

# Olivetti Early Computers

(at least) two cases  
of brand making

Conservatoire National des Arts et Métiers  
Paris, 25 June 2013

G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

1 / 48

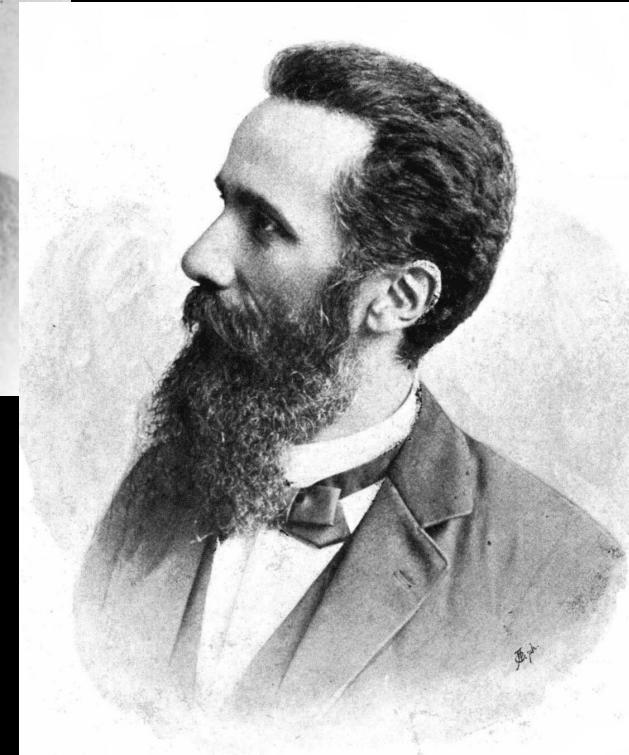
Creator  
Creation  
Language

# The founder, and its mentor

Camillo Olivetti  
(1868-1943) was an  
electrical engineer

Pupil of renowned  
Galileo Ferraris

Asst. Researcher  
Stanford 1893/94



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

2/48

Creator  
Creation  
Language

# The first Olivetti

First enterprise  
Centimetro-Grammo  
-Secondo (1896-1907)  
electronic equipments

Ing. C. Olivetti & C.  
(1908) typewriters

Key element: a social  
approach to the firm,  
with faithful people  
as Domenico Burzio



Creator  
Creation  
Language

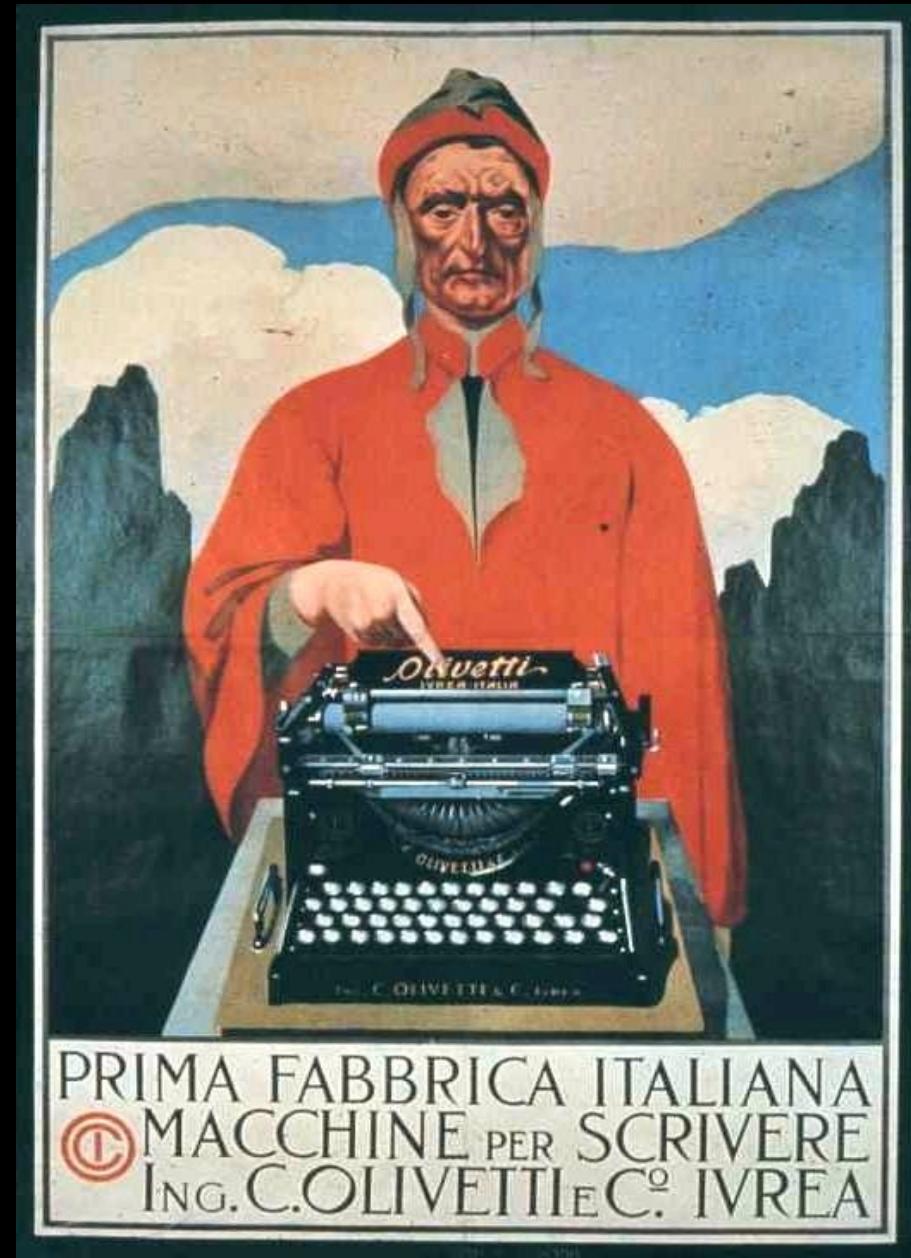


[hmr.di.unipi.it](http://hmr.di.unipi.it)

# Mostly, typewriters

First model M1,  
released for the  
1911 anniversary

...but it's a varied  
enterprise, devoted  
e.g. to import/export  
of mixed goods



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

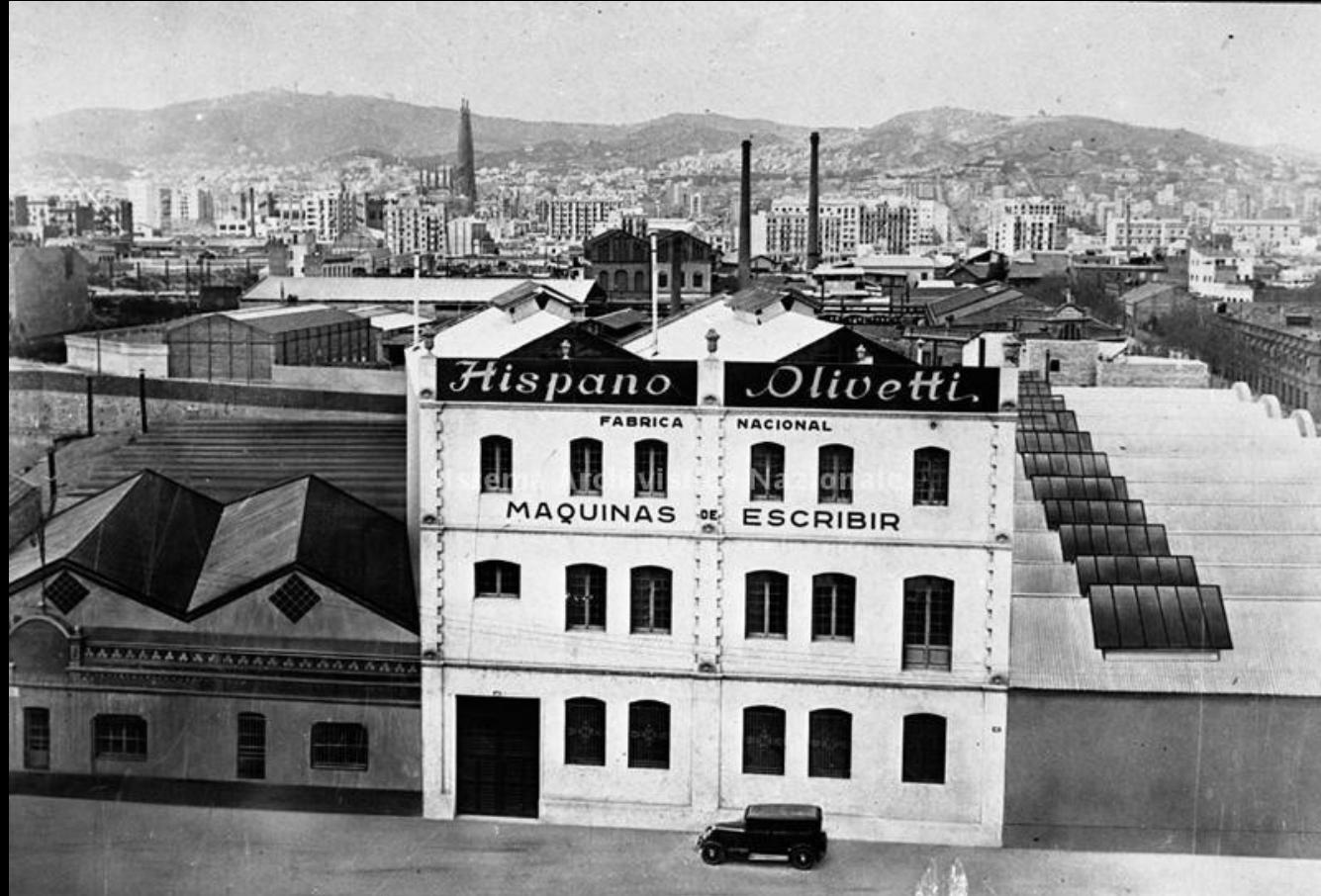
4/48

Creator  
Creation  
Language

# Some partners & branches

Barcelona  
(1929)

Buenos Aires  
(1932)



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

5 / 48

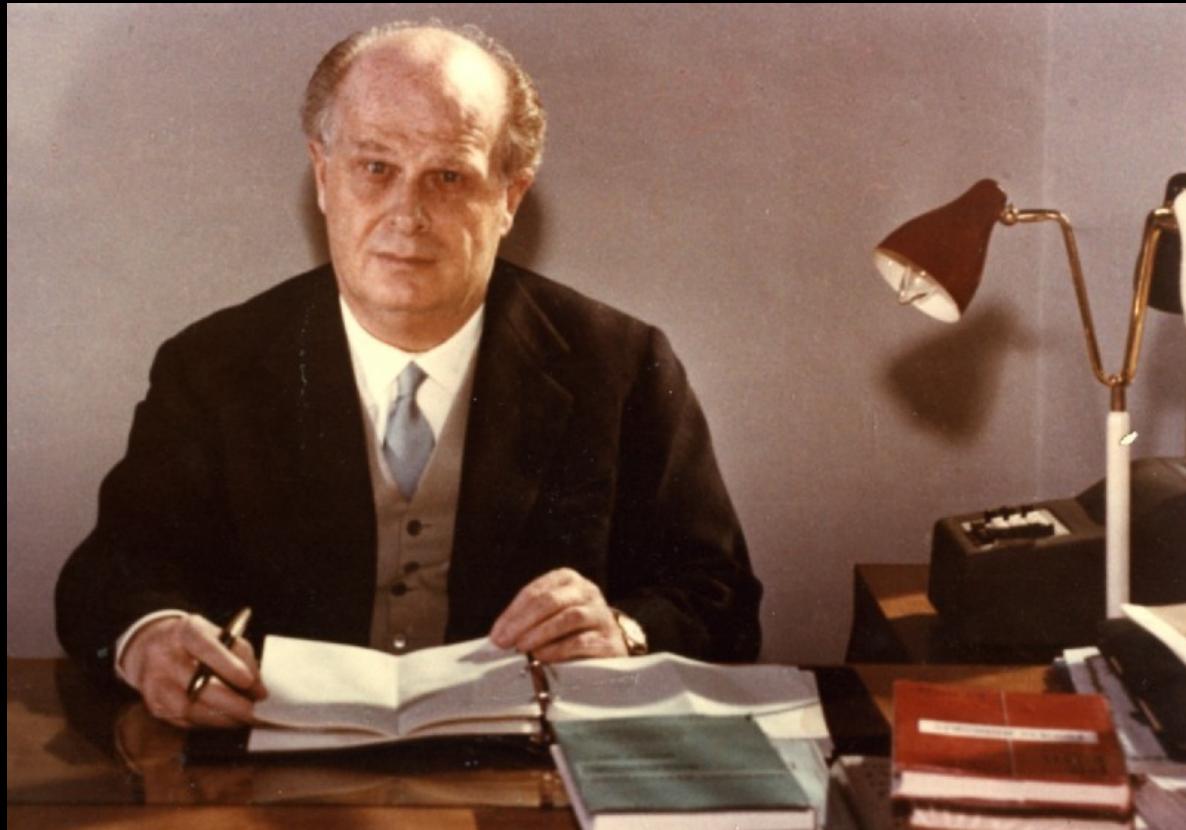
Creator  
Create  
Langua

# Enters Adriano

Adriano Olivetti  
(1901-1960) was a  
chemical engineer

In charge of the  
family firm (with  
a large group of  
relatives!!) since  
1932, fully in 1938

Also a politician  
(1948, Movimento  
Comunità), along  
utopic socialism



G.A. Cignoni, F. Gadducci

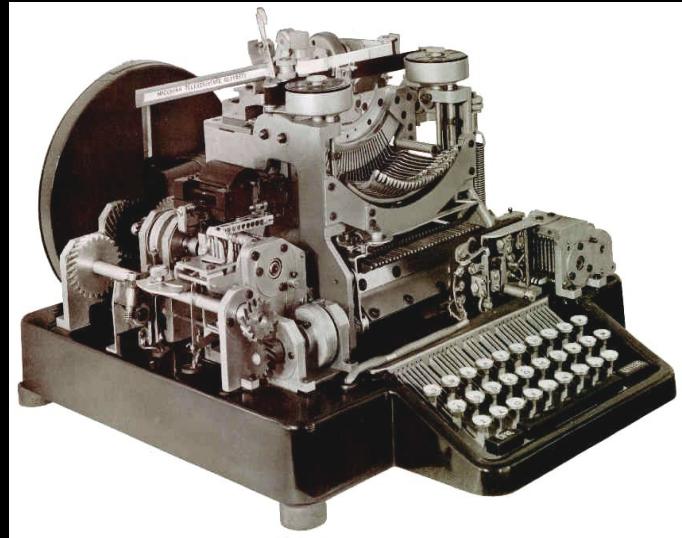


# The second Olivetti

Portable typewriter  
(MP1, 1932)

New industrial plants  
(Figini&Pollini, 1934-36)

Teletype (T1, 1937)



G.A. Cignoni, F. Gadducci

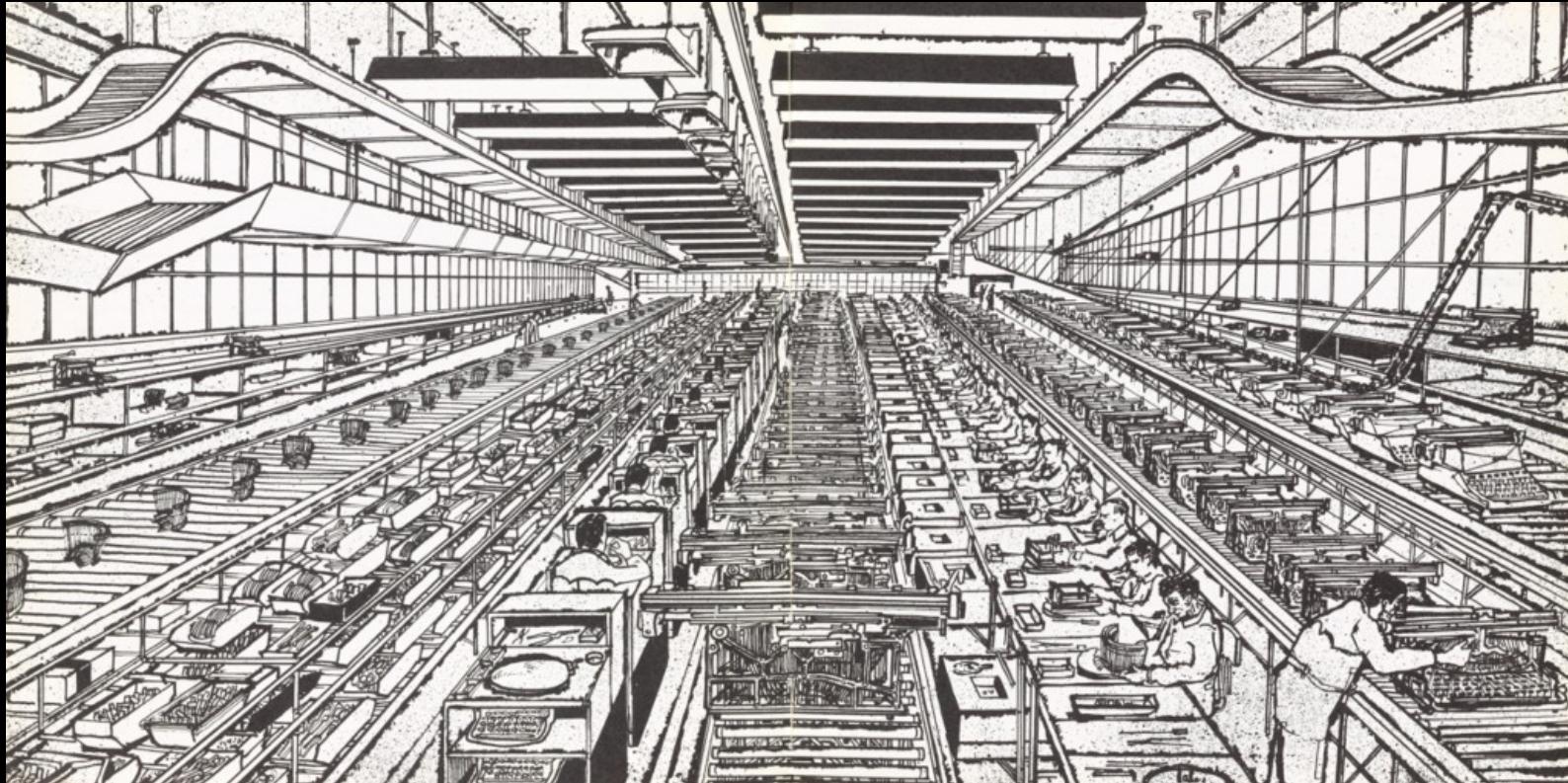


[hmr.di.unipi.it](http://hmr.di.unipi.it)

7/48

Creator  
Creation  
Language

# New organization



G.A. Cignoni, F. Gadducci

A more efficient production line [late depiction]

A largely remunerative product

A large stake of the national market



Creator  
Creation  
Language



[hmr.di.unipi.it](http://hmr.di.unipi.it)

8/48

# New style

Lagomarsino  
(i.e. fascist  
rationalism)  
vs. Olivetti  
(i.e. “telefoni  
bianchi”!!)

Bazzi (~1930)  
vs. Boggeri &  
Shawinsky  
(1934)



# A detour on Lagomarsino

Audit 52 (1934)

A Luce newsreel  
from 1928...

In the meanwhile,  
Olivetti becomes a  
world player wrt.  
typewriters and it  
starts a chain of  
Macchine contabili  
(1933-34)

...with new lines  
up into WW2!!



Multisumma  
4M (1941)



Creator  
Create  
Langua



[hmr.di.unipi.it](http://hmr.di.unipi.it)

10/48

G.A. Cignoni, F. Gadducci

# After the war: New products...

Natale Capellaro (1902-1977),  
yet another faithful employee

Divisumma 14 (1948)

Divisumma 24 (1956), one  
million in 1967 (90% net)



G.A. Cignoni, F. Gadducci

# ...and going into electronics

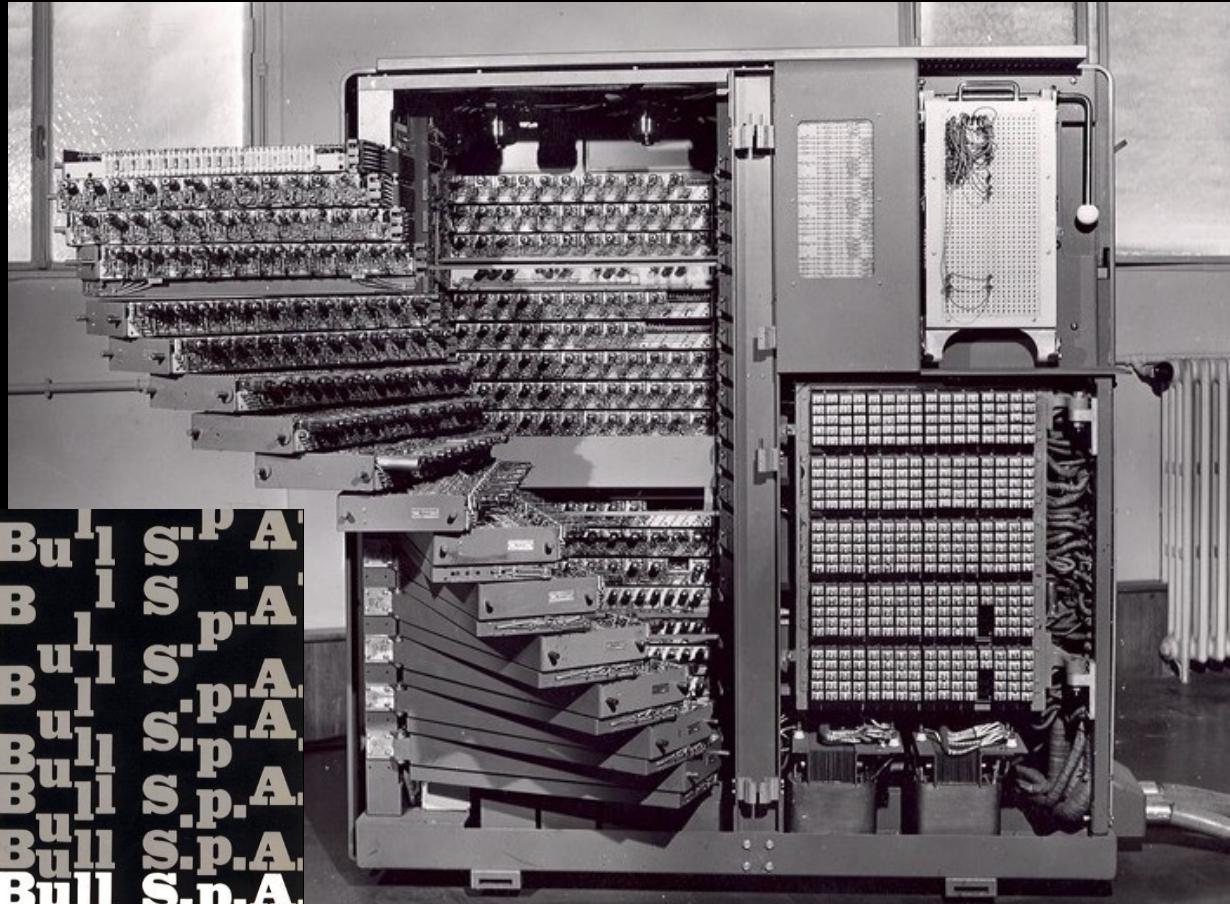
Bull partnership  
(1949-64), mostly  
for importing the  
Gammas (thus  
against IBM)



Le imprese di qualsiasi dimensione possono trovare in un Centro Mecanografico un mezzo sicuro per rendere più efficiente e dinamica la gestione aziendale.

La Olivetti Bull mettendo a disposizione della clientela la vasta gamma delle sue apparecchiature, offre la possibilità alle piccole come alle grandi aziende di avvalersi dei più moderni sistemi di elaborazione dei dati.

Macchine per l'elaborazione dei dati



Courtesy E. Mori



[hmr.di.unipi.it](http://hmr.di.unipi.it)

12/48



# A journey in the USA (1950)

Ist. Nazionale per  
le Applicazioni del  
Calcolo (1927)  
Mauro Picone

Olivetti Corp.  
of America (1950)  
Dino Olivetti

Research labs in  
New Canaan (Ct)  
(1952)  
Mario Canepa



G.A. Cignoni, F. Gadducci



# MOMA and shops

New shops and subsidiaries in Chicago and S. Francisco (1952)

Most famous in New York (1954)

“Olivetti: design in industry” is held at MOMA (1952)



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

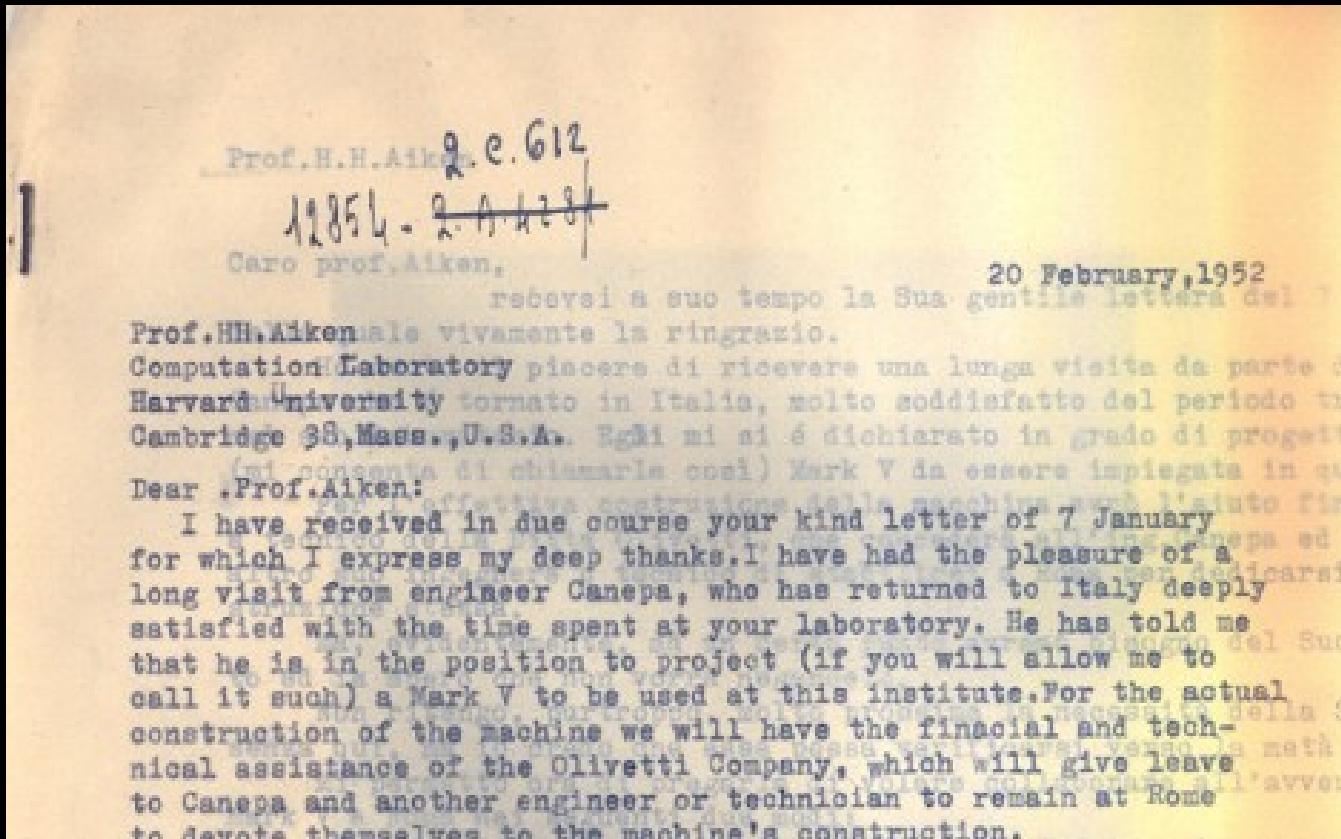
14/48

Creator  
Creation  
Language

# The Mark V attempt (early Fifties)

A joint venture

INAC  
Harvard  
Olivetti



# After a long thinking, Picone buys

FINAC (1954)

Ferranti Mk1\*

[In those same months, also Politecnico di Milano buys (Luigi Dadda)]

[Somehow, both fundings are related to Marshall Plan]



G.A. Cignoni, F. Gadducci



# The University of Pisa project

Funded by three (3)  
local administrations  
(Pisa-Lucca-Livorno)

Pushed by both the  
Physics Department  
& its community

Firmly endorsed by  
Enrico Fermi

RIUNIONE PER IL SINCROTRONE DEL 20 MARZO 1954			
Ripartizione del fondo di 150 milioni tra gli Enti			
Comune di Pisa	£. 40.000.000)	90.000.000	
Provincia di Pisa	" 50.000.000)		
Comune di Livorno	" 15.000.000)	33.000.000	
Provincia di Livorno	" 18.000.000)		
Comune di Lucca	" 12.000.000)	27.000.000	
Provincia di Lucca	" 15.000.000)		

FINANZIAMENTO			
Anni.....	Spettrografo di massa	Calcolatrice elettronica	Totale.....
1955	10.000.000	8.000.000	18.000.000
1956	10.000.000	26.000.000	36.000.000
1957	8.000.000	27.000.000	35.000.000
1958	-	30.000.000	30.000.000
1959	-	31.000.000	31.000.000
	28.000.000	122.000.000	150.000.000



hmr.di.unipi.it

17/48

Creator  
Creation  
Language



G.A. Cignoni, F. Gadducci

# Olivetti joins

Officially in 1956

Funding, materials,  
and personnel  
(1956-1961)

Mario Tchou was  
helping since 1955

[10k per year, plus  
120k total by local  
funds, plus more by  
the Physics Dpt.]



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

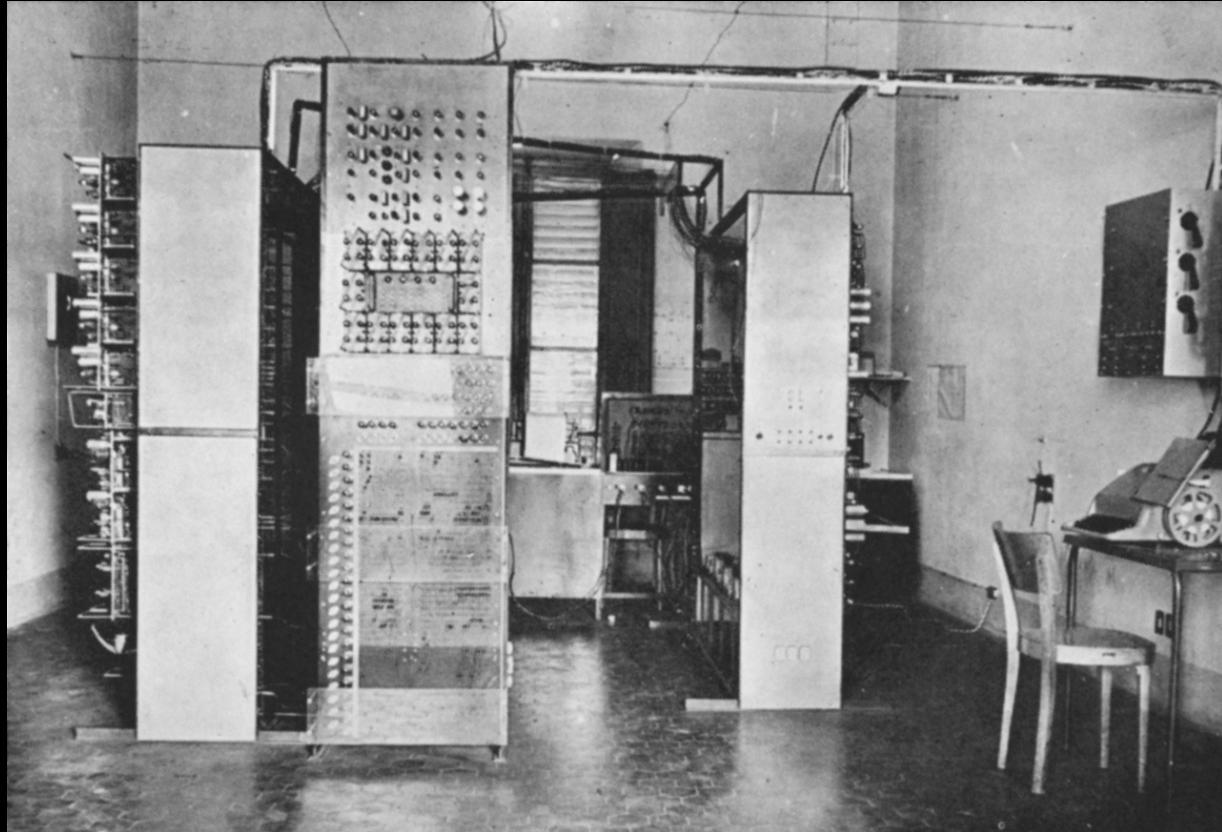
18/48

Creator  
Creation  
Language

# The Macchina Ridotta

Alfonso Caracciolo  
Elio Fabri  
Giuseppe Cecchini  
Sergio Sibani  
(1957)

The very first  
Italian computer



G.A. Cignoni, F. Gadducci



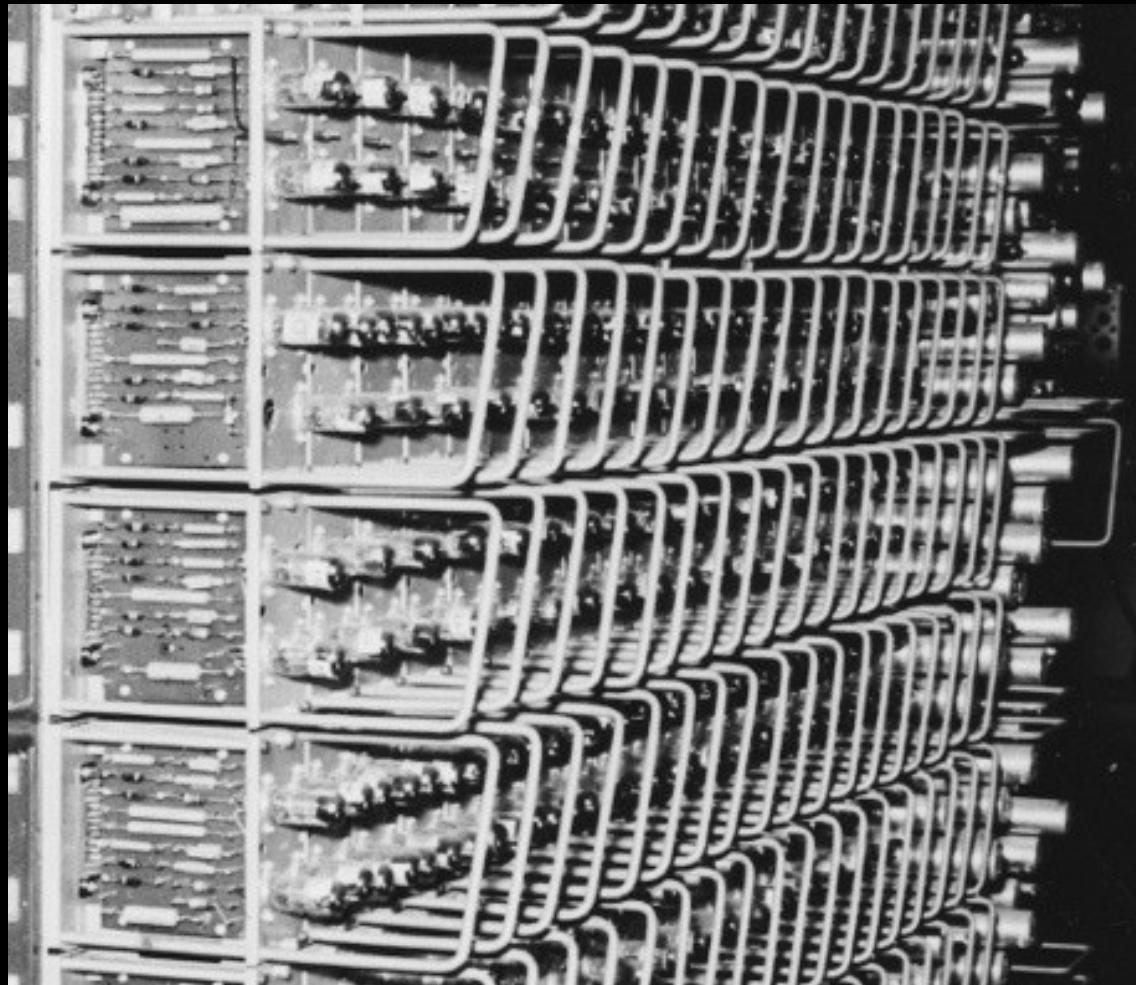
[hmr.di.unipi.it](http://hmr.di.unipi.it)

19/48



Creator  
Creation  
Language

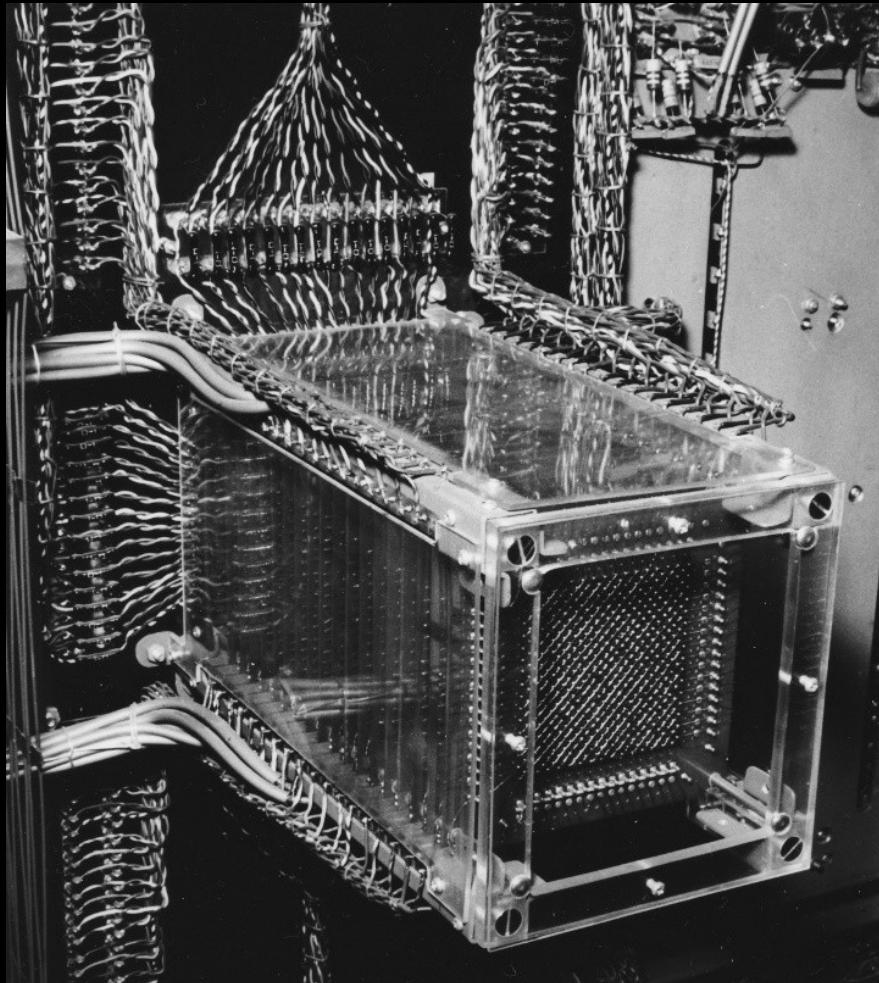
# Parallel machine



G.A. Cignoni, F. Gadducci



# Ferrite core memory



G.A. Cignoni, F. Gadducci



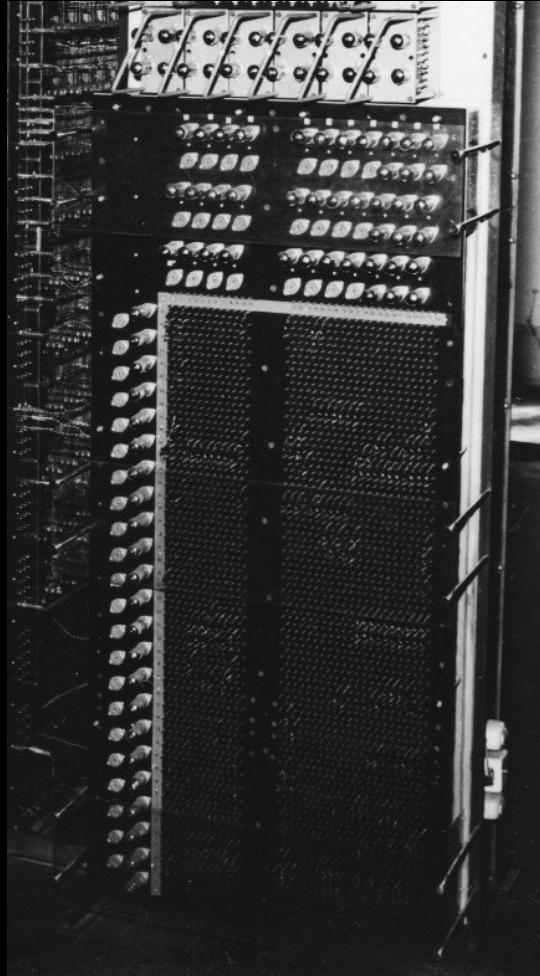
Creator  
Creation  
Language



[hmr.di.unipi.it](http://hmr.di.unipi.it)

21/48

# Microprogrammed control



G.A. Cignoni, F. Gadducci



Creator  
Creative  
Langua



[hmr.di.unipi.it](http://hmr.di.unipi.it)

22/48

# A small but fine machine

State of the art,  
for its time

Few interesting  
features

hot breakpoints  
DMA access

[a nice T2 (1949) is  
in plain view]



G.A. Cignoni, F. Gadducci



# The “other” Olivetti project in Pisa

Laboratorio  
Ricerche  
Elettroniche  
(Barbaricina,  
Pisa, 1955-58)

...and two of  
its important  
protagonists:  
Roberto O.  
(1928-1985) -  
Mario Tchou  
(1924-1961)



G.A. Cignoni, F. Gadducci



Creator  
Create  
Langua



[hmr.di.unipi.it](http://hmr.di.unipi.it)

24/48

The first Olivetti  
Computer, called  
Macchina Zero  
(1958)

[Here in its later  
home near Milan]



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

25 / 48

Creator  
Creation  
Language



# Transistors are coming

W.B. Shockley,  
J. Bardeen,  
W. Brattain

R. Noyce  
The Traitorous Eight  
S.M. Fairchild  
(1957)



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

26/48

Creator  
Creation  
Language

# Transistors vs tubes

Smaller,  
low voltages,  
no heating

Neither faster,  
nor more reliable  
(at least initially)



G.A. Cignoni, F. Gadducci

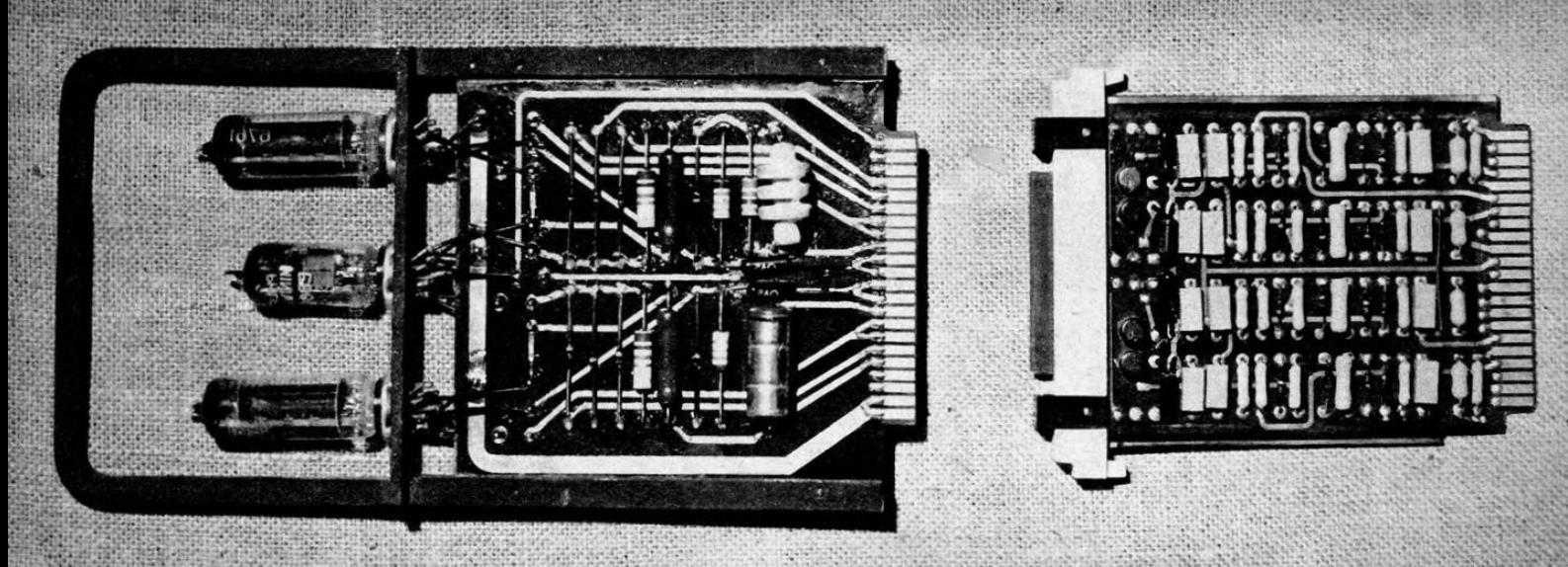


[hmr.di.unipi.it](http://hmr.di.unipi.it)

27/48

Creator  
Creation  
Language

# The Olivetti technology switch



The ELEA project starts with Macchina Zero (aka ELEA 9001V)

SGS established by Olivetti & Telettra (with Fairchild as partner)  
LRE moves to Borgolombardo (near Milan)

G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

Creator  
Creation  
Language

# ELEA 9002



Presented at the 1959 Milan Fair  
(here at the Olivetti shop in town)

G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

29/48

Creator  
Create  
Langua

# Design..

Compasso d'oro

«... delle specie  
di armadi... molto  
fantascientifici...  
un aspetto  
assolutamente  
metafisico e  
impenetrabile...»

Ettore Sottsass Jr.



Courtesy E. Mori

G.A. Cignoni, F. Gadducci



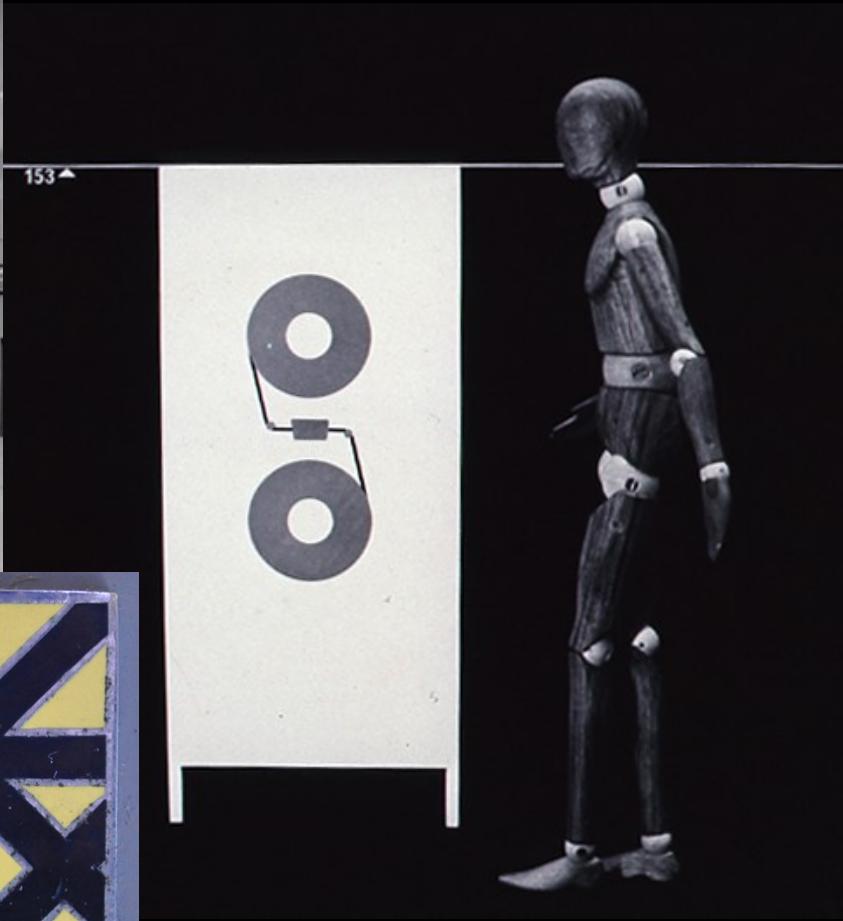
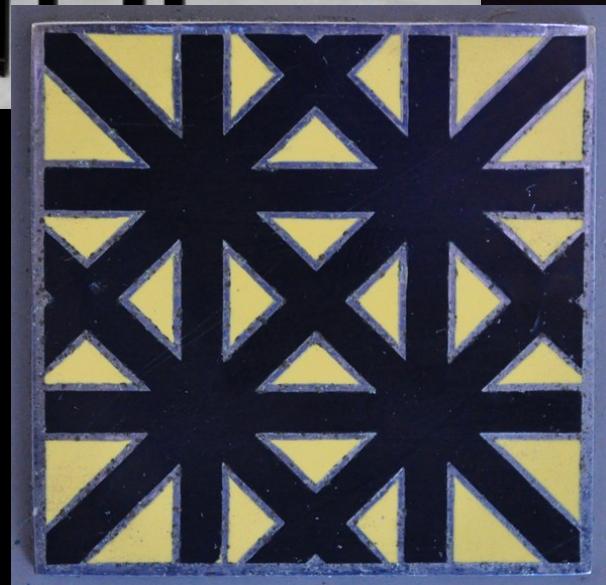
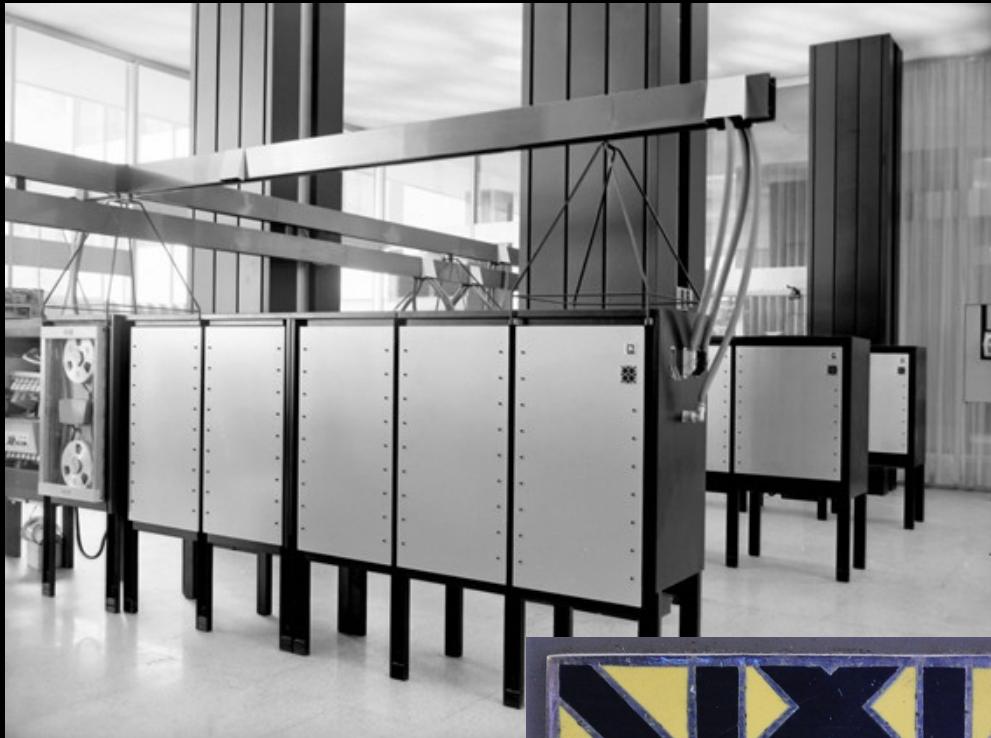
[hmr.di.unipi.it](http://hmr.di.unipi.it)

30/48



Creator  
Creation  
Language

# ...and new ergonomics/signs



Courtesy E. Mori



G.A. Cignoni, F. Gadducci



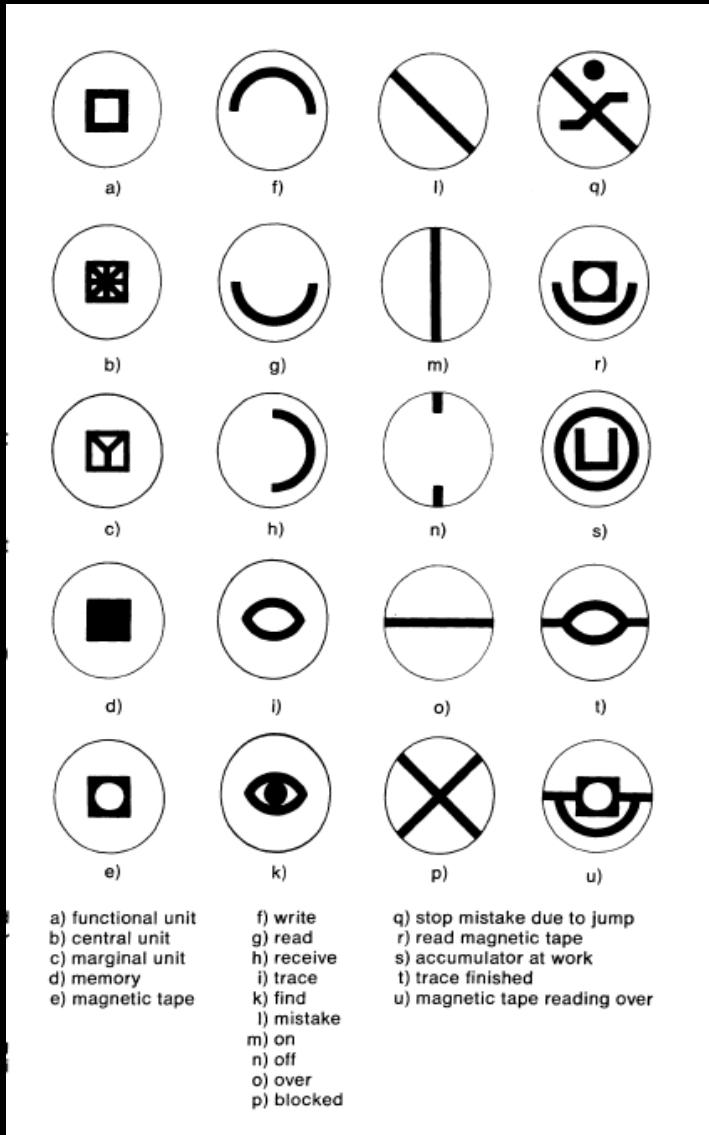
[hmr.di.unipi.it](http://hmr.di.unipi.it)

Creator  
Creation  
Language

# An overall idea of design



Sottsass&Maldonado at ULM (1959)  
at work on the chassis of Tekne 3



Bonsiepe&Maldonado signs alphabet  
planned for ELEA 9003 (~1959)

32/48

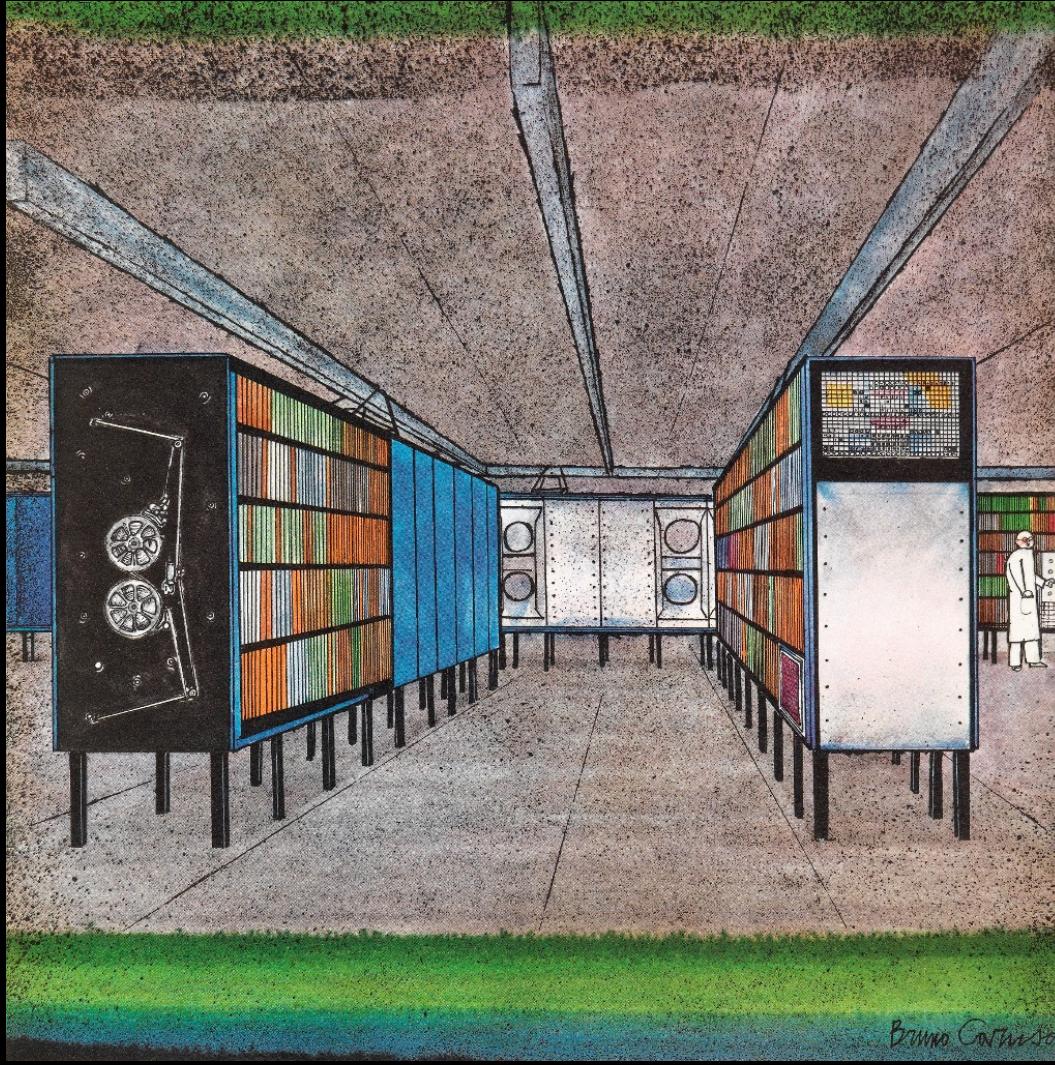


[hmr.di.unipi.it](http://hmr.di.unipi.it)

# Design and branding

Bruno Caruso

Agenda Olivetti 1960



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

33/48

Creator  
Creation  
Language

# A few more examples

Reasoning on  
Elaboratore  
Elettronico  
Automatico  
(ELEA school)

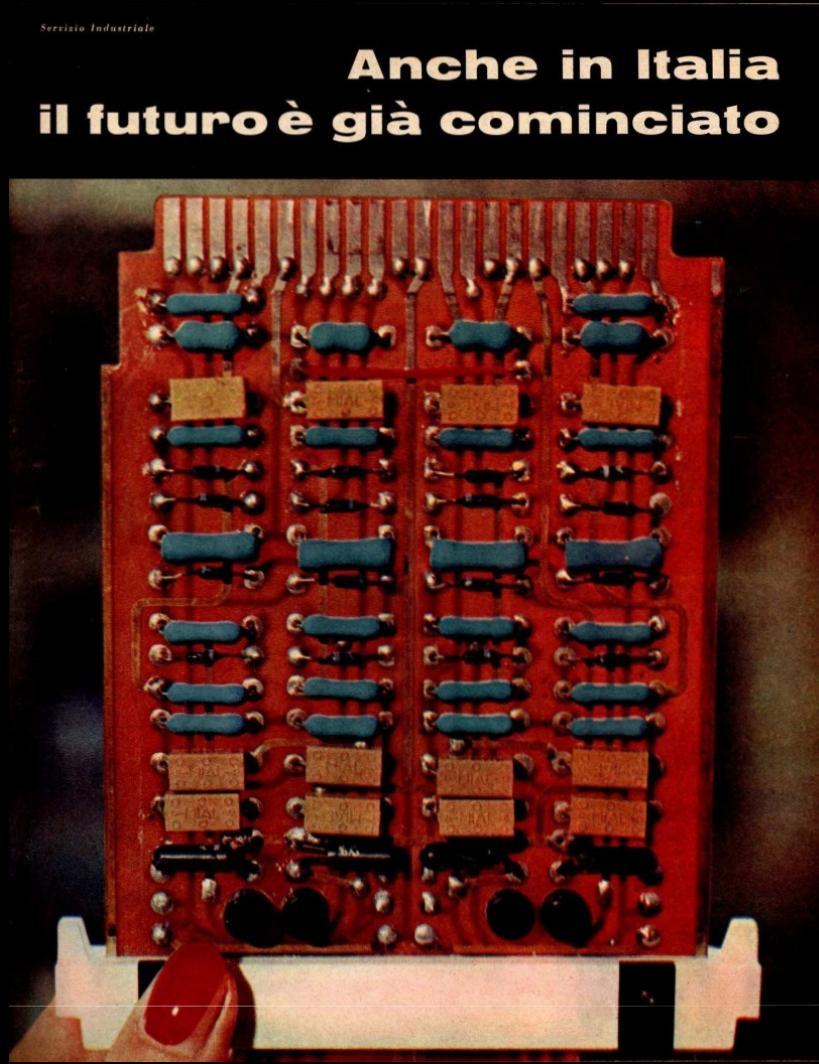
...and adding  
an art market  
touch!!



# Brand advertising, popular

Epoca magazine

Technology  
popularization  
(with a bit of hype)



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

35/48

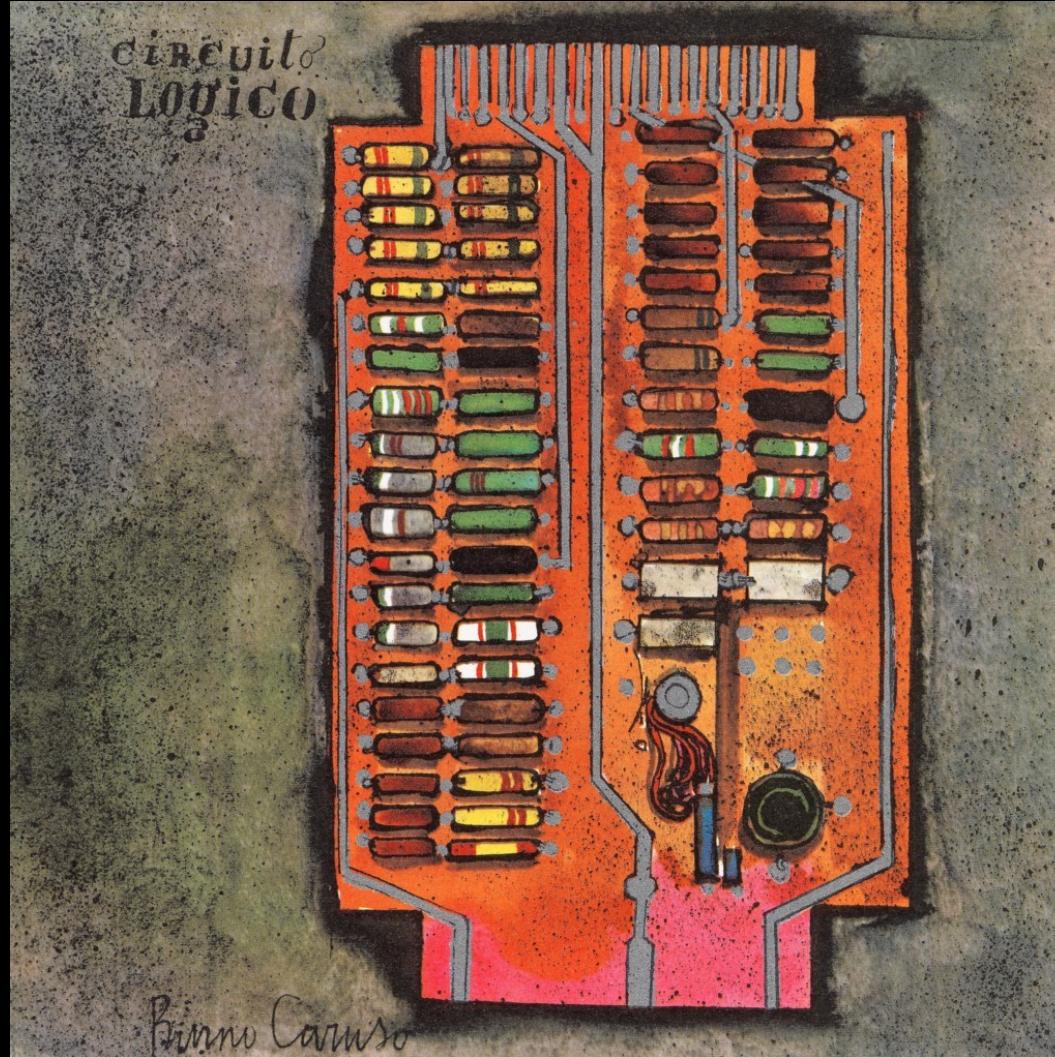
Creator  
Create  
Langua

# Brand advertising, cultural

«... calcola, decide,  
propone, risponde,  
ricerca la verità,  
scarta l'errore...

... il passato  
sopravvive invisibile  
e immutabile  
perché questa  
memoria  
non conosce  
stati d'animo...»

Bruno Caruso



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

36/48

Creator  
Create  
Langua

# The ELEA 9003

LRE moves to Pregnana (Mi)

About 40 sold

Marzotto (textile)

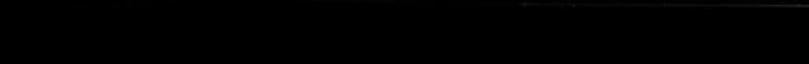
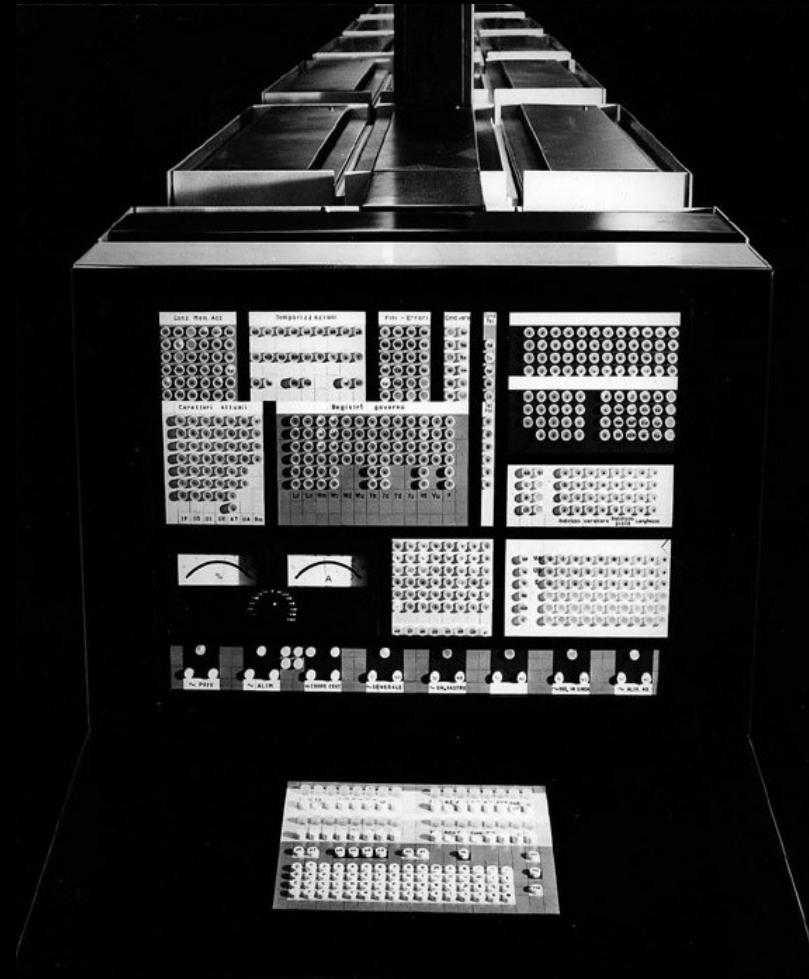
MPS (bank)

Fiat (automotive)

San Paolo (bank)

Motta (food)

...



# Now and then...



The only surviving picture in color of the 9002...



[hmr.di.unipi.it](http://hmr.di.unipi.it)

...and the only 9003 that is still working (at ISIS Bibbiena-AR)

38/48

Creator  
Creation  
Language



# Brand advertising, widespread

Christmas 1960



[hmr.di.unipi.it](http://hmr.di.unipi.it)

39/48

Creator  
Create  
Langua

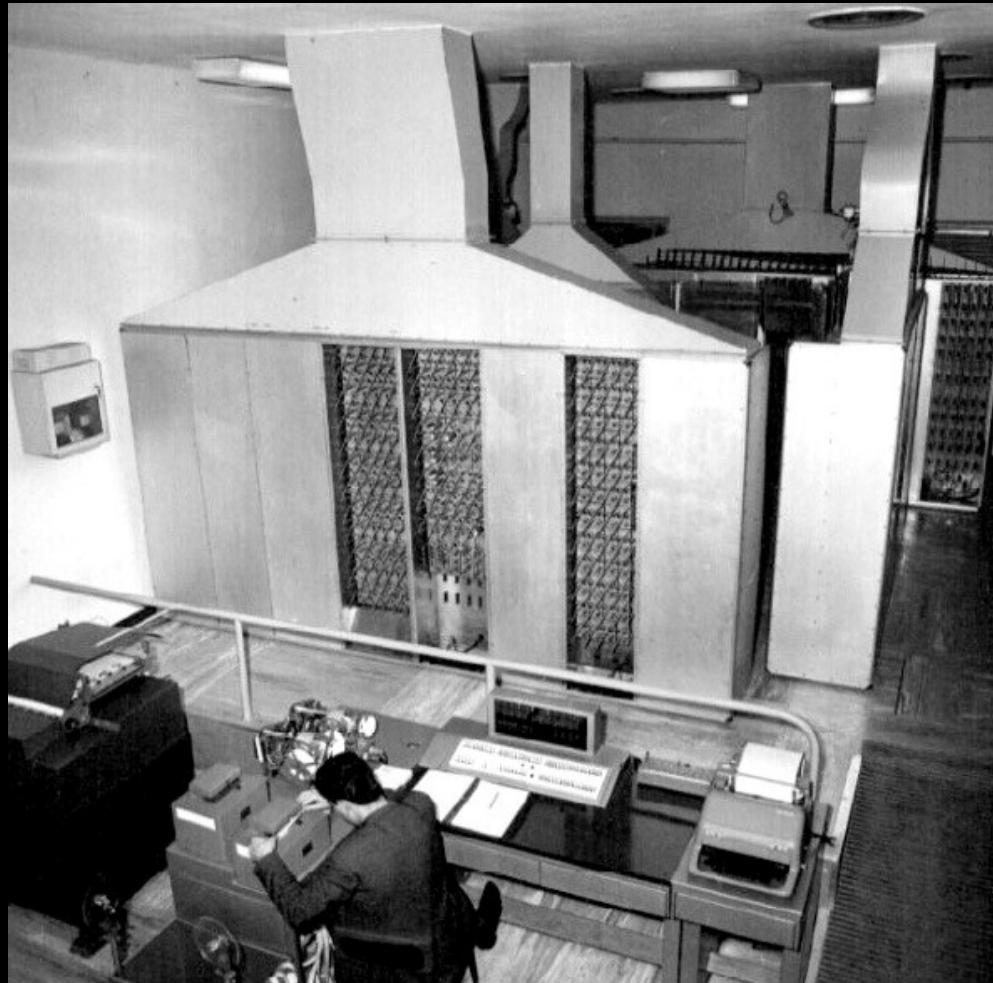


G.A. Cignoni, F. Gadducci

# The outdone partner

The second computer of  
the University of Pisa

Ready in early 1961, still  
based on vacuum tubes  
(due to a lack of money)



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

40/48

Creator  
Creation  
Language

# Not the first transistor computer

Few earlier ones:

MIT TX-0 (1956)

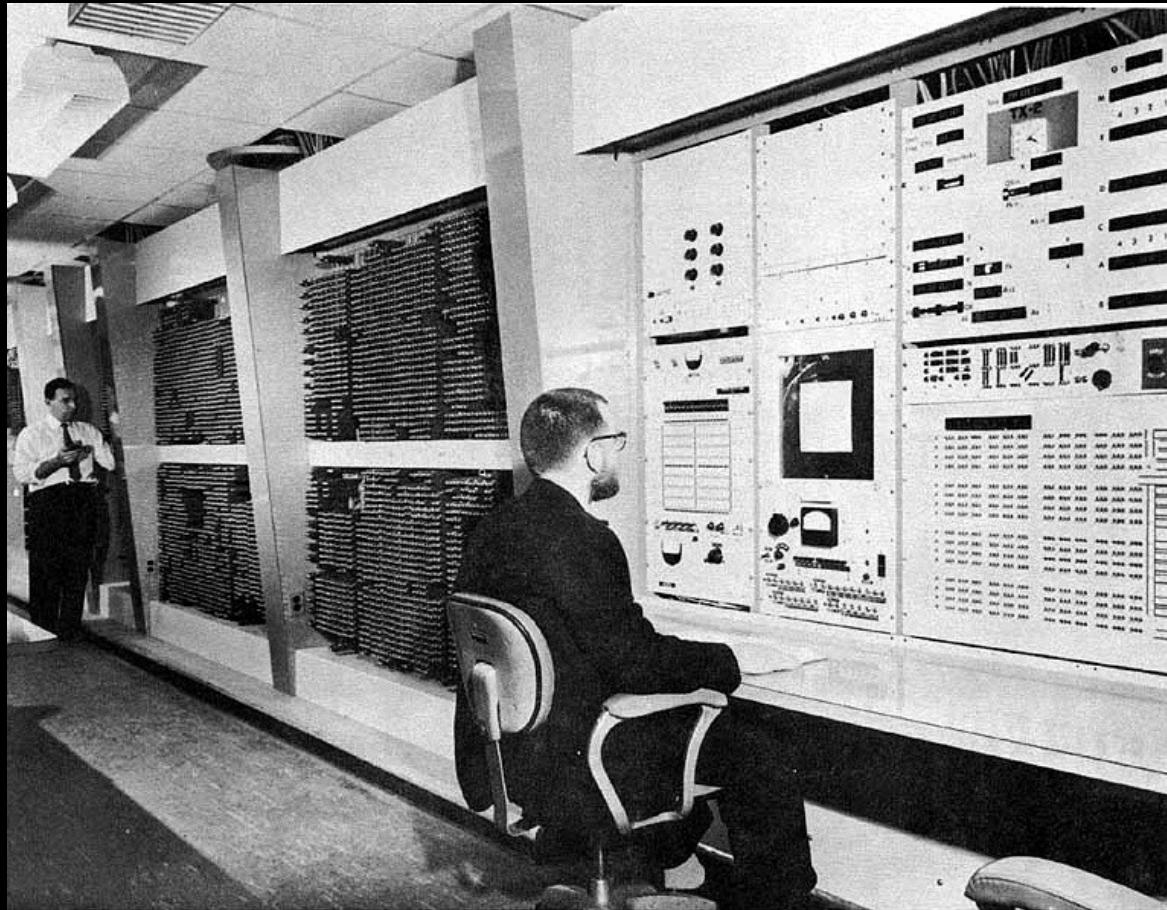
IBM 608 (1957)

MIT TX-2 (1958)

Ferranti Argus (1958)

IBM 7090 (1959)

PDP-1 (1960)



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

41/48



Creator  
Creation  
Language

# More important than primacy...

A unique blend of expertise (pivotal for the industry in Italy for so many years to come)

[At Borgolombardo, around 1960]



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

42/48

Creator  
Creation  
Language

# A well-established division

ELEA 6001 (1961),  
a smaller scale 9003

ELEA 4001 (1963),  
An improved design  
(Sottsass&van  
Onck)

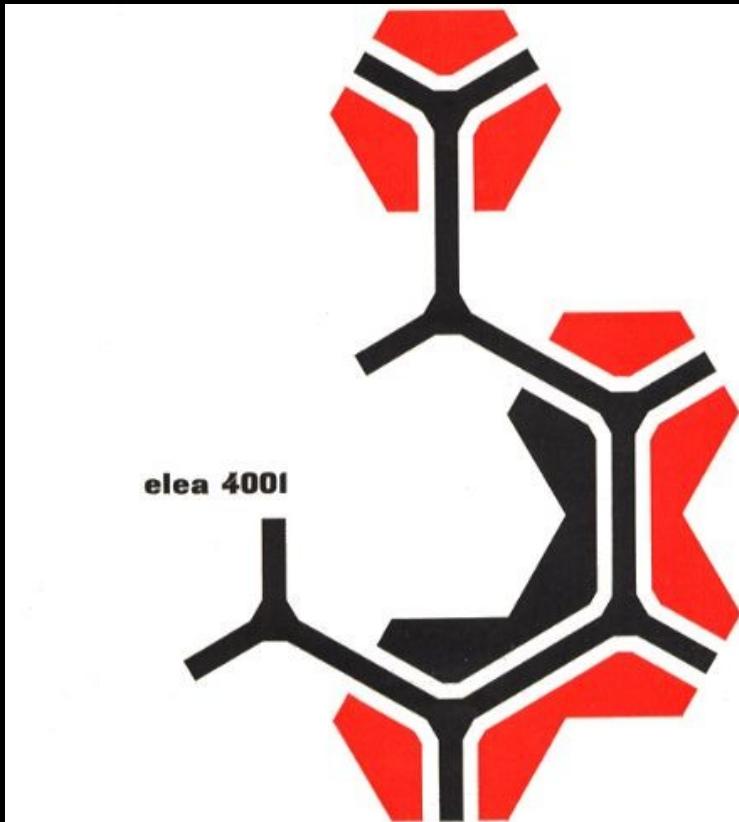
ELEA 9004 (1961  
on), a prototype...



G.A. Cignoni, F. Gadducci



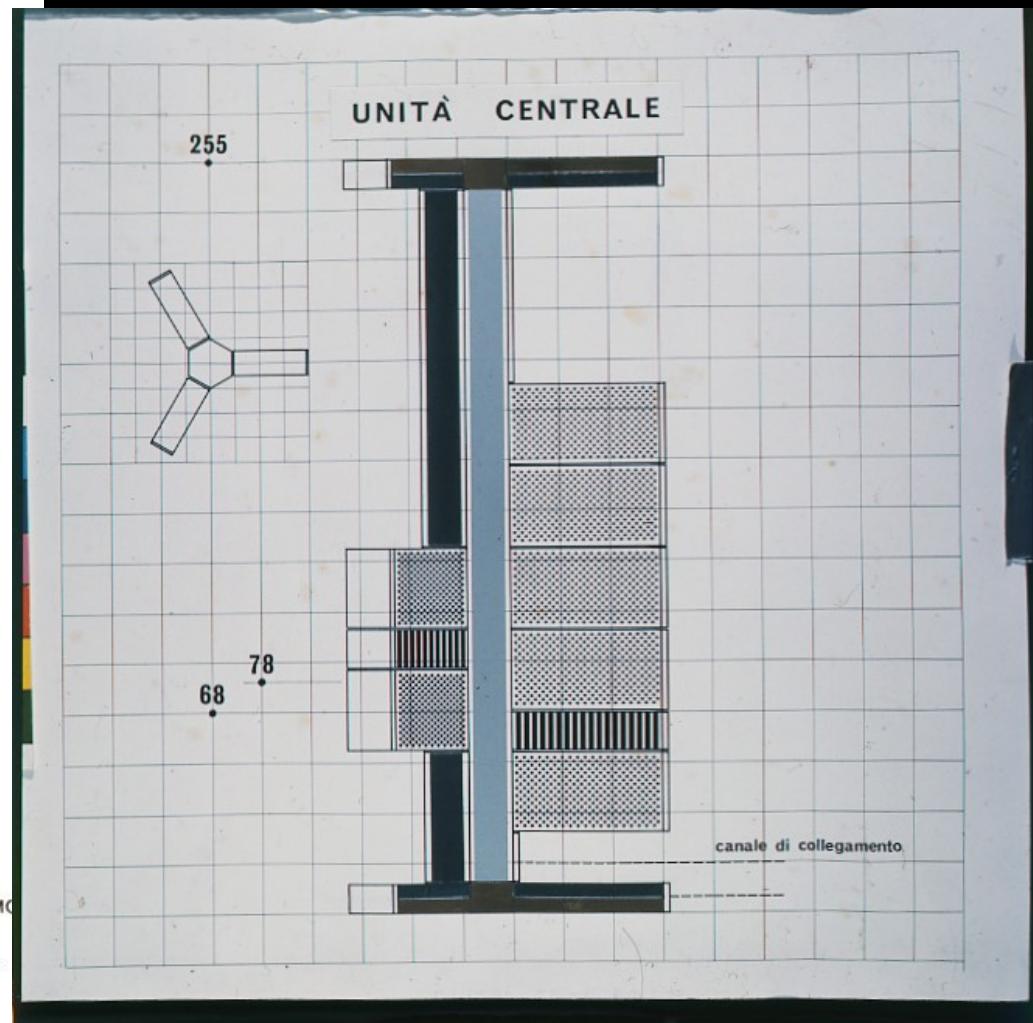
# Advertising 4001 (&drafts for 9004)



Tutte le esperienze realizzate,  
i risultati già raggiunti,  
con costante sforzo di ricerca  
e rapida espansione sul mercato,  
dall'elettronica Olivetti,  
sono racchiusi nell'Elea 4001:  
elaboratore elettronico  
medio-piccolo per dimensioni e di basso costo.

Elaboratore di tipo universale,  
l'Elea 4001 opera con memorie  
a nastro ed a dischi,  
con supporti di ogni tipo  
(schede, nastri perforati, caratteri magnetici CMC)  
con stazioni d'interrogazione  
e strumenti di misura.  
Eccezionali le sue caratteristiche di modularità.

**olivetti**  
Elettronica



Courtesy E.  
Mori



[hmr.di.unipi.it](http://hmr.di.unipi.it)

44/48

Creator  
Create  
Langua

G.A. Cignoni, F. Gadducci

# A well-established division, 2

Still good  
scientific  
connections

CINAC  
refurbishing  
Olivetti 9104

[A Ferranti  
emulator, to  
save software]



G.A. Cignoni, F. Gadducci

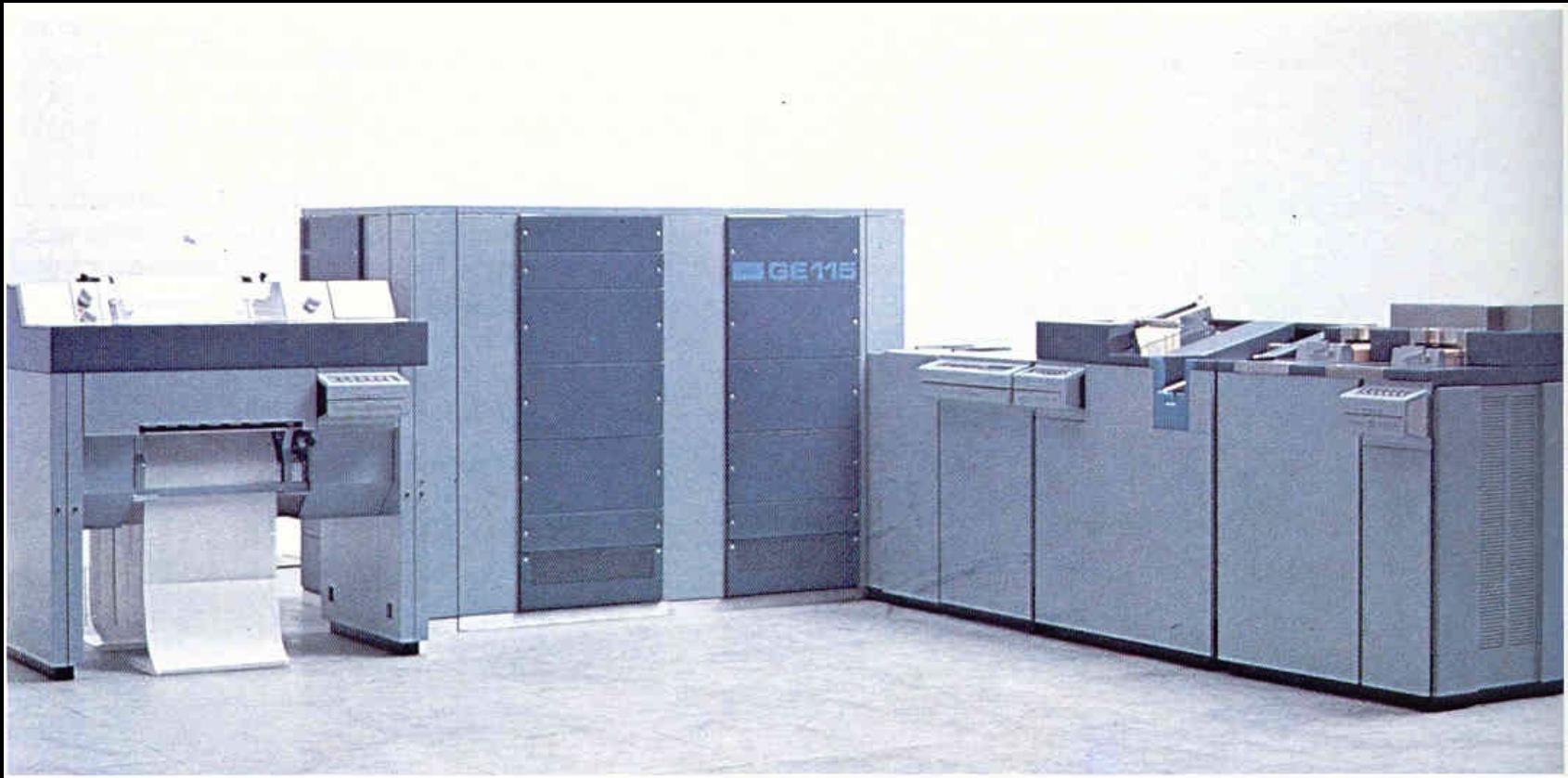


[hmr.di.unipi.it](http://hmr.di.unipi.it)

45/48

Creator  
Creation  
Language

# A quickly dismissed division



Selling out to General Electric in 1965 (various causes: money crunch, success of electric division, lack of vision in the industrial/political complex)

G.A. Cignoni, F. Gadducci



ELEA 4-115: 3300 sold, 60% in US as GE 115



[hmr.di.unipi.it](http://hmr.di.unipi.it)

46/48

Creator  
Creation  
Language

# Summing up

Two intertwined threads mark the Olivetti history

Scientific and technological background (see Camillo&Adriano)

Constant search for technological partners (INAC, Univ. of Pisa)

Planned establishing of the Electronic Division (Tchou)

Careful attention to branding

Social issues

Design style

Cultural utopism

G.A. Cignoni, F. Gadducci



# A different story

Programma 101  
(aka perottina)

After dismission  
of the electronic  
division (1965)



G.A. Cignoni, F. Gadducci



[hmr.di.unipi.it](http://hmr.di.unipi.it)

48/48

Creator  
Creation  
Language