

# Computer production 12800

Technology



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The market for computer products is a multi-billion dollar business where one

can find a perfect balance of technology and efficiency. The huge industrial market is lead by such names as IBM, Hewlett Packard, and Compaq. In the world

today, computers are used for a variety of tasks and play a crucial role in the areas of academics and business. The steps that are taken to bring the computer

from several small components to a desktop product are organization of the manufacturing facility, assembly of hardware, installation of software, and a test process. The production of a high quality product is important to computer

buyers. The following discussion demonstrates steps large corporations take to

make an efficient computer. Companies such as IBM and Apple computers are well

known in the computer industry. These companies have several manufacturing

facilities around the world where thousands of computers are built.

Manufacturing factories, which typically range between “ 75, 000 to 200, 000

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square feet”()) in size, produce approximately 14, 000 systems weekly.

Companies

generally use 2 methods of computer assembly. One method involves complete unit

assembly by one person, the other being group assembly where several people

construct a single computer (the latter method is known as assembly line production). A factory employing the single unit assembly method produces about

40 to 60 computers a day (this number varies base on the complexity of the system being assembled). The assembly line method yields approximately 70

computers a day in the average factory. The assembly line method is the most

efficient way to produce computes as individual workers become highly

specialized in a specific task. In addition, the next person down the ‘ line’

can check the pervious person’s work to check for errors. “ Additional

inspection [, as used on assembly lines] tends to increase the computer’s

quality”()). The first step in manufacturing a computer is for the designer to

consider a balance between economic need (customers price level) with computer

power and practicality. Manufacturers try to make the best computer (in a given

price range) for the lowest cost. Once a specific model is designed the company

orders the high quality parts from their own component manufacturing divisions

or outside suppliers. Inventory control is an important part of acquiring

components as, to remain efficient, the company tries to avoid overstocking.

Manufacturers take note of the consumer demand, on a daily basis to efficiently

establish quantities for the production line. Top manufactures such as IBM and

Apple buy computer components for their products based on “ availability, quality and priority of the configuration” (). When assembling a computer,

there are 8 to 10 major components installed including the processor speed chip,

the motherboard, RAM (Random Access Memory), diskette drive, modem or network

card, video card, hard drive, sound card, and CD-ROM. Before the components are

placed into the computer, each part undergoes an extensive testing process called “ quality control” (). Quality control ensures that faulty systems are not shipped. As an initial step, prior to the assembly process, an inspection of

the outer case to ensure that there are no scratches or defects. The brand name

and indicator labels are put onto the computer case at this time. Next the

motherboard is installed and prepared for the processor chip. The chip (which is

often a Pentium chip) is attached to the motherboard along with the RAM

component. Once the chip and RAM are installed, the internal speakers and sound

card are placed into the case. The hard drive, disk drive and CD-ROM drive are

in snugly attached to the computer chassis. All these components are then attached to the motherboard with cables so that they may communicate with each

other. Power supply is then applied to the computer and other additional  
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components such as the video card, and modem are added near a final stage of

assembly. After all these components are installed to create the finished

‘ PC’, the unit is thoroughly inspected to ensure that all the cables

connections are in place and all other defects are fixed. Inspectors also ensure

that cables are in appropriate places so that they do not touch components.

This

is important as heat given off components, while operating can cause minor

explosions. The CMOS (complementary metal-oxide semiconductor- circuitry for the

memory and processor) is set up at this time. The top cover is placed onto the

computer and it is shipped off for further testing. All companies differ in

their testing of finished products. A common in most companies includes the

48-hour burn in period. This period is very similar to the burn in period that a

car undergoes following production. After the 48-hour burn in, final diagnostic

tests are completed to ensure all components are working well. If a computer is

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ordered with sound cards, speakers are attached to the unit and they also are

tested. Mouse and keyboard components are tested manually by connecting a

testing mouse and keyboard to the ports. The computer is then shipped from the

manufacturing site to the distribution center. At the center, additional tests are possible as computers are randomly checked and inspected. The computer is

then further shipped to department or retail stores for sale to the consumer.

In

conclusion, the production of a computer from a number of components to a finished product is a complex procedure. It is crucial to have a well-organized

computer manufacturing facility, and it is important that assembly and

insulation of all components is carried out accurately. Final testing is the

concluding step in computer manufacturing process. The testing phase is most

important, as consumers demand high quality and efficient products. In society

today, computers are essential for the flow of information and important  
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technical tasks. The usefulness of the computer and subsequent consumer demand

for improved models will keep pressure on manufactures to build more efficient,

high quality machines in future years.