A history of automated vertical storage systems in the United States
Think that automated storage carousels and vertical lift modules are relatively recent innovations? You may be surprised to learn that they have actually been in use in the United States for well over 50 years! In fact, some of today’s office filing equipment manufacturers can trace their roots back to the very beginning of the century. The history of automated carousels and vertical lift modules (C/VLM) reflects the changing needs of American business as it reacts to increasing foreign competition, technological developments and a shifting labor market.

The Early Years
The Industrial Revolution in America created both an unprecedented need to keep business records, and the technology to efficiently store and access them. Most early financial and business records were kept on small index cards that were stored in simple wooden boxes or cabinets. To find an individual record, a person had to thumb through all records sequentially until they found the desired card.

To reduce the time spent searching through hundreds of index cards, James Henry Rand, Sr. invented the first commercial system of dividers, file tabs and index cards, establishing the Rand Ledger Corporation in 1898 to manufacture them. His son, Henry Rand Jr., designed a steel cabinet to store index cards and make them easier to sort and access. He founded the American Kardex Company in 1915, using an amalgam of “card index”.

Both companies were quite successful individually, and by the time they merged to form the Rand Kardex Company in 1925, and merged again with the Remington Typewriter Company to form Remington Rand in 1927, they had became the world’s largest supplier of office equipment and supplies...even manufacturing equipment overseas in Germany.

Birth of the Carousel
The Great Depression of the 1930’s and war years of the 1940’s presented great challenges for equipment manufacturers and kept developments in automation to a minimum. That would all change in the early 1950’s when the Supreme Company displayed an innovative new concept at a US trade show: the vertical storage carousel. They did not put their design into production, but other companies who were at the show took notice.

In 1957, White Systems, a manufacturer of horizontal carousel systems, introduced the Power File Vertical Carousel for office filing applications. Later that same year, Sperry Rand (a merger of Sperry and Remington Rand) introduced the Lektriever vertical carousel and Hänel Büro -und Lagersysteme introduced the Rotomat vertical carousel in Germany. By the end of the 1960’s, several companies had entering the US market with vertical carousel products and the concept began to grow in popularity, expanding beyond office filing into commercial and industrial applications.
Growth and Diversity

In the 1970’s, spurred by the success of their vertical carousel, Sperry Rand established a manufacturing presence in Germany in 1972 to begin production of vertical carousels overseas. By the end of the decade, Remington Rand was split into two companies: Kardex AG in Europe and Kardex U.S., named in honor of their roots dating to the early 1900s.

In the 1980’s, Kardex AG introduced a U.S. division, Remstar (named for Remington Storage and Retrieval), bringing it’s line of vertical carousels to the U.S. Hänel Storage Systems began selling their Rotomat vertical carousel in the U.S., alongside the Industriever Carousel from Kardex in Germany and the newly-introduced 2400 Series Carousel from White Systems.

Birth of the VLM

The late 1980’s saw the introduction of an entirely new type of automated storage: the vertical lift module or VLM. The VLM brought higher weight capacities, taller storage heights and more flexibility to automated vertical storage. The VLM expanded automated vertical storage and retrieval systems into to even more new markets. Manufacturing, assembly, electronics, MRO, distribution and many other industries quickly adopted the VLM as an ideal way to save floor space and boost productivity. Kardex led the charge with their 8000 Series VLM, followed by White System in 1989 with their Power Column.

In the 1990’s, the VLM saw rapid market growth as users realized the benefits of improved throughput and space savings. Many successful VLM designs would be introduced in rapid succession; the Shuttle VLM by Remstar in 1993, the Lean-Lift VLM by Hänel Storage Systems in 1994, the Modula VLM by System Logistics in 1998, and the SMARTdepot VLM by Diamond Phoenix in 2003.

The new millennium was marked by saw a series of mergers and acquisitions, led by White Systems merging with Senecorp in 2008, Diamond Phoenix merging with System Logistics shortly thereafter, and the purchase of Kardex Systems by Remstar to create Kardex Remstar in 2009.

Looking to the Future

Today, the concept of automated storage and retrieval remains as popular as ever, and vertical carousels and vertical lift modules continue to find new supporters...and new suppliers. In 2010, almost 100 years after the founding of American Kardex, Sapient Automation was founded and introduced both a vertical carousel and VLM to the market.

As American businesses look for ways to combat the challenges
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