CSU33012

James Lunt

18323467

 The software I have chosen to write about is Bill Gates. I understand this is one of the most popular and well known software engineers however he is one I seem to know most about and have an attraction towards. As an aspiring software engineer Bill Gates is particularly inspirational in comparison to other famous engineers who I often find egotistical or unsettlingly nerdy. Although fanatical about the computing world, Bill Gates is admirably grounded, benevolent and rational. I believe these qualities are very well complemented by his passion for programming and problem solving hence I have decided to talk about him, his early days, career and post-career in this essay.

Bill's life began in an all-boys private school called Lakeside in Seattle, Washington, USA, where as an 8th grader he joined the Lakeside programming club with his friend Kent Evans which had been founded by sophomores Paul Allen and Ric Weiland. Here the school had installed an ASR 33 teletype which had a direct link to the main frame computer in downtown Seattle, which in the early days of the computer revolution was an extreme rarity to have in any high school in the world. Bill and his friends began their practice as programmer and Bills obsession began. The group were accustomed to assignments that honed their skills, one in particular was a task to figure out a new year curriculum to accommodate a girls school that would merge with Lakeside that September. This task consumed Bill and Paul Allen who worked around the clock together to solve the problem. This is where Bill and Pauls relationship as well as their ability to pair program was conceived. It's humbling that the early days of computing automation included school students solving a school curriculum based off their drive to program and innovate with no payment or much recognition.

However, Bill and Paul would soon gain such recognition and payment, sometimes this payment was just more computer time as Bill and Paul valued investing in skill development. As an example of this value, in Malcom Gladwell's "Outliers" he mentions Bill and Paul took advantage of the University of Washington's computers in the physics and biology department which were free and available between the hours of 3am and 6am. I think this desire for practice is a core principle in software engineering, such a discipline requires an eagerness to learn and to constantly hone and learn new things.

In their later high school years, the computer club were hired by a company called ISI to write software to automate company payrolls. Bill and Paul also developed software to analyse traffic called traf-o-data, such was an early example of their innovation and entrepreneurship as well as consideration of community and society. ISI referred Bill to a hydroelectric company who were looking for someone to computerize their system so in his senior year he left for Bonniville where he spent the spring writing code under the supervision of John Norton who bill claims taught him as much about programming then anyone else. I think it's awesome that it was here where he met a peer and teacher who

would be worthy of such a great disciple as Bill Gates, perhaps it is imperative to have said teacher for any student aspiring to greatness and revolution in the computing world and others. This was Bill's turning point where at such an early age he had the practice and discipline to be miles ahead of the rest of the world in software development and his destiny was set.

Bill went on to Harvard University where he soon dropped out to move in with Paul Allen to create software for the landmark Altair – 8800 computer which had been released, no one had ever written commercial software on a personal computer till now. The creators of the Altair, MITS, hired Bill and Paul to create an operating system for their PC, named MITS Altair Basic, and so Micro Computer Software was born. After this project Microsoft got a job from IBM, the worlds leading computing company, who hired them to build an operating system which became the ubiquitous and dominant MS-DOS IBM operating system. This was Bills breakthrough into the industry as Microsoft began to make global recognition.

As Microsoft grew, Bill's greatest contribution to the company as a CEO was his relentlessness, he began to enjoy and revel in his fanaticism, he was dedicated to building the most revolutionary and prosperous business he could. I think Bill Gates showed that leadership by example is very effective in the software industry and without his extraordinary ability to work and organise Microsoft would not have reached the heights it did. He is a true of example of how effort and intense attention pays off and will lead to success.

Microsoft soon added to their product line with their acquisition of PowerPoint which lead to their first software package Microsoft Works which has since been developed into the must-have Microsoft office and was also the first piece of cross platform software. Furthermore Microsoft would contribute to the tech industry with the Xbox, one of the most prominent gaming console of the 21st century, C#, a programming language that would progress game development , and internet explorer which became part of the internet and search engine revolution. Microsoft also invested hugely in a new and unproven animation company called DreamWorks.

However Microsoft's next breakthrough would make Bill Gates and Microsoft the world leaders of tech; Windows 95. This operation system sold 1 million copies in 4 days and would make Bill Gates the youngest billionaire ever at 32 year old. This success however lead to a stressful time in Bill Gates life when in 1999 he was trialled in court for monopoly practices Microsoft undertook on the industry, Bill was disliked by a lot of the public and was conceived as greedy and lustful for domination over the industry. In time these accusations were settled however I think this is the first example that would resemble future sort of paradigms where huge tech tycoons are viewed as imperial such as Mark Zuckerberg and Jeff Bezos to give two examples where they exercise such dominating manoeuvres in the tech industry. This view seems to be a trend with such tech giants such that their morals and values are even criticised and questioned, and it makes me wonder if its due to the nature of software engineering entrepreneurs who have this great ability to progress and problem solve in comparison to people in other disciplines that make them so

rich and dominating or is it perhaps just that tech is so extremely influential and reaching into peoples lives that it is way more apparent when such people and companies show certain aggressions.

In recent years Bill Gates has released his position as CEO of Microsoft and turned his attention outwards. The Bill and Melinda Gates foundation was set up by Bill Gates and his wife Melinda in 2000. In the Netflix documentary "Inside Bill's Brain: Decoding Bill Gates", Bill talks about the foundations progress in Nigeria with sanitation engineer Doulaye Kone. The projects goal was to reinvent the sanitation system in the slums of Nigeria with an affordable toilet scheme which would boil and steam faeces and reuse the chemical energy to self sustain the toilet and produce drinkable water.

Another cause the foundation has been dedicated to is that of climate change, particularly with nuclear waste management. Working with other engineers, the invention of the travelling wave reactor was made, this reactor would trap unused uranium from nuclear power plant and recycle it into reusable energy.

These global issues Bill has addressed in his later years are proving of his stewardship and responsibility to the rest of the world, I think this makes him a very admirable person and software engineer. I think his ability to program and problem solve in the computing world matches and is correlated to that in the real world, I think these problems of sanitation and climate change have clearly been outlined by Bill as critical and he has applied principles of programming, intense attention, logical and algorithmic thinking, priority of efficiency and others to try help solve them.

Lastly I think Bill's story is one of humble beginnings and hard work and it is vital for software engineers to be aware of.

Bibliography:

- Outliers, book by Malcom Gladwell
- Inside Bill's mind: decoding Bill Gates, Netflix Documentary series
- https://www.youtube.com/watch?v=Xjq0kljBZnY
- https://en.wikipedia.org/wiki/Bill_Gates
  pdf