```
00200   IF1;<    LENGTH,<PRINTX /SMALL/ >
00220   IFE      LENGTH-1;<PRINTX /MEDIUM/ >
00240   IFE      LENGTH-2;<PRINTX /BIG/ >
00260   IFE      STRING;<PRINTX /NO $$/ >
00300   IFN      STRING;<PRINTX /$$ $$/ >
00320   >
00340   SUBTTL   VERSION I.1 -- MORE FEATURES TO COME
00360   COMMENT *
00380
00400   --------- ---- -- ---- ----- --- ---- -----
00420   COPYRIGHT 1975 BY BILL GATES AND PAUL ALLEN
00440   --------- ---- -- ---- ----- --- ---- -----
00460
00480   WRITTEN ORIGINALLY ON THE PDP-10 AT HARVARD FROM
00500   FEBRUARY 9 TO APRIL 27
00520
00540   PAUL ALLEN WROTE THE NON-RUNTIME STUFF.
00560   BILL GATES WROTE THE RUNTIME STUFF.
00580   MONTE DAVIDOFF WROTE THE MATH PACKAGE.
00600
00620   THINGS TO DO:
00640   SYNTAX PROBLEMS (OR)
00641   NICE ERRORS
00642   ALLOW ^H AND ^C IN LIST COMMAND
00643   TAPE I/O
00646   BUFFER I/O
00648   USR ??
00650   ELSE
00652   USER DEFINED FUNCTIONS(MULTI-ARG,MULTI-LINE,STRINGS)
00660   MAKE STACK BOUNDARY STUFF EXACT
00680   (FOUT 24 EIN 14)
00700   PUNCH,DELETE;,,
00720   INLINE CONSTANT CONVERSION--MAKE IT WORK
00740   SIMPLE STRINGS
00750   *
00760   ;P==0                        ;FOR SIMULATOR FIXUPS
00780   CARRY==^O1
00800   SIGNF==^O200
00820   PARITY==^O4
00840   ZEROF==^O100
00860   NUMTK==^O377                 ;NUMBER TOKEN
00880   LINLEN==^D70                 ;LINE LENGTH (MUST BE MULTIPLE OF 14)
00900
00950   CONTW==15
00960   REALIO==1                    ;FOR MITS I/O ADDS 16 BYTES
         OOON===02
         DIE===040
01020   TTOCHN==1                    ;TELETYPE OUTPUT CHANNEL
01040   TTICHN==1                    ;TELETYPE INPUT CHANNEL
01060   LNGVAR==1
01081   FNCYIF==1
02040
02060
02080
02100
02120
02140
02160
02180
02200
02220
02240
02260
022
```

MICROSOFT

William H. Gates
President
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Paul G. Allen
Vice President
Albuquerque, NM 87108

The title page of the assembly language code that produced Altair BASIC.

■ Bill Gates: Letter to Hobbyists

Date: February 3, 1976
Author: Bill Gates
Genre: Letter

Summary Overview

Bill Gates and Microsoft were central figures in the computing world throughout the last quarter of the twentieth century. This letter, written by Gates in 1976, one year after Microsoft's founding, offers an invaluable window into his thinking when the company was still new and relatively small. By examining this letter, one can gain a better understanding of Bill Gates's thinking near the time of Microsoft's beginnings. Further, the letter provides insight into the nature of the budding software industry as a whole.

Defining Moment

This letter illuminates Bill Gates's perspective at a time when Microsoft was still in its infancy. In fact, founders Gates and Paul Allen did not register the trademark Microsoft with the state of New Mexico until months later, in November 1976.

Gates and Allen attended Lakeside School together as teenagers, where they shared a love for computing. Later Allen, who is three years older than Gates, convinced his friend to leave Harvard and found Microsoft with him. The company met instant success formulating software for other companies. Frustrated with what he perceived as the rampant theft of Microsoft software, Gates drafted this open letter to address the issue. The company moved to Washington state in 1979 and started formulating operating systems. IBM contracted Microsoft to formulate software for its hardware, and the resulting MS-DOS saw great success. Microsoft retained the copyright for MS-DOS, which proved profitable as IBM's competitors created compatible hardware. In 1985 Microsoft continued its string of successes with its release of Windows.

Throughout the 1980s and 1990s, Microsoft grew into one of the most powerful companies in the world and perhaps the most influential computer industry firm. As its cofounder and helmsman, Gates steered the company with an unwavering vigor. Some say that his business tactics crossed the line as he strove to secure Microsoft's centrality by aggressively pursuing rivals. After a long antitrust lawsuit, a judge sided with the U.S. Government in 1999, ruling that Microsoft had created a monopoly by the way it packaged and sold its operating system software to consumers. In June of the following year, the court ordered Microsoft to be broken up as a remedy. Microsoft immediately appealed the decision, and the DC Circuit Court of Appeals overturned the ruling. In November 2001, the Department of Justice and Microsoft reached a settlement that left the company intact and did not force it to rewrite any of its code.

The information technology (IT) industry continues to evolve, and Microsoft no longer holds the central position that it did in the 1990s. Though it has since been eclipsed by rivals such as Apple and Google, it remains an influential player, and its history has unequivocally and irrevocably shaped the IT landscape.

Author Biography

William Henry Gates III was born on October 28, 1955, in Seattle, Washington. Gifted in mathematics, he showed an early penchant for computing. He attended Harvard but took a leave of absence in 1975 to form Microsoft with Paul Allen; Gates never returned to Harvard. The company enjoyed monumental success through the 1980s and 1990s under Gates's strong leadership. After amassing a colossal fortune, Gates stepped back from the business world and moved into philanthropy. He and his wife founded the Bill and Melinda Gates Foundation in 2000. Through this foundation, the couple brings the same tenacity to scientific research and charitable causes that Gates exhibited at Microsoft.

HISTORICAL DOCUMENT

An Open Letter to Hobbyists

To me, the most critical thing in the hobby market right now is the lack of good software courses, books, and software itself. Without good software and an owner who understands programming, a hobby computer is wasted. Will quality software be written for the hobby market?

Almost a year ago, Paul Allen and myself, expecting the hobby market to expand, hired Monte Davidoff and developed Altair BASIC. Though the initial work took only two months, the three of us have spent most of the last year documenting, improving, and adding features to BASIC. Now we have 4K, 8K, EXTENDED, ROM and DISK BASIC. The value of the computer time we have used exceeds $40,000.

The feedback we have gotten from the hundreds of people who say they are using BASIC has all been positive. Two surprising things are apparent, however: 1) Most of these "users" never bought BASIC (less than 10% of all Altair owners have bought BASIC), and 2) The amount of royalties we have received from sales to hobbyists makes the time spent on Altair BASIC worth less than $2 an hour.

Why is this? As the majority of hobbyists must be aware, most of you steal your software. Hardware must be paid for, but software is something to share. Who cares if the people who worked on it get paid?

Is this fair? One thing you don't do by stealing software is get back at MITS [Micro Instrumentation and Telemetry Systems] for some problem you may have had. MITS doesn't make money selling software. The royalty paid to us, the manual, the tape, and the overhead make it a break-even operation. One thing you do is prevent good software from being written. Who can afford to do professional work for nothing? What hobbyist can put 3-man years into programming, finding all bugs, documenting his product and distribute for free? The fact is, no one besides us has invested a lot of money in hobby software. We have written 6800 BASIC, and are writing 8080 APL and 6800 APL, but there is very little incentive to make this software available to hobbyists. Most directly, the thing you do is theft.

What about the guys who resell Altair BASIC, aren't they making money on hobby software? Yes, but those who have been reported to us may lose in the end. They are the ones who give hobbyists a bad name, and should be kicked out of any club meetings they show up at.
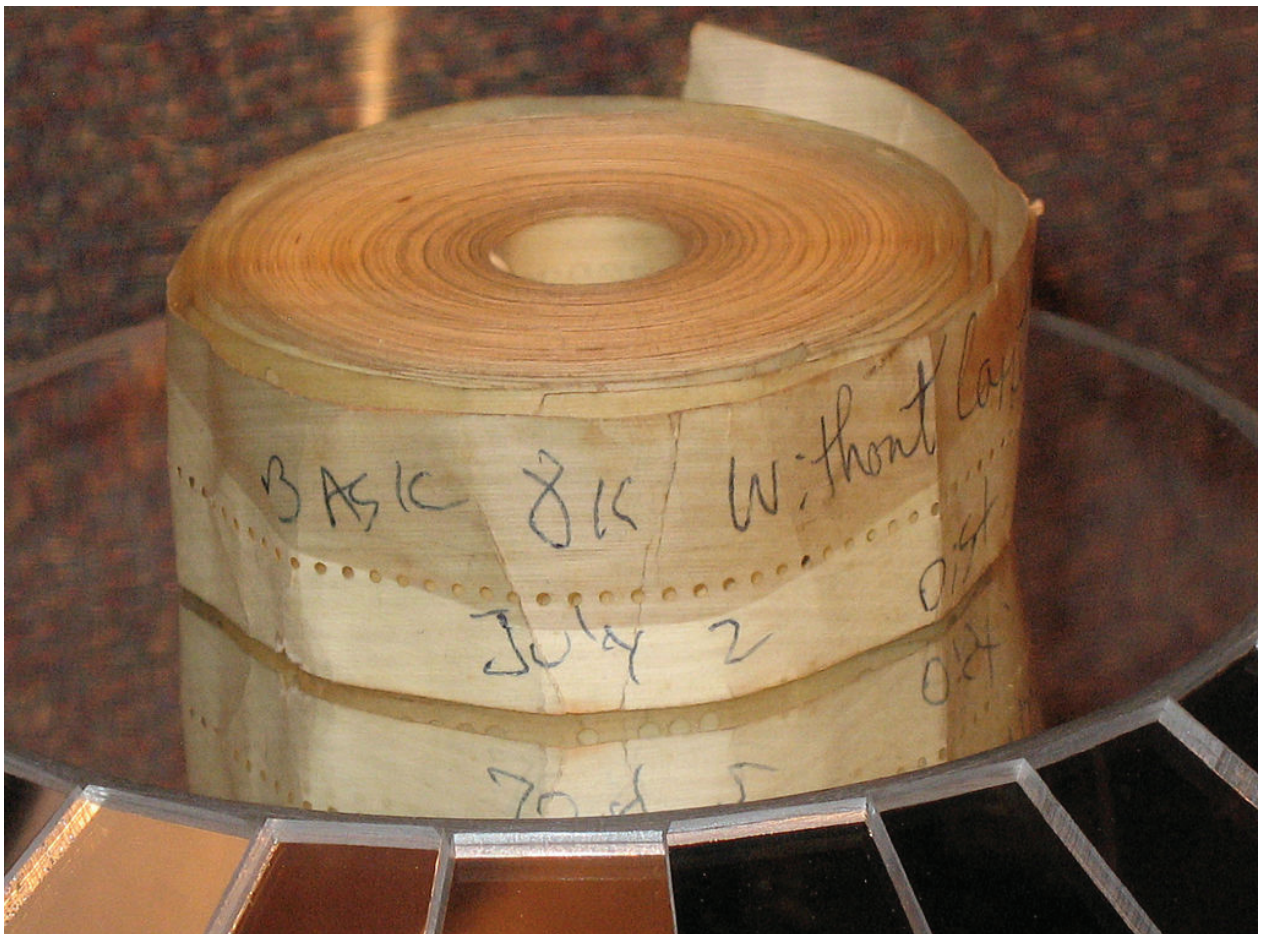
I would appreciate letters from any who wants to pay up, or has a suggestion or comment. Nothing would please me more than being able to hire ten programmers and deluge the hobby market with good software.

/s/ *Bill Gates*
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Altair 8K BASIC on paper tape.

Document Analysis

This open letter showcases Microsoft in its infancy and Bill Gates's perspective at that time. In the letter, Gates comes across as angry, upbraiding those who pirate his products and invoking justice. This document also exhibits how Microsoft got its start producing software, concentrating its initial efforts on Altair Basic, a high-level programming language for the Altair 8800 microcomputer, manufactured by MITS and sold through mail-order to computer hobbyists.

Gates's motive in drafting this open letter is to stop or slow the theft of Microsoft software. He attempts to effect this in a variety of ways, playing on his audience's rationale as well as their emotions. His opening statement reads, "To me, the most critical thing in the hobby market right now is the lack of good software courses, books, and software itself." This sentence not only delineates the state of the industry, but also hints at the nature of his audience. His reasoning is that since theft is pervasive in the software industry, no software provider invests in making quality software. His closing sentence echoes the same theme: "Nothing would please me more than being able to hire ten programmers and deluge the hobby market with good software." Both of these statements strike a positive, collaborative tone. If Microsoft and the hobbyists work together, they will all benefit.

The middle of the text strikes a more combative and emotional tone. Gates attempts to invoke pity for the hard work that he and his colleagues have put forth: "The amount of royalties we have received from sales to hobbyists makes the time spent on Altair BASIC worth less than $2 an hour." He builds upon this by shifting to an attempt to shame his audience: "Most directly, the thing you do is theft." This statement paints the subject with a broad brush, coloring all hobbyists in the same negative light. He later retains his hostility but makes differentiations within the group, "They are the ones who give hobbyists a bad name, and should be kicked out of any club meetings they show up at." In all, Gates's combative tone hints at his aggressive management style and business tactics.

This document also offers a blunt look at the early software industry. Gates clearly outlines the difference between the hardware industry and the software industry: "As the majority of hobbyists must be aware, most of you steal your software. Hardware must be paid for, but software is something to share." Although the computer industry has changed significantly since 1976, the same general principle holds: Software today is more likely to be illegally copied than hardware. (This parallels a similar dynamic in the music industry, where there is a relatively large market for music pirated online.)

Essential Themes

A sense of justice, or fairness, is as an underlying theme of this letter. Gates explicates his theme with a pair of rhetorical questions. After outlining how the theft of software leads to Microsoft workers earning the equivalent of $2 an hour, Gates asks, "Why is this?" He follows with an explanation of how hardware is bought but software is often stolen and asks, "Is this fair?" A cynic might draw on the larger context to shoot down Gates's call for justice. As a teenager, Gates and three of his friends got in trouble for exploiting bugs in a shared computer to obtain free computer time. The anecdote highlights their computing prowess but begs the question: Is this situation much different than the hobbyist stealing software?

Gates claims that it is unfair for hobbyists to steal software and not hardware. Some may adhere to a "might makes right" theory of justice, meaning that because it is easier to steal software, the onus is on Microsoft to make such theft more difficult. However, most people would not draw on this type of reasoning in this case. If one recalls the nature of American copyright law and intellectual property protection, it becomes hard to deny Gates his point. In later years, of course, as the company grew and maintained a staff of lawyers, such illicit copying became progressively harder to do without facing legal challenges. (In a comparable development in the music industry, a 2001 court ruling declared it illegal to copy and share music files.)

—*Anthony Vivian*

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