The Revolutionaries of the Office

Just about everyone in the world knows their products-but who are the brains behind Word, Excel and PowerPoint?

In the beginning there was the Word. It's the most used electric writing tool of the modern world. It simply could not have any other name. The inventor, Charles Simonyi, is a well known minimalist.

Simonyi's villa in Kirkland near Seattle is on the shores of Lake Washington. Several hundred meters of glass and metal siding house neatly fitted halls, reception rooms and offices. Nowhere a personal item. Visitors are greeted by a housekeeper, asked to take their shoes off so that no trace of their visit remain. The otherwise stark white walls hang with original art: Lichtenstein, Jasper Johns, Victor Vasarely. Simonyi, fresh from a morning row in the lake, just recently finished cataloging his collecting.

Word Processing-the easy way to write a letter

For him, the three artists are soul-mates who have arrived at the top rung of the latter of abstraction. Is it possible that these artists envisioned the digital revolution long before the technologists and venture capitalists? The 53-year old Simonyi is convinced that this is the case. He sees in the pictures the zeros and the ones of the binary alphabet. Lichtenstein, Johns and Vasarely "lived and worked on the threshold of the information age," says Simonyi.

The fact that the information age looks the same on 9 out of 10 computer screens across the world is largely to Simonyis credit. He's one of the fathers of Microsoft Office-the software bundle that does world processing, spreadsheets, presentations, organization and communication for an estimated 250 million users. Anyone who cannot open a document on his computer is excluded from the exchange of ideas between colleagues and business partners. Without PowerPoint, there's no consulting business. Any businessman who doesn't know how to perform profit analysis on cells A:5 to A:35 of the finance plan and plot it in a bar graph will suffer from a lack of credibility. Word, PowerPoint, Excel and Outlook are the wide tires on which modern economies ride. In the U.S. even school kids are expected to know them.

For Simonyi, a Hungarian by birth who fled without a cent from the Eastern Block in 1966, the climb of this software palette to a universal tool is the magic of capitalism. "The debate over whether there's a conflict between advanced technology and economic success is ridiculous. There's only one criterion for measuring the usefulness of technology: will people buy it or not?" Bill Gates touted this simple insight in 1980 when he met Simonyi for the first time. The two discussed the future of the microcomputer, then in its infancy, during a car trip. Gates was an ambitions

businessman with a young company that had neither system software nor end-user software. Simonyi was working as a programmer for the famous Xerox Park laboratory. It bothered him that future technologies were developed there without a commercial purpose. Both Gates and Simonyi believed that the personal computer would revolutionize life in business and at home. Yet one thing was missing: the software building blocks.

Simonyi got down to business. He drafted a three and a half page long memo for Gates that captured the vision and strategy that Microsoft subsequently followed: it covered the integration of various programs for private and businesses and even named them and estimated their year of appearance. Today he keeps the memo in a safe in his house. The hook with which he Simonyi could extend his meetings with Gates, was Bravo – the first word processing software for the precursor of the PC, the Alto from Xerox.   Together with Butler Lampson, Simonyi had been tinkering since 1973 on a program that directly translated a letter from a keyboard to the monitor, complete with formatting options like bold or cursive. In view of the speed limit of six megahertz on the processor, the software was a stroke of genius whose commercial potential was immediately clear to Simonyi. "There used to be specialists whose only job was to type text much like the typesetters at a printer. When we noticed that the wives of colleagues would come to the lab in the evenings just to write using Bravo without having anyone tell them how to use it, we knew we were onto something big."

But Xerox was blind to the market potential of the software, remembers Simonyi today. "Sometimes you have to take an idea with a revolutionary future to new, more agile doorway. This doorway was Microsoft. This is the wonder of capitalism." Starting in 1981, he further developed the Bravo concept without any of the current controversy of intellectual property ownership. The idea that software algorithms are patentable only emerged at about that time. In 1983, the second generation of his word processing program came on the market under the name Word. "Many people worked together on Word," says Simonyi. As the development lead, I delivered my piece and kept others enthusiastic about their work. While we had written down the vision, the real art is making money on the way to the vision.

The modern Word, twenty years later, is a monster program that automatically corrects typos, suggests synonyms, and puts the mailing address into a letter, and is without question the same baby he dreamed of. "The list of functions that I dreamed of is nearly reality now. Sometimes you have to wait until the technical capabilities catch up with your imagination."

At the same time as Simonyi was burning the midnight oil in Palo Alto on the first word processor, two academics were laying the foundation for easy calculations for everyone. Dan Bricklin and Bob Frankston were familiar with computers from 1970 from the computer labs of MIT. Their collaboration yielded VisiCalc in 1979, the first spreadsheet for Apple's microcomputer.

Before Microsoft's Multiplan was released and long before Excel became a household word, Bricklin and Frankston sold thousands of floppies of their new spreadsheet software to bankers, doctors and businesses of every kind and size. Today, they have a chapter in the history books of the software industry, but no riches.

Dan Bricklin is a slim 50-year old who in the meantime is leading his fourth startup near Boston called Trellix. He showed up at his old friend Bob Frankston's Victorian house for the interview in jeans and a flannel lumberjack shirt. In the attic, Frankston - who worked for Microsoft until 1998 – has a jumble of high tech artifacts. Old monitors lie on tables, electronics and books are piled on bookcases. The latest models of hand-held organizers sit in plastic boxes and in between everything there are dozens of telephones, cell phones and digital cameras. Frankston has trouble verbalize his thoughts before the next idea demands to be set to words. He starts sentences and jumps to the next theme, while he loads pictures of the current discussion into a computer.

Spreadsheets on the computer: Casting a spell on the finance wizard

Dan Bricklin was the businessman of the team. As a computer scientist, he studied at Harvard Business School in 1978 and saw himself as an investment banker. But there was this idea that consumed him: Why can't a pocket calculator have a mouse with which you could navigate through your calculations? Bricklin discussed his idea with professors and fellow students. They introduced him to the Apple II, the first personal computer with a primitive joystick called the Game Paddle that could move the cursor horizontally or vertically depending on the orientation of the cursor.

The idea for spreadsheets on the PC was born. Bricklin got in contact with Frankston, who developed the bulk of the program in the fall and winter of 1978. "We were standing in front of an unusual problem," remembers Bricklin. "The finance people who longed for such a program had no idea about computers. The programmers, who could develop such a program, saw no need for such software." The two tinkerers didn't do any market research that you could point to. "We didn't have a specific target market in mind. At that time, people bought a computer in order to use the already-included programs. But we knew from our discussions with bankers and friends that there was a need for number crunching capabilities.

In January of 1979, Frankston was done with the source for VisiCalc. It was introduced at a private conference that the technology analyst Benjamin Rosen from the investment bank Morgan Stanley organized. "What is now coming on the market is a new software concept. We believe that VisiCalc is so capable, universal, easy to use and modestly priced that it will become the best-selling program on the market. The user need know nothing about computers or programming." This praise from Rosen, who later helped baptize Lotus and Compaq.

Bookkeepers and financial planners immediately recognized how important the tables whose columns and rows they could manipulate on screen to their hearts' content, while the new results appeared like magic. Like Simonyi, Bricklin and Frankston were masters of minimalism. The limited power of the Apple, which didn't even have installed system software, forced them to be. The first version of the program allowed for closing the books of a company: 256 rows and 64 columns for the 52 weeks of the year and a few calculations in between. The system software, the program and the user data fit on the two sides of the old five and a quarter inch floppy. VisiCalc itself used 32 kilobytes. The full capabilities of the program gradually became clear to its buyers. "At first there were people who glued a calculator to their keyboard because they couldn't believe that we didn't just take their input, but also performed the calculations," said Bricklin.

For the programmer Frankston the effect was revolutionary. "VisiCalc was the first program that justified the expense of a 3000 dollar computer. As soon as you loaded the program, all further activities were suddenly more affordable. The computer ripened to a universally usable tool. When you have access to spreadsheet functionality, suddenly numbers take on a magical aura. I can analyze the details and take a look at the balance sheet every evening. Bookkeeping was no longer this secret art that only specialist could understand and present. Over the long run, this has led to more openness and honesty."

A stubborn rumor emerged that new founded Microsoft was thinking about merging with Frankston and Bricklin's Software Arts in 1979. But Bricklin and Frankston broke with VisiCorp, the distributor of VisiCalc, in the early 1980s Their company, Software Arts, went into the newly founded company Lotus Development Corporation. As early as 1985, Lotus 1-2-3 became the standard for spreadsheets until the time Microsoft's spreadsheet program Excel was sold as part of the Office package and became the market leader. For Bricklin it's obvious: "I don't know about those early rumors, but VisiCalc was the clear model for Excel."

PowerPoint-Presentations: The attack on the overhead foils

A second duo with business sense and futuristic vision tied their success with the rise of Microsoft Windows. Robert Gaskins and Dennis Austin sold their invention, PowerPoint. To Microsoft in April 1987 just after their first version appeared on the market. If today thousands of listeners in conference rooms everywhere stare at animated slides, they have Gaskins of San Francisco to thank. Microsoft estimates that every day at least 30 million presentations are created with PowerPoint.

Gaskins is honest when he thinks back to the beginnings of PowerPoint. "We weren't the only ones who had the idea for presentation software. Similar concepts were developed at Stanford and at Parc." But he analyzed the market opportunity like no one else and brought programmer Dennis Austin on board to make the idea into a successful product. Up until that time, companies had to take their presentation contracts for foils and slides to specialized companies who earned money hand over fist. Even the professionals rarely

used the expensive computers with the first graphics programs that were available. Gaskins estimated the market potential at 10 billion dollars in 1990.

To translate his plans to reality he needed a partner. Enter Forethought, a software company seemingly ripe for the partnership. They distributed among others Filemaker but suffered from a lack of long-term strategy and stood on the brink of failure. The company's board nibbled when Gaskins presented his idea for a modestly priced presentations software backed by sold market research. The head of Forethought fired nearly the entire company's employees and brought Dennis Austin in as head of software development. "The idea sounded so full of potential that I had a good feeling from the beginning." Says the 54-year old Austin. "I was the architect and Bob was the contractor who always had some gripe." As a literary effort before the first line of code was written, the two wrote a 45-page document that detailed every capability down to the last detail. Then Austin went to work and knitted, with a colleague, the first version of PowerPoint. The name was Gaskin's idea.

Since the only computer capable of the graphics requirements of the program was the Apple, the Windows version had to wait. But the IBM/Microsoft market was Gaskins' goal from the start. Even Apple, who invested the bulk of the the 4 million dollars of Forethought's venture capital funding, saw the golden future of the fall of 1983-introducted Windows clearly.   "There was a secret clause in our contract with Apple stating that we must release a Windows version as quickly as possible," says Gaskins.

But even before the first version of PowerPoint was released (black and white on a single floppy disk), Bill Gates was knocking at the door. "It was very inconvenient to have them looking over every line of source code and interviewing all of our programmers," remembers Austin. "But they were just conducting a thorough due diligence." In August 1987 Microsoft paid 14 million dollars for PowerPoint and create the Graphics Business Unit, which Gaskins managed. The 30 employees stayed in Silicon Valley and and shared two million dollars of the purchase price and received stock options in Microsoft that afforded both Gaskins and Austin comfortable early retirements. Both worked for Microsoft into the 90s. Austin left Microsoft in 1996 after version 7 of his baby was released. Gaskins lives half of the year in San Francisco and the other half in London.

Has the load of "productivity software" really made us more productive?   The programs didn't merge until after 1992 when hard disks and CD-ROMs made the integration of complex programs possible. The three welded-together boxes became a product where the success of one of the components pulled the sister products up. The judgement of the pioneers over the current status of their creations is varied. "My vision was to give the author control over his ideas," quoted Gaskins from his business plan from 1984. Today, PowerPoint is so complicated and overloaded that we're back where we started. Whoever wants a good presentation has to go to a specialist." Gaskins and Austin don't believe that PowerPoint is the reason people feel they have to immortalize every expression on a slide. "I don't see anything wrong with being able to organize your thoughts and get a better idea of the timing. But PowerPoint is overkill for a 5th grade book report," says Austin.

What concerns the two computer experts is the flood of canned templates that the Office programs spit out. You just fill in a few key words in presentations like "communicating bad news" or "motivate a team." The dependence on a handful of programs results in preformatted ideas, into which you shoehorn your own thoughts. More than 4 lines don't fit on a single slide, so cut the remaining two.   If your thoughts don't line up with the program, then something must be wrong with your argumentation, suggests the software, even though brainstorming often goes in circles and ellipses.

The standardization through software underscores the growing propensity of form over substance. Thanks to Word, PowerPoint and Excel, even half-baked ideas, whimpy compositions or creative financial acrobatics come across as polished and any mistakes are blanketed under superficial effects. Enron, for example, could hide its hundreds of bogus spinoff firms in the footnotes of its Excel tables. Wall Street analysts who recommended buys in October had to apologize for its analysis of those calculations. Gaskins sees PowerPoint behind the scenes in the boom/bust dot com bubble: "Nearly every new business in Silicon Valley was launched after showing PowerPoint slides to the venture capital community. There is probably no other program in the history of mankind that helped raise so much money!" Simonyi finds these concerns over the power of Office amusing footnotes. "At least I can now read a crummy document faster," he says, "and thereby recognize that it's crummy."