# March 30th

## Word Processing Undo

### March 30, 1858

Hymen L. Lipman of Philadelphia was granted the first patent for a pencil with an attached eraser (US 19,783). However, it was installed within the wooden core of the pencil, not just stuck on one end, which meant that both the graphite and rubber ends could be sharpened.

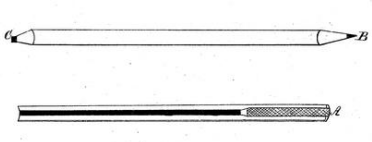

Illustration from Lipman's Pencil and Eraser Patent (1858). USPTO.

In 1862, Lipman sold his patent to Joseph Reckendorfer for $100,000, who went on to sue the pencil manufacturer Faber for patent infringement. In 1875, the Supreme Court ruled against Reckendorfer declaring the patent invalid because the invention was a combination of two already known things with no new feature.

The integrated eraser-pencil was far from Lipman's only contribution to office 'automation'; he was America's first envelope manufacturer, and instigated the notion of including glue on the back flap.

## Phototransistor Announced

### March 30, 1950

The Bell Labs' phototransistor was operated with light rather than current by being enclosed in a transparent case so that illumination could reach the transistor's base collector. It had been developed by John N. Shive who was granted a patent (US 2,560,606) for his "photoresistive translating device" in 1951.

Shive's device wasn't the first "electric eye", but it was smaller and sturdier than previous efforts, and could generate enough power to operate a switch without amplification.

## Brian Behlendorf

### Born: March 30, 1973; Southern California

Behlendorf was one of the developers of the Apache Web server [Dec 1], and a founding member of the Apache Group, which later became the Apache Software Foundation.

In 1993, Behlendorf got a part-time job as a "$9-an-hour UNIX sherpa" for *Wired* magazine [Jan 2]. They wanted him to set up an Internet account for email and to make the magazine's articles available on the Web. This required him to start patching server code from NCSA [Jan 15], which brought him into contact with other 'patchers' such as Cliff Skolnick. A mailing list was created, and eventually Apache was forked from the NCSA codebase in Feb. 1995, and Wired's site became HotWired [Oct 17]. Behlendorf later recalled, "I felt like I was doing God's work in that first year and a half at Wired."

Behlendorf went on to serve on the board of the Mozilla Foundation [Jan 23], and the Electronic Frontier Foundation [July 6]. He also used to run the SFRaves mailing list (in the 1990's), and created a large site devoted to electronic music, called hyperreal.org, which also hosted the Burning Man [Jan 21] website until 2003.

## Knuth's Galley Proofs

### March 30, 1977

In 1976 when the second edition of the second volume of Donald Knuth's [Jan 10] "The Art of Computer Programming" was to be published, the book had to be typeset again because the Monotype technology had been largely replaced by phototypesetting. When Knuth received the galley proofs for the book on this day, he looked upon them and was displeased.

Knuth knew how good the output of a digital typesetting system could be, and this spurred his interest in digital typography. The disappointing galley proofs were the final 'nudge' to persuade him to build his own typesetting system.

On May 13, 1977, he wrote a memo describing the necessary features of such a system, which he called TeX. He optimistically planned to finish it during a sabbatical in 1978, but the system wasn't actually "frozen" until 1989. By then, TeX had reached version 3.0, and thereafter updates have been marked by adding an extra digit at the end of the decimal so that the number asymptotically approaches π [March 14]. The current version is 3.141592653; it was last updated on Feb. 8, 2021, seven years after version 3.14159265.

Tex also includes the METAFONT language for creating fonts. Its version was "frozen" at 2.0, and has been asymptotically approach e [Jan 27] since then.

TeX is extremely popular in academia, especially for generating beautiful mathematics. However, most ordinary mortals (and mathematicians) tend to use LaTeX [Feb 7], which manipulates the heady power of TeX in a more easily controllable form. TeX handles the layout side, while LaTeX focusses on document content processing.

## Vinge's Singularity

### March 30-31, 1993

I.J. Good [Dec 3] was the first person to warn of the coming computer "intelligence explosion" in his 1965 essay, "Speculations Concerning the First Ultraintelligent Machine".

Nearly 20 years later, Vernor Vinge, the award-winning sci-fi author, employed the term "singularity" in the context of intelligent machines in the Jan. 1983 issue of *Omni Magazine*:

"We will soon create intelligences greater than our own. When this happens, human history will have reached a kind of singularity, an intellectual transition as impenetrable as the knotted space-time at the center of a black hole, and the world will pass far beyond our understanding."

Although this was the first published use of "singularity", Vinge had test-driven the term the previous year on a panel at AAAI-82, the annual meeting of the American Association for AI. But it was Vinge 's 1993 article, "The Coming Technological Singularity: How to Survive in the Post-Human Era", that really popularized the idea. It was first presented as a talk on this day at the "VISION-21 Symposium". It begins:

"Within thirty years, we will have the technological means to create superhuman intelligence. Shortly after, the human era will be ended."

Thankfully, his 30-year estimate has proven a little pessimistic.

In April 2000, Bill Joy [Nov 8], one of the co-founder of Sun Microsystems [Feb 24], voiced concern over the dangers of the singularity in a *Wired* magazine [Jan 2] article, "Why the Future Doesn't Need Us" [Aug 29].

In 2005, Ray Kurzweil [Feb 12] published the book "The Singularity is Near", and Kurzweil and Peter Diamandis established the Singularity University (aka SingularityU) in 2009.

## A Cloudy Manifesto

### March 30, 2009

The "Cloud Computing Manifesto" was published by a consortium of companies lead by IBM, with Cisco, HP, and Sun Microsystems [Feb 24]. It called upon the industry to keep cloud computing services as open as possible.

Manifestly a Cloud. Photo by Acabashi. CC BY-SA 4.0.

This sentiment seems fairly harmless, but the original version, called the "*Open* Cloud Manifesto" had been sharply criticized by Microsoft who described it as the work of a "shadowy group of IT industry companies".

Microsoft, Amazon, and Google, refused to become signatories of the manifesto. Incidentally, these companies dominate the cloud market. Amazon Web Services (AWS [March 19]) is no. 1, followed by Microsoft Azure [Feb 1], Google Cloud, Alibaba [April 4] Cloud, and IBM.