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Welch was central to his business strategy at General Electric in 1995. A business processes. It uses a set of quality management methods, reducing costs, increasing customer satisfaction and increasing profits. The

area of the signal (a single lane of traffic northbound). Special light diffusion optics and a colored fresnel lens create the indication. In the 1970s, 3M developed a theatrical blood formula based on red fast-colored microbes suspended in a carrier liquid. [26] This stage blood was sold under the name Nextel Simulated Blood. [26][27] and was used during the production of the 1978 film Dawn of the Dead. [28] He has since been suspended. [27] 3M Mincom participated in some of the first digital audio recordings of the late 1970s to see commercial release when a prototype machine was brought to Sound 80 studios in Minneapolis. In 1979 3M introduced a digital audio recording system called the 3M Digital Audio Mastering System. [29] 3M launched Press 'n Peel in stores in four cities in 1977, but the results were disappointing. [31] A year later, on 8 April 2002, [35] On September 8, 2008, 3M announced an agreement to acquire Meguiar's, a car care products company that was family-owned for more than a century. [37] On August 30, 2010, 3M announced that it had acquired Coptex Systems for \$943 million. [38] On October 13, 2010, 3M completed the acquisition of Arizant Inc. [39] In December 2011, 3M completed the acquisition of Wintertech Technology Group, a bond abrasive company. As of 2012, 3M was one of 30 companies included in the Dow Jones industrial average, added on August 9, 1976, and was 97 on the Fortune 500 list in 2011. [40] On January 3, 2012, it was announced that Avery Dennison's Office and Consumer Products Division was being bought for \$300 million. [41] The transaction was cancelled by 3M in September 2012 amid antitrust concerns. [42] In May 2013, 3M announced that it was selling Anglers Scientists and Ross Reels to Orvis. Ross Reels had been acquired by 3M in 2010. [43] In March 2017, it was announced that 3M was buying Johnson Control International Plc's security gear business, Scott Safety, for \$2 billion. [44] In 2017, 3M had net sales for the year of \$31.657 billion, up from \$30.3 billion the previous year. [45] In 2018, it was reported that the company would pay \$850 million to end Minnesota's water pollution case regarding perfluoroochemicals. [46] On May 28, 2018, Michael F. Roman was appointed CEO by the board of directors. [47] There are some international subsidiaries such as 3M India, 3M Japan, and 3M Canada. [48] On December 19, 2018, 3M announced that it had signed a definitive agreement to acquire M'Modal's technology business, for a total business value of \$1 billion. [49] In October 2019, 3M completed the purchase of Acelity and its KCI subsidiaries worldwide for \$6.7 billion, including debt assumption and other adjustments. [50] Environmental record The Target Light System, built by 3M at Target's headquarters in Minneapolis. [51] The 3M pollution prevention programme was established in 1975. The program initially focused on reducing pollution at plant level and expanded to promote recycling and waste reduction in all divisions in 1989. In the early 1990s, approximately 2,500 3P projects decreased the company's total generation of global pollutants by 50 percent and saved \$3M \$500-600 million by eliminating waste production requiring further treatment. [53] In 1983, the Oakdale Landfill in Oakdale, Minnesota, was listed as an EPA Superfund site after significant groundwater and soil contamination was uncovered by VOCs, heavy metals. [54] The Oakdale landfill was a 3M landfill site used through the 1940s and 1950s. During the 1990s and 2000s, 3M reduced releases of toxic pollutants by 99 percent and greenhouse gas emissions by 72 percent. The company won the Energy Star award from the United States Environmental Protection Agency every year that the honor was given, starting in 2012. [55] In 1999, the United States of America The Protection Agency began investigating perfluoroochemicals after receiving data on the overall distribution and toxicity of perfluorooctane sulfonic acid (PFOS). [56] These materials are part of a large group of perfluoroalkyl and polyfluoroalkyl substances often called PFAS, each of which has different chemical properties. [57] 3M, the former main producer of PFOS in the United States, announced the phase out of PFOS, perfluorooctanoic acid, and the production of PFOS-related products in May 2000. [58] Perfluoroochemicals produced by 3M have been used in non-stick kitchen utensils, stain-resistant fabrics and other products. The Cottage Grove facility manufactured PFAS from the 1940s to 2002. [60] The estimate of cleaning costs, which included a granular activated carbon system to remove PFAS from groundwater was \$50 to \$56 million. [62] funded from a \$147 million environmental reserve reserved in 2006. [63] In 2008, 3M created the Renewable Energy Division within the 3M Industrial and Transport business to focus on power generation and energy management. [64] In late 2010, the state of Minnesota sued 3M for \$5 billion in punitive damages, alleging that they released PCFS – classified as toxic chemicals by the EPA – into local waterways. [66] In February 2018 an agreement was reached for \$400 million. [67][59][68] although in 2019, 3M, together with the Chemours Company and DuPont, appeared before lawmakers to deny responsibility, with Senior VP of Corporate Affairs Denise Rutherford arguing that the chemicals do not pose threats to human health at current levels and have no victims. [69] The earplug controversy The Combat Arms Earplugs, Version 2 (CAE V2), was developed by Aearo Technologies for US military and civilian use. The CAE V2 was a double-finshed ear plug that 3M claimed would offer users different levels of protection. [70] Between 2003 and 2015, these ear plugs were a standard issue for members of the U.S. military. [71] 3M acquired Aearo Technologies in 2008. [72] In May 2016, Moldex-Metric, Inc., a competitor to 3M, filed a complaint against 3M under the False Claims Act. [73] In 2018, 3M agreed to pay \$9.1 million to the United States government to resolve the allegations, without admitting responsibility. [74] Since 2018, more than 140,000 former ear plug users – mainly U.S. military veterans – have filed a lawsuit against the company, as a result of the defective design. Internal emails showed that 3M officials boasted of charging \$7.63 per piece for ear plugs that cost 85 cents to produce. The company's official response indicated that the cost to the government includes R&D, costs. [75] N95 respirators and the COVID-19 pandemic The N95 respirator mask was developed by 3M and approved in 1972. [77] In being able to filter viral particles, their use was recommended during the COVID-19 pandemic, but the offer soon fell short. [77] Much of the company's supply had already been sold before the outbreak. [78] The shortage led the U.S. government to ask 3M to stop exporting N95 respiratory masks made by the United States to Canada and Latin American countries. [79] and President Donald Trump invoked the Defense Production Act to require 3M to prioritize orders from the federal government. [80] The dispute was resolved when 3M agreed to export more respirators, mainly in its factories in China. [81] 3M later reached a \$4.70/MACD agreement with the federal government of Canada and the Ontario provincial government to produce N95 masks at its plant in Brookville, Ontario. [81] 3M operational facilities in St. Paul, Minnesota's general offices, corporate research laboratories and some division labs in the United States are located in St. Paul, Minnesota. In the United States, 3M operates 80 manufacturing facilities in 29 states, and 125 manufacturing and conversion facilities in 37 countries outside the U.S. (in 2017). [82] In March 2016, 3M completed a 400,000-square-foot (37,000-square-foot) research and development building at cost \$150 million. [83] 3M's South Asia operations are based in Bangalore, India. [84] The company had invested \$1.5 billion in the construction of the building. [83] Selected factory details: Cynthia, Kentucky Union Carbide produces Prost-N (1,627 SWU) and Sulfur Tails (1,747 SWU). [85] 539 employees were established in 1969. [84] In 2018, Avylenne, Coquitlam, British Columbia, Canada, a 45-year-old company had invested \$4.5 billion in the construction of the building. [86] The Hutchinson 3M facility produces products for more than half of the company's 23 divisions, starting in 1919. [87] The ear hub has manufactured stethoscopes for Novacare filters, speech over tape, among other products. [88] The Cottage Grove plant is one of three operated by 3M for the production of cushion conditioners, as of 2011, 1901 3M has operated a manufacturing plant in Columbia, Missouri since 1970. The plant has been used for the production of products including electronic components [91] 92 solar and filters and stethoscopes. The facility received a \$2 million expansion in 2012 and has approximately 400 employees. [93] 3M opened the plant in Brookings, South Dakota in 1971 [95] and announced a \$70 million expansion in 2019. [96] The facility manufactures more than 1,700 sanitary products and employs 1,100 people, starting in 2018, making the 3M plant the largest focused on health care. [97] The production of masks at the site increased during the swine flu pandemic of 2009, the 2019 California wildfires, the 2019-20 Australian bushfire season and the COVID-19 pandemic. [98] The 3M Springfield Missouri plant opened in 1967 and manufactures industrial adhesives and tapes for aerospace manufacturers. In 2017, 3M had approximately 12,000 employees in the metropolitan area, and announced a \$40 million expansion project to improve the facility and redevelop another building. [99] In Iowa, the Ames plant manufactures glass paper products and received funding from the Iowa Economic Development Authority (IEDA) for extensions in 2013 and 2018. [100] The Knowle plant is among the largest at 3M and produces approximately 12,000 different products, including adhesives and ribbons. [102] 3M's Southeast Asian operations are based in Singapore, where the company has invested \$1 billion over 30 years. 3M has a facility in Tuan, a smart urban solutions manufacturing and laboratory plant in Woodlands, and a customer technical center in Yishun. [103] 3M expanded a factory in Woodlands in 2011. [104] The company has operated in China since 1984. [105] 3M's first foreign-owned company, [106] The seventh 3M plant, and the first dedicated to the production of health products, opened in Shanghai in 2007. [107] By October 2007, the company had opened an eighth manufacturing and technology center in Guangzhou. [105] 3M broadened on its ninth manufacturing facility, for the production of photovoltaic and other renewable energy products, in Hefei in 2011. [109] 3M announced plans to build a technology innovation center in Chengdu in 2015. [110] and opened a fifth design center in Shanghai. [111] Chairman of the Leadership Board has included: William L. McKnight (1949–1966), [112][113] Bert S. Cross (1966–1970), [114] Harry Helzer (1975–1980), [115] Raymond H. Herzog (1975–1980), [116] Livio DeSimone (1991–2001), [117] James McNeary (2001–2005), [120] George W. Buckley (2005–2012), [121][122] and Inge Thulin (2012–2018). [123] Thulin continued to serve as president until President Michael F. Roman was appointed in 2019. [124] The 3M CEOs have included: Cross (1966–1970), [125] Helzer (1975–1979), [125][126] Lehr (1975–1979), [126] Lehr (1975–1979), [126][127] Helzer (1979–1986), [127] Helzer (1986–1991), [128] DeSimone (1991–2001), [129] McNeary (2001–2015), [120] Robert S. Preuo Buckley (2005–2012), [121][122] Thulin (2012–2018), and Roman (2018–present). [123] The presidents of 3M have included: Edgar B. Ober (1905–1929), [129] McKnight (1929–1949), [130] Richard P. Carlton (1949–1953), [131] Herbert P. Buetow (1953–1963), [132] Cross (1963–1966), [133] Helzer (1966–1970), [114] and Herzog (1970–1975). [134] In the late 1970s, the position was separated into roles for U.S. and international operations. The position of overseeing domestic operations was first occupied by Lehr, [126] followed by John Pitblado from 1979 to 1981, [135] then Jacobson from 1984 to 1991. [136] James A. Thwaites led international operations from 1979. [135] Buckley and Thulin were presidents from 2005 to 2012. [137] and 2012–2018, respectively. [123] See also Oakdale Dump More Reading V. Huk, Tartan Mark: The history of 3M and challenges includes employee profiles. C. Rimington, from Minnesota mining and manufacturing at 3M Australia Pty Ltd (3M Australia): the story of an innovative company. Sidarta Publishers, 2013. Memories of 3M Australian employees in the context of a broader organizational history. ^ 3M Birthplace Museum, Lake County Historical Society "a b c d f 3M Company 2018 Annual Report (Model 10-K). las10k.com U.S. Securities and Exchange Commission. 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