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# Digital State: The Story of Minnesota's Computing Industry

Thomas J. Misa

8 Nov. 2013 Mager & Quinn books



# Topics tonight

1. Mn *was* Silicon Valley
2. “Silver mine” (impacts)
3. “Gold mine” (consequences)
4. What to ‘see’ today?



# California's 'Silicon Valley'





# California's 'Silicon Valley'



Adobe



Apple



Cisco



eBay



Facebook



Google



HP



Intel



Oracle



Yahoo





# California's 'Silicon Valley'



Adobe



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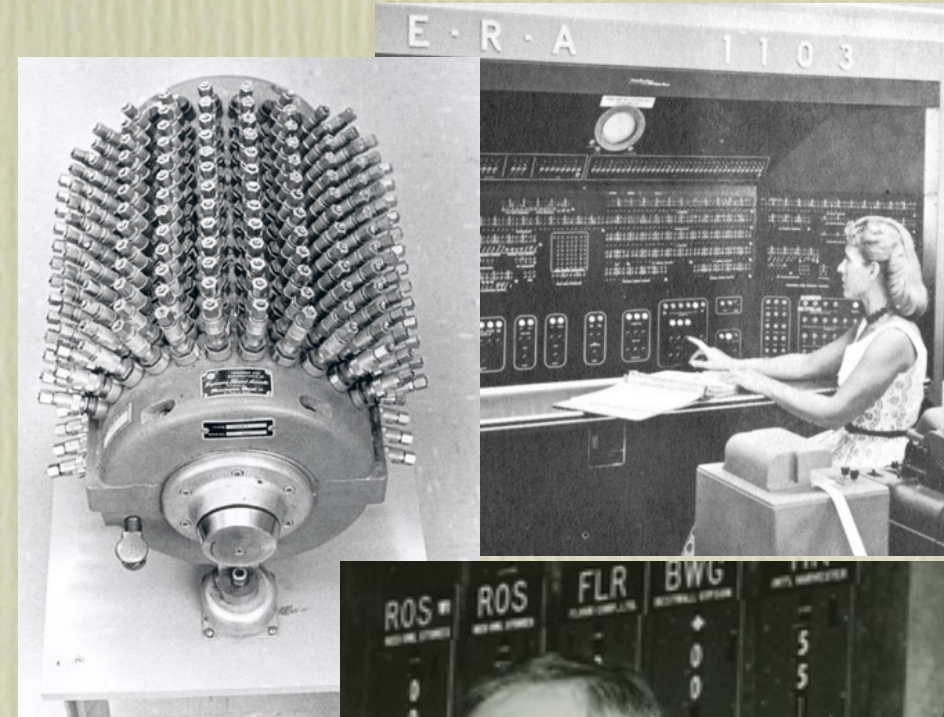
Yahoo





# MN *was* Silicon Valley (1950s–1970s)

- ‘stored program’ computer [1950]
- magnetic data storage
- computer industry
- ‘supercomputer’
- early WWW





# Silver mine: MN's computer industry

2. Engineering Research Associates [1946]
3. Sperry-Rand Univac [1955- Unisys 1986-]  
⇒ 29 spin-offs
4. Control Data Corp. [1957-92]  
⇒ 45 spin-offs inc. Cray Research [1972]
5. Honeywell (computing = 1958-91)
6. IBM-Rochester [1956--]



# Silver mine: MN computer workforce

MN by mid-1970s . . .

- ... 1.8% of US population
- ... 3.3% of US manufacturing jobs
- ... 12% of US \$6B computer sales
- ... 17% of US computer mfg jobs



# Why 'not' Silicon Valley MN?

- ✓ Technology & innovation
- ✓ Computer-center 'industrial district'
- ✓ Venture capital #2 [1958-63]
- ✓ Sales to military + labs + ATC + security
- ✦ Less visibility in commercial markets
- ✦ No journalist's "Silicon Valley" [1971]
- ✦ Secret work  $\Leftrightarrow$  public awareness?



# Gold mine: longer consequences

- ERA magnetic media ⇨ 3M + Imation
- Twin Cities ⇨ 'younger, female' + 62% state's population
- MECC ⇨ Apple Computer
- computing ⇨ medical devices [ch.7]
- lessons for high-tech innovation?



# CBI *from* CA *to* MN 1980

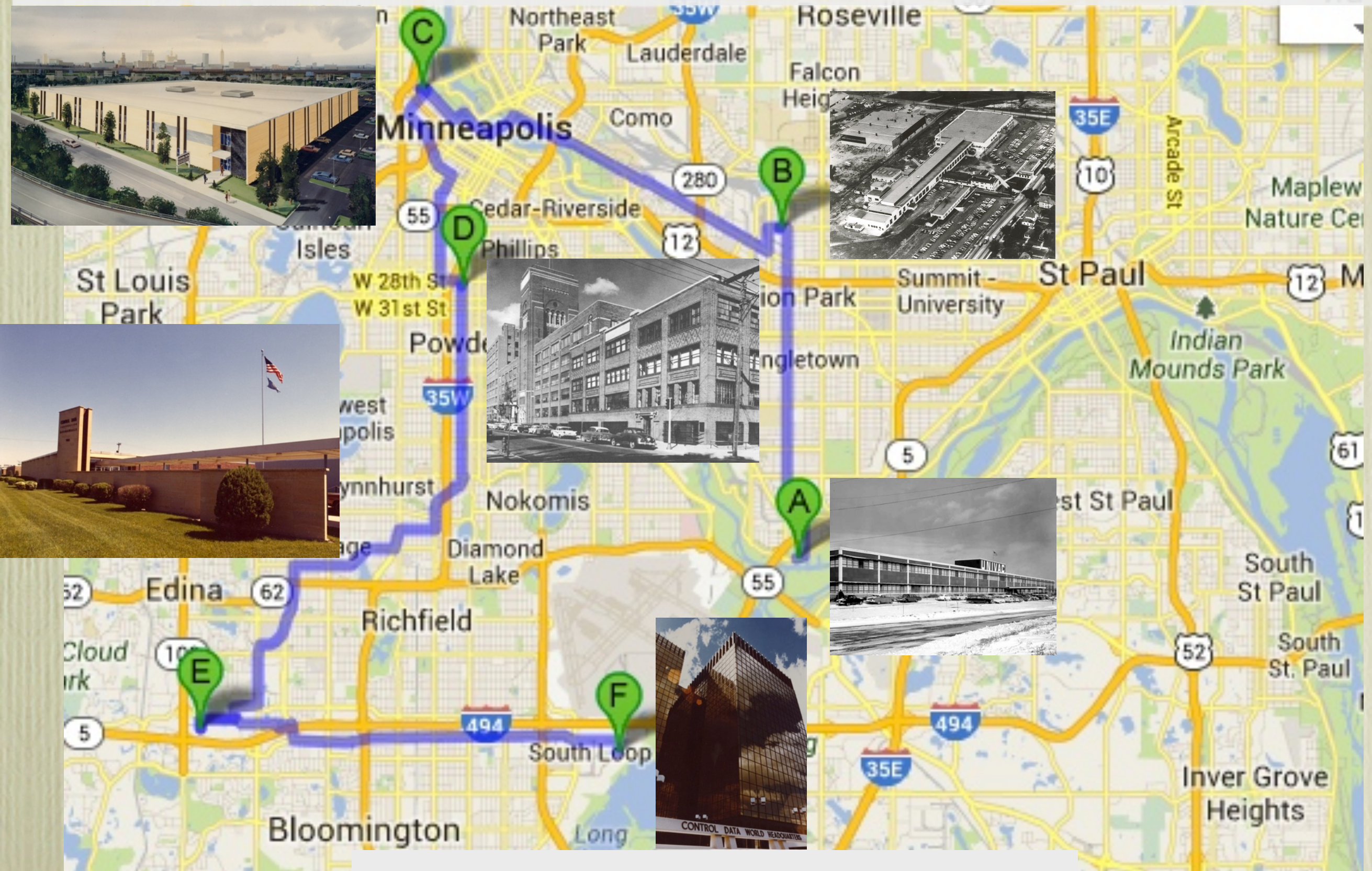
- Computer history research and archiving
- 250 archival collections
- 400 oral histories
- 150,000 photos
- “1 mile” of paper records
- 4 staff + students



Charles Babbage  
(1791-1871)



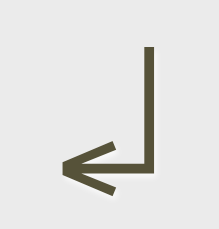
# What to see today?



[tinyurl.com/sia-misa](https://tinyurl.com/sia-misa)

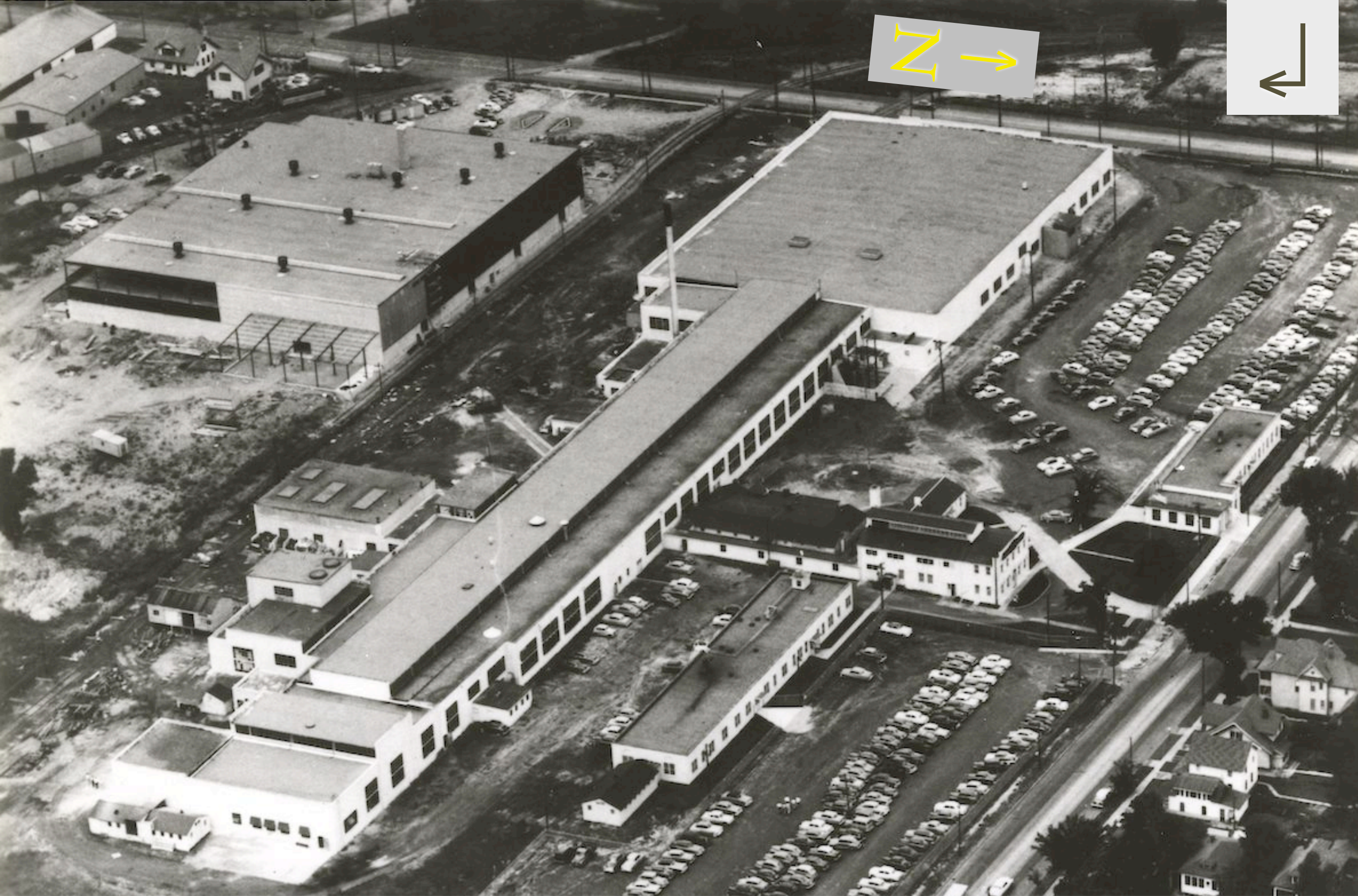






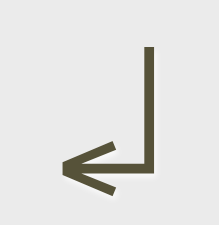
Univac West 7th/Shepard Rd (1956)





ERA Plant #1 W. Minnehaha Ave. (c.1955)





Control Data Northside plant (1967)





Honeywell S Minneapolis (here:1940s)





Control Data 7800 Computer Ave. (1980s)





Control Data *now* Health Partners (1980s)



# DIGITAL STATE

» THE STORY OF MINNESOTA'S COMPUTING INDUSTRY



■ THOMAS J. MISA



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