose solutions



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- Next, I will show you an example in which we used our own experience to meet customer expectations.
- Okinawa Tokyo Keiso Co., Ltd., which appears in this video, manufactures semiconductor processing equipment.
- The company got in touch with Epson because they were having problems connecting a pliable hose during equipment assembly.
- We listened to what was happening on the manufacturing floor and what they needed, demonstrated that the problem could be solved by combining a force sensor and a 6-axis robot, and proposed a system for them.
- They were our first customer in the design and installation support area, an area on which we will focus a lot of effort.

Example 3

Robots

Molders

Sensing

Software

IJ heads

Installation

EPSON
EXCEED YOUR VISION

▶ Complete multiple processes in the factory with a single system



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- The next example is of a new system created around a small injection molding machine.
- The aim is to complete multiple processes in a factory within a single machine.
- In the first half of this presentation, I talked about increasing human and space productivity and reducing environmental impacts through manufacturing innovations. The system shown in this movie is a perfect example of that.
- A series of operations is handled by a single system. Parts molded by a compact injection molding machine are picked up, visually inspected, and loaded on trays. Since the quality of these small parts has been assured before they are loaded on trays, they do not need to be realigned in the next process. Once this equipment is installed in an assembly plant, the packaging materials used to move parts between factories are no longer needed, saving energy and money in transportation.
- This system combines Epson's technical knowledge in areas such as robots and inspection programs.

Example 4

Robots

Molders

Sensing

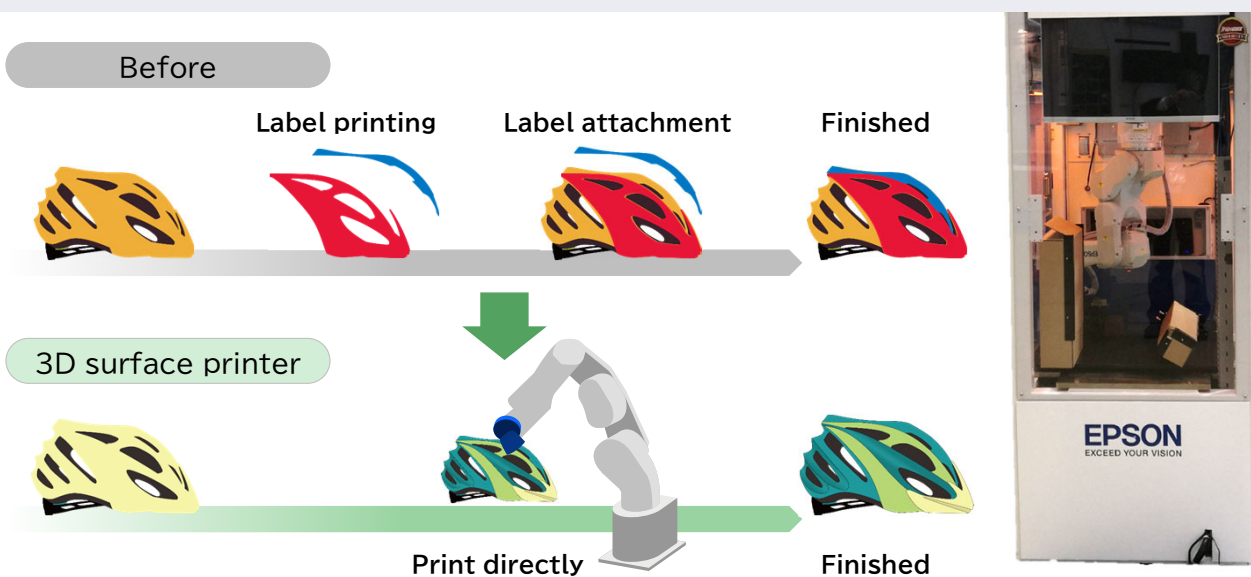
Software

IJ heads

Installation

EPSON
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► Print directly on 3D objects by combining inkjet printheads and robots



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- In the last example, I will show equipment that we are considering putting on the market in the near future.
- Inkjet printheads and robots can be combined to make it possible to print directly on three-dimensional objects, such as customized helmets, for example.
- In the past you would have to print the customer's design on a label, cut the label to match the contours of the helmet, and then attach it to the helmet.
- The new 3D object printer, however, can print directly on the helmet, reducing the number of processes and quickly providing customers with a design that suits them.

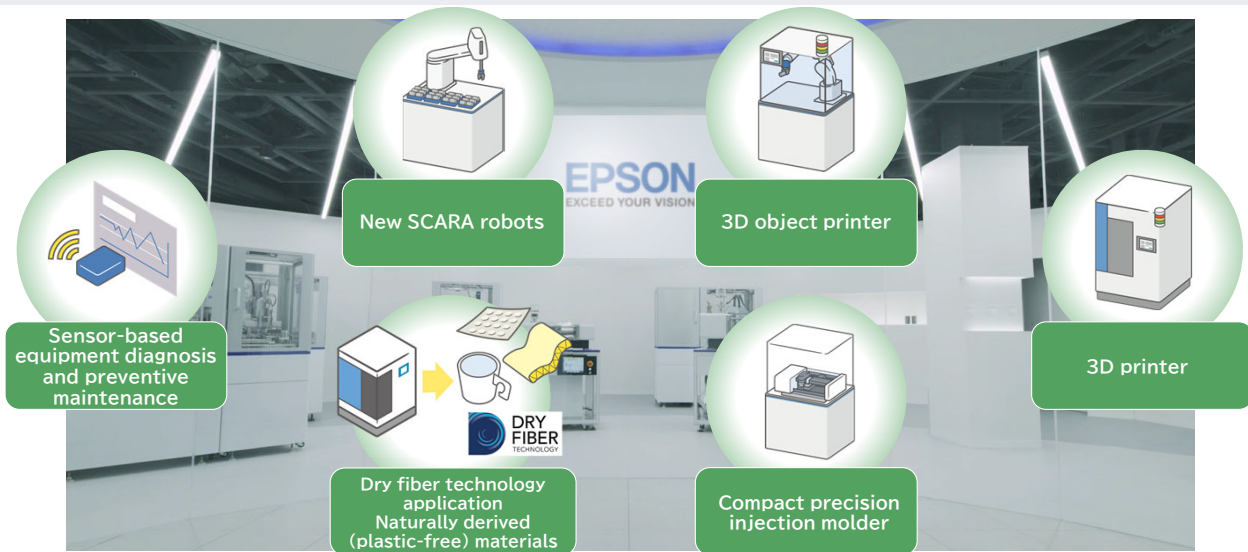
Additional Information

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- Before closing, I want to say a few words about the International Robot Exhibition.

International Robot Exhibition 2022

- ▶ New concept product families will be exhibited at the International Robot Exhibition scheduled for March 2022



- The International Robot Exhibition is held once every two years. The next one is scheduled for March 2022.
- At next year's exhibition, we plan to demonstrate new concept product families that reflect the growth story.
- We are also thinking of providing more details at small meetings and the like. At that time, I would like to give more specifics on products and services and describe the manufacturing innovation story that we envision.



Glossary

Term	Meaning
Injection molding machine	A machine that works by injecting melted plastic into a mold to form parts (example application: manufacture of plastic model kits)
Peripheral equipment	Hardware that is mounted on, connected to, or used with robots, such as force sensors, vision cameras, vibration feeders, and general-purpose end-effectors
Engineering	Conceptualizing, proof-of-concept testing, designing, manufacturing and improving the operation of automation systems for manufacturing processes (i.e., production engineering)
3C	Communication (mainly smartphones), consumers (mainly of home electronics), and computers (mainly PCs)
Sensing device	Devices that utilize Epson's own sensing technology
Flat screw	A key component technology for Epson's compact precision injection molding machines, flat screws are a disc-shaped plasticizing mechanism (a part that melts and transports resin)
Sler	Here, an Sler refers not to a software system integrator but to a business operator that proposes, conceptualizes, installs, and supports automation systems in manufacturing processes
Sensory inspection	Inspections performed to assess product quality using human senses, such as sight for visual inspections and tactile/pressure sensing for inspecting motion during assembly