TECHNOLOGICAL CHANGE AND MANAGEMENT EDUCATION

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I - Introduction

Since the mid-seventies a new system of technology has been gradually supplanting the system that emerged at the end of the last century.

The former system was based on heavy industry and general technology in the fields of steel/cement/alloys and plastic, combustion engines and electricity as well as for all equipment, systems and products related to these materials and sources of energy (i.e. automobiles, home appliances, machine tools, airplanes, telephones, television sets, etc.).

The new system is based on four fields of technology: microelectronics (information technologies), biotechnology, new materials and electro-optics (light technologies).

THE NEW TECHNOLOGIES (a)

- PRODUCTS
  - NEW PRODUCTS (CALCULATORS, COMPUTERS)
  - ADDED TO EXISTING PRODUCTS (RADIOS, AUTOMOBILES)

- MANUFACTURING PROCESSES
  - NUMERICAL CONTROL
  - ROBOTICS
  - COMPUTER-ASSISTED DESIGN (CAD)
  - FLEXIBLE MANUFACTURING
  - INTEGRATED MANUFACTURING AND DISTRIBUTION (CIM, LAND)

- TELECOMMUNICATIONS (INTEGRATED DIGITAL SYSTEMS, SATELLITES)

- SERVICES (COMPUTERIZATION OF A WIDE RANGE OF SERVICES)

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Of these new technologies, only the use of microelectronics is currently widespread. The others are still in the fledgling stage and it will still be a few years before they make a major impact. This is particularly true of biotechnology.

Every new technological system involves new ways of organizing production and labor, new strategic concepts and even more international operations (transport, telecommunications, etc.).

**CHARACTERISTICS OF THE NEW TECHNOLOGICAL SYSTEM**

**MICROELECTRONICS**

⇒ REPRODUCE HUMAN CAPACITY TO CALCULATE AND ANALYZE

**BIOTECHNOLOGY**

⇒ CREATE NEW BIOLOGICAL SPECIES/EXCEED NATURE'S LIMITS

**NEW MATERIALS**

⇒ CREATE PREVIOUSLY UNKNOWN MATERIALS/EXCEED NATURE'S LIMITS

**TECNO-OPTICS**

⇒ BASED ON SOLAR LIGHT/UNLIMITED ENERGY

**RESULT**

- A NEW SOCIETY
  WITH UNSUSPECTED
  CAPABILITIES AND THREATS