

The Pace of Change

"It's nice to believe that you can map out every step ahead of time and end up where you want, but that's a fantasy. The world changes. Ten years from now your industry might not even exist."

- Daniel Pink, The Adventures of Johnny Bunko

In *Out of Our Minds*, Sir Ken Robinson asks readers to think of the past 3000 years as the face of a clock, with each of the 60 minutes representing 50 years. Until three minutes ago, transport was dominated by the horse, wheel, and sail. With James Watt's refinement of the steam engine in the 18th century, however, everything changed - and fast! Using our clock, the following is a look at the vertical climb:

- 4 minutes ago Internal combustion engine (Francois Isaac de Rivaz, 1807)
- 2.5 minutes ago Motor car (Karl Benz, 1885)
- 2 minutes ago First powered airplane flight (Wright brothers, 1903)
- 1.9 minutes Rocket propulsion (Robert Goddard, 1915)
- 1.5 minutes Jet engine (Hans von Ohain and Frank Whittle, 1930)
- 1 minute ago First man-made object orbits the Earth (Sputnik 1, 1957)
- 50 seconds ago First manned moon landing and moon walk (Apollo 11, 1969)
- 30 seconds ago Reusable space shuttle (Discovery, 1981)
- 2 seconds ago Roadable aircraft (Terrafugia Transition, 2009)
- 1 second ago Unmanned spaceplane (X-37B, 2010)

Sir Ken calculated a similar curve of change for writing systems. Spurred by Johannes Gutenberg's invention of the printing press - between 1440 and 1450, or about eleven minutes ago on our clock - the pace has again been breathtaking:

- 11 minutes ago Printing press (1440-1450)
- 3.4 minutes ago Morse Code (1838-44)
- 2.7 minutes ago Telephone (1875)
- 2.5 minutes ago Radio (1885)
- 1.6 minutes ago Black and white television (1929)
- 54 seconds ago Fax (1966)
- 41 seconds ago Personal computer (1977)
- 38 seconds ago Analog cell phone (1979)
- 25 seconds ago World Wide Web (1990)
- 22 seconds ago SMS messaging (1993)
- 13 seconds ago Broadband (2000)
- 1 second ago 3-D TV (2010)