

# Case 13 How Do You Solve a Problem Like General Electric?\*

The appointment of Larry Culp as the chairman and CEO of the General Electric Company (GE) on October 1, 2018, was a clear indication of the seriousness of the problems that had engulfed the company. Culp was the first outsider to lead GE in its 126-year history—each of GE's ten previous chief executives had been a career manager at the company.

GE was America's greatest industrial corporation. Its innovations, that ranged from light bulbs to electric locomotives and from jet engines and medical imaging, had powered the US economy and US living standards for the entire 20th century. For decades GE had been the bluest of blue-chip stocks, supported by GE's growing revenues and profits and reliable dividends. In the first 10 years of *Fortune's* ranking of the world's most admired companies (1998–2007), GE topped the list seven times. GE's management principles and systems had formed the template for the management structures and processes of large corporations throughout the world.

Between the retirement of its last long-serving CEO, Jeff Immelt, on June 12, 2017, and the appointment of Larry Culp (previously CEO of Danaher Corporation) on October 1, 2018, GE's reputation for managerial excellence was shattered by a \$23 billion write-down in the value of its power division assets, \$15 billion of charges arising from insurance companies it had sold 12 years previously, and revelations concerning dubious accounting practices. Its share price declined by 61%, its dividend was halved, and GE was dismissed from the Dow Jones Industrial Index after 111 years of continuous membership. (Figure 1 shows GE's share price.)

During his first 30 months at the helm, Culp sought to stabilize GE. This involved replacing board members and senior executives, accelerating the divestments started by predecessors Flannery and Immelt, and raising operational efficiency through a program of lean production.

By early 2021, these measures were producing results. Despite the devastating impact of the COVID-19 pandemic (especially on the Aviation division), GE reported positive profits and free cash flows for 2020 (see Table 1). Yet, these signs of progress did little to resolve the big questions concerning GE's future.

The GE that Culp had inherited was the product of over a century of continuous development. Its structure of separate business divisions integrated by a corporate headquarters reflected a business model that had been refined by successive CEOs. The corporate center created value through the use of acquisitions and disposals to reshape the business portfolio, exploiting synergies between the businesses, enhancing

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**FIGURE 1** General Electric share price, January 1978–March 2021 (\$)**TABLE 1** General Electric: Selected financial data, 2012–2020 (\$bn. unless otherwise indicated)

	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>GE consolidated</b>									
Revenues	79.6	95.2	97.0	122.1	123.7	117.4	148.6	146.0	146.7
Net earnings	5.5	(4.9)	(22.2)	(7.8)	8.8	(6.1)	15.3	15.2	14.6
R&D expenditure	2.6	3.1	3.4	4.8	4.8	4.2	4.2	4.6	4.5
Cash flow from operating activities	3.6	8.8	5.0	10.4	(0.2)	19.9	27.5	29.0	31.0
Cash from (used in) investing activities	16.6	8.9	18.3	2.3	49.2	59.5	(5.0)	29.1	11.3
Return on average equity	16.3%	(11.9%)	(34.5%)	(8.7%)	10.9%	1.6%	11.6%	12.2%	12.1%
Total assets	253.5	265.2	319.6	377.9	365.2	493.1	648.3	656.6	681.7
Long-term borrowings	70.3	67.2	90.8	108.6	105.1	144.7	200.4	221.7	236.1
Shareholders' equity	37.6	30.3	51.9	64.3	80.5	111.1	128.2	130.6	123.0
Total employees (,000s)	174	205	283	313	295	333	305	307	305
<b>GE industrial</b>									
Revenues	73.1	87.7	89.0	108.2	113.7	100.7	115.4	112.2	110.9
Net earnings	6.9	(5.0)	(20.8)	(6.5)	7.9	(6.1)	15.2	13.3	13.8
Total assets	160.7	170.2	230.5	279.3	277.9	323.6	245.7	231.0	236.7

(Continues)



**TABLE 1** (Continued)

	2020	2019	2018	2017	2016	2015	2014	2013	2012
Total borrowings	22.4	31.4	36.2	81.5	79.3	103.1	16.4	13.3	17.4
Shareowners' equity	21.4	14.4	51.5	64.3	75.8	98.3	128.2	130.6	123.0
<b>GE Capital</b>									
Revenues	7.2	8.7	9.6	9.1	10.9	10.8	42.7	44.1	45.4
Net earnings	(1.3)	0.1	(1.7)	(7.1)	(2.2)	(15.8)	7.2	6.2	6.2
Total assets	116.9	121.5	123.9	156.7	183.0	316.0	500.2	516.8	539.4
Total borrowings	19.2	19.1	22.6	95.2	117.3	180.2	349.5	371.1	397.0
Shareowner's equity	15.7	15.4	11.4	13.5	24.7	46.2	87.5	82.7	81.9

**Source:** Data from General Electric Company, 10-K Reports.

business performance through corporate systems for strategic and financial control, developing executives, and fostering innovation.

The system that GE created provided a management model for large companies, not just in the United States, but throughout the world. Its most celebrated chief executive, Jack Welch ("The most successful CEO of the 20th century") had established a status amongst managers similar to that of Warren Buffet among investors. He even founded the Jack Welch Management Institute to disseminate his management philosophy through a specially designed MBA program.

The collapse in GE's performance and reputation that accompanied the final years of Welch's successor as CEO, Jeff Immelt, produced a range of diagnoses among investment analysts and business journalists. These diagnoses allocated blame among three sets of factors: external forces, misjudgment by senior executives (Immelt in particular), and the obsolescence of the GE management system.

Culp's emphasis on incremental and operational improvement raised questions over his broader vision for GE. Should GE continue as a diversified, capital-intensive, technology-based manufacturing company, or should it split up either partially or completely? If it was to continue as a diversified, multibusiness company, should it retain its multidivisional structure with centralized corporate functions and a high degree of top-down intervention, or should it move to an alternative structure? If an alternative structure was appropriate, should it be a looser, more decentralized structure such as that employed by Danaher or Berkshire Hathaway, or a tighter and more integrated structure such as that of ExxonMobil or Procter & Gamble?

## The History of GE

GE was created in 1892 from the merger between Thomas Edison's Electric Light Company with the Thomas Houston Company. Its business was based upon exploiting Edison's patents related to electricity generation and distribution, light bulbs, and electric motors. Throughout the 20th century, GE was not only one of the world's biggest industrial corporations but also "a model of management—a laboratory studied by business schools and raided by other companies seeking skilled executives."<sup>1</sup> Each of GE's chief executives contributed to the development of GE's management system,



and, for several of them, these developments diffused well beyond GE's corporate boundaries. Among those who shaped corporate strategy thinking and practice:

- Charles Coffin (1892–1922) married Edison's industrial research and development laboratory to a business system capable of turning scientific discovery into marketable products. The innovations emanating from the R&D laboratories of large corporations such as AT&T, Siemens, BASF, IBM, and DuPont were major drivers of industrial development during the 20th century.
- Ralph Cordiner (1950–1963) assisted by Peter Drucker, established GE's Crotonville management development institute and decentralized GE's operational management to 120 departmental general managers. The reconciliation of operational decentralization with corporate control within the diversified industrial company was the key feature of the multidivisional structure that became the dominant organizational form among large companies during the latter half of the 20th century.
- Fred Borsch (1963–1972) devised GE's corporate planning system based on strategic business units and incorporated the portfolio management techniques developed with BCG and McKinsey & Co. This became a model for other diversified corporations.
- Reg Jones (1972–1981) integrated strategic planning with financial control to create a comprehensive system for the corporate headquarters to manage its businesses.
- Jack Welch (1982–2001) was responsible for reenergizing GE through combatting bureaucratic inertia and introducing a rigorous and demanding performance management system based on stretch targets and powerful incentives. Welch stripped out layers of hierarchy and spearheaded initiatives designed to root out complacency and to drive change. His "rank-and-yank" system of firing the lowest-performing 10% of managers each year, ensured intensity of motivation and commitment. Welch reformulated GE's business portfolio through exiting low-growth extractive and manufacturing businesses, and by expanding services—financial services especially. By the time he retired, GE was "a bank disguised as an industrial conglomerate."<sup>2</sup> Welch's status as "the greatest manager of the 20th century" (according to *Fortune* magazine) rested on his impact beyond GE. According to the *Economist*, he "helped jolt America Inc out of the complacent 1970s" and "transformed American capitalism."<sup>3</sup>
- Jeff Immelt (2001–2017) sought to return GE to its manufacturing roots through divesting its financial service and entertainment businesses and increasing integration among the industrial businesses through sharing know-how, increasing global presence, exploiting synergies in sales and marketing, and deploying digital technologies. However, as we shall see, failures in executing the strategy were instrumental in precipitating the crisis of 2017–2020.

## GE's Corporate Strategy and Management System

### The Business Portfolio

Diversification formed the core of GE's corporate strategy throughout its history. Its origins lie in the flood of inventions from Thomas Edison's lab and was fueled by cash flows searching for new investment opportunities. GE's innovations in organization and strategy was driven by the management needs of such a vast and complex enterprise.



However, by the 1990s, diversification had become unfashionable and a dominant theme in strategic thinking was “core business focus.” Indeed, many diversified corporations were being dismembered—either through leveraged buyouts or voluntarily as boards of directors sought to release value and escape the “conglomerate discount.”

GE had resisted the dominant trend toward refocusing; it had always viewed its diversified portfolio of businesses as a source of stability and strength. At the outset of his tenure as CEO, Jeff Immelt declared: “The GE portfolio was put together for a purpose—to deliver earnings growth through every economic cycle. We’re constantly managing these cycles in a business where the sum exceeds the parts.”<sup>4</sup> Thirteen years later, his views were little changed: “Diversity provides strength through disruptive events and commodity cycles,” thereby constituting a key “source of value from a multi-business company.”<sup>5</sup> This commitment to risk spreading through diversification would appear to reflect GE’s desire for independence from external capital markets.

GE’s diversification also allowed it to adjust its portfolio to changing opportunities for growth and value creation. Jack Welch had reconstituted GE’s business portfolio by exiting low-growth, commodity businesses and building a financial services colossus. Jeff Immelt’s restructuring of GE’s portfolio was guided by the potential offered by three global trends:

- Economic development, especially in emerging markets, would require massive investments in infrastructure including energy, water, and transportation.
- Environmental degradation through global warming and, water scarcity, and conservation would require new technologies and business innovations.
- Demographic trends—especially aging—would create increasing demand for healthcare.

The outcome was to recreate GE as an infrastructure company—a diversified corporation directed toward global needs for aviation, rail transportation, power generation and distribution, oil and gas production, and medical hardware. During his 16-year tenure, Immelt reconfigured GE by acquiring infrastructure-related companies and divesting consumer and financial service businesses. Table 2 shows GE’s principal acquisitions and divestitures during 2004–2020.

The rationale of exiting slow-growing, low-margin sectors to exploit the growth and profit opportunities of more attractive industries was sound. The risk, however, was that, first, GE’s corporate executives would be no better than the stock market in identifying the attractive industries of tomorrow and, second, the costs of acquisition and divestment would dissipate the returns from such a strategy. The *Economist’s* Schumpeter column was skeptical of the effectiveness of portfolio management in creating value: “The cost of churning capital in predictable ways can be significant . . . GE has paid a multiple of 13 times gross operating profits for the businesses it has bought and got 9 times for those it sold. Some nine-tenths of its industrial capital is now comprised of goodwill, or the premium that a firm paid above book value for its acquisitions.”<sup>6</sup>

Moreover, for portfolio management to work well, corporate management must be willing to exit businesses whose long-term prospects are deteriorating. This is easier for a private equity firm than for a diversified industrial corporation where long-established businesses are likely to be protected by sentimental attachment and entrenched political power. A feature of Immelt’s leadership was the length of time it took to exit from financial services and domestic appliances.

Shrinking GE Capital was a massive challenge given its size and contribution to GE’s profitability. Despite Immelt’s commitment to downsizing GE Capital, it continued to grow during 2001–2007. In 2006 and 2007, GE Capital accounted for almost half of GE’s



**TABLE 2** General Electric's principal acquisitions and disposals, 2004–2021

Year	Acquisitions	Disposals
2004	Acquires entertainment assets of Vivendi Universal for \$12bn. to form NBC Universal (80% owned by GE) GE Healthcare buys Amersham plc for \$9.5bn. GE Capital acquires Dillard's credit card unit for \$1.25bn. GE Security acquires InVision Tech (airport security equipment)	Life and mortgage insurance spun off as Genworth Financial
2005	GE Commercial Finance buys Bombardier's financial services unit for \$1.4bn.	
2006	GE Healthcare acquires IDX (medical software) for \$1.2bn. GE Water & Process Technologies acquires ZENON Environmental Systems for \$758m.	GE Advanced Materials sold for \$3.8bn. GE Insurance Solutions and GE Life sold for \$6.5bn.
2007	GE Aviation acquires Smiths Aerospace for \$4.6bn. GE Oil & Gas acquires Vetco Gray for \$1.4bn.	GE Plastics sold to Saudi Arabia Basic Industries for \$11.7bn.
2008	NBC Universal buys Weather Channel for \$3bn. GE Capital acquires Merrill Lynch Capital, CitiCapital, and Bank BPH	
2010	GE Healthcare acquires Clariant for \$0.6bn.	
2011	GE Oil and Gas acquires Dresser Inc. (\$3bn.), Wellstream plc (\$1.3bn.), and the well division of John Wood Group PLC (\$2.9bn.)	51% of NBC Universal sold to Comcast for \$13.8bn. GE Capital sells Mexican assets to Santander
2012	GE Capital acquires \$7bn. of MetLife bank deposits	
2013	Buys Lufkin (oilfield pumps) for \$3.1bn.	Remaining 49% of NBC Universal sold to Comcast for \$16.7bn.
2015	Acquires Alstom S.A.'s power business for \$13.1bn.	GE Antares Capital (private equity) \$12.0bn. GE Capital (vehicle services) \$6.9bn. GE Capital (transport finance) \$8.9bn. GE Capital (lending & leasing) to Wells Fargo for \$26.5bn. Synchrony (credit cards) for \$21.6bn.
2016		GE Appliances sold to Haier for \$5.4bn.
2017	Acquires 62.5% of Baker Hughes (for \$32.4bn.), merges it with GE Oil and Gas	GE Water & Process Technologies sold to Suez for \$3.4bn.
2018		GE Transportation merges with Wabtec Corp. Sale of Industrial Solutions business ABB for \$2.3bn. Sale of financing businesses for \$1.6bn.
2019		Sale of BioPharma business to Danaher for \$21.4bn. Sale of GE Current to API Begins divestment of Baker Hughes (to be completed by 2022)
2020		Sale of GE Lighting to Savant for \$250m.
2021		Sale of aircraft leasing business to AerCap for \$30bn.

**Sources:** Based on General Electric press releases and *Wall Street Journal*.



total net profit (up from 25% in 2001). Only after the financial crisis of 2008–2009 did GE take drastic action to divest financial services. The designation of GE Capital as a “systemically important financial institution” in 2013, which raised its capital reserve requirements, eliminated any competitive advantages it had derived from being a non-bank supplier of financial services. By 2021, GE Capital retained only “vertical financial businesses”—those linked to GE’s core industrial businesses, such as GE Capital Aviation Services (GECAS).

Figure 2 shows the changes to GE’s divisional structure between 2015 and 2021. Table 3 shows these sectors’ financial performance, while Exhibit 1 describes their business activities.

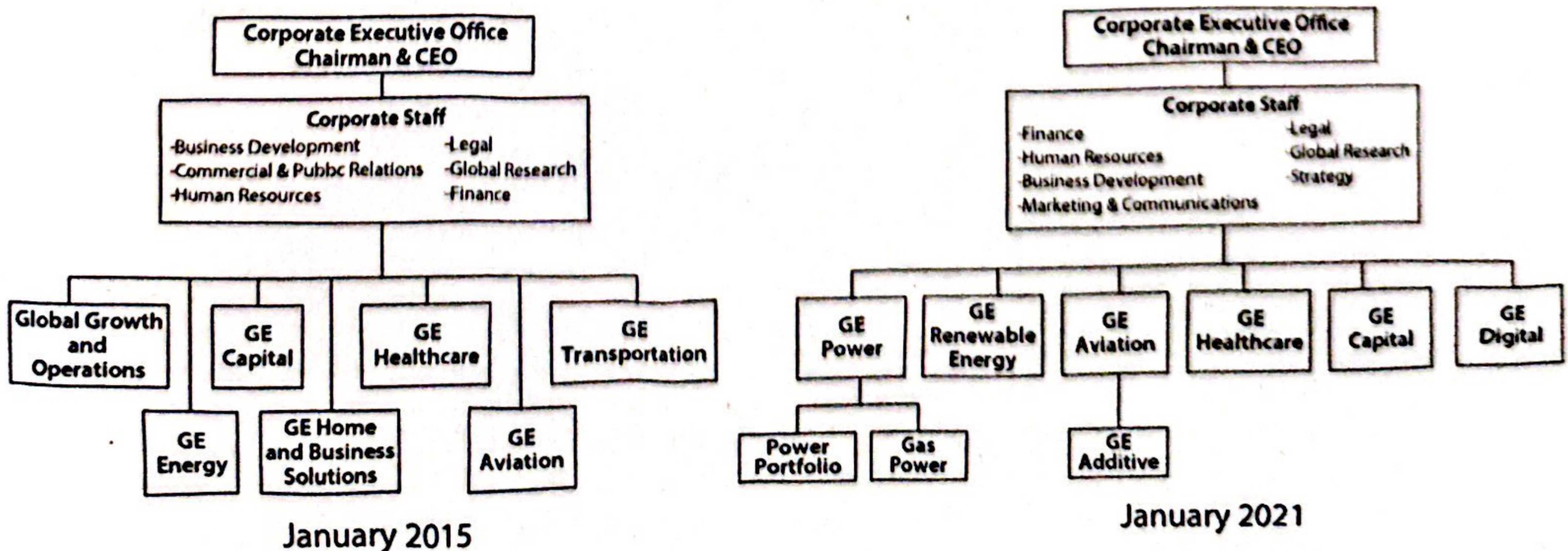
### Exploiting Synergies

Both Jack Welch and Jeff Immelt were adamant that GE was not a conglomerate. For Immelt:

GE is a multi-business growth company bound together by common operating systems and initiatives, and a common culture with strong values. Because of these shared systems, processes and values, the whole of GE is greater than the sum of its parts.<sup>7</sup>

For Welch, the essence of “integrated diversity,” was the frictionless transfer of best practices and know-how across GE. His vision of a “boundary-less” company was directed to this. Immelt’s efforts to exploit linkages among GE’s different businesses focused on building structures and systems to facilitate the creation and sharing of knowledge. This included a network of eight Global Research Centers to develop technologies with applications to multiple businesses. These technologies included molecular imaging and diagnostics, nanotechnology, energy conversion, advanced propulsion, sustainable energy, and security technologies. Priority was given to establishing GE’s leadership in the “internet-of-things”—the application of machine learning and artificial intelligence to the flow of continuous data from embedded sensors in jet engines, locomotives, oil and gas equipment, medical diagnostic, electricity generators, and GE’s other hardware in order to manage maintenance schedules, optimize fuel consumption, prevent accidents, and automate other processes.

**FIGURE 2** General Electric Company Organization Structure, 2015 and 2021





**TABLE 3** General Electric segment financial results, 2014–2020

	2020	2019	2018	2017	2016	2015	2014
<b>Revenues (\$m.)</b>							
Power	17,589	18,625	22,150	35,990	36,795	28,903	27,746
Renewable Energy	15,666	15,337	14,288	10,280	9033	6273	6399
Aviation	22,042	32,875	30,566	27,375	26,261	24,660	23,990
Healthcare	18,009	19,942	19,784	19,116	18,291	17,639	18,299
Oil & Gas	—	—	22,859	17,231	12,898	16,450	19,085
Transportation	—	—	3898	4178	4713	5933	5650
Lighting <sup>a</sup>	—	—	1723	1987	4823	8751	8404
GE Capital	7245	8741	9551	9070	10,905	10,801	11,320
<b>Segment profit (\$m.)</b>							
Power	274	291	(1105)	2786	5091	4772	4731
Renewable Energy	(715)	(791)	140	727	576	431	694
Aviation	1229	6812	6454	6642	6115	5507	4973
Healthcare	3060	3737	3522	3448	3161	2882	3047
Oil & Gas	—	—	429	220	1392	2427	2758
Transportation	—	—	633	824	1064	1273	1130
Lighting <sup>a</sup>	—	—	70	93	199	674	431
GE Capital	(1710)	(530)	(489)	(6765)	(1251)	(7983)	1209
<b>Operating margins (%)</b>							
Power	0.2	0.2	(5.0)	7.7	13.8	16.5	17.1
Renewable Energy	(4.6)	(5.2)	0.1	7.1	6.4	6.9	10.9
Aviation	5.6	20.7	21.1	24.3	23.3	22.3	20.7
Healthcare	17.0	18.7	17.8	18.0	17.3	16.3	16.7
Oil & Gas	—	—	1.9	1.3	10.8	14.8	14.5
Transportation	—	—	16.2	19.7	22.6	21.5	20.0
Lighting <sup>a</sup>	—	—	4.1	4.7	4.1	7.7	5.1
GE Capital	(23.6)	(6.1)	(5.2)	(74.7)	(11.5)	(73.9)	10.68

**Note:**

<sup>a</sup> Lighting includes appliances before 2017.

**Source:** Data from General Electric, 10-K reports.

In 2011, GE opened a new software center in San Ramon, CA, to lead GE's digital transformation. This formed the centerpiece of GE Digital, a new business division created in September 2015 to "bring together all of the digital capabilities from across the company into one organization."<sup>8</sup> GE Digital's efforts focused on the development of its Predix Platform, a cloud-based operating system for industrial applications that uses sensor-generated data within a next-generation industrial automation system.



**EXHIBIT 1****General Electric's business segments, January 2021**

**GE Power** is the world's biggest supplier of equipment and supporting services for generating and distributing electricity and is GE's biggest segment with 83,500 employees. It is composed of two divisions:

- ◆ Gas Power offers gas turbines for utilities, independent power producers, and industrial applications.
- ◆ Power Portfolio offers steam power boilers, generators, steam turbines, and air quality control systems. It also provides motors, generators, automation, control equipment, and drives for energy-intensive industries such as marine, oil and gas, mining, rail, metals, test systems, and water. Its joint ventures with Hitachi provide plant, fuel, and support for nuclear power generation.

Between 2017 and 2020, GE Power cut employment from 83,500 to 34,000 as it adjusted to excess capacity and intense price competition.

**GE Renewable Energy:**

- ◆ Onshore Wind provides smart, modular turbines and services that use digital infrastructure to optimize wind farm performance.
- ◆ Grid Solutions Equipment and Services equips power utilities and industries worldwide to bring power reliably and efficiently from generation to final consumers.
- ◆ Hydro Solutions provides design, management, construction, installation, maintenance, and operation of hydropower plants.
- ◆ Offshore Wind provides equipment and services for offshore wind farms, including Haliade-X, the world's most powerful offshore wind turbine.
- ◆ Hybrid Solutions integrates storage and renewable energy generation sources.

**GE Aviation** is the world's leading supplier of commercial and military aircraft engines plus avionics systems and support services. CFM International, a joint venture with Safran of France, produces the LEAP engine. In response to the COVID-19 pandemic, Aviation cut its workforce from 50,000 to 40,000 during 2020.

**GE Healthcare** comprises:

- ◆ Healthcare Systems, the world's leading supplier of diagnostic imaging systems using X-rays, digital mammography, computed tomography, MRI, and ultrasound. They also provide patient monitoring and care systems and digital solutions to healthcare delivery.
- ◆ Pharmaceutical Diagnostics provides imaging agents for the detection, diagnosis, and management of disease, and systems for patient monitoring, infant incubation, respiratory care, anesthesia, and cellular and gene therapy.

With the sale of BioPharma, Healthcare reduced its employment from 54,000 to 47,000.

**GE Capital** provides financial services to support GE's industrial businesses and their customers in developed and emerging markets. These include:

- ◆ GE Capital Aviation Services, which leases aircraft.
- ◆ Energy Financial Services, which provides financial and underwriting capabilities for power and renewable energy.
- ◆ Working Capital Solutions, which purchases GE Industrial customer receivables.
- ◆ Insurance—the residue of GE Capital's insurance business was reinsurance related to long-term care policies. The liabilities from these policies required GE to cover a \$17 billion shortfall in its reserves in 2017.



However, despite top management's evangelism of GE as a "digital industrial" company and massive R&D expenditure at GE Digital, Predix was beset by software problems, including inability to handle the vast data streams generated by GE's MRI scanners, jet engines, and gas turbines. In February 2018, Immelt's successor, Flannery announced a narrowing of GE's Digital's focus. His successor, Larry Culp, proceeded to sell part of Digital and appointed a new CEO to turn around the remainder of the business.<sup>9</sup>

Additive printing (also known as 3D printing) was another area of technology that GE viewed as applicable across all its businesses. By 2020, GE Additive was a world leader in developing and supplying metal additive manufacturing machines for use in aerospace, medical, and automotive manufacture.

GE also sought to exploit cross-business synergies in sales and marketing. GE bundled products and support services to offer tailored "customer solutions." In the case of a new hospital development, for example, there might be opportunities not just for medical equipment but also for lighting, backup generators, and financing. Such opportunities were particularly important internationally where GE's "Company-to-Country" strategy aimed to build relationships with host governments across multiple infrastructure development projects. In 2012, GE announced that "Nigeria should be our next billion-dollar country."<sup>10</sup>

## The GE Management System

GE's ability to resist the dominant trend toward core business focus rested upon its much-acclaimed management system through which GE enhanced the performance of the businesses it owned. This management system was a product of over a century of continuous development. It was so deeply embedded within GE's culture that it was integral to GE's identity and world view. At the core of this management system was its approach to management development—its "talent machine"—and its system of performance management. Both had been refined, reinforced, and revigorated by Jack Welch.

GE's commitment to leadership development was indicated by its reliance on internally developed senior executives. Its effectiveness in developing leaders had given it the status of a "CEO factory"—former GE managers have been appointed to lead major companies throughout the world—including Boeing, 3M, Home Depot, Honeywell, and ABB. According to Welch:

Our true "core competency" today is not manufacturing or services, but the global recruiting and nurturing of the world's best people and the cultivation in them of an insatiable desire to learn, to stretch and to do things better every day.<sup>11</sup>

Key components of its management development system were GE's corporate university at Crotonville, New York, and its "Session C" system for tracking managers' performance, planning their careers, and formulating succession plans for every management position at GE from department heads upward.

GE's performance management system was based heavily on objective, quantitative performance measures. Managers were set demanding performance targets, then given strong incentives for their attainment. Under Welch, bonuses became bigger and more discriminating, while stock options were extended from the top echelon into middle management. Equally, underperformance became more rigorously penalized: "A company that bets its future on its people must remove that lower 10% and keep



removing it every year – always raising the bar of performance,” declared Welch.<sup>12</sup> Central to Welch’s management philosophy was the need for constant pressure on managers to uproot complacency and drive change: “If the rate of change on the outside exceeds the rate of change on the inside, the end is near.”<sup>13</sup>

Under Immelt, the performance management system was adapted, first, to take account of managers’ widening scope of responsibility (“Our managers have to work cross-function, cross-region, cross-company”<sup>14</sup>) and, second, to nurture and reward the “growth traits” required for GE managers to become successful “growth leaders.” Inevitably, GE’s performance management process became increasingly complex.

## Diagnosing GE’s Problems

Analyses of what had gone wrong at GE abounded. Most of these centered around two sets of factors, first, the leadership of Jeff Immelt during the 16 years prior to his retirement on June 12, 2017 and, second, the strategy, structure, and management systems of GE.

### Jeff Immelt

One of Jack Welch’s smartest decisions was to retire when he did. Immelt took over as chairman and CEO a few days before September 11, 2001: “On my second day as chairman, a plane I lease, with engines I built, crashed into a building I insure, and it was covered by a network I own,” he later reflected.<sup>15</sup> During the decade that followed, GE’s business was impacted by the bear market of 2001–2002, the invasions of Afghanistan and Iraq, and the financial crisis of 2008. Apart from these external challenges, Immelt’s tenure was blighted by missteps of his own making:

- *Ill-judged acquisitions.* Several commentators pointed to GE overpaying for the companies it acquired. The principal evidence of this related to Alstom. During the long delay in gaining approval for the acquisition, the market for power-generating equipment took a downturn, and GE was forced to offer more concessions to Alstom and the French government. Hence, by the time the acquisition closed, Alstom was worth considerably less than the price GE was paying. Timing was also amiss for several of GE’s acquisitions in oilfield services: Dresser, Wellstream, John Wood, and Lufkin were all bought when oil prices were booming. Similarly, with financial service businesses: GE Capital made massive investments in commercial real estate during 2007—just before the financial crisis.<sup>16</sup> Scott Davis of Melius Research estimated that GE’s total return on Immelt’s acquisitions was less than half of what GE would have earned by simply investing in stock index mutual funds.<sup>17</sup> *The Economist* estimated that GE was paying much more for the businesses it bought than what it received for those it sold.<sup>18</sup>
- *Overoptimism.* GE’s failure to guard itself against risk and pay adequate attention to early warning signs has been interpreted by some GE-watchers as symptoms of top management’s overconfidence and reckless optimism. According to some current and former GE executives, Immelt and his top deputies engaged in “success theater”—they “projected an optimism about GE’s



businesses and its future that didn't always match the reality of its operations or its markets."<sup>19</sup> In particular, during 2017, when signs of flagging sales and mounting inventory were emerging at GE Power, Immelt was slow in acknowledging the problems. Such optimism and the urge to project success contributed to Immelt's willingness to overpay for the acquisitions and his propensity to allow his enthusiasm for future possibilities to dominate his appreciation present realities (as in the case of GE Digital).

- *Failures in financial management.* During the 21st century, GE lost its reputation for financial conservatism along with its triple-A credit rating. At the core of concerns over its financial management was an erratic approach to cash-flow management. The financial crisis was, of course, unexpected, but the fact that GE was forced to obtain \$3 billion in emergency funding from Warren Buffett's Berkshire Hathaway Inc. and \$139 billion in loan guarantees from the federal government points to lack of awareness of the risks inherent in GE Capital. GE's stock buyback program was particularly ill-judged: in the three years prior to the dividend cut in 2017, GE spent \$49 billion on buying its own stock at a time when free cash flows from industrial businesses failed to cover GE's dividend.<sup>20</sup>
- *Dubious accounting practices.* GE's slow responses to emerging problems can be partly attributed to its accounting practices. These had been designed to impress Wall Street but may also have insulated management from the realities of GE's business performance. Under Jack Welch's leadership, GE Capital became a valuable tool for managing GE's quarterly earnings: "Unlike a factory, GE Capital's highly liquid assets could be bought or sold at the ends of quarters to ensure the smoothly-rising earnings that investors loved."<sup>21</sup> Dubious accounting practices also surfaced in GE's industrial businesses—these malpractices were motivated by the pressure on divisional executives to achieve their budgeted sales and profits. For example, GE Power recorded profits from its sales of upgrades to its customers' existing gas turbines, but without taking account of the impact of these upgrades on reducing future service revenues.<sup>22</sup> It also booked as current profits the anticipated returns from extending customers' service contracts.<sup>23</sup>

## The GE Model of the Diversified Industrial Corporation

Underlying the debate over Immelt's qualities and limitations as a chief executive was the issue of whether GE's corporate strategy and its much-vaulted management system were appropriate to the business environment of the 21st century.

As already discussed, GE's corporate strategy and management system created value from three main sources: from managing the business portfolio, from exploiting synergies from sharing resources and transferring capabilities between the businesses, and from the performance enhancing effects of the GE management system. Yet, each of these sources of value seemed to be more elusive in the 21st than in the 20th century.

In terms of portfolio management, the internationalization of capital markets and the increasing role played by private equity had increased the efficiency of financial markets, making it increasingly difficult to create value through acquisitions and divestments. Certainly, GE's acquisitions and divestments during the 21st century gave little indication of GE's top management having superior foresight to that of the stock market.



The synergies from sharing resources and capabilities among GE's different businesses are difficult—if not impossible—to quantify. GE pointed to substantial benefits from sharing technology—especially turbine technology between Aviation, Power, and Renewables. In other areas, however, these synergies were difficult to access in practice—for example, the benefits from cross-selling between GE divisions. Moreover, it appeared that, through strategic alliances and informal collaborations, separate companies were becoming increasingly adept at sharing technology.

GE also derived economies from the centralized provision of support functions such as finance, HR, shareholder relations, and research. However, such economies were offset by the tendency for the divisions to duplicate corporate functions and by the tendency for these functions to expand under their own momentum. In 2014, the CFO had observed: “We have got \$3 billion of costs at corporate that is not allocated to the businesses.”<sup>24</sup> At the beginning of 2021, corporate functions (together with development units such as Digital and Additive) accounted for about 11,000 of GE's total employment (down from 28,500 in 2017).

The biggest questions relate to the effectiveness of the GE management system in improving the performance of the businesses. The effectiveness of GE's “talent machine” rests upon the assumption that general management capability is not context specific, and it can be enriched by rotating managers through different functions and different types of business. Similarly, the ability of the corporate headquarters to boost the performance of the constituent businesses depended upon the ability of corporate executives to understand the needs and the determinants of performance among those businesses.

The evidence of the Immelt era casts doubt on the extent of top management's familiarity with the financial and operational details of the businesses they headed. This was particularly evident at GE Capital, which was GE's primary engine of growth for both Welch and Immelt. Yet neither was fully cognizant of the risks inherent in this diversified financial services behemoth or of the difficulties of applying a management system developed for industrial businesses to financial services. So too with some of the divisional leaders. Steve Bolze, head of GE Power 2005–2017, was prone to unrealistic, overoptimistic growth forecasts and a willingness to massage results in order to boost quarterly profits.

GE's metrics-based, performance management system also began to unravel during the 21st century. The system was designed to meet the needs of the industrial businesses rather than financial services. Moreover, these industrial businesses became more complex as they transitioned from supplying equipment to providing “customer solutions”: customized packages of hardware and services. As a result, there was growing potential for “gaming the system”—meeting performance targets by manipulations and ruses that did not reflect improvements to underwriting performance.

Even if the performance management system had remained as robust as it was during the 1980s and 1990s, it was clear that performance metrics were not the sole drivers of resource allocation and strategic decisions. These were strongly impacted by power politics, interpersonal relationships of friendship and hostility, and executive preferences.

## The Future of General Electric

After Immelt's resignation in June 2017, both of GE's subsequent CEOs, John Flannery (June 2017–September 2018) and Larry Culp (October 2018–), were preoccupied with managing the crisis precipitated by excess debt, dwindling cash flows, overcapacity



at GE Power, \$15 billion in liabilities arising from GE's insurance unit, write-downs in the balance sheet values of previous acquisitions, and continuing allegations over GE's accounting shenanigans. As the seriousness of these problems became increasingly apparent in 2018, the GE board became increasingly frustrated with Flannery's indecision and lack of urgency, replacing him with Larry Culp, who was already a board member.

During 2018–2020, Culp accelerated the turnaround measures introduced by Flannery. These included top management changes (including restructuring the board of directors), cost cutting, and the sale or spin-off of businesses—notably GE Oil & Gas (Baker Hughes), Transportation, Lighting, and BioPharma—in order to pay off debt. In 2020, the COVID-19 crisis necessitated further crisis measures—notably a drastic downsizing of GE Aviation.

In addition, Culp initiated internal management changes. The priority was to improve operational performance. To achieve this, Culp devolved responsibility from corporate to the businesses and applied Danaher's lean production principles (based upon those originally developed at Toyota) to “examine processes and continually improve them by solving problems at their root cause.”<sup>25</sup> Changes in the GE culture involved changing managers' values: “In 2020, we committed ourselves to the leadership behaviors of humility, transparency, and focus.”<sup>26</sup>

Culp also outlined a strategic vision for GE: “We're focused on three important opportunities—the energy transition to drive decarbonization, precision medicine that personalizes diagnoses and treatments, and a future of smarter and more efficient flight.”<sup>27</sup> The implication being that power generation, medical diagnosis, and aviation would continue to be GE's core businesses. However, the form that the new GE would take remained unclear.

Flannery's plan had been to spin off GE Healthcare, leaving GE with three major divisions—Power, Renewables, and Aviation—all of which shared turbine technology. Following the sale of GE Healthcare's BioPharma business and its aviation leasing business, Culp had given no indication of further divestments.

Equally, he had given no indication of his preferences for restructuring GE. The lean production system he introduced was similar to that he had developed at Danaher. If Danaher was to provide the model for GE, then this would likely involve the dismantling of GE's divisions in favor of a large number of smaller business units, each with profit and loss responsibility. Danaher comprised over 100 businesses that were clustered in four main areas (life sciences, diagnostics, dental, water quality, and product identification) but not integrated into large divisions like GE.<sup>28</sup>

A more fragmented structure had also been adopted by Siemens AG, whose background and profile were similar to those of GE. It was founded in the late 19th century, and its biggest businesses were power generation systems (including wind power), medical equipment, and industrial automation. However, unlike GE, Siemens had moved toward greater decentralization rather than GE's path of closer integration. Its CEO, Joe Kaeser, described the Siemens model as a “fleet of ships” with divisions becoming semiautonomous and separately listed. Siemens' medical equipment unit, Healthineers, its renewables division, Gamesa, and its gas and power division have each been spun out as separately listed companies.<sup>29</sup> Like GE, Siemens' had suffered from a sharp reduction in world demand for gas turbines; however, the fall in revenues and profits in its power division were much less than that experienced by GE. During the three years to March 1, 2021, Siemens' share price increased by 53%; GE's fell by 56%.



## Notes

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