

FEATURE

The Strange Birth and Long Life of Unix

The classic operating system turns 40, and its progeny abound

By WARREN TOOMEY / DECEMBER 2011



Photo: Alcatel-Lucent

KEY FIGURES: Ken Thompson [seated] types as Dennis Ritchie looks on in 1972, shortly after they and their Bell Labs colleagues invented Unix.

which stood for "Multiplexed Information and Computing Service." Time-sharing, a technique that lets multiple people use a single computer simultaneously, had been invented only a decade earlier. Multics was to combine time-sharing with other technological advances of the era, allowing users to phone a computer from remote terminals and then read e-mail, edit documents, run calculations, and so forth. It was to be a great leap forward from the way computers were mostly being used, with people tediously preparing and submitting batch jobs on punch cards to be run one by one.

Over five years, AT&T invested millions in the Multics project, purchasing a GE-645 mainframe computer and dedicating to the effort many of the top researchers at the company's renowned Bell Telephone Laboratories—including Thompson and Ritchie, Joseph F. Ossanna, Stuart Feldman, M. Douglas McIlroy, and the late Robert Morris. But the new system was too ambitious, and it fell troublingly behind schedule. In the end, AT&T's corporate leaders decided to pull the plug.

After AT&T's departure from the Multics project, managers at Bell Labs, in Murray Hill, N.J., became reluctant to allow any further work on computer operating systems, leaving some researchers there very frustrated. Although Multics hadn't met many of its objectives, it had, as Ritchie later recalled, provided them with a "convenient interactive computing service, a good environment in which to do programming, [and] a system around which a fellowship could form." Suddenly, it was gone.

With heavy hearts, the researchers returned to using their old batch system. At such an inauspicious moment, with management dead set against the idea, it surely would have seemed foolhardy to continue designing computer

They say that when one door closes on you, another opens. People generally offer this bit of wisdom just to lend some solace after a misfortune. But sometimes it's actually true. It certainly was for Ken Thompson and the late Dennis Ritchie, two of the greats of 20th-century information technology, when they created the Unix operating system, now considered one of the most inspiring and influential pieces of software ever written.

A door had slammed shut for Thompson and Ritchie in March of 1969, when their employer, the American Telephone & Telegraph Co., withdrew from a collaborative project with the Massachusetts Institute of Technology and General Electric to create an interactive time-sharing system called Multics,

operating systems. But that's exactly what Thompson, Ritchie, and many of their Bell Labs colleagues did. Now, some 40 years later, we should be thankful that these programmers ignored their bosses and continued their labor of love, which gave the world Unix, one of the greatest computer operating systems of all time.

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