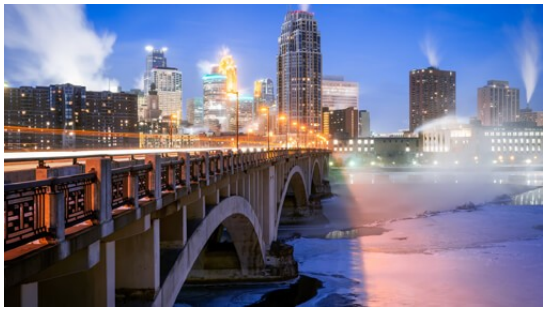
UNISYS WEB and TIMELINES

Lowell A. Benson, Retired Engineering Manager, UNIVAC '60 to Unisys '94

INTRODUCTION

The Unisys website, https://www.unisys.com/locations/, for **Eagan** shows this photo of the Kellogg Avenue bridge crossing the Mississippi into downtown St. Paul. The Unisys facility in Minnesota's Twin Cities is located ~8 miles south at 3199 Pilot Knob Rd. – Eagan, Minnesota 55121. When Burroughs bought Sperry to form Unisys in 1986 the two corporations had occupied 28 buildings in the Minnesota Twin Cities environs, http://vipclubmn.org/TwinCities.html#TablePlt.



Shortly thereafter, Unisys built their Pilot Knob Road facility to consolidate the scattered Burroughs facilities and to begin merging the Minnesota Unisys commercial operations' facilities which, at that time, were mostly in Roseville, MN. This new Eagan facility was adjacent to the Sperry-Unisys Defense Systems Division at 3333 Pilot Knob Road, Eagan, MN 55122, and the Sperry Semiconductor Operations at 1500 Tower View Road.

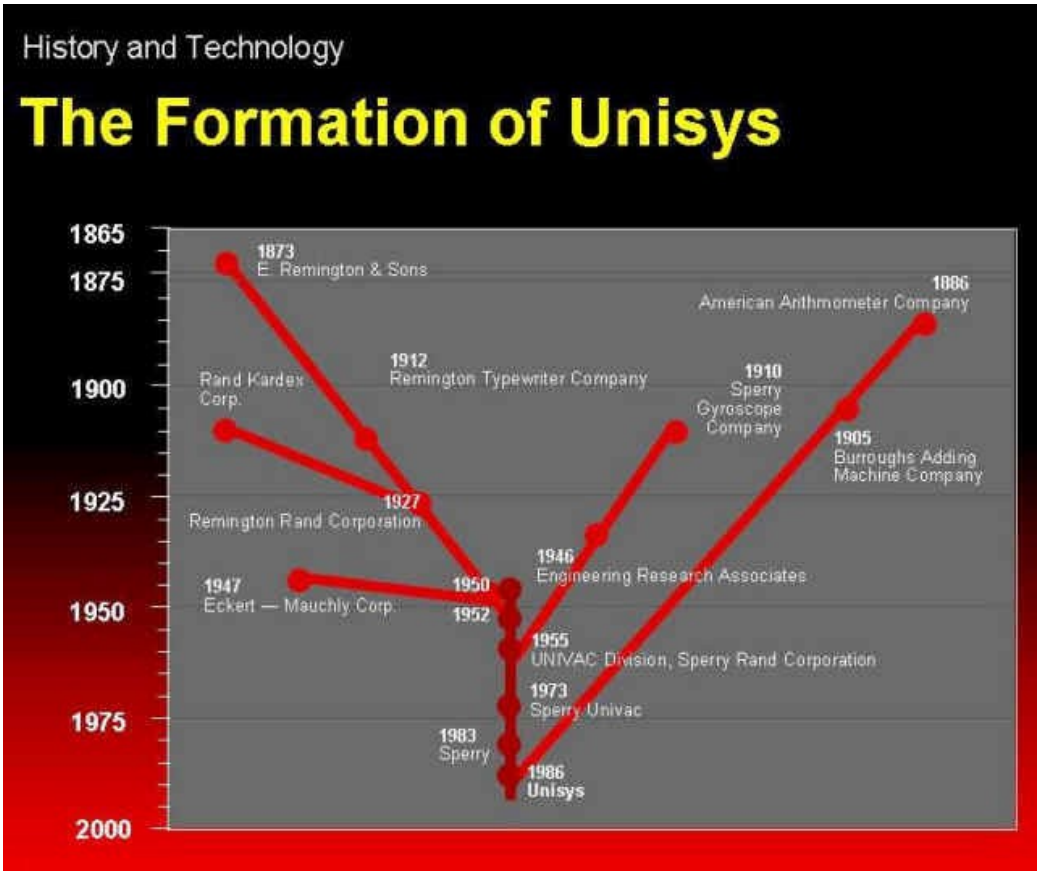
The ever-changing commercial computer business climate has diminished the 2021 Unisys presence in the Twin Cities to just this current Eagan facility. Burroughs' management made a 1987 business decision to close the Semiconductor Operations in favor of their semiconductor production facility in Rancho Bernardo CA and the Defense Systems Division operations were sold to Loral in 1995 which in turn was sold to Lockheed Martin in 1996.

Sperry started a retirees' club in 1980 that continues yet today with former employees of Unisys, Lockheed Martin, and their heritage companies illustrated in this 'Legacy' icon. Now known as the *VIP Club*, we communicated and cooperated with the Unisys Blue Bell Retirees Group (UBBRG) for three decades until UBBRG dissolved in 2016. An ongoing VIP Club activity since 2005 is the Legacy committee, formed to document the technology and people history from the MN parts of Engineering Research Associates (ERA), Remington Rand, UNIVAC, Sperry, Lockheed Martin, and Unisys.

This paper reviews the timeline of corporate mergers and the technology innovation timelines documented by the current Unisys website history, the VIP Club, and another internet timeline. For the most part, these timelines correlate – one with others. However, because many 'Defense Systems' developments by ERA, Remington Rand, and Sperry in the 40s, 50s & 60s were classified or government contracts, those innovations did not make it into the public computer history timelines.

MERGERS THUMBNAIL

Retired Unisys Fellow Ron Q. Smith created this 'slide' for his many History and Technology presentations, http://vipclubmn.org/Documents/HistorySequence.pdf. His PowerPoint slide set includes the 1100 computer series technology evolution to the 2200 series.



The Unisys story begins in 1873 with the introduction of the first commercial typewriter by E. Remington & Sons of Ilion N.Y. After a half century of business operation, E. Remington & Sons was merged with several other business machine makers to form a new company in 1927 - Remington Rand, Inc. During the next two decades, Remington Rand earned an enviable reputation as a developer of financial record and filing systems and a manufacturer of typewriters, mechanical calculators, and punched card systems. Then, the Remington Rand acquisition of two small companies in 1950 and 1952 would form the nucleus of an entirely new kind of business which continues to be reflected in the Unisys organization today.

- In 1950, Remington Rand purchased the Eckert-Mauchly Computer Corporation (EMCC) of Philadelphia, PA. A few years earlier, while affiliated with the University of Pennsylvania, J. Presper Eckert and John Mauchly had designed and assembled ENIAC (Electronic Numerical Integrator and Calculator.) Another computer which they called UNIVAC (Universal Automatic Computer) was only partially completed when the Eckert-Mauchly Computer Corporation was acquired by Remington Rand in 1950, see http://vipclubmn.org/UNISYS.html. The first model of the UNIVAC I Series was delivered to the United States Bureau of the Census in 1951.

- In 1952, Remington Rand purchased Engineering Research Associates of St. Paul, Minn. ERA had been organized in 1946 by a group of World War II mathematicians and engineers who had developed considerable expertise in electronic cryptography and special purpose military electronic systems, see http://vipclubmn.org/lmcolegacy.html. In 1950, ERA had delivered an electronic computer to the National Security Agency's predecessor in Washington D.C. After ERA was acquired by Remington Rand, the computer models in this initial series were identified as an ERA/UNIVAC 1101 and ERA/UNIVAC 1103.
- In 1955, Remington Rand merged with the Sperry Corporation, forming Sperry Rand. The 1960s and 70s were decades of organizational stability and business growth in Sperry's five key markets: Home Products, Defense, Commercial, Vickers, and Agriculture – New Holland.
- In 1979 Sperry Rand changed its name to Sperry Corporation then divested itself of the electric shaver & office products group and the Sperry Vickers group.
- In 1986 when Burroughs bought out Sperry; Sperry had five operating groups:
  1. Information Systems Group (40,000 employees) headquartered in Blue Bell, PA; a leading manufacturer of commercial computer systems, peripheral equipment, software, and services. {The 40,000 employees included the Roseville, MN operations.}
  2. Defense Products Group (14,000 employees) headquartered in Eagan, MN; a leader in real-time, high technology militarized information processing and support systems and products.
  3. Aerospace and Marine Group (9,000 employees) headquarter in Phoenix, AZ; a leading manufacturer of systems and instrumentation for commercial, defense and general aviation and maritime markets.
  4. Systems Management Group (5,000 employees) headquartered in Great Neck, NY; a leading prime contractor to domestic and international government markets specializing in electronic-based systems.
  5. Sperry New Holland (5,000 employees) headquartered in New Holland, PA; the world's largest manufacturer of specialized agricultural equipment.

The 1986 Burroughs/Sperry corporation renamed itself Unisys (**Un**iversal **I**nformation **Sys**tems) and over the next decade divested itself of the Sperry Groups 2 thru 5 listed above leaving itself, Unisys, as an Information Systems corporation.

TIMELINES' DISCUSSION

In January 2012, the Legacy committee posted a Computer History Review of the first 25 years of computing, http://vipclubmn.org/Articles/HistoryReview.pdf. That paper presented some details of the mergers from the St. Paul viewpoint while comparing local history with then on-line timelines:

1. Computer History Museum (CHM)[1]- http://www.computerhistory.org/timeline/.
2. History of Computing by Lexikon Services (CLS)[2]- http://Computermuseum.li.

[1] For discussion purposes hereunder, the CHM abbreviation will be used in this paper.

[2] This URL was not available as this paper is being developed. The 2001 book *History of Computing* by Mark W. Greenia, published by Lexicon was the information source for that web page. Mr. Greenia has also developed YouTube videos documenting 'Unisys' history pieces, http://vipclubmn.org/Articles/CHAP_SummaryRev1.pdf .

2021 Website Timelines:

Now Unisys has an on-line history timeline created from the Blue-Bell view of corporate and technology history, https://www.unisys.com/company-history/. The Levvvel organization has created *A Timeline of the History of Computers*, https://levvvel.com/computer-history-timeline/. About Levvvel, "We're a group of gamers and tech nerds giving our keyboards, controllers, and phones a break to pool all our knowledge for enthusiasts across the world to use." The Minnesota retirees VIP Club timeline is http://vipclubmn.org/Milestones.html. Each of these timelines has a different focus thus there is no complete agreement on what happened when and whether an event is relevant to the site organization's purposes.

First timeline entries:

- CHM's Computers timeline starts with a 1937 Bell Laboratories demonstration adder.
- Levvvel starts with, "2700-2300 BC: The Abacus is actualized"- oldest mentions of the abacus appear, and it was first used in Ancient Mesopotamia.
- Unisys's timeline starts with the 1816 E. Remington company founded by Eliphalet Remington as a manufacturer of firearms, then in 1873 E. Remington and Sons introduced the first commercially viable typewriter that uses the QWERTY keyboard layout.
- The VIP club's timeline of milestones starts with the 1946 opening of ERA in St. Paul, MN.

When viewing timelines, most are scroll down to see what is next. The Unisys timeline uses scroll sideways scripting – showing that Graphic User Interface (GUI) innovation does exist!

Last timeline entries:

- CHM's 145th computer and last entry is a 2015 Apple Watch discussion. They also have six other technology timelines of the computer industry, see page 7 hereunder.
- The Levvvel 88th timeline entry is, "2020: Apple announces iPad Pro with trackpad support."
- Unisys's 100th timeline entry is a 2021 recognition of the 75th Anniversary of the 1946 ENIAC.
- The VIP Club Legacy's 75 milestones end with a 2021 recognition of 75-years since ERA doors opened - http://vipclubmn.org/Articles/Anthologies2Go.pdf.

Timeline conflicts with our Twin Cities Legacy documents:

- ✓ CHM lists the Atanasoff-Berry Computer (ABC) as completed in 1942 whereas ERA employee Bill Butler, a 1940 Iowa State graduate who knew both men, informed us of the National Geographic, August 1998 article which printed that the ABC was built by 1940. See reference http://vipclubmn.org/People1.html#Butler.
- ✓ The following Levvvel site constructive critique items were emailed to the page/site author; however, we received no response.
  - 205 BC: The Antikythera mechanism deserves mention, https://www.smithsonianmag.com/history/decoding-antikythera-mechanism-first-computer-180953979/.
  - In 1911, "IBM coined the term personal computer." What is the source of this statement? There were numerous calculators and analytical engines around at that time but … If IBM were given credit for 'personal computer' in 1971 – it would be believable.

- "In 1945: Construction of the ENIAC. The ENIAC (Electronic Numerical Integrator and Computer) is the first electronic digital computer used for general-purpose problem-solving. It is designed by John Mauchly and J. Presper Eckert of the University of Pennsylvania, US." Almost correct; the ENIAC was developed for the US ARMY and first used for developing trajectory tables for artillery, *not general purpose problem-solving*. – From: http://vipclubmn.org/Burroughs.html#Sperry "In 1950, Remington Rand purchased the Eckert-Mauchly Computer Corporation of Philadelphia, PA. A few years earlier, while affiliated with the University of Pennsylvania, J. Presper Eckert and John Mauchly had designed and assembled ENIAC (Electronic Numerical Integrator and Calculator.) This huge electronic computer, the first of its kind in the world, was built to solve ballistics problems for the U.S. Army and was hundreds of times faster than any of its mechanical counterparts." Also, read Herman Lukoff's book, *From Dits to Bits* and http://vipclubmn.org/BlueBell.html#OtherDesigns plus http://vipclubmn.org/Articles/ENIACbyCurt.pdf. BTW, when I was in the MN National Guard we used trajectory tables for targeting, aiming, and firing 155mm howitzers.

- In 1947, "Booth invents assembling language". The word 'assembling' is not consistent with the following sentence: "Kathleen Booth starts theoretical work on assembly language…" **assembly** is the correct word, not assembling!

- In 1949, relative to EDVAC there are conflicting statements:
  - It is the first computer that stored program instructions in its electronic memory.
  - It stored programs on plugboards or similar mechanical systems. Plug boards are not electronic! Believe me, I programmed IBM card sorter plug boards in 1959 as well as the UNIVAC model 1004 plug board in 1964.
- In 1950 you are missing: http://vipclubmn.org/Milestones.html, **1950:** Shipped the ATLAS computer to Central Intelligence Agency's predecessor via railway car in October 1950. This computer is believed to be the world's first stored program computer installed for operations at a customer's site in December 1950. The site and application were classified until 1977 thus didn't appear in any early computer technology books.

- In 1956, you write that IBM invented the first commercial hard drive – Not true! They got the hard drive technology from ERA via a patent agreement in the late 40s, http://vipclubmn.org/Memory.html#Drums.

- In 1971 you show that IBM invented the floppy disc. Wikipedia indicates that they started doing floppy work in 1967! Change your date and cite the source of information!

- In 1973-74 you discuss the ethernet that allows connecting multiple computers in one local network. In 1961, the Naval Tactical Data System (NTDS) had Intercomputer technologies that facilitate almost instantaneous data exchanges between multiple computers in their Combat Information Centers. These were local aboard ships! And they developed ship-to-ship communications using a High Frequency radio Link-11 over-the-horizon communication system for the transfer of 30-bit parallel words for 'combat zone' information exchange. The Link-11 systems also facilitated ship to shore automated

communications connecting with the Marine Tactical Data System. And there were automated Link-11 computer-to-computer data transfers between Anti-Submarine Warfare patrol aircraft to both ship and shore computers. This led to the government development for communications between their laboratories. In 1970, the Department of Defense developed Arpanet, the predecessor of the internet. Reference page 12 of http://vipclubmn.org/Articles/Nethist5.pdf and the top of page 3 of http://vipclubmn.org/Articles/The%20Invention%20of%20Voice%20Mail.pdf. AND, Link-11 was used for U.S. Navy communications with NATO navies.

- ✓ The Unisys timeline notes the 1950 acquisition of Eckert-Mauchly Computer Corporation but skipped the 1952 acquisition of Engineering Research Associates.
- ✓ Unisys notes in 1955: "Remington Rand introduces UNIVAC 1103, marking the first commercial use of Random-Access memory (RAM)." The February 20, 1953, Orbit newsletter announced the ERA 1103 a year after Remington Rand bought ERA and two years before RR made their announcement - http://vipclubmn.org/Articles/ERA1103Announced.pdf
- ✓ Unisys site notes in 1960 that the US Census Bureau purchases two UNIVAC 1105 computers for the 1960 census and "Sperry introduces the UNIVAC 1100 Series, forerunner of the 2200 series." Page 7 of http://vipclubmn.org/EngDocImg/CommlCustomers.pdf shows that the 1105s were delivered to the U.S. Bureau of the Census in 1957 and 1958. And the http://vipclubmn.org/processors.html#1950Tree from Unisys Fellow Ron Q. Smith shows the 1100 series starting in 1950 with the ERA 1101, a full decade before the company name was Sperry.
- ✓ Unisys site notes that in 1960 Grace Hopper's co-creation of the UNIVAC proves instrumental to the Apollo missions by accepting a continuous 48kbps data stream from the Apollo spacecraft.
  - The word UNIVAC in general refers to the company UNIVAC or to the specific UNIVAC I, UNIVAC II, and UNIVAC III computers or just to computers. She was not a co-creator of any of these. Her place in history is as an early star in software development; reference slide 10 of http://vipclubmn.org/Articles/UnisysAndComputingGrowth.pdf.
  - The Apollo Program started in 1961 and was completed in 1975! Not 1960. John Kennedy's May 25, 1961, speech to congress said we'll put a man on the moon.
  - The Apollo telemetry was via UNIVAC 1218 and UNIVAC 418 computers, both of which came out of the Twin Cities factories. For the NASA installation see bottom of page 2, http://vipclubmn.org/Articles/418Inquiry.pdf.
  - The Apollo program was supported by St. Paul, both defense and commercial divisions: See articles 257 and 258 at http://vipclubmn.org/OurStories.html#2019. Also see articles 239 and 249 at VIP Club - Legacy Stories (vipclubmn.org). From #239, "In total, 48 642Bs, 33 1218s, six 494s, seven 1108s and seven 418 UNIVAC Computer systems are involved in Project Apollo," he said." Plus, article 101 from VIP Club - Legacy Stories (vipclubmn.org).
- ✓ Unisys notes that in 1990 'Unisys selected as the contractor to build the NEXRAD (Next Generation Radar) system, called WSR88D, 1988, Doppler), a network of high-resolution S-band Doppler radars to detect and forecast weather. The top of page 2 of

http://vipclubmn.org/Articles/NEXRADarticle.pdf has the NEXRAD development starting in 1979! Also, see section 2.0 of http://vipclubmn.org/sysgovernment.html.

Other CHM Website Timelines:

In addition to their 145 entry *Computer's* time line, CHM has several other timelines:

1. a 58-entry timeline of *Networking & The Web* beginning in 1933,
2. a 55-entry timeline of *AI & Robotics* beginning in 1939,
3. a 60-entry timeline of *Software and Languages* beginning in 1945,
4. a 50-entry timeline of *Popular Culture* beginning in 1945,
5. a 61-entry timeline of *Memory and Storage* beginning in 1947, and
6. a 48-entry timeline of *Graphics & Games* beginning in 1951.

These six timelines are all related to the Computer Industry. Three examples from each are:

- The 1945 "First actual case of bug being found".
- The 1947 Mark I Williams-Kilburn tube.
- The 1949 'Alan Turing quoted by *The London Times* on Artificial intelligence.
- The 1949 Birth of the Modem.
- **The 1950 Magnetic drum memory.**
- The 1952 Grace Hopper completes A-O.
- The 1957 First computer scanned image on SEAC.
- The 1957 FORTRAN and MATH-MATIC.
- The 1961 timesharing – the first online communities.
- The 1969 SIGGRAPH is founded.
- The 1970 Banking Automation Reaches the Customer.
- **The 1971 Honeywell vs. Sperry Rand trial begins.**
- The 1972 LUNAR natural language information retrieval system.
- The 1972 Pong is released.
- The 1978 First computers installed in the White House.
- The 1981 MS-DOS released with the IBM PC.
- The 1995 MQ-1 Predator drone called to duty.
- The 2000 USB Flash drive.

Only two [**bolded**] of these 18 timeline entries are directly associated with the computer industry in Minnesota and two are associated with Grace Hopper, Commodore US Navy, ret. I had the privilege of meeting her early in my career. The 1971 Honeywell vs. Sperry Rand trial records and props are at the Charles Babbage Institute (CBI) in Minneapolis if you want to review them. BTW, the CBI Director holds the Engineering Research Associates Land Grant Chair for the History of Technology.

EPILOGUE:

I herewith apologize to the webmaster(s) of the Levvvel and Unisys websites. It is not my intent to re-write history. However, while documenting the Minnesota legacy of ERA to Unisys, it is obvious that they and other 'webmasters' overlooked the many accomplishments that came from Minnesota.

Our retirees club website is http://vipclubmn.org/ and our Legacy embedded therein is http://vipclubmn.org/Legacy.html. If you, the reader of this 186th Article for the Month, have any corrections or would like to send us your story – we will find a place for it on our website, either as a monthly article or a unique section within one of our 60 Legacy chapters.

Thanks to Jim Andrews, Ron Q. Smith, and John Westergren for editorial reviews. *LABenson*