

# LEAN MANUFACTURING AT GE AND DANAHER

## A TALE OF TWO CEOs

It was the best of times. It was the worst of times. The similarities could not have been more striking. The outcomes could not have been more divergent.

Two men of similar age, similarly athletic, and both with Harvard MBAs would begin the third millennium as leaders of two NYSE-listed companies in similar industries. One would take the helm of the iconic General Electric Company (then a century-long component of the Dow Jones Industrial Average), while the other would lead a smaller, lesser-known industrial conglomerate known as The Danaher Corporation.

Both would shepherd their companies through the aftermath of the 2001 attack on the World Trade Center and both would endure the Great Recession of 2008. Both would spend nearly a decade and a half in the CEO's chair and both would understand the putative benefits of a *lean management system*.

But, while Larry Culp of Danaher, long steeped in the practice and culture of Lean management, would apply the system consistently and decisively to every aspect of his company (finance, accounting, HR, logistics, and R&D), GE's Jeffrey Immelt, it seems, would attempt to implement lean in a significantly less systematic way, only having read Eric Ries's *The Lean Startup* "literally in a day."

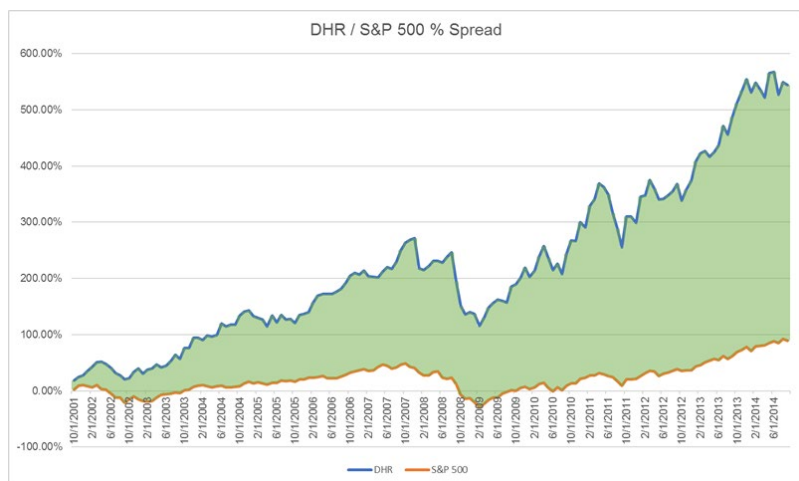
Something would go spectacularly right at Danaher. Something would go horribly wrong at GE.

## WHAT WENT RIGHT AT DANAHER?

H. Lawrence Culp, Jr. joined The Danaher Corporation upon graduation from the Harvard Business School (MBA) in 1990. Showing great promise in discovering opportunities and doing deals rapidly, he worked his way up to CEO in 2001 (just months before Jeffrey Immelt would assume the reins at GE).

Danaher, a then-twenty-year-old creation of billionaires Steven and Mitchell Rales, had a history of buying great companies (highly-competitive companies ranking number one or two in their industry) and integrating them into a unified, synergistic structure.

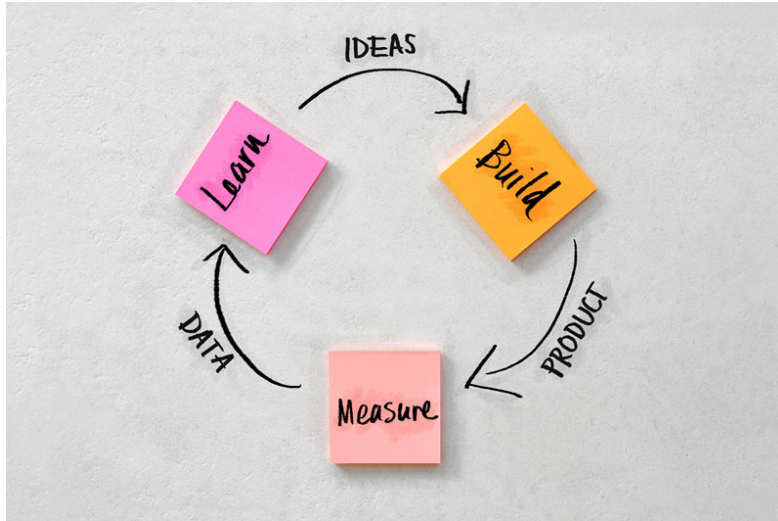
Often compared to a private equity firm, Danaher was itself a very different animal. Much like Coltala Holdings, Danaher bought and built companies for the long term. It was a perfect training ground for Culp to become immersed in the theory and practice of The Danaher Business System (DBS).



Larry Culp applied the principles of the lean approach consistently in the successful acquisition and integration of some 110 businesses during his tenure as CEO of Danaher. He would, by the time of his retirement, quintuple both Danaher's revenues and market cap and in 2014 would claim 38<sup>th</sup> place in the *Harvard Business Review's 100 Best Performing CEOs in the World*.

The cyclical nature of conglomerates is well documented in business history and, as night follows day, unbundling follows bundling and the Rales brothers began to talk of the breakup of Danaher. Larry Culp retired from the company he had helped to build shortly thereafter.

Culp was a builder not a splitter. He assumed a teaching role at Harvard. There he lectured on the same lean principles he had acquired and applied at Danaher, principles such as, customer-centric product design and development for competitive advantage, efficient layout of the *gemba* (the factory floor), the application of *kaizen* (continuous and never-ending improvement), the process of inculcating the lean culture of commitment in teams of Danaher employees, the concept of *andon* (a notification system to alert management of a process glitch), and the proper use of *kanban* (a



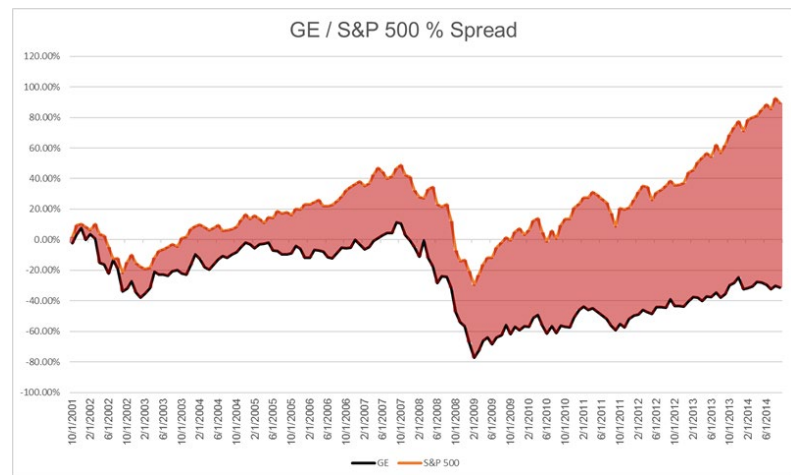
visual monitoring and reporting system).

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## WHAT WENT WRONG AT GE?

Just as Culp was beginning his term as CEO at Danaher, Jeffrey Robert Immelt prevailed over some formidable competition for Jack Welch's job at GE. Passed over for the position were Bob Nardelli (who would leave GE to become the CEO at Home Depot and later CEO of Chrysler) and James McNerney (later to become Chairman and CEO of The Boeing Company).



Immelt was, at that time, a disciple of Welch's Six Sigma methodology (a data-driven management system focused on quality) which, along with Welch's tough controls on people and process, had propelled GE to become the largest company in the world by market cap (\$588 billion in September, 2000).

The spectacular multiples investors were willing to pay for the Welch persona (a dizzying high of 58 times TTM earnings at the end of 2000) were not to carry over to Immelt. The PE ratio at GE collapsed over the first eight years of Immelt's tenure from 30 times earnings in September, 2001 to roughly 6 at the market lows of March / April 2009. Market cap bottomed at \$74 billion around that same time and Immelt began to search for a better way.

"The two things that influenced me the most were Marc Andreessen's 2011 Wall Street Journal article, *Why Software Is Eating the World*, and *The Lean Startup*—Eric Ries's book, which I literally read in a day," Immelt wrote in his Harvard Business Review article *How I Remade GE* (published shortly after his retirement).

Immelt would bring Ries himself in as a consultant in the design of a new production system known as FastWorks – a framework designed to speed up the product development cycle and align output more closely with customer needs. He would seek to transform GE into a tech company with a plan for the digitization of industry and the Internet of Things (IoT). Changes would be made to GE's administrative structure (finance, supply chain, and a decentralization of responsibility) to support the new focus and the results would show promise.

Application of the system at GE Appliance would serve up incredible results. Reports showed costs cut in half, program speeds doubled, and sales running at a pace twice that of before. If this were applied broadly across the spectrum of businesses, surely the results should follow. The only thing left, then, was to raise guidance. Just a little over one year ago, Immelt projected that GE would earn more than two dollars per share for full year 2018.

It would not come to be.

## WHERE IS GE NOW – LITERALLY AND FIGURATIVELY?

A little over four hundred miles up the Acela corridor from Danaher's DC headquarters, Boston is making preparations to receive a new corporate resident – the General Electric Company. No stranger to moving headquarters in its 126-year history, GE has moved from upstate New York, to Manhattan, to Fairfield, Connecticut – its 42-year home until just last year.

Corporate moves as a result of growth are normally celebrated. However, this move (ostensibly in an effort to reduce taxes) has come in the midst of the company's being hit with one stunning setback (a second quarterly dividend cut to \$0.01 per share) after another (a \$6.2 billion charge at GE Capital). GE's power division, the weak link in the big three divisions (Healthcare and Aviation are strong performers to date in 2018 and had, under interim CEO Flannery, been scheduled for some serious restructuring), was forced into a \$22 billion write-down.

GE's defined-benefits Pension plans are currently underfunded by about \$29 billion and subject to the vagaries of the stock and bond markets. Employees, as well as the Pension Benefits Guaranty Corporation, are justifiably concerned (if 618,000 current and future pensioners were dumped on the PBGC it would rock the agency).

Emblematic of behavior antithetical to lean practice, CEO Immelt always traveled with a backup corporate jet – twice the fuel, twice the number of pilots, twice the cost.

Things had not gone as planned.

## WHAT'S NEXT FOR GE?

Larry Culp, in his mid-fifties, would be called to serve on GE's board of directors in April, 2018. Rather quickly it became apparent that he had much more to offer.

Six months after joining the board, on October 1<sup>st</sup>, GE released the news that Larry Culp, an *outsider*, would become the 14<sup>th</sup> CEO of the General Electric Company.

The response from the market and the business community was positive.

Former employee and GE CEO runner-up Bob Nardelli was supportive of the choice, "I think that Larry's going to move at blink speed," [unlike Flannery who was slow]. "He's a solid industrial manufacturing guy. He knows what it takes to be lean, he knows about cycle times, he knows about reducing [time] from orders to delivery. So, he's going to get in there and really understand these businesses that need some help. That wasn't particularly the case with the last two gentlemen [Immelt and Flannery]."

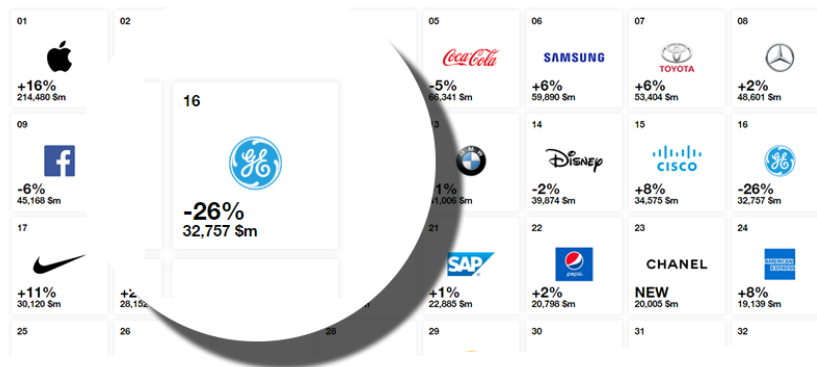
As such, Danaher's past may be GE's prologue. Culp is expected to apply lean methodology broadly in an attempt to cut costs, increase efficiency, preserve earnings, manage debt, decrease leverage, and restore morale in a damaged and confused corporate culture.

Although threatened, substantial resources remain on hand. Thirty-eight billion dollars of GE's \$40 billion credit lines remains untapped with around \$20 billion of cash available and an active commercial paper program in place. The value in the major business lines can be a source of funds if necessary – all or part of Healthcare and Aviation as well as Baker Hughes can be sold (all businesses with the potential to earn).

The Immelt legacy is not totally in ruins. A focus on the Internet of Things, the digitization of industry, and a heavy investment in additive manufacturing (rapid, industrial-scale 3D printing in a variety of materials) will all benefit from the fast, low-risk approach of the build-measure-learn cycle that Culp is expected to bring to GE.

## CULP, THE INTANGIBLES, AND THE HUMAN FACTOR

Often lost in the transactional world of business are the intangible values and very real costs in human terms. Global brand consultants InterBrand, in their 2018 ranking of the 100 best global brands, places GE in 16<sup>th</sup> place with a value of \$33 billion (around half its current market cap of about \$66 billion).



The persistence of GE's reputation should afford Culp the leverage he needs to assuage the concerns of ratings agencies and regulators. When asked about the current relationship with customers Culp responded, "All they do is ask, How can we help?"

The best way out of this is to preserve the businesses that can earn and grow, contain waste, reduce risk and leverage intelligently, and remember the human factor. In Culp's own words it's "the challenge of a lifetime."

When asked why, after such success at Danaher, he would consider taking on GE in its current state – he replied, "This is a company that matters, particularly to the United States. What we do in aviation, healthcare, and energy is important. I see GE shareholders, employees, pensioners – some of them second and third generation – unhappy with where we are, but still committed to the company and keen to see it be in a better place. And, I thought, if I could be helpful, if I could serve those people, that would be a good thing to do at age fifty-five."

\*\*\*\*\* end notes \*\*\*\*\*

The Danaher Business System (DBS) and The Coltala Enterprise System (CES) are based on the *lean principles* of the Toyota Production System (TPS). The TPS is itself based on the management / production system devised by W. Edwards Deming which is considered largely responsible for Japan's post-World War II industrial resurgence.

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