



30 Years Ago: PC Spreadsheets Bring Number Crunching to the Masses

By John Pallatto | Posted 2013-08-28



30 Years Ago: PC Spreadsheets Bring Number Crunching to the Masses

PC spreadsheet software brought about a fundamental change in the way that the corporate number crunchers—the accountants, financial analysts, stock traders and marketing managers—got access to the computing power they needed to do their jobs.

PC Week, the predecessor of today's eWEEK (<http://www.eweeek.com/pc-hardware/pc-week-chronicles-explosive-growth-of-ibm-compatible-pcs/>),

closely followed the astounding growth in the use of PCs and spreadsheets in the 1980s. The story about the evolution of the PC spreadsheet was not a dry technical narrative.

Like the growth of the PC market itself, the story about how spreadsheets became a critical computer business tool is about the rapid rise and fall of companies that were once household names. The early spreadsheet market was built by a combination of shrewd entrepreneurs and brilliant technologists, including Mitch Kapor and Jonathan Sachs of Lotus Development, Dan Bricklin and Bob Frankston of VisiCalc, Bill Gates of Microsoft and Philippe Kahn of Borland Software.

Along with email (<http://www.eweeek.com/enterprise-apps/30-years-ago-how-email-rose-to-become-the-no.-1-killer-app/>), spreadsheet software was the application that most helped justify corporate deployment of PCs in huge numbers during the 1980s. Countless millions of copies of popular spreadsheet programs—including VisiCalc, Lotus 1-2-3, SuperCalc and, later, Microsoft Excel and Borland's Quattro Pro—were sold during these years, putting fairly sophisticated financial and statistical modeling tools into the hands of people who a few years earlier probably had no idea what a spreadsheet was.

Spreadsheets were also the tools that helped teach a generation of developers and statistical analysts how to write complex macros and mathematical algorithms that drive today's globally interconnected financial markets and trading systems. The development and deployment of these systems would likely have taken years longer if the corporate world didn't gain access to relatively inexpensive PCs and spreadsheet software.

In the days before PCs became widely available (<http://www.eweeek.com/c/a/Desktops-and-Notebooks/PC-WEEKeWEEK-Chronicler-of-the-PC-Revolution-for-25-years/>) in the 1980s, anybody who needed to tally up a lot of numbers up sent a request to the data processing center asking for a report from a pre-existing database application running on a mainframe or midrange computer.

These were the days of "batch processing." It wasn't necessarily possible to pull up a preformatted report on a mainframe terminal. However, if a report was scheduled to run on a particular day of the month or if it was deemed sufficiently important to get a high production priority, the requester could expect to get the report back in a few days or so printed out on a thick stack of flimsy perforated computer paper.

The requester would then sift through that stack of paper searching for the sales numbers, cost estimates, financial results or whatever information he or she was actually looking for and then manually type up a report.

There were mainframe spreadsheet applications, of course, that were developed as early as the 1960s. But getting

access to mainframe computing time was hardly a democratic process. Computing resources were limited, and they went to the users with the greatest need. Access was granted to the experts, to the initiated—not to the average Joe or Jane who needed something more powerful than a calculator to produce a complex statistical report.

The PC spreadsheet changed all that. The first PC spreadsheet to catch on was VisiCalc. It was originally developed for the Apple II by Software Arts, which was founded by Bricklin and Frankston, who together are considered the "fathers" of the PC spreadsheet.

But it was later ported to IBM and compatible computers, where it rapidly caught on, selling hundreds of thousands of copies and helping to open corporate office doors to rapid PC adoption.

Another early spreadsheet application that is mostly forgotten today is SuperCalc, which was created by Sorcim in 1980 for the CP/M operating system that originally ran on the early Osborne 1 portable computer. It was later ported to the Apple II and IBM-compatible PCs. In some ways, SuperCalc was more advanced than VisiCalc, particularly in its ability to perform the iterative solving of spreadsheet cells that depend on each other's results.

Many people may also forget that Microsoft introduced a spreadsheet program before Excel. This was Multiplan, which it introduced as a competitor to VisiCalc on the CP/M platform in 1982.

Microsoft soon developed versions for the Apple II, DOS and other early PCs. Multiplan for the Macintosh was Microsoft's first spreadsheet with a graphical interface, helping to make it the most popular spreadsheet on the early-generation Macintoshes, which was a point of some pride for Microsoft founder Bill Gates.

30 Years Ago: PC Spreadsheets Bring Number Crunching to the Masses

But all three of these spreadsheets were soon overshadowed on the PC by the introduction of Lotus 1-2-3 in 1983 by Lotus Development, founded by Mitch Kapor. Lotus 1-2-3 was developed by MIT-trained computer scientist Jonathan Sachs in x86 assembly language, which made it highly compatible with the IBM PC platform.

In fact, a standard test of IBM PC compatibility was whether Lotus 1-2-3 could run fast and reliably on the latest PC models to hit the market. The other gold standard PC compatibility test application was Microsoft Flight Simulator.

Lotus 1-2-3 also encouraged the development of spreadsheet macros, which were complex calculation strings with multiple variable expressions. This allowed users to create spreadsheets with macros that could perform complex stock market data analysis, as well as sales, profit and revenue forecasts. The possibilities were only limited by the user's imagination.

Soon third-party vendors were marketing their own packages of prewritten Lotus 1-2-3 macros for various vertical industries and markets, which only increased Lotus' hold on the corporate spreadsheet market through the end of the 1980s.

What did corporate IT executives think of this rapid adoption of spreadsheets that to a great degree drove the massive deployment of PCs in the 1980s? For them it was a two-edged sword. On one hand, deploying PCs loaded with spreadsheets, word processing, graphics and email applications was considered less costly than trying to extend expensive centralized mainframe processing to provide the same level of service. More people got convenient access to data processing resources sooner than if they had to rely on the data center. Those users liked having a measure of independence from the IT department.

But corporations also had to provide substantial technical support resources to keep all those PC users working productively. Then those PC users started knocking on the IT department's door demanding access to mainframe data, which started a whole new cycle of budgetary arguments and technology investment.

While this was going on, the spreadsheet market continued to evolve and mature. Lotus' dominance started to wane toward the end of the '80s thanks to a number of factors. Microsoft introduced the graphical Excel spreadsheet for the Macintosh in 1985 and for Windows 2X in 1987 (<http://www.eweek.com/enterprise-apps/30-years-ago-windows-evolved-slowly-before-microsoft-got-it-right/>). There were other new competitors as well, including Borland Software's Quattro Pro, VP-Planner, Mosaic Software's Twin and Paperback Software.

Lotus didn't help itself by being late in introducing more advanced versions of its spreadsheet, giving Microsoft and

other competitors the opportunity to grab more market share. Lotus tried to regain its market footing by introducing Lotus Symphony as an integrated office suite that included a spreadsheet, word processor, database and business graphics. But it was never able to repeat the early success of Lotus 1-2-3.

Borland presented enough of a competitive challenge that Lotus sued its rival on the grounds that Quattro Pro too closely mimicked Lotus' command menu structure. But the courts ruled in Borland's favor, claiming that command menus cannot be protected under federal copyright law.

Lotus also sued Paperback Software and Mosaic for copyright infringement, this time winning, which forced both companies to exit the spreadsheet business.

Despite the competitive setbacks, Lotus had grown into such a force in the enterprise software market that it became attractive to IBM, which launched a successful hostile bid to acquire Lotus Development in the spring of 1995. This gave IBM control of the company and its various products, including Lotus 1-2-3, Symphony and the Lotus Notes email platform.

But by then the spreadsheet competition had devolved into a battle of office application suites among Lotus, Microsoft, Borland, WordPerfect and a few others. Microsoft ultimately won that battle, and today Excel is pretty much the default spreadsheet application for corporate and home use. But that's another story.

IBM continued to support Lotus 1-2-3 and the related products until it announced in November 2012 that it was dropping the Lotus brand name (<http://www.eweek.com/enterprise-apps/ibm-drops-lotus-brand-takes-notes-and-domino-forward/>) even as it prepared to start beta testing new versions of the long established Lotus product under the name IBM Notes/Domino 9.0.