

# **Why we need RT middleware?**

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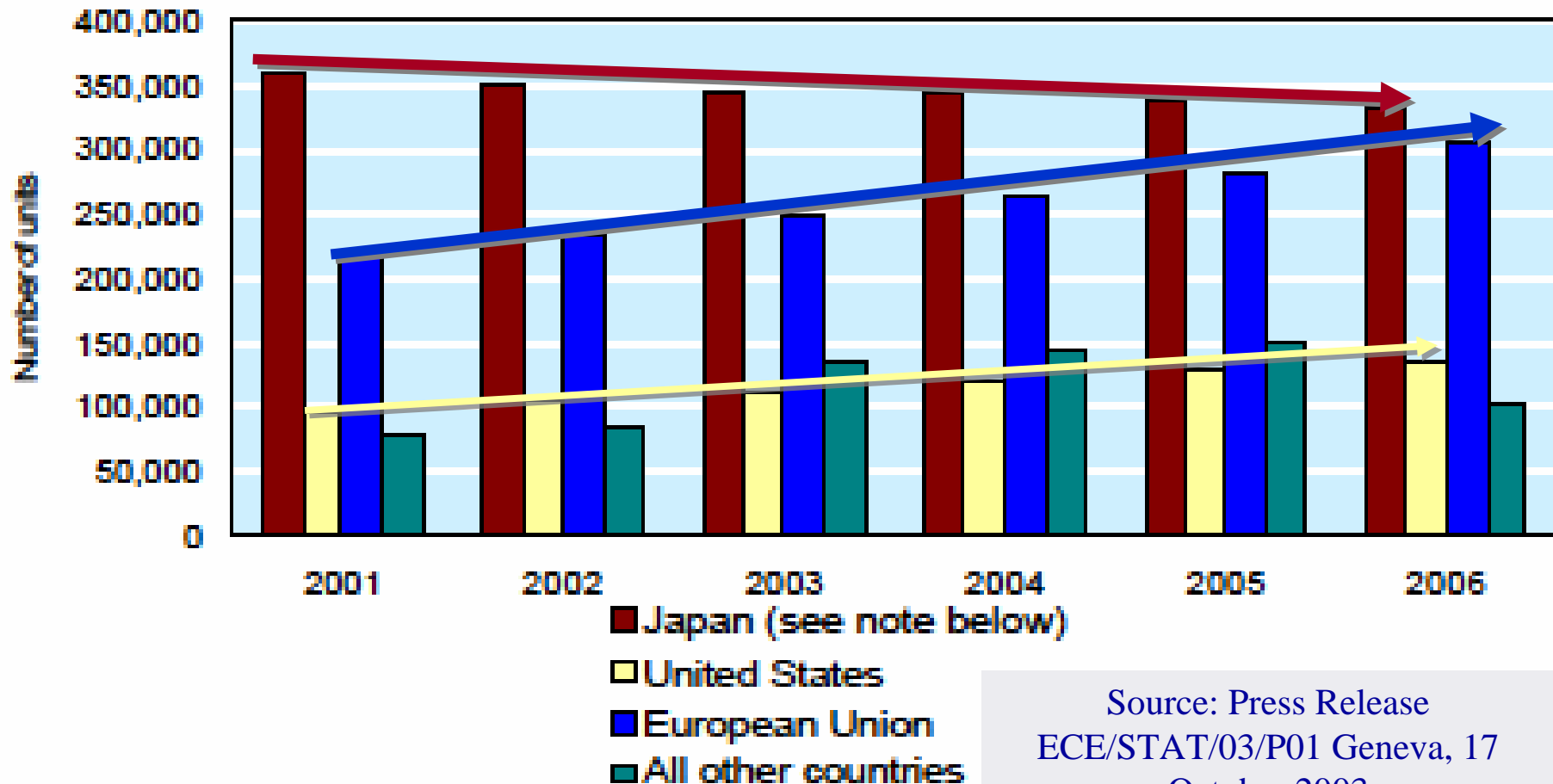
**3. Importance of RT middleware**

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# Industrial Robot



# The Number of Industrial Robots used in the World (2003-2006 Predicted Number)

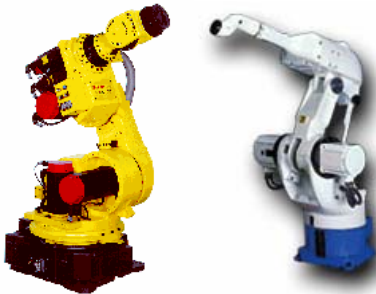


Source: Press Release  
ECE/STAT/03/P01 Geneva, 17  
October 2003

Note 1: Addition to the stock data for Japan included dedicated robots up to and including 2000. Stock data shown here are therefore not fully comparable with those of other countries.

# Expanding of Robot Applications

## -From Industrial Applications to Non Industrial Applications-



Application  
Expanding

Rehabilitation and Assistance  
for Handicapped People

Home Appliances

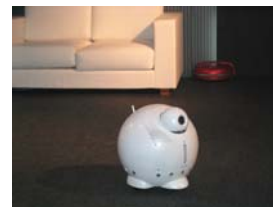


Guidance and Transportation

Security



Industrial Robots



Communications



Mental Commit

# **What is the Problems?**

**Each user's request is getting personal.**

**Difficult to identify the good product each user wants to buy?**



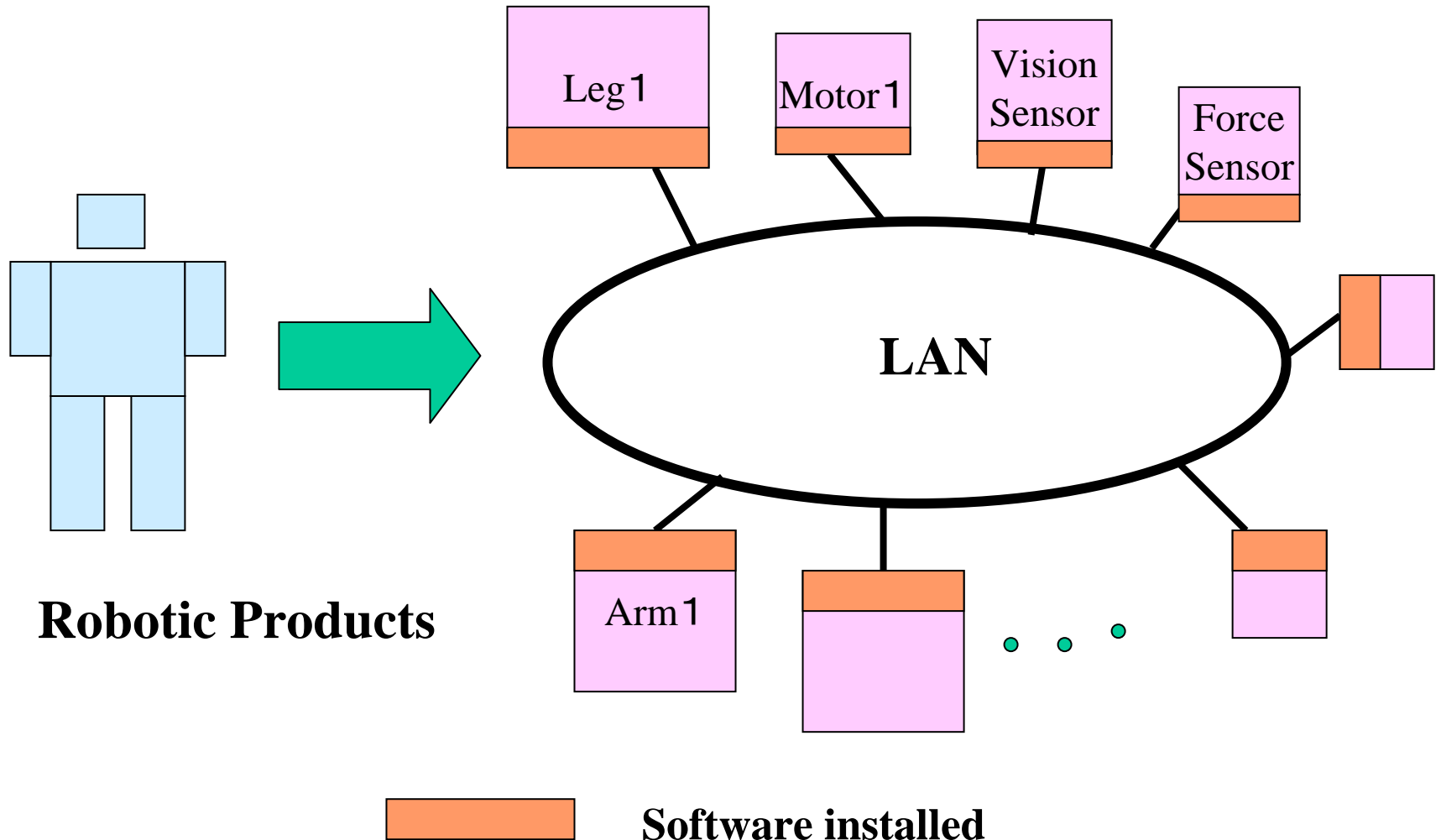
**The Problems to be solved!**

**How to design the new products efficiently and quickly?**

**How to create a new industrial infrastructure which supports the efficient new product design.**

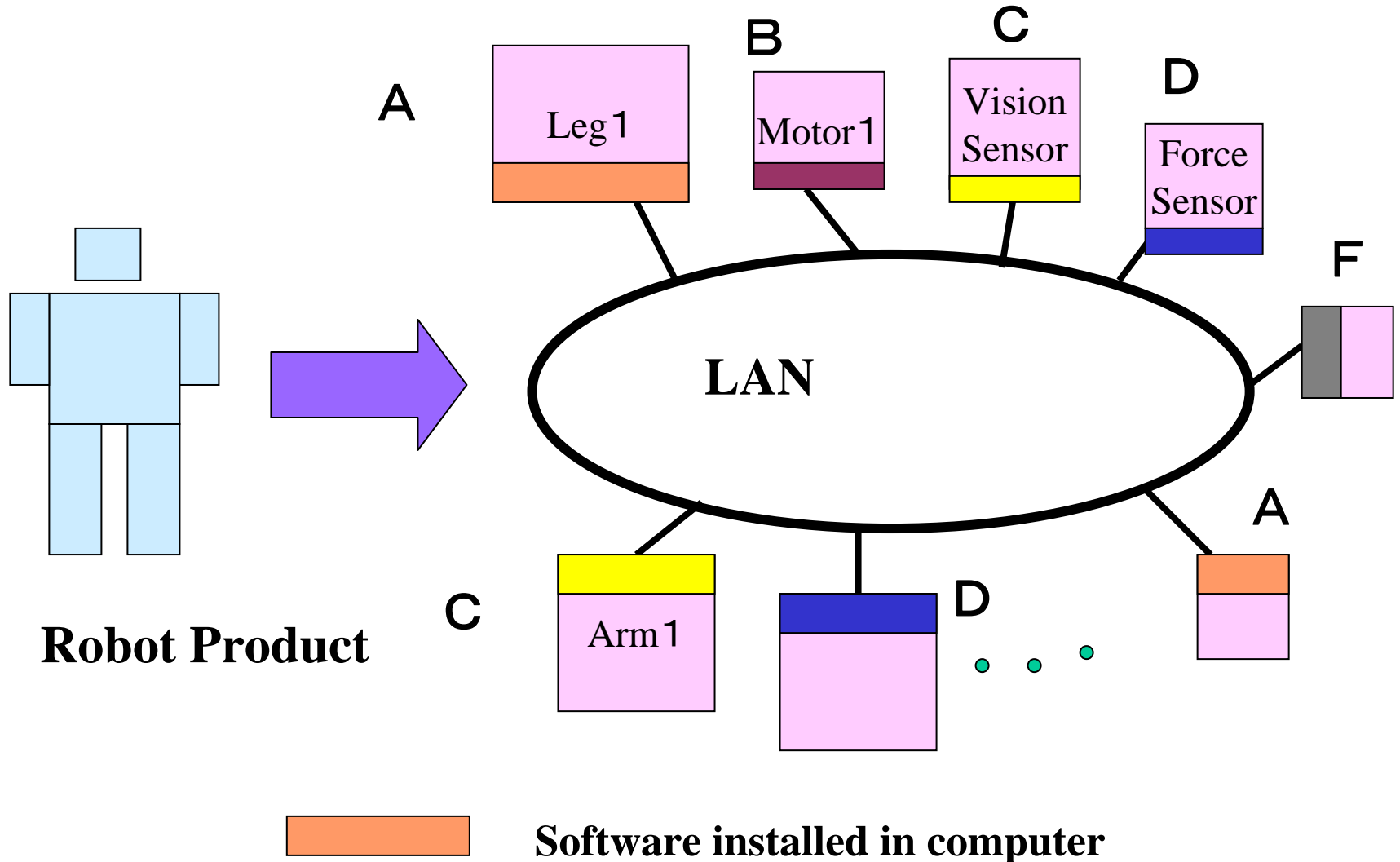
# Current New Robotic Product Development

**One company will make the whole system!**



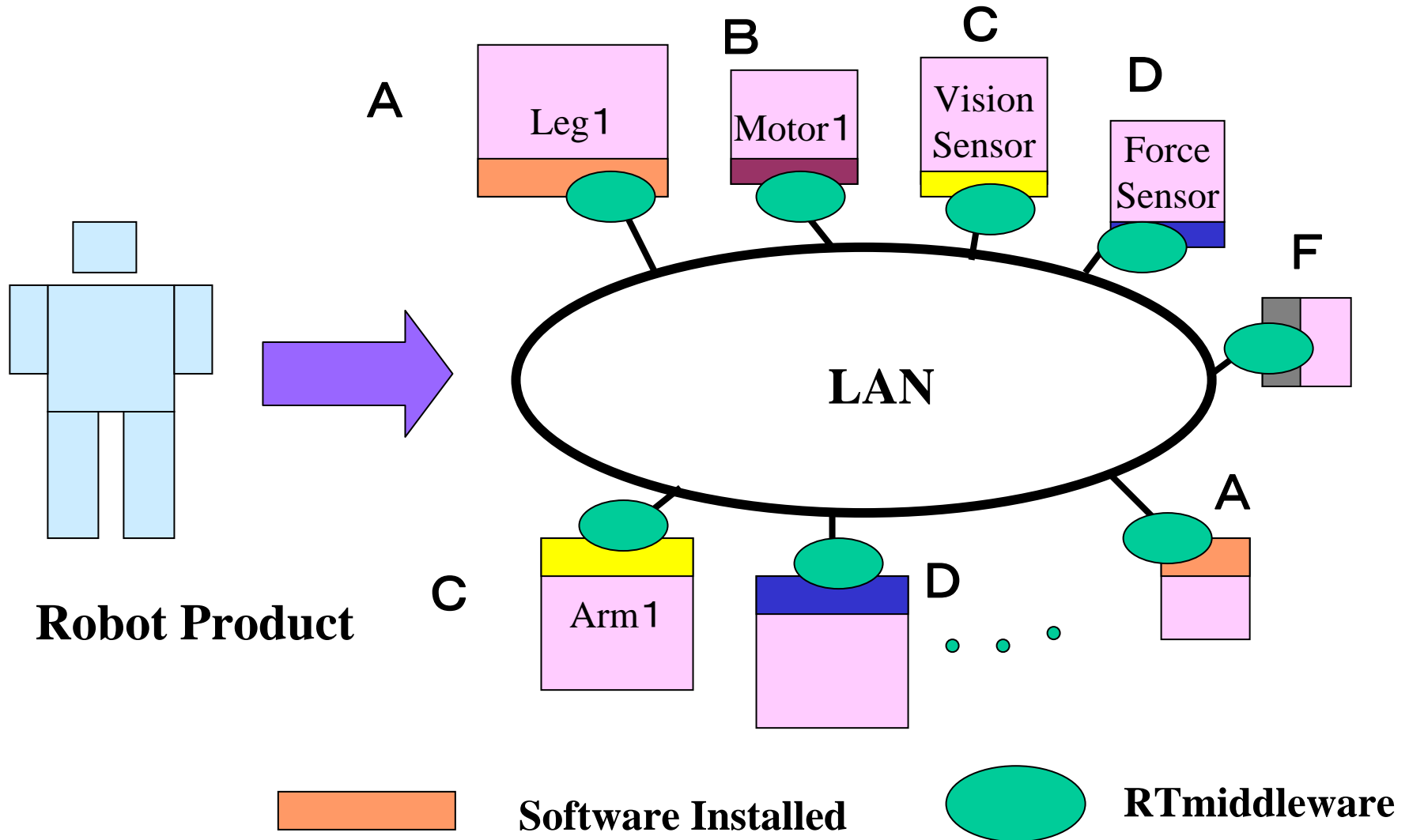
# New Robotic Product Development using the components available in the Market

(Product will be made using components manufactured by different companies, A, B...)

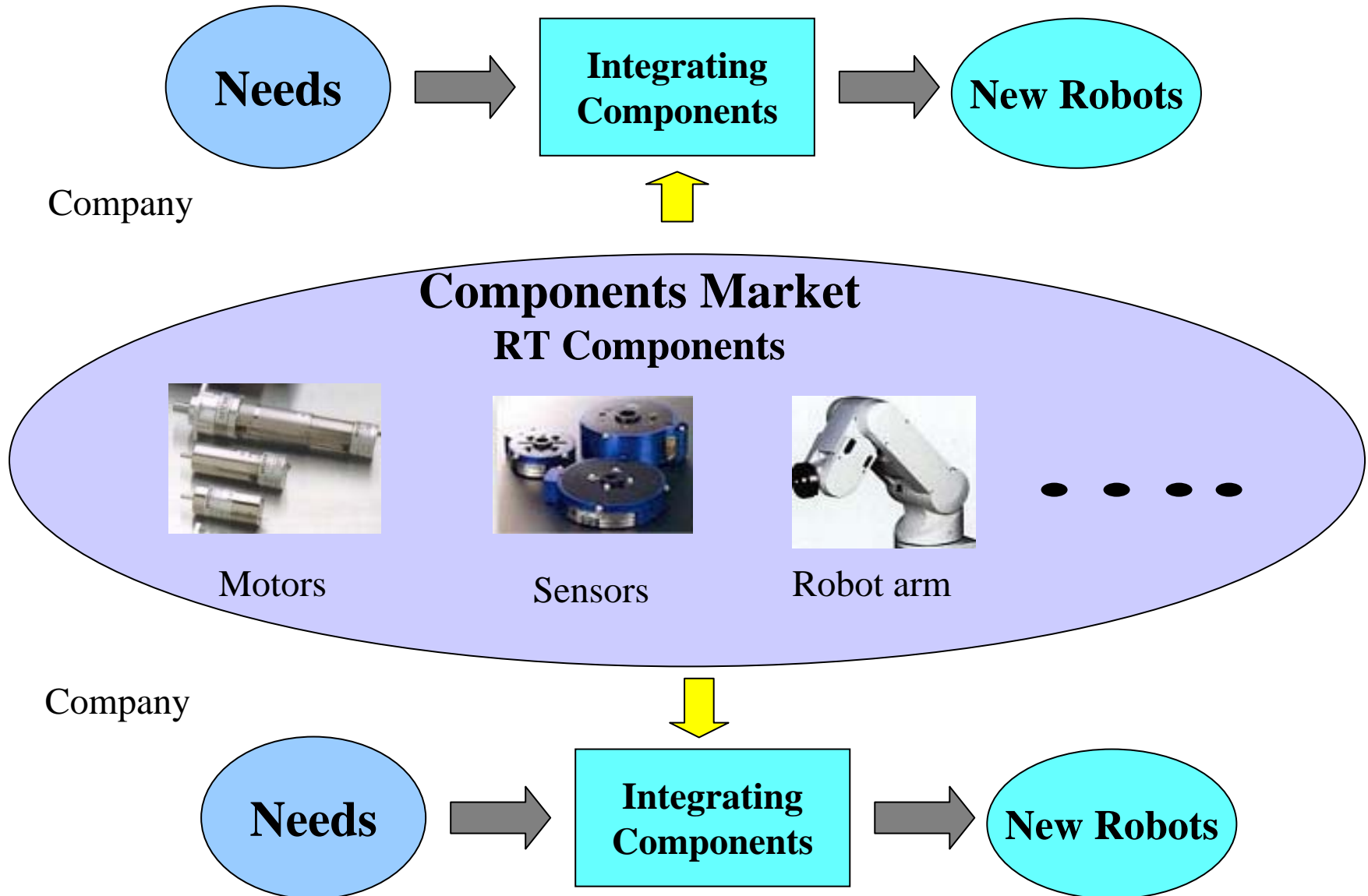




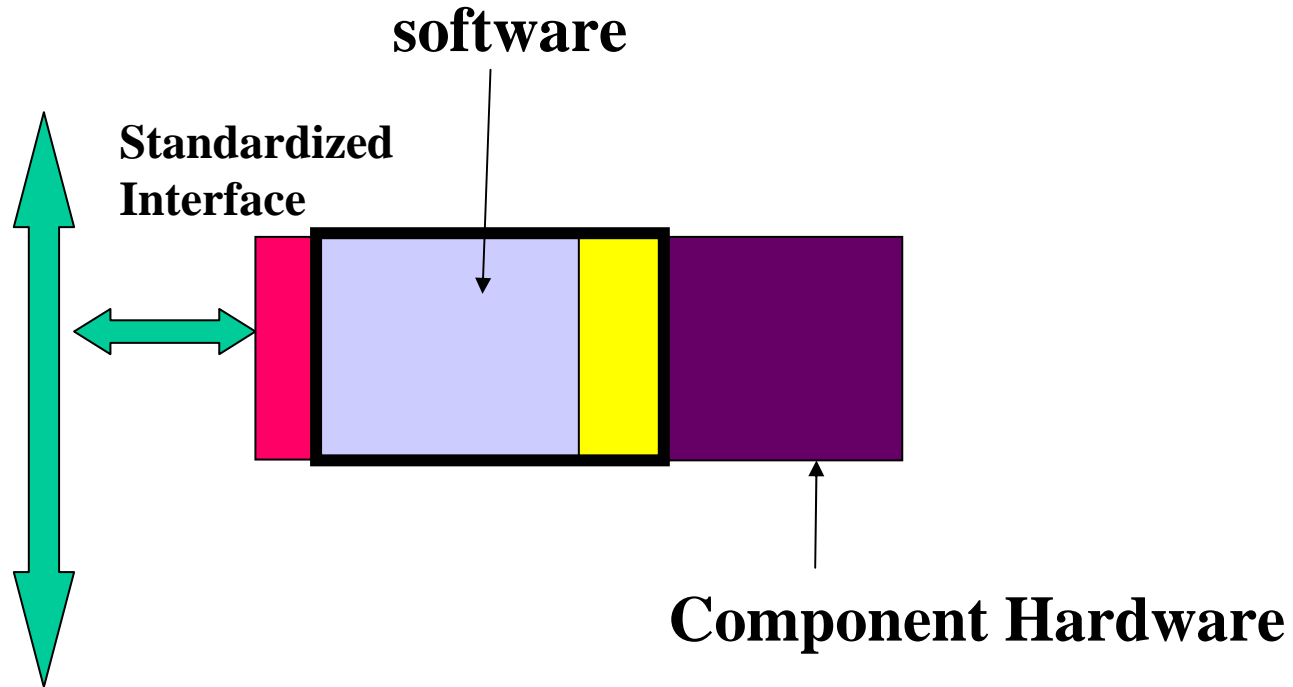
# Robot Product Development using RT middle ware



# How new robotic products will be produced?



# Modularized Component

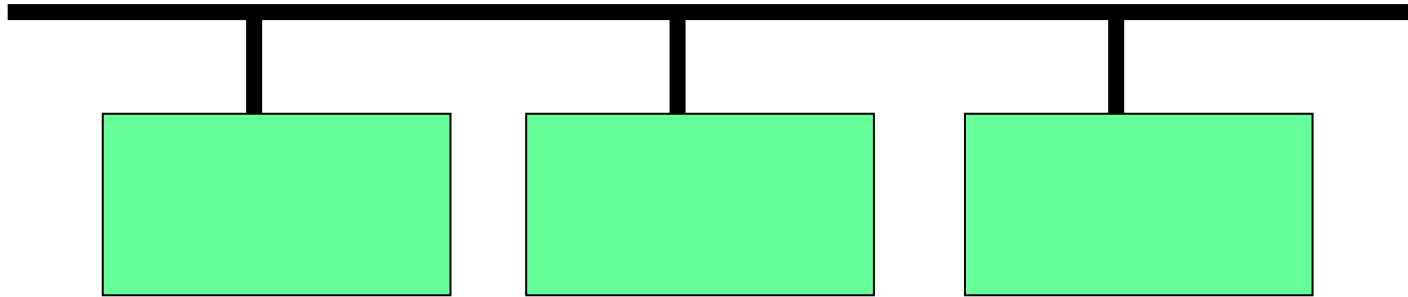


 RT middleware

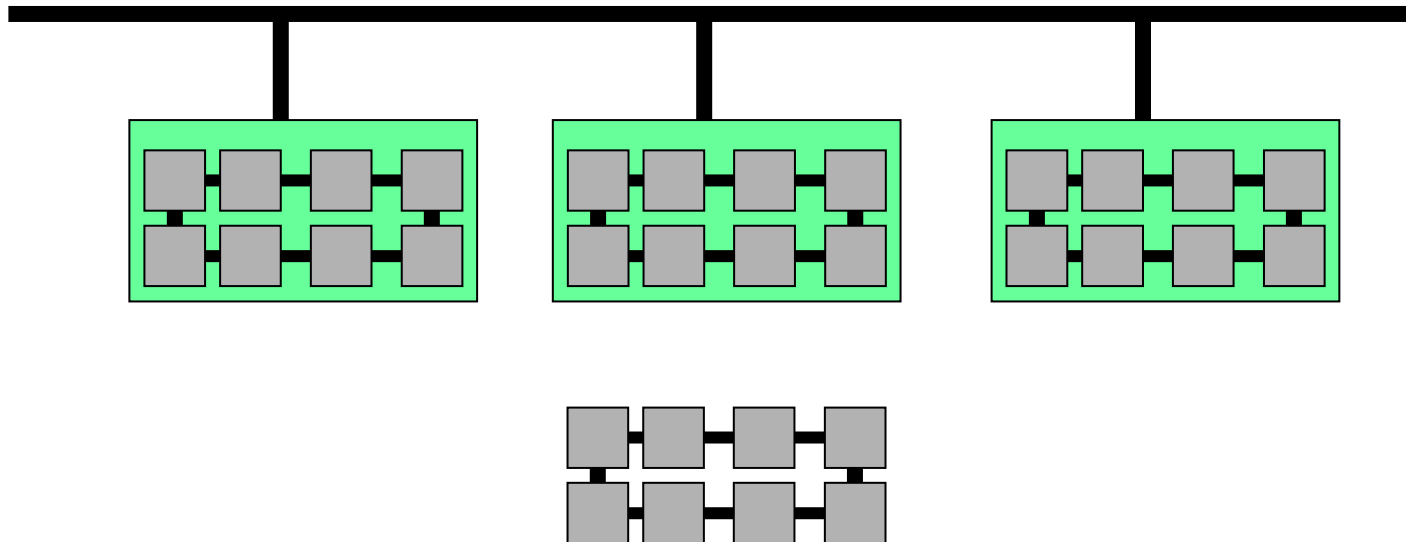
 Embedded Computer

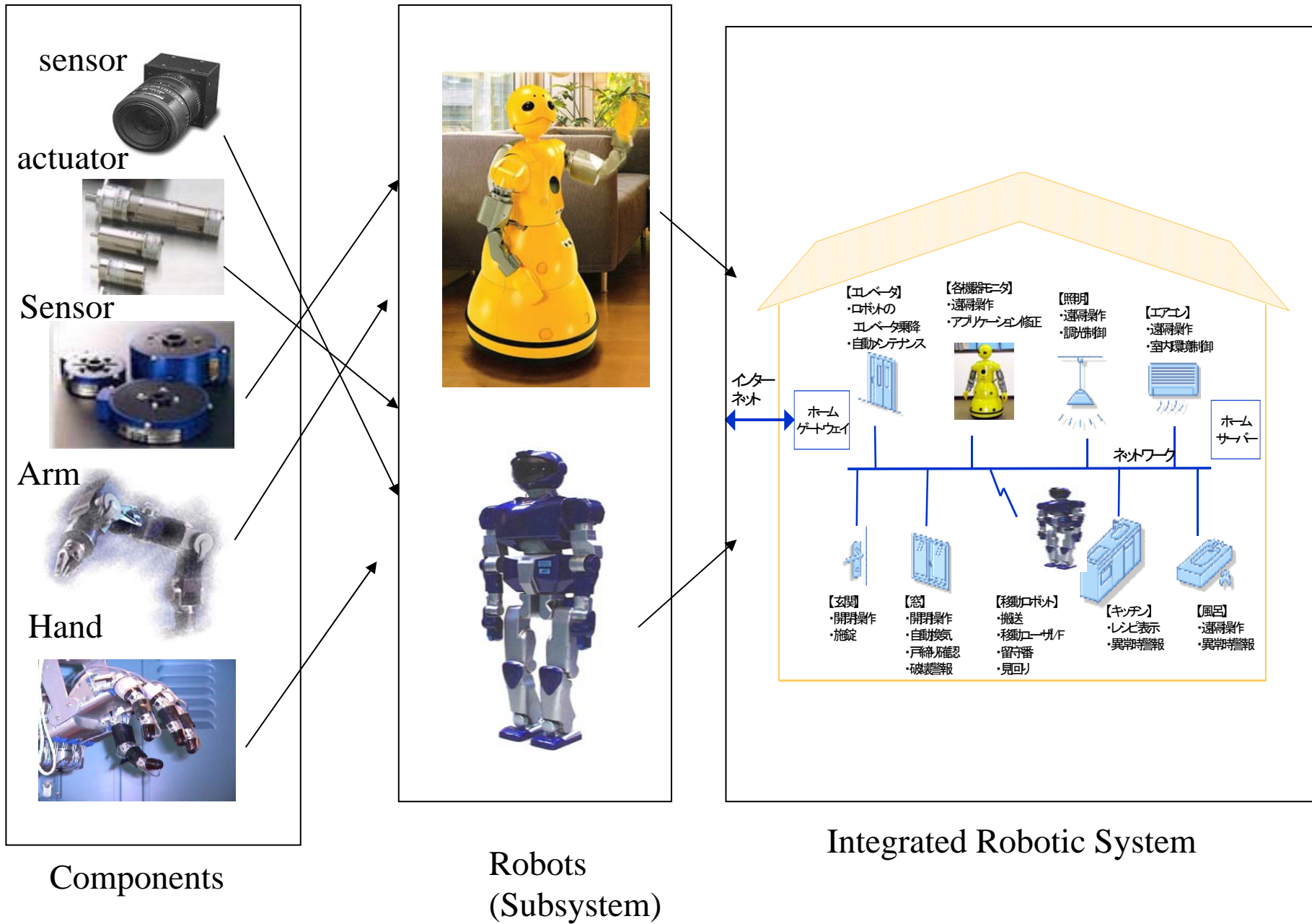
# Two kinds of Modularization

## Part I (Subsystem)



## Part II (Component)

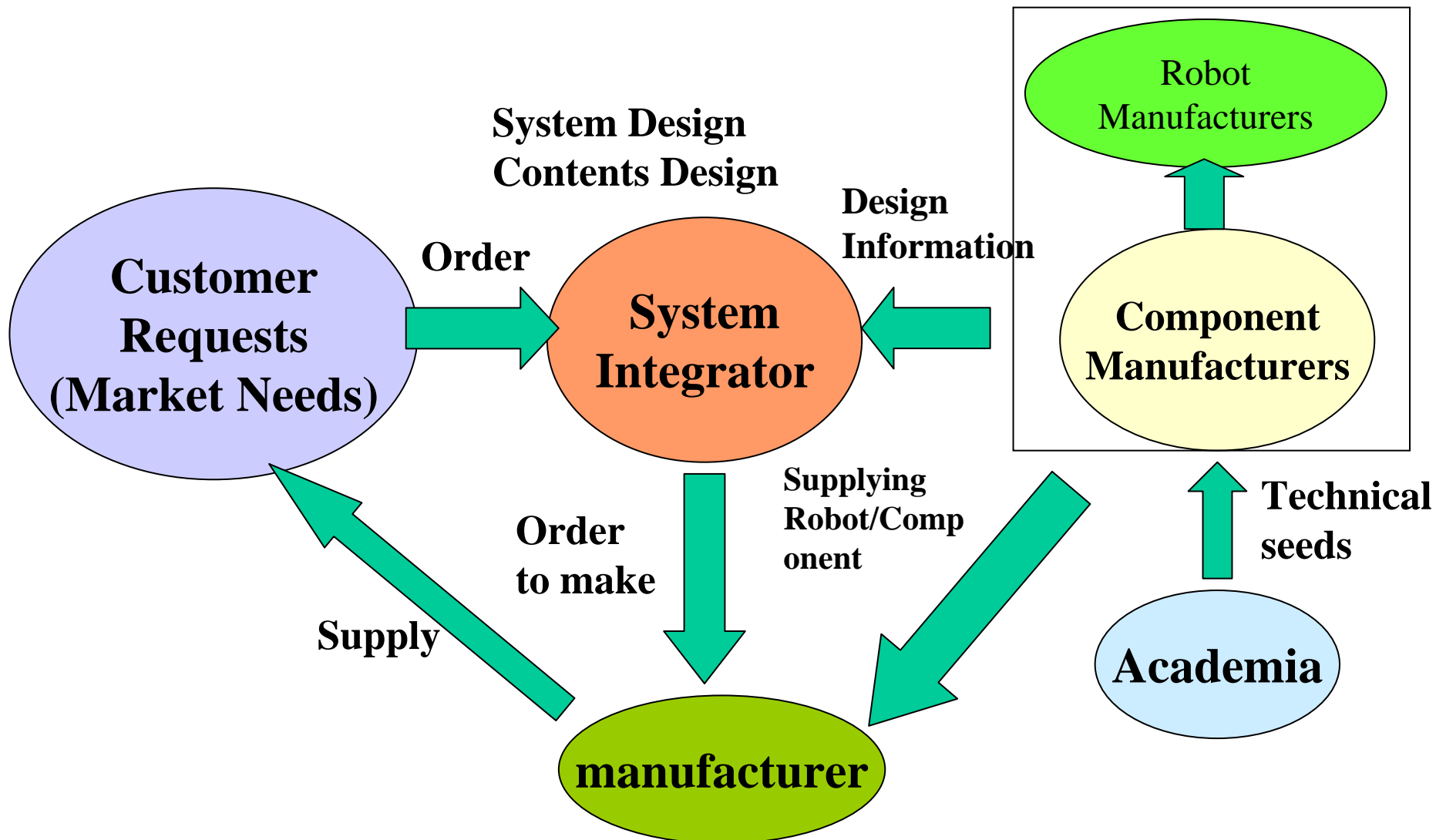




# **Three Kinds of Robotic Businesses**

- 1. Robot Component Manufacturer**
- 2. Robot Manufacturer**
- 3. Robot System Integrator**

# A Future Robotic Industry Business Model



**Thank you**