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Few can deny the impact computers have had on our society. They sort the mail, route aircraft, process tax returns and, with increasing complexity, entertain us.

Today's children are growing up in a world that has never been without the mechanical mind or the electronic game. Even university students only dimly recall the first, hesitant steps taken by "Pong", the first mass-market video game.

The effects of computers on society, even today, are hard to gauge. Postal and automobile workers have long complained that automated processes are costing them jobs, but are today's high unemployment rates strictly the result of computers? Administrators charge that children's minds are being drawn away from their studies by the electronic wizardry presented in the movies, on television and in the arcades. But are the children becoming stupider, or are they simply learning different things than their parents did?

Computers begin and

We are rapidly seeing computers emphasize the class differences in society. Computers and computerization obviously cost money, and it is the rich children, the rich schools and the rich nations that can afford them. But how different is this form of industrialization than, say, the automobile, a device which quickly became affordable to most and gave transportation to all?

Futurist Alvin Toffler spoke of the "electronic cottage," quiet, isolated areas where we would work and live in the same building. Others have postulated an "information revolution;" Nesbitt, in his book Megatrends, isolated information as a commodity that would be processed and sold by computerized societies.

But how accurate are these predictions? The easy response to this and other questions is to say we shall find out in the future. But that does not satisfy the father whose son can perform binary logic but not math, or the woman who job was replaced by a mess of wires and rods.

The impact of computerization seems to mean what people want it to mean. To labour unions, almost unanimously fighting automation, it means the decline of labour and the recurrence of management exploitation. To the plant manager, it means lower operating costs and higher maintenance bills. To government, computers will provide a means of handling the mass of data required to run a country. To the civil libertarian, though, computers mean governments will be able to monitor their every activity.

How is it though that computers are creating unemployment? The answer lies in the fusion of computer technology and automation. The concept of machines aping human movements has been around for a long time. Kurt Vonnegut illustrated the possibility in one of his first books, *Player Piano*. Many seemingly simple tasks, however, require a flexibility that could not be produced without the computer mind and sensitive input devices.

Automation was essentially the product of the industrial revolution. The cost in jobs first protested by the Luddites is still being realized as more and more repetitive tasks are replaced by machines.

In many offices the clatter of manual and electric typewriters has vanished; in its place exists the quiet hum of video-display terminals and word processors. In the business offices computers check the books, bill customers and prepare the payroll.

Companies look at expanding computer facilities for a very simple reason: it's cheaper. In times of prosperity the computer is not essential; the increasing load of data can be handled by one or two more employees. But in times of recession the company can no longer handle the payroll, but must handle the workload. Computers specialize in the sorting and processing of information. And many computers cost less than the proverbial "two month's salary."

The need for computers is stimulated by what is referred to as "information overload" by a number of authors. Quite simply, the amount of information to be processed exceeds the human capacity to process it. Computers are filling a gap.

In the sciences the same trend is evident. A Calgary company, Geophysical Services Incorporated (GSI), uses computers to process seismic data. This information, stored on magnetic tapes, could be processed by people. Even with computers, however, it requires a staff of over fifty people to fill the demands of city oil companies.

Computers create three diffe those that repair the machine, machine and those that

It has been said that computers will allow work to be more rewarding, that the work force will be able to operate on a theoretical rather than a practical basis. This is true, but for management personnel only. In fact, computers create three different levels of worker: those that repair the machine, those that monitor the machine, and those that use the machine.

This division is once again seen by the operations of GSI. The workforce is divided into three sectors, and within each sector there are definite hierarchies. At GSI, there are technicians, operators, and users. The operators are at the low end of the scale. Their job, quite simply, is to watch the computer screen, stack print-outs, and call someone if something goes wrong.

The operator calls the operations supervisor, who has a major decision to make: is it a mechanical error, or a program error? In other words, does he call in the technician or the user?

If the technician is called, he will arrive with several people in tow. The highest person on the technical totem pole is the designer, but he rarely shows. Instead, the next highest, the manufacturer's representative (IBM calls them CEs, or Customer Engineers) will arrive. Behind him will be the company's own technical person and an apprentice.

