

# Alliance Business

**Develop a Growth Driver by Infusing  
Core Technologies with a New Business Model**

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# Safe Harbor for Forward-Looking Statements and Use of Document

Among the information that Terumo discloses, the forward-looking statements including financial projections are based upon our assumptions using information available to us at the time and are not intended to be guarantees of future events or performance. Accordingly, it should be noted that actual results may differ from those forecasts or projections due to various factors. Factors affecting to actual results include, but are not limited to, changes in economic conditions surrounding Terumo, fluctuations of foreign exchange rates, and state of competition.

The market share information in this presentation is partly derived from our own independent research.

Information about products (including products currently in development) which is included in this material is not intended to constitute an advertisement or medical advice.

Terumo Corporation

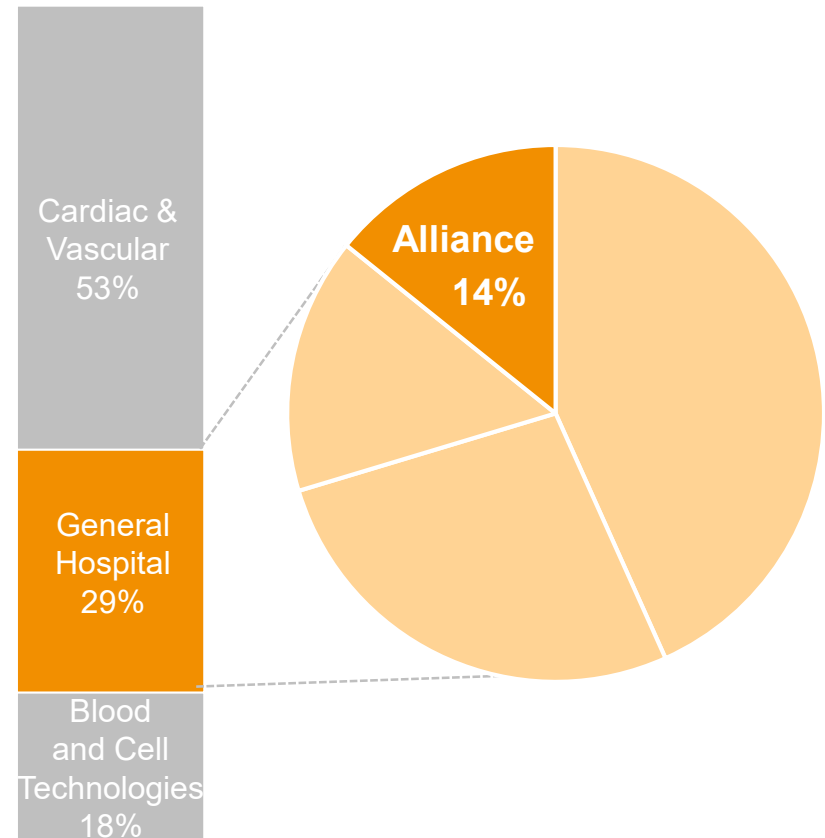
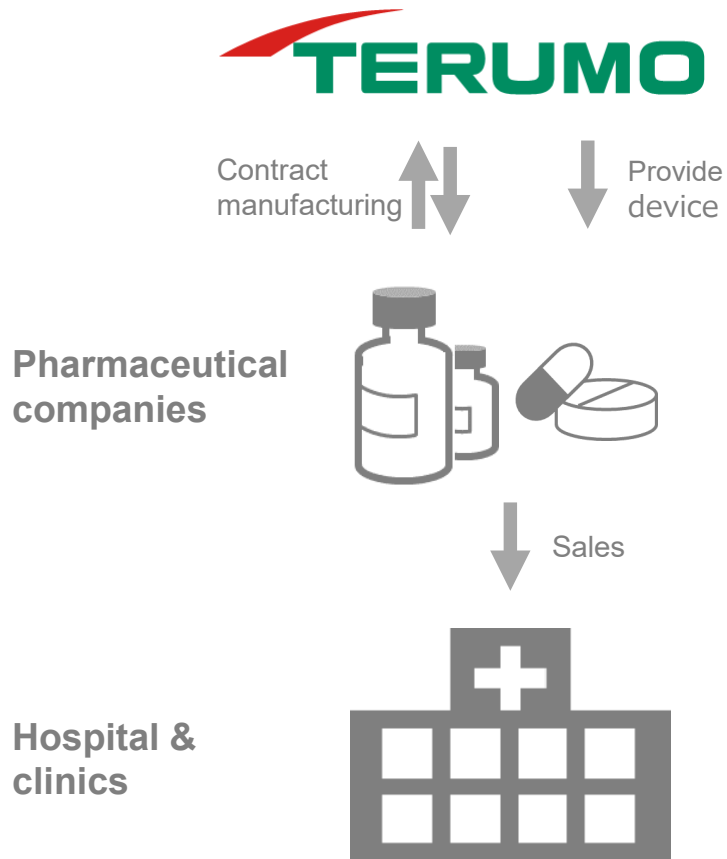
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# “Alliance” Business within Terumo

B2B: Provides pharma w/ devices to add additional value to drug and contract manufacturing

A division of General Hospital company with annual sales of 20 BJPY



# Alliance Business Trajectory



High-calorie nutrient solutions containing multivitamins



Heparin in saline



Erythropoiesis-stimulating protein

FY09~

**Biologics, Drug Kit Administration Device**

Develop track record and pipeline

FY99~

**Drug & Device**

Entry into combination products



Devices to be kitted w/ drug ample/vial

FY16~

**Growth stage**

Deploy product pipeline, prepare for next stage



Biosimilar using PLAJECT has launched in EU

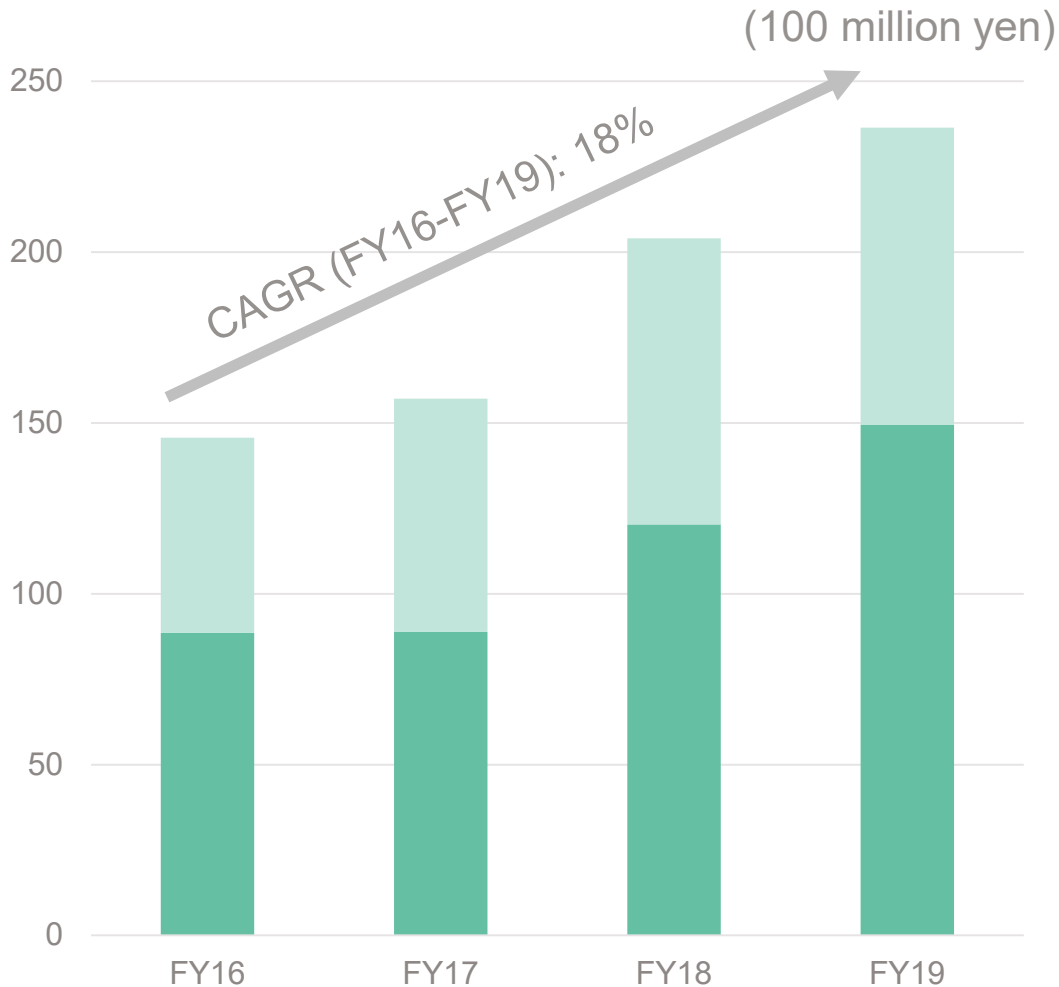
Next Mid- to Long-term Growth Strategy

For Safety

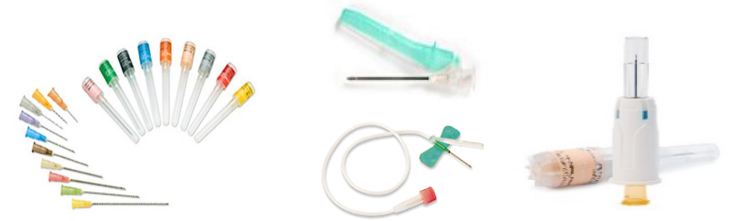
Plus efficiency

Plus Efficacy & Diversity

# Entering Growth Phase



## Drug Kit Administration Device (primarily outside Japan)



## Prefilled syringes (primarily Japan)



Provide prefillable container (PLAJEX)

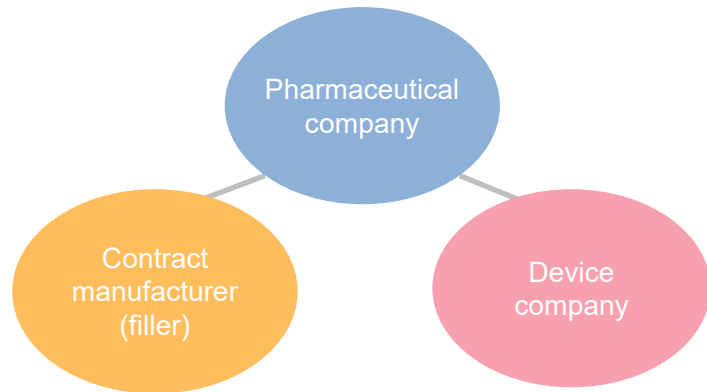


CDMO  
Fully-integrated manufacturing from molding thru packing

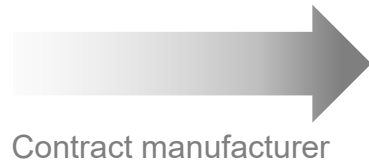
# Unique Business Model

## Traditional Model

Three-way collaboration is required

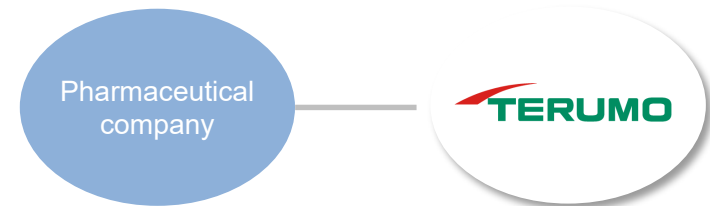


## CMO/CDMO



## Terumo's Model: CDMO + $\alpha$

Terumo plays a double roles, device company and contract manufacturer



- Provide devices to add additional value to drug
- Contract manufacturing
- Regulatory affairs support

Make partnership from development phase and collaborate all the way to manufacturing



# Captured Emerging Needs for Change in Drug Trend

## Change in Drug Trend



**Small-molecule:  
Orally administered drugs**



**Large-molecule and biopharmaceutical:  
Injected drugs**

### Emerging challenges

- Delicateness of biologics
- Technologies to handle small volume, high viscosity drugs
- Difficulty of regulatory affairs for combination products
- Diversified drug delivery

### Terumo's solutions

- Silicone oil-free, aseptic filling
- Filling technology for small volume, high-viscosity drugs
- Regulatory affairs support for the big three markets of US, EU, and Japan
- Diverse drug delivery options and customizability

# Next Moves for Sustainable Growth

- Use core technologies to further strengthen customization capability for increasingly diverse drugs



## ■ Steady preparation for **growth outside Japan**

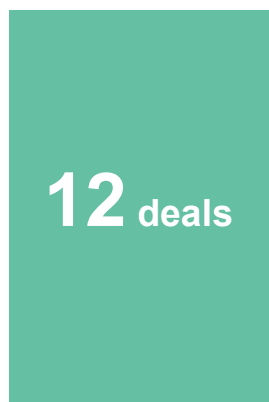
- Jul 2018 Prefilled syringe manufacturing line of biologics certified for EU GMP
- Nov 2018 Premix IV solutions manufacturing certified GMP compliant by US FDA
- Jul 2020 Contract manufacturing of biosimilar Hulo certified GMP compliant by US FDA



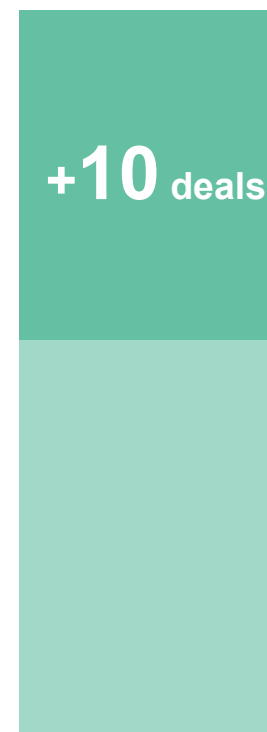
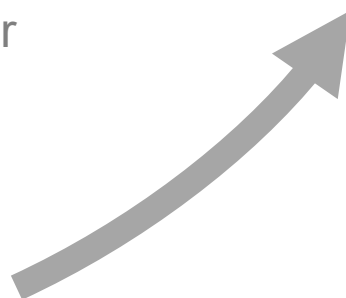
# Seamlessly Expanding Development Pipeline

Deals projected from ongoing co-developments

- Erythropoiesis-stimulating protein
- Adalimumab biosimilar
- Teriparatide acetate
- 9 more drugs



~FY19

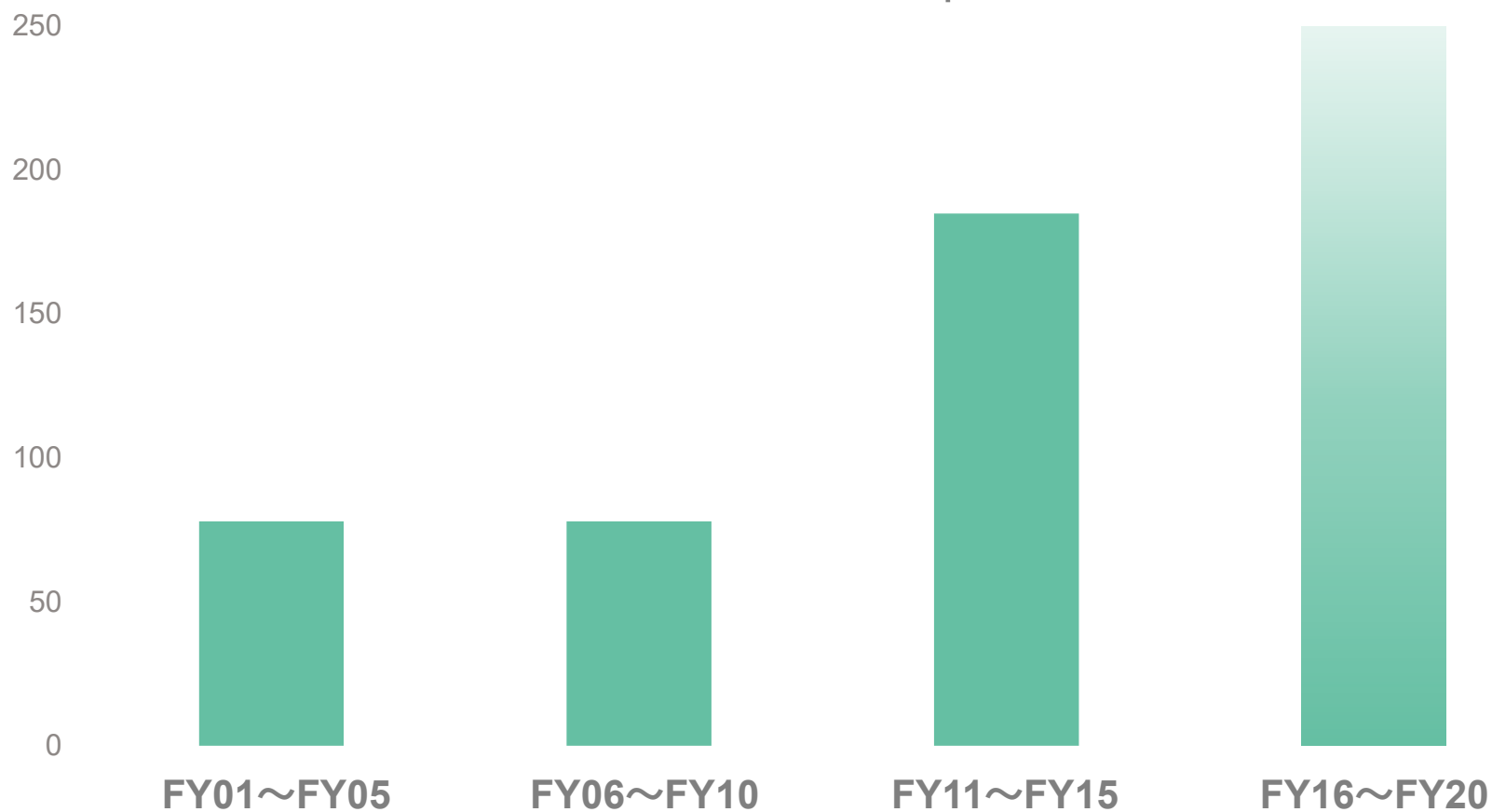


FY20~FY26

# Expand Production Capability thru Constant Investments

(100 million JPY)

CAPEX investment for production



# KSF to Secure Sustainable Growth Trajectory

- **Ample drug delivery technologies** to meet a wide variety of drugs
- **Filling and sterilization technologies** to manage sensitive drugs
- **Knowledge and experience of development, evaluation, regulatory affairs, and clinical development** for combination products
- **Track record and long-term commitment** to earn the trust of pharmaceutical companies

# Extend Our Market Reach with “Alliance” Model

Capture the expansion of healthcare scene by innovation of combined technologies

