
Description: The automated process revolution in educational and entertainment robots promises strong growth that extends beyond the direct markets. Once students learn how to use robots, they move into industry and make functional robots for business automated process and for communications and entertainment. Robots are automating systems, leaving more time for leisure activities. The educational kits are designed for pure fun and for educational competitions where students put together modules in innovative ways to create designs that work.

Robots are set to provide more variety to entertainment as well. The robotic ability to sing and dance and fight provides endless new modalities of entertainment as people organize their robots in a creative manner. Innovation is set to be stimulated by the modular systems that are available in the robotic community. Humanoid robots and innovative shaped robots are evolving a place in homes and offices, providing information and communications, as well as automated locomotion. The modularity of robot kits makes them versatile and flexible. Modules can be put together in a variety of ways, give users choices about what functionality the robot will have.

Educational robots are used by every level of student. Kits are geared to various age and skill levels. Robotics competitions are being held for every age level. Students do not yet receive formal education on robots and are more likely to enter competitions as clubs competing against each other representing different educational institutions.

The automated process revolution in business process and communications is being extended to robots. Markets for educational robotic kits at 541,000 units in 2007 are anticipated to reach 35.8 million units by 2014. As the price comes down and schools begin to institutionalize robotics programs, there is very fast growth anticipated. Growth at the low end robotic kits starts to level off as demand increases for robots with more components and more functionality. Robotics transcends national boundaries. Children in Germany, Japan, Korea, India and Great Britain all are equally captivated by robotics systems.

In countries across the world, those responsible for educating the future workforce, a workforce that must compete in an internationalized economy where the science and engineering acumen of workers can mean the difference between maintaining standards of living or falling behind, robotics is rightly viewed as a key enabler and educational tool. In these countries, like the US, robotics will become a mainstay of educational curricula at all education levels.

Robotics kits are being used for education and entertainment to get students started and comfortable with the technology, programming, and concepts of robots. In some competitions, the robot must fit inside a 4'x4'x4' cube for the entire duration of its run. Robots must be autonomous. Remote control is not allowed with the exception of the remote control safety switches. Robot types include insects and animal robots, listening, touching and seeing robots, robot arms, programmable robots, educational kits, hackable robot kits, legged robot platforms and kits, and wheeled platforms.

Robotics teaches skills for every field of interest from the arts to zoology. Components are used to make a robot from a kit. Robot kits are for all ages, skills, interests and budgets. The robot must be constructive. No damage the environment or other robots is envisioned or tolerated by kit manufacturers. No kit robot weighs more than 50 pounds. Competitions do not permit use of an internal or external combustion engine.

Vendors have developed extensive robotics curriculum that is taught in high schools and colleges around the world. Vendors sell books and parts kits. They also make all the books available for free download. A robot kit gives access to a huge library of technical training and information that is specifically designed for the robot. Many entertainment robots are available. WowWee Robopanda™ is a playful and talkative interactive friend. With his engaging personality and bright animated eyes, Robopanda™ loves to share stories and jokes, play games, sing songs and talk with children of all ages. He's a fun-filled robotic bear who can even crawl on all fours and return to a sitting position. Designed to work without a remote control, Robopanda is controlled directly by touch and sound. Users experience hours of delight and entertainment
playing with him and his interactive cartridge-based content.

Markets for educational robotic kits at $27.5 million in 2007 are anticipated to reach $1.69 billion by 2014. Robot entertainment and educational markets at $184.9 million in 2007 are anticipated to reach $2.985 billion by 2014. Market growth is spurred by the evolution of a new technology useful in a range of industry segments. The educational and entertainment robots represent a first step in the evolution of the robotic markets because they provide the teaching aspect of the market that precedes any other market evolution in the services and mobility segments of consumer robotics.
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