

Bill Gates

Biography

Bill Gates is known for many things; a businessman, author, investor and philanthropist. But he is mostly known as the founder of Microsoft. Gates, with childhood friend, Paul Allen, launched Microsoft in 1975 in Albuquerque, New Mexico. Little did they know that it would go on to become one of the worlds largest computer software company, where their software power's the majority of personal use computers.

Gates began his software engineering journey from a young age. At 13, he was enrolled in a private prep school, it was here that he wrote his first computer program. It was when the school got a General Electric computer that Gates took an interest in programming the system in BASIC, an easy to understand high level programming language used to teach the fundamentals of programming. It was on this machine that he created an implementation of tic-tac-toe which allowed players to play against the computer. Gates and the other student's were fascinated by the machines and sought time on other systems. They were banned on the PDP-10 system, which belonged to the Computer Center Corporation, after exploiting bugs in the OS which allowed them free computer time.

At the end of this ban Gates and other students had formed the Lakeside Programmers Club, the Club offered to work for CCC and to find other bugs in the software, like the one they used to exploit, in return for extra computer time. During this time, Gates went to the CCC offices and studied source code in Fortran, Lisp and Machine language. The Club were asked to computerize their school's payroll system in COBOL and paying them in computer time and royalties. Gates wrote the system to schedule students in classes and modified the code to place him in classes with more "interesting girls". At 17, Gates and Allen used the Intel 8008 processor to make traffic counters called Traf-O-Data and licensed it to local governments. While Gates was doing all this work for personal projects, he still managed to work hard at school work also and scored a 1590 out of 1600 on the SAT and could enroll in Harvard College in 1973. Here he took a pre-law major and took maths and computer science courses also but left Harvard after two years. With the release of the MITS Altair 8800 Gates and Allen saw an opportunity to create a software company and decided to drop out of Harvard.

Gates and Allen contacted MITS to gauge interest on a BASIC interpreter for their platform by telling them they had been working on it but in reality they had done nothing. MITS agreed to demonstration leaving Gates and Allen only a few weeks to develop an Altair emulator, as they did not have an Altair, and the BASIC interpreter. But they obviously did a good enough job in that small timeframe to land a deal with MITS to distribute is as Altair BASIC. They names their partnership "Micro-soft".

IBM approached Microsoft in 1980 about an operating system for its upcoming PC the IBM PC. Gates suggested they go to Digital Research DRI, who made the CP/M OS, however the discussions between DRI and IBM did not go well and so they went back to Microsoft looking for an OS. Gates pointed them in the direction of 86-DOS as it was similar to the widely used CP/M. Microsoft then made a deal with the owners of the 86-DOS OS to be the

exclusive licensing partners and later became the full owners. Microsoft then adapted the OS to work with the IBM PC and sold it to IBM for \$50,000 as a one-time fee. While this was a small fee, the wide adoption of it by IBM propelled Microsoft from a small business to the World's leading software company. The IBM compatible PC became the standard of PC's and the sales of MS-DOS skyrocketed and made Microsoft an influential player in the industry. Eventually Microsoft launched the first version of Windows for retail customers, which would become Microsoft's most recognisable contribution to the computing world today. Bill Gates later left the company in 2006 to focus more of his time on his philanthropy.

Ambitious

Bill Gates is extremely ambitious, in school he made the Lakeside Programmers Club in order to make some money, showing his ambition from a young age. He dropped out of college to pursue his own company, during this time he told MITS that he had been working on a BASIC interpreter however in reality he had nothing and was just gauging interest, this was an ambitious move as it only gave them a few weeks to build in order to demonstrate to MITS. He did not stop his ambition there and he would often discuss new ideas with Allen for future projects. It was this ambition and his vision for the future that led to what Microsoft is today.

Intelligence

Bill Gates was known as the smartest kid in school and he believed in his intelligence and his ability to apply that intelligence to achieve his goals in life. It was when he was at Harvard his solution to the pancake problem was the fastest for over 30 years, the new version being only 1% faster.

Hard Working

Gates believed in achieving his goals through hard work, from a young age Gates was not only working hard in school, where he would go on to score 1590 out of 1600 in his SAT, but also balancing his own personal projects with the Lakeside Programmers Club. He worked hard to find time to learn how to build the systems that he would build working with the club. Private schools were known for their intense academic environment and yet Gates managed to thrive and not only learn skills outside of the scope of school, but also apply those skills. This shows an efficiency in these tasks from an early age and an ingenuity for software engineering at a young age. During this time Gates learnt to understand many different languages such as Fortran, Lisp and COBOL, while at the same time working hard enough to get into Harvard; the most prestigious school in America. Another example of Gates ability to work hard to achieve his goals was what arguably got Microsoft in the door with his development of the Altair BASIC interpreter in only a few weeks. An ability to work hard to achieve one's goals is an essential skill for any software engineer, and to see Bill Gates consistent belief in hard work to succeed is quite inspiring to me.

Confident

Gates had an inherent confidence in his own ability as a software engineer. From a young age Gates was confident to build and develop Traf-O-Data to be an actual production piece of software that would be used by the local governments. This takes a confidence in the quality of your work, something that I struggle with, so to see Gates willingness to take on such a project is inspiring. Having taught himself his programming skills, he was confident to take the ban that he received from the Computer Center Corporation and offer to work for them after the ban to find bugs, where he would have to learn new languages to understand the source code. Gates also left college because he had the confidence in starting his own company and its ability to succeed.

Opportunist

Bill Gates was an opportunist who was always looking out for a problem he could fix, a system he could provide or something he could take advantage of. He developed these skills from a young age as he noticed bugs in the OS of the PDP-10 allowing him free computer time. Gates and his friends took advantage of these bugs until they were caught and banned. However, Gates took this ban as another opportunity to offer his skills to CCC in exchange for extra computer time, so not only was he given more time but also learnt a wider range of skills from working in the CCC offices during this time. His opportunistic ways didn't stop there however. Gates and Allen noticed that they could process the traffic counting data cheaper and faster than the local companies, and so used their skills to create this system and sold it to the local governments. He was always looking for new things he could build to make money, with the release of the MITS Altair Gates saw the opportunity to create Microsoft. Later Gates kept the trademark of the PC-DOS as he saw the opportunity that would bring if other PC makers adopted IBM's PC hardware, which they did.

Competitive/Team player

One of the things Bill Gates struggled with was communication. He may have not been a great team player as he was notoriously hard to get in contact with and gained a reputation for being distant. He was very competitive, which in itself is not detrimental, but the extent to which Gates competitiveness extended may have been a negative. Microsoft were under anti-trust litigation after allegations of blocking competition, many of the decisions that led to the litigation were approved by Gates. Managers also described Gates as being verbally combative and one of his biggest issues was hiring and management and he struggled with how he would build up the team. Gates also personally reviewed every line of code in the early days, and rewrote code where he saw fit, where he thought he could do a better job. Gates was certainly a competitive person, which would have both helped and hurt Microsoft.

Cutting Edge

Gates followed the release of new technologies such as the MITS Altair 8800 based on Intel 8080 CPU and saw the opportunity to start their own software company, if they weren't

keeping an eye on new technologies available they could've missed that opportunity to start Microsoft. A good software engineer is aware of the technologies that are available to them and who is willing to change if one such new technology provides a better way to approach or solve a problem.

Motivated

Bill Gates has always had an intense desire to do well, from being one of the smartest kids in school to working on outside projects, Gates has always had a deep motivation to succeed. This motivation to do well and succeed was planted in him from a young age where his parents would organise all sorts of competitive games for the family.

Broad Knowledge

BASIC = tic-tac-toe

PDP-10 instruction set

Fortran, Lisp, machine language = CCC

COBOL = School system

Intel 8008 Instruction Set = Traf-O-Data

Gates was not afraid of constantly extending his software engineering project and acquired broad knowledge by working on various different projects.

Conclusion

Bill Gates has made an immeasurable impact to the field of computing, whether you are browsing the web to playing a game on the Xbox, you are utilising software that Microsoft has built and if not, you are using software that was influenced in some way or another by Microsoft. Bill Gates and Microsoft's vision was a "computer on every desk" and certainly they achieved it in one way or another.

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