Depends on who’s doing the arithmetic, the world market for electronic automation technology is valued at between €120 billion and €230 billion. In 2006, according to the German Electrical and Electronic Manufacturers’ Association (ZVEI), it grew six percent.

According to the ARC Advisory Group, a consultancy specializing in manufacturing and supply chain solutions, globalization is the driving force behind this increase. Indeed, globalization demands that manufacturing companies live by the motto “faster, cheaper, better.” In order to survive in such a competitive environment, manufacturers need to respond to market demands in an agile and flexible manner. They also have to cut their costs, boost their productivity and performance, and shorten product lifecycles. All of the above require standardized platforms and protocols. What’s more, production lines must not only be scalable and adaptable, they also need to be characterized by the lowest possible maintenance costs.

The automation industry’s key market segments are motor systems consisting of a drives, controllers and motors; numerical controllers; and programmable logic controllers. According to ARC, global sales of motor systems amounted to about $4.5 billion, with Siemens holding a leading market share of 33.3 percent, followed by Fanuc and Mitsubishi Electric with 32 and 12.4 percent respectively. Thanks to their robust and reliable nature, programmable logic controllers (PLCs) play a key role in factory automation. These products undergo continuous improvement in terms of functionality, communications, diagnostic capabilities, scalability, and software.

ARC expects sales of programmable logic controllers to rise from $7.5 billion in 2005 to $10 billion by 2010. This area’s leading supplier of hardware, software, and services is Siemens, which holds a 28.7 percent market share, followed by Rockwell with 21.8 percent and Mitsubishi with 14.9 percent.

Demand for information technology (IT) that not only synchronizes production processes, but also simplifies such processes and increases their flexibility is rising in parallel. Users plan to efficiently link all product-relevant IT solutions by means of PLM (product lifecycle management). According to a study by consulting company AMR Research, the worldwide market for PLM products amounted to around $11 billion in 2006 and is forecast to hit $16 billion by 2010.

With a market share of 13 percent, Cadence, which specializes in CAD systems, was the number one company in the PLM market in 2005, followed by Dassault Systems and UGS — now part of Siemens — with 11 percent. The largest PLM market is the U.S., which accounts for 47 percent, followed by Europe (36 percent) and the Asia-Pacific region (15 percent).

The objectives of PLM are product and process optimization, reduced time-to-market, lower costs, higher flexibility, and improved planning and process quality. The U.S. National Institute of Standards & Technology supports the Aberdeen Group’s conclusion that manufacturing companies have a lot to gain from PLM. Implementation can cut development time and boost productivity by at least 20 percent.

According to the Aberdeen Group’s study, companies that implemented PLM solutions, enjoyed a 19 percent increase in sales, while their production and development costs fell by 16 percent.

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**The Buzz About Automation**

**Key technologies for automation**

- Sensors
  - Lab on a chip
  - Sensors for microorganisms
  - Sensors for process parameters
  - Sensors for image processing
- Networking & communications
  - Wireless sensor networks
  - Cooperative robot systems
- Software & modeling
  - Complete vertical integration
  - Assistance systems for automation
  - Simulation systems
- Control & management layer
  - Virtual traffic
  - Virtual factory
  - Virtual power plant
- Human-machine interface
  - Intuitive user interactions
  - Operators for human-robot interaction
- Plant and process automation
  - Remote-readable electricity meters
  - Sensors for plant administration
  - Sensors for process parameters
  - Sensors for image processing
  - RFID
  - Ethernet

**World PLM market**

Sales (in billions of dollars)

- 2005: 10.5
- 2006: 11.3
- 2007: 12.6
- 2008: 13.5
- 2009: 14.7
- 2010: 16.0

**Four forces driving the installation of PLM solutions**

- Demand for shorter product lifecycles: 49%
- Globalization of markets and / or supply chains: 43%
- More complex design or a decentralized design environment: 34%
- More complex products: 31%

**World process automation market**

Total world market: €61 billion

- Energy sector: 15%
- Chemicals: 19%
- Petroleum processing: 11%
- Agriculture: 14%
- Mining, stone, earths: 6%
- Food, beverages and tobacco: 9%
- Paper and cellulose: 6%
- Textile and clothing: 5%
- Iron and steel: 4%