

**8° IT STAR Workshop on History of Computing  
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***Italy's early approaches  
to the Computer Era***

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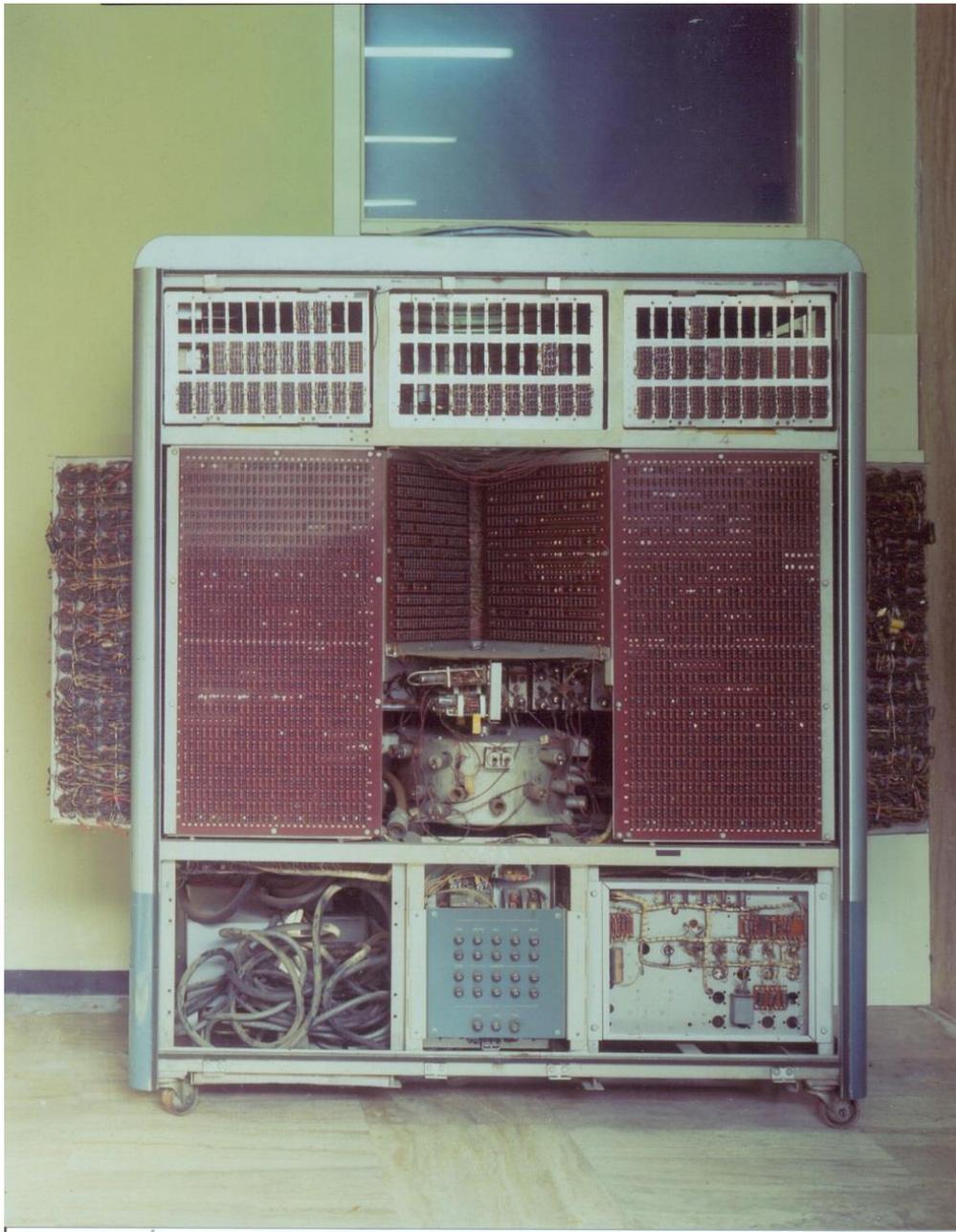
*AICA (The Italian Computer Society, IT STAR Member Society)*

## The “buy” approach

○ The Polytechnic of **Milano** acquired in USA a Crc 102-A computer to equip the just then set up *Centro di Calcoli Numerici*. The machine was running by **October 1954** and the Centre officially opened some months later.

○ The *Consiglio Nazionale delle Ricerche* (C.n.r.) bought in UK a Ferranti Mark I\* for the *Istituto Nazionale per le Applicazioni del Calcolo* (Inac). The Finac machine (a contraction of “Ferranti Inac”) arrived in **Roma** in **November 1954** and completed acceptance test on **June 1955**.





**CRC 102-A. (1954)**

**Drum memory is placed in  
central position.**

**(still preserved at the  
Polytechnic of Milano)**

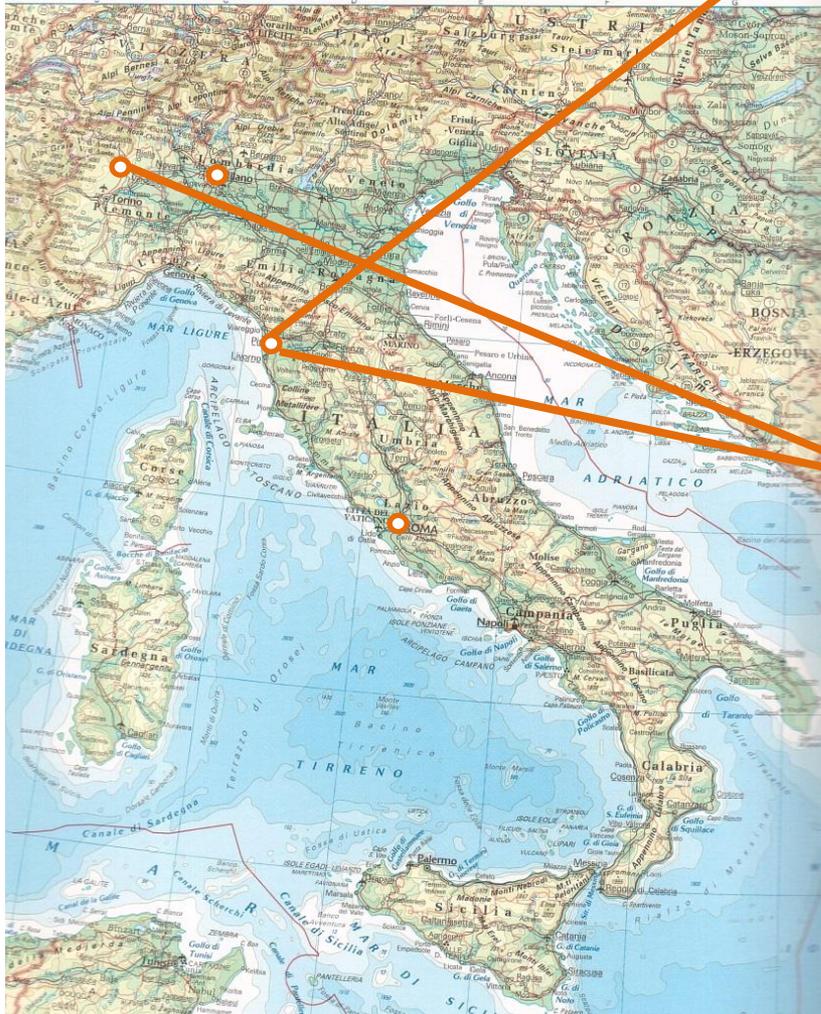


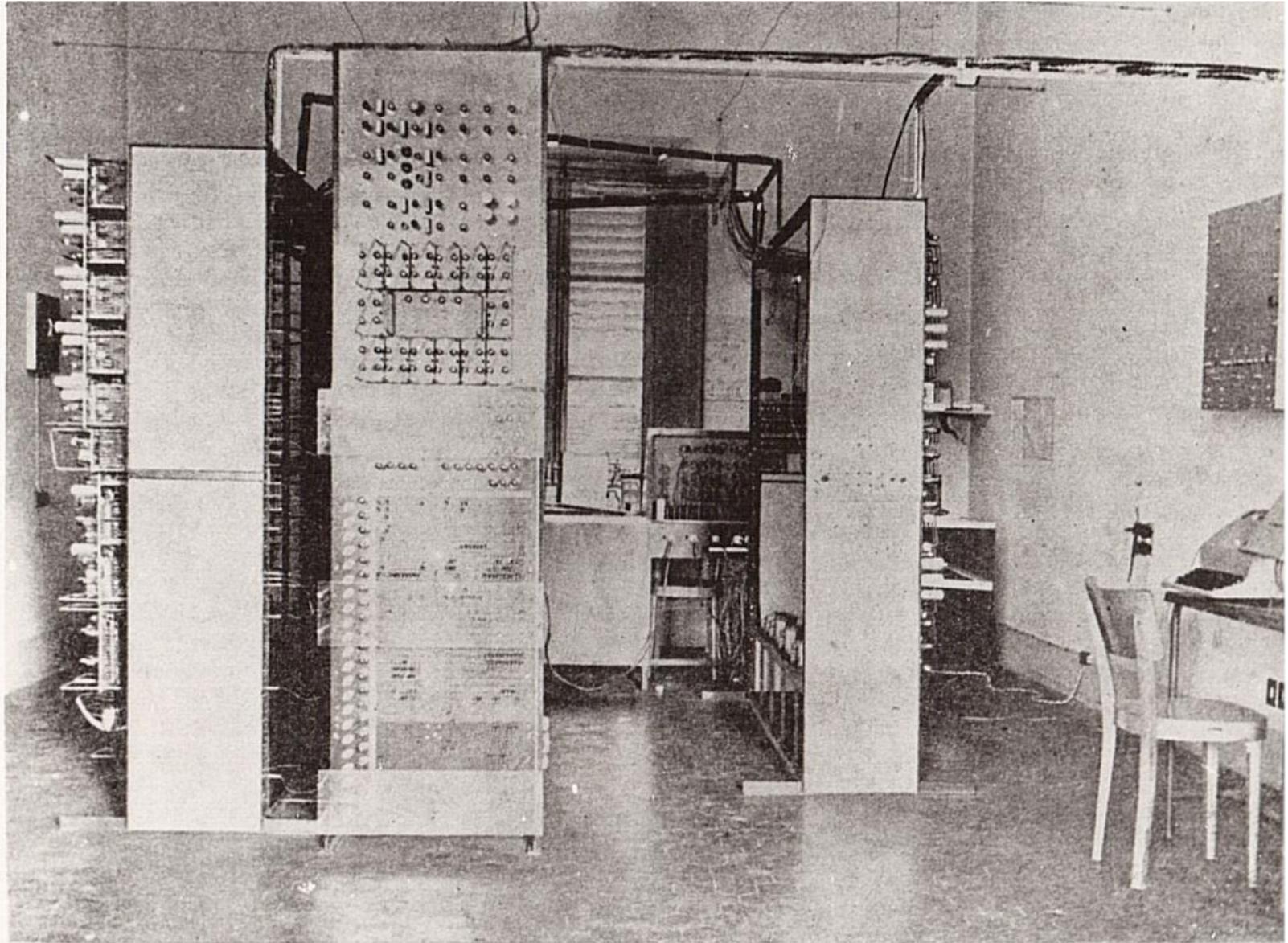
**Finac / Ferranti Mark I \*. (1965)**

## The “make” approach

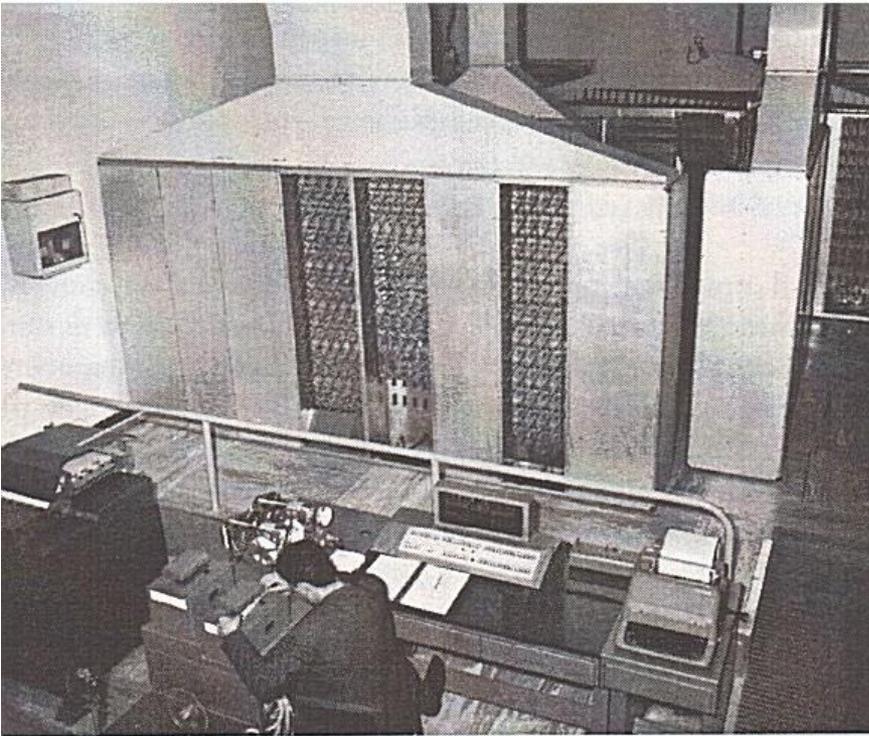
○ The University of **Pisa** established his *Centro Studi Calcolatrici Elettroniche* (Csce) with the aim of designing and build the *Calcolatrice Elettronica Pisana* (Cep) scientific computer. Csce activities started in **March 1955**.

○ The internationally renowned firm Olivetti decided to enter the then emerging computer industry. His *Laboratorio Ricerche Elettroniche* (Lre) was then established at Barbaricìna – nearby **Pisa** – in order to design and prototype the Elea commercial mainframe. R&D begun at **mid 1955**. Olivetti’s headquarters were located in **Ivrea**.





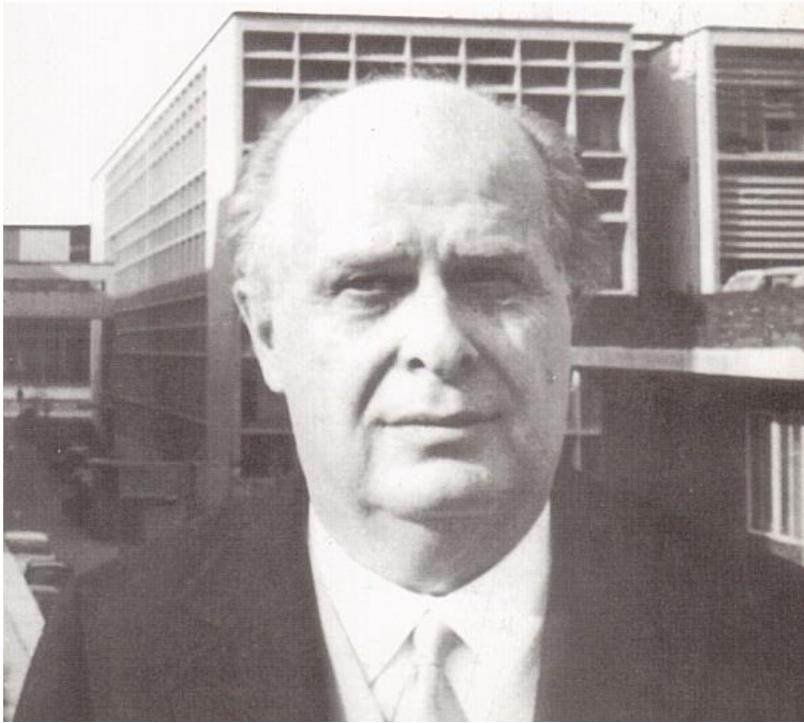
**Csce "Reduced Machine" (1957)**



**Cep computer (1960); partial view.**

**Still preserved at the Museo degli strumenti di calcolo (Pisa).**





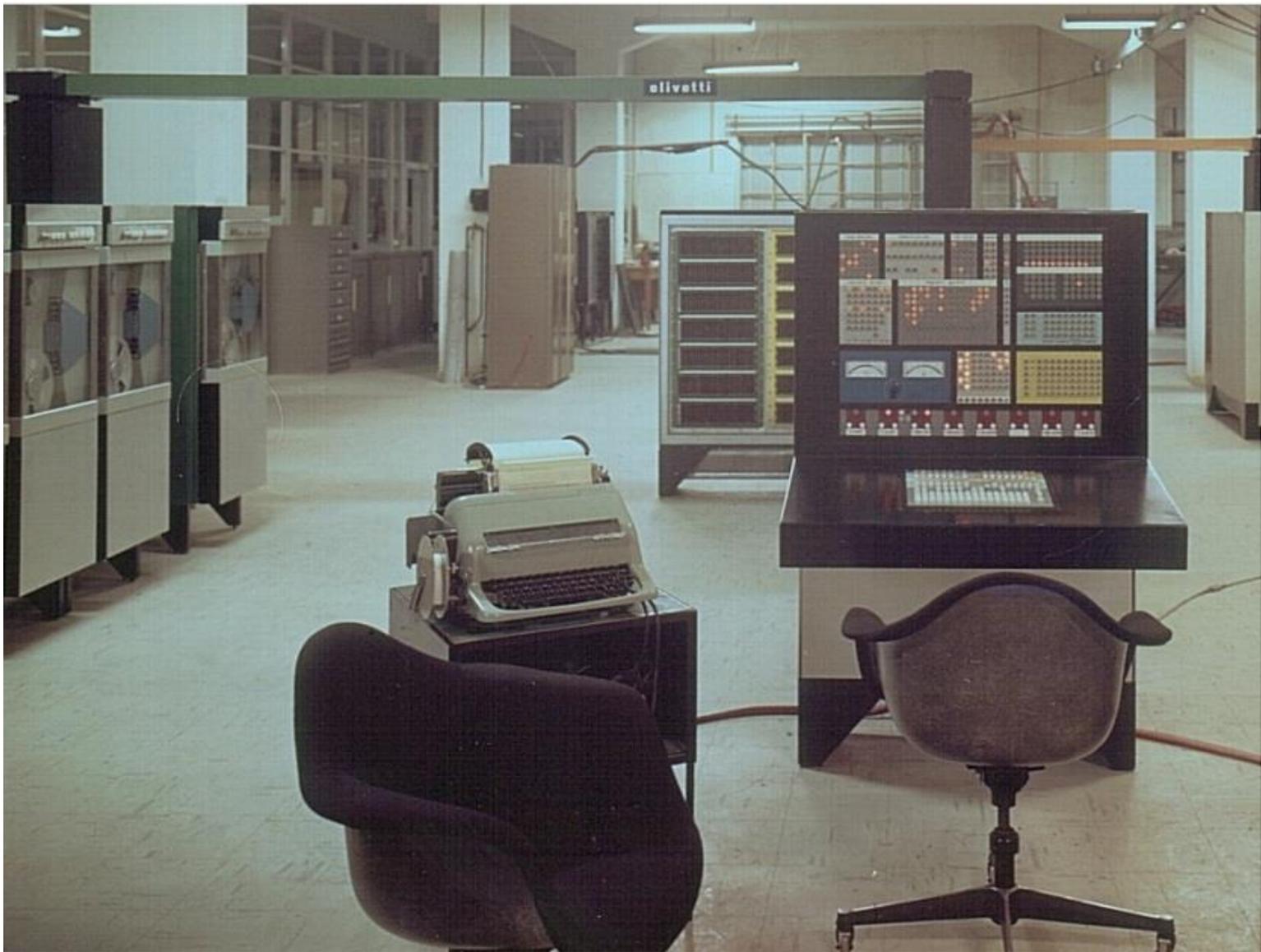
**Adriano Olivetti (1958).  
In the background some of the  
Olivetti buildings at Ivrea.**



**Roberto Olivetti, left, and  
Mario Tchou (about 1958).**



**The first group of “Barbaricina Guys” (1956).  
Standing, from left: G. Calogero, F. Filippazzi, M. Tchou, R. Galletti, P. Grossi, S. Sibani, G. Sacerdoti. Kneeling, from left: L. Borriello, S. Fubini, O. Guarracino, G. Raffo. On the occasion, M. Friedman was away.**



**Olivetti Elea 9003 (1959); 35 machines sold.  
(Still preserved – not depicted here – at the Istituto  
Tecnico “Enrico Fermi” of Bibbiena (Tuscany))**

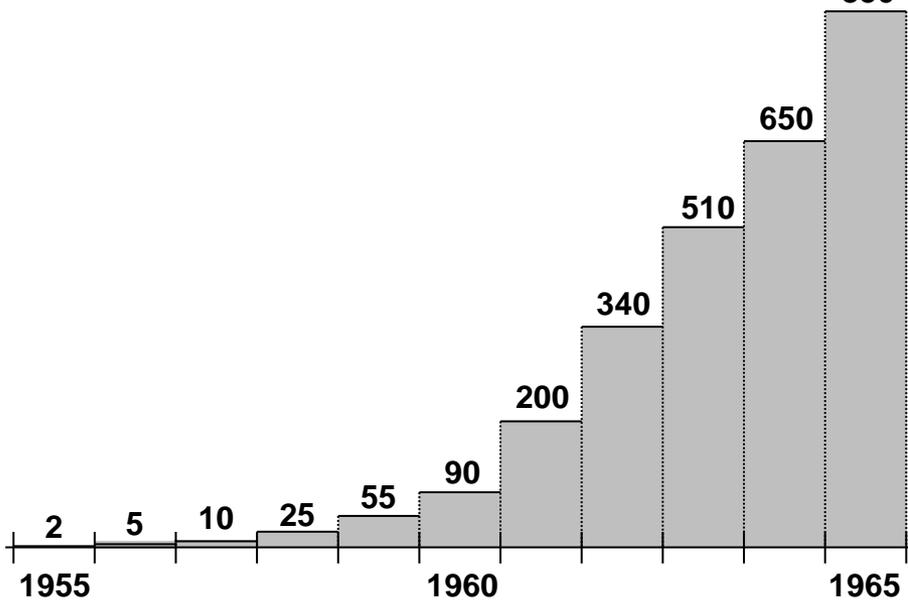
	CEP	ELEA 9003	FINAC	CRC 102A
Word size	36 bits	variable	20 bits	42 bits
Main memory technology	Magnetic cores	Magnetic cores	Williams tubes	Magnetic drum
Main memory capacity (words)	4,096	20,000 char up to 160,000	832	1,024
Secondary memory devices	Magnetic drum and magnetic tape	Magnetic tape	Magnetic drum	Magnetic tape
Secondary memory capacity	Drum: 32K words; tape: 1,536K words	13,000 Kchar	32K words	117K words
Additions per second	~6,700	~5,000	~1,041	~100
Kind of components	Vacuum tubes, germanium diodes and transistors	Germanium diodes and transistors	Vacuum and cathode tubes	Vacuum tubes and germanium diodes
Instruction set	128	91	30	25
I/O devices	Tape punch and reader, teletype-writer and printer	Tape punch and reader, card punch and reader, printer and teletype-writer	Tape punch and reader, teletype-writer and printer	Tape punch and reader, and teletype-writer
Electric power used	25 kW	4.5 kW	35 kW	20 kW
Exemplars made	1	35	9	20



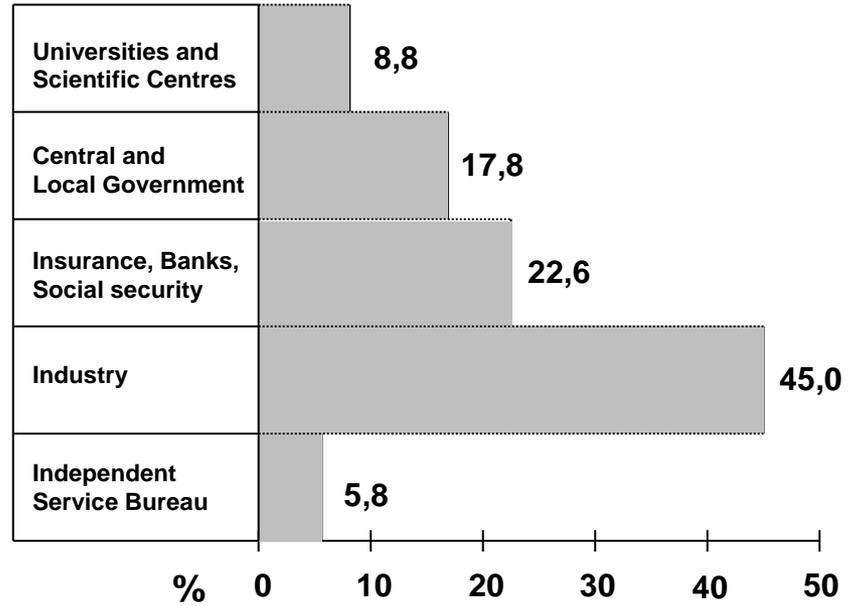
**Olivetti Elea 6001 (1961); 64 machines sold.  
(Still preserved – not depicted here – at the  
Museo degli strumenti di calcolo; Pisa)**

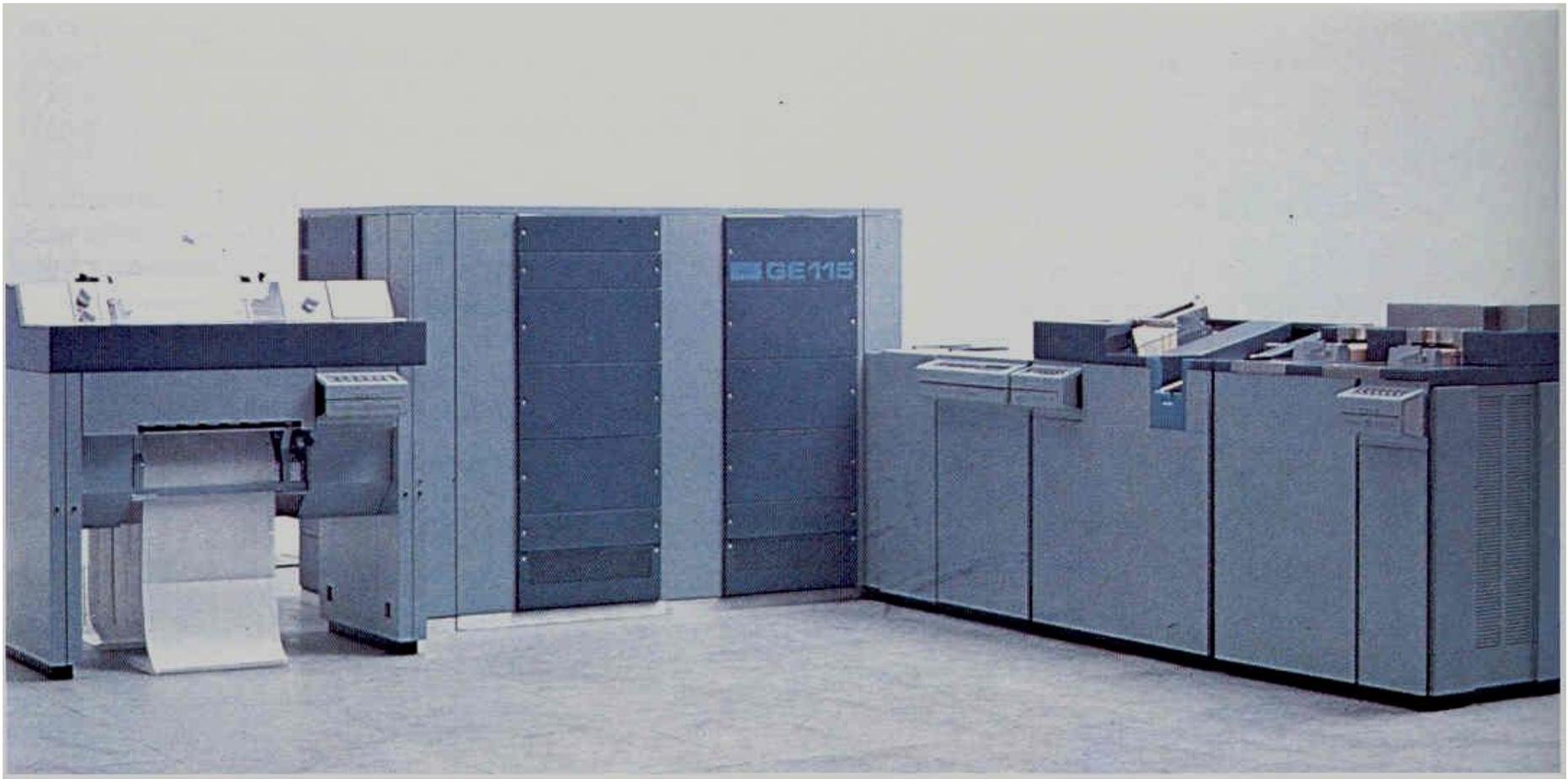
## COMPUTER SPREAD THROUGHOUT ITALY

### Number of Installed Computer 1955-1965



### % Share by User Category (1965)

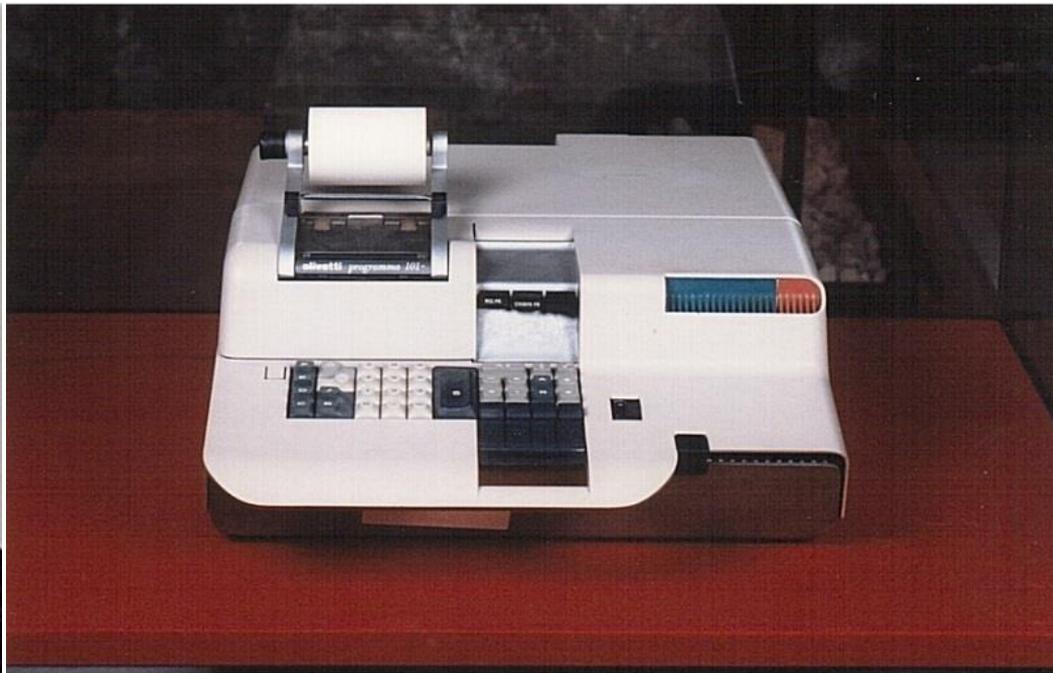




**General Electric GE 115 (1965); over 4,000 machines sold.  
GE adaptation of Olivetti Elea 4001 (1964).**

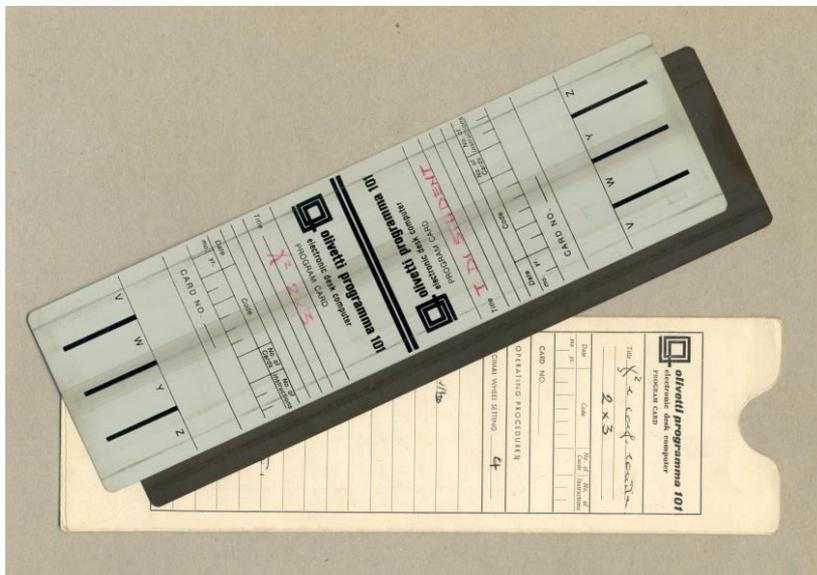


**Pier Giorgio Perotto (1991)**

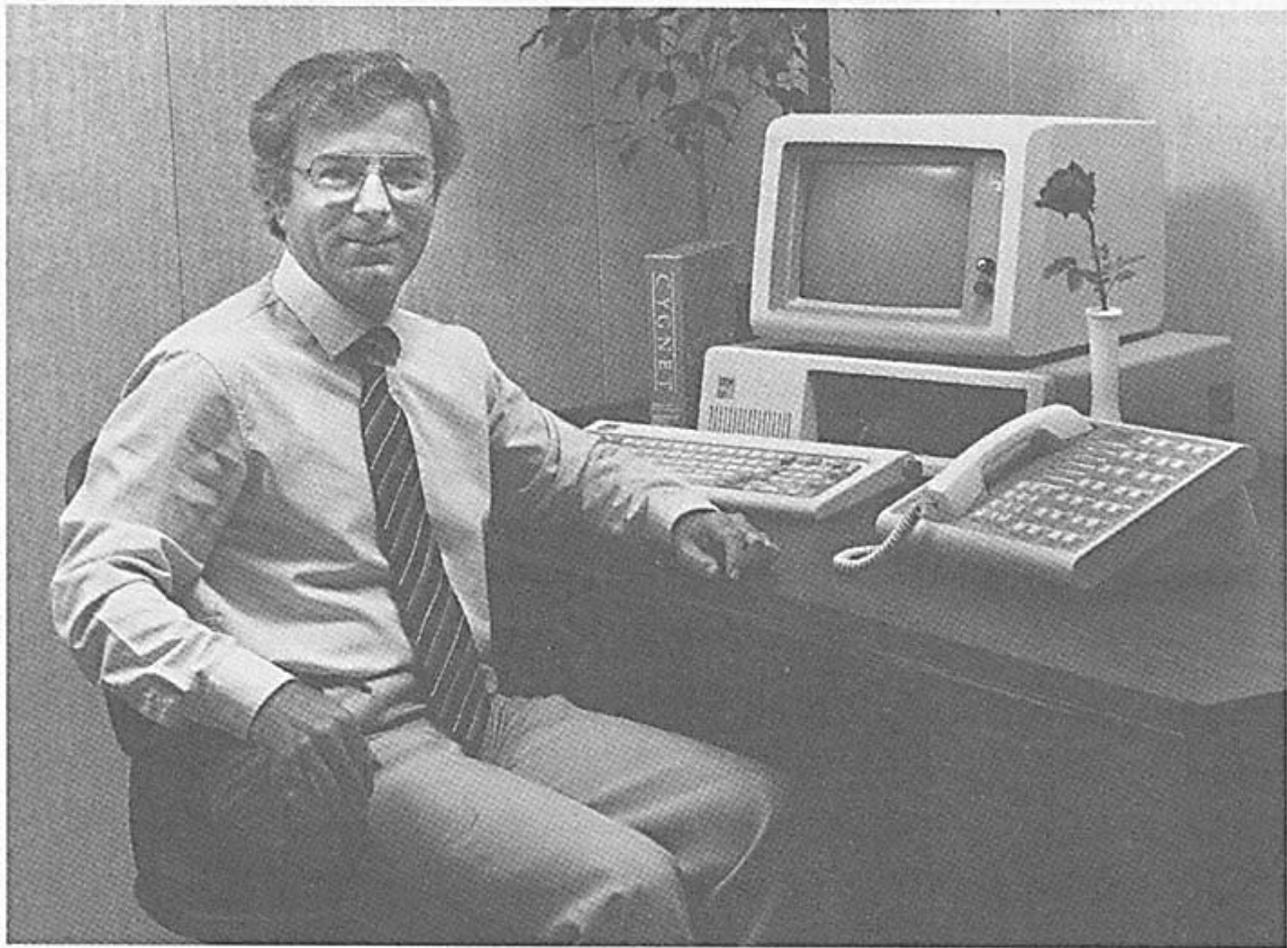


**Olivetti Programma 101 (1965)**

(C. Bonfanti collection, Trieste)



**Floppy card for P 101.  
The black reverse is the  
magnetic-sensitive side.  
(7×25 cm)**



**Federico Faggin (1969)**

***Q & (possibly) A ?***

***thanks !***