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World Robots

Industry Study with Forecasts for **2016 & 2021**

Study #2950 | December 2012 | \$6100 | 289 pages



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Robots can perform certain tasks faster and more accurately than humans can, which increases productivity and helps reduce overall costs in developing and developed countries.

World demand to rise 10.5% annually through 2016

Global demand for robots is forecast to increase nearly 11 percent per year through 2016 to \$20.2 billion, outpacing both the world's economy and overall manufacturing activity. Robots can perform certain tasks faster and more accurately than humans can, which increases productivity and helps reduce overall costs. In developed countries, which tend to have higher labor costs, robots are often used to replace human workers. In developing countries, which usually have an abundance of low cost labor, robot use is more concentrated in tasks that are difficult or dangerous for human workers. However, as wages rise in developing countries, the use of robots to replace human workers will increase, especially as advantages in end product quality and worker safety become more apparent.

Service robots to outpace industrial types

The industrial sector has been a significant user of robots for a few decades now, while the service sector has only become significant robot users since the middle of the first decade of the 2000s. Through 2016 and beyond, service robots will lead growth as lower costs and the increasing sophistication of robot technology and software make these products more appealing to a broader range of consumers. The robust outlook for service robot demand is leading an increasing number of companies to enter

World Robot Demand, 2016 (\$20.2 billion)



Asia/Pacific
42%

North America
29%

Western Europe
25%

Other Regions 4%

photo: KUKA Robotics Corp.

the market, especially in the medical and consumer product sectors, and this should increase competition and further lower costs. Professional applications will continue to dominate the service robot market, with medical robots leading gains, particularly in developed countries.

US to remain top market

Five countries -- the US, Japan, Germany, China, and South Korea -- combined to account for 68 percent of the \$12.3 billion global robot market in 2011 and will continue to dominate the overall market through the next decade. The US will remain the largest national market. China will become the second largest market by 2016.

Global robot production is dominated by Japan, the US, Germany, and South Korea, which combined accounted for 70 percent of the total in 2011. Because production is so concentrated, trade is quite important in the robot industry. Sophisticated high-value industrial and medical robots tend to be produced in highly developed countries with established high tech manufacturing industries, such as Japan, the US, and Germany. Smaller, less expensive service robots, especially those geared to the consumer market, are generally produced in countries with developed consumer electronics manufacturing capacity, primarily in Asia.

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Sample Text, Table & Chart

ASIA/PACIFIC

South Korea: Demand by Type & Market

Demand for robots in South Korea is projected to advance at a rate of 10.5 percent per year through 2016 to reach 1.2 million units, compared to a global average over the same period of 7.5 percent. South Korea accounts for the vast majority of the world's robot demand. The main motor vehicle sector will see the most growth in the auto industry and an extremely high demand for service robots.

Moreover, the key electronics manufacturers are expected to see a decline in robot usage after witnessing record robot orders in 2010 and 2011. However, room robots are widely used in South Korea in the electronics industry, and sales of these products have risen rapidly in recent years. The competition from China and other lower-cost Asian nations as well as Taiwan will negatively impact production of electrical and electronic products in South Korea through 2016.

Service robot demand in South Korea, however, will triple by 2016, reaching 1.2 million in 2016, aided by growing interest in teaching robots, security robots and medical robots. In 2012, the South Korean Ministry of Education announced that it wants to place a robot in every kindergarten classroom by 2013. Test runs with ENGKEY robots were initially conducted in the cities of Masan and Daegu. Developed by the Korea Institute of Science and Technology, ENGKEY can hold scripted conversations in English with students to help them improve their language skills. A modified version can serve as a telepresence, allowing a distant teacher to interact with students.

Medical robots have not penetrated the Korean market as yet although growth is expected to accelerate in the future as increasing domestic production. For example, in February 2011, Asan Medical Center (South Korea) opened a South Korean hospital dedicated to the development of robots for surgical applications.

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**SAMPLE
TEXT**

TABLE VI-8

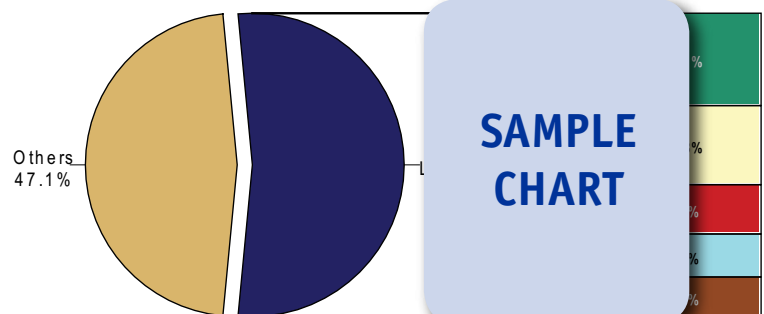
SOUTH KOREA: ROBOT DEMAND BY TYPE & MARKET
(million dollars)

Item	2001	2006	2011	2016	2021
Manufacturing Value Added (bil 2010\$)	100	120	140	160	180
\$ industrial robots/mil \$ MVA	0.1	0.15	0.2	0.25	0.3
Motor Vehicle Production (000)	1000	1200	1400	1600	1800
\$ motor vehicle robots/vehicle	0.1	0.15	0.2	0.25	0.3
Robot Demand					
Industrial:					
Motor Vehicles					
Chemicals					
Electrical/Electronic Products					
Other Industrial Markets					
Service:					
Professional					
Personal					

**SAMPLE
TABLE**

CHART VIII-1

WORLD INDUSTRIAL ROBOT MARKET SHARE
(\$8.7 billion, 2011)

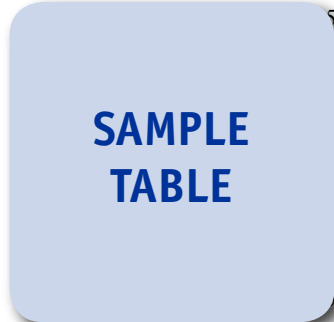


**SAMPLE
CHART**

Sample Profile, Table & Forecast

TABLE VI-7
SOUTH KOREA: ROBOT SUPPLY & DEMAND
 (million dollars)

Item	2001	2006	2011	2016	2021
Gross Domestic Product (bil 2010\$)					
\$ GDP/capita					
Population (million persons)					
\$ robot demand/mil \$ GDP					
Robot Demand					
net exports					
Robot Shipments					



COMPANY PROFILES

BA Systemes

Route de Chavagne, BP 36
 35310 Mordelles
 France
 33-2-99-85-110
<http://www.bas>

Annual Sales:
 Employment:

Key Products:



BA Systemes designs and manufactures automated guided vehicles (AGVs) for industrial logistics applications. The Company is privately held.

The Company is active in the world robot industry through the manufacture of AGVs, which are driverless industrial vehicles outfitted with communications, guidance, and safety systems. These vehicles, which can be used to pick up and transport loads in industrial facilities, encompass the GL, GF, GLE, GBH, CM, GT, and PL models. The GL AGV, which is BA Systemes' smallest offering, has a 1,200-kilogram (kg) payload and can pick up and move pallets. The GF model is designed to pick up pallets and other loads on the ground, on conveyors, or in racks, while the Company's GLE AGV is intended to handle loads of up to 2,000 kg in tight spaces. The GBH unit is equipped with special forks to horizontally transport paper reels. BA Systemes' CM AGV is a conveyor-type unit that can accommodate up to four pallets at a time. The GT model is intended for narrow aisle applications and has a lifting height of 10 meters, while the PL lift-deck AGV can be used for picking up loads on the ground or on a double-chain conveyor.

"Robot demand in South Korea totaled \$1.2 billion in 2011, making it the fifth largest national market in the world behind the US, Japan, Germany, and China (which overtook South Korea in 2011). Demand more than doubled between 2006 and 2011, with the South Korean motor vehicle and electronics industries performing particularly well. The country was a net exporter of robots in 2011, with domestic production totaling \$1.5 billion."
 --Section VI, pg. 142

OTHER STUDIES

World Food Processing Machinery

Global sales of food processing machinery are expected to climb 7.3 percent per year to \$53.3 billion in 2016. The Asia/Pacific region will record the fastest demand gains, led by China, India, Indonesia and Thailand. Bakery and pasta machinery will remain the largest segment and post the highest value gains. This study analyzes the \$37.4 billion world food processing machinery industry, with forecasts for 2016 and 2021 by type, world region and for 21 major countries. The study also evaluates company market share and profiles industry participants.

#2931 November 2012 \$5900

Sensors

US sales of sensors are forecast to climb at a 6.1 percent annual rate through 2016 to \$14.9 billion. Process variable sensors will remain the largest category, while chemical property sensors and proximity and positioning sensors will post the fastest growth. Motor vehicles will once again be the leading sensor market as production rebounds from recessionary lows. This study analyzes the \$11.1 billion US sensors industry, with forecasts for 2016 and 2021 by type and market. The study also evaluates company market share and profiles industry competitors.

#2957 October 2012 \$5100

World Material Handling Products

Global demand for material handling products is forecast to climb 4.0 percent annually through 2016 to \$123.6 billion. Opportunities will be best for sales of advanced equipment such as automated conveyors and automated guided vehicles. Among national markets, India and China will see the fastest gains. This study analyzes the \$101.4 billion global material handling product industry, with forecasts for 2016 and 2021 by product, market, world region and for 24 major countries. This study also evaluates company market share and profiles industry participants.

#2919 August 2012 \$6300

Packaging Machinery in China

Demand for packaging machinery in China will increase 7.5 percent annually to 40 billion yuan in 2016. Filling and form/fill/seal equipment will remain the largest segment, while labeling and coding equipment will continue as the fastest growing. The medical, pharmaceutical and personal care market will lead gains. This study analyzes the 27.8 billion yuan packaging machinery industry in China, with forecasts for 2016 and 2021 by product, market and geographic region. The study also evaluates company market share and profiles industry participants.

#2918 July 2012 \$5400

World Mining Equipment

The world market for mining equipment is projected to climb 8.5 percent annually through 2015 to \$92 billion. The Asia/Pacific region will remain the fastest growing market. Metals and coal mining will lead gains by application. Mining drills and breakers will pace demand among product segments. This study analyzes the \$61 billion world mining equipment industry, with forecasts for 2015 and 2020 by application, product, world region and for 31 countries. The study also evaluates company market share and profiles industry competitors.

#2840 January 2012 \$6200

About The Freedonia Group

The Freedonia Group, Inc., is a leading international industry market research company that provides its clients with information and analysis needed to make informed strategic decisions for their businesses. Studies help clients identify business opportunities, develop strategies, make investment decisions and evaluate opportunities and threats. Freedonia research is designed to deliver unbiased views and reliable outlooks to assist clients in making the right decisions. Freedonia capitalizes on the resources of its proprietary in-house research team of experienced economists, professional analysts, industry researchers and editorial groups. Freedonia covers a diverse group of industries throughout the United States, the emerging China market, and other world markets. Industries analyzed by Freedonia include:

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