

GAME CHANGERS: JOSEPH GERBER

A true inventor

In an unusual column for this series, we speak to David Gerber about his father, Joseph Gerber, the founder of Connecticut-based software and automation solutions provider Gerber Technology, and an innovator described by a curator at the Smithsonian Institution as “a Thomas Edison of the twentieth century” (and all this after escaping the Nazis in 1940). To mark the twentieth anniversary of Joseph Gerber’s death and the recent publication of a book that his son has written about his father’s life and work, we dedicate this article to his memory.

What does it tell us about your father that he developed groundbreaking technological innovations for so many different industries?

It tells us that Joe Gerber was a true inventor, who looked for problems and found solutions wherever you put him. He was one of the first to recognise the computer’s potential for enhancing productivity in skill-intensive industries; he possessed the creative ability to turn this potential into reality. Sometimes people

come up with an innovation that happens to have applications in other areas, but my dad’s technologies are, in many cases, focused on specific application areas, on a specific set of problems. He loved solving problems. In his native Austria in the 1930s, he figured out a way to disengage a door-latching mechanism so he and his father could jump from a train headed toward the Dachau concentration camp. He amplified his family’s radio reception, allowing them to hear news broadcasts when they tried to plan their emigration (his father did not make it). His first exposure to the apparel industry was in Vienna at a class taught by a Jewish woman there who wanted young people in her community to learn skills they would be able to use after emigrating; she didn’t have enough light in the room where she taught so my father built a lighting system for her, based on ultraviolet (people came out of her class with a tan). Then, trying to make his way in America as a fatherless and penniless boy, he used the elastic from his pyjamas to invent a “revolutionary new engineering device” and start his firm.

Joseph Gerber at the company he founded in the US after fleeing the Nazis in 1940. He developed the first automated cutting system for textiles, the first 3D design system for shoes and many other innovations that have benefited the apparel and footwear sectors.

 Gerber Technology

What was it about the garment and footwear industry that attracted his attention and prompted him to devise for it what he called “a totally new system”?

In the 1970s, apparel manufacture was the world’s largest non-automated industry. My father succeeded in this industry due to his method of invention. He was an inventor of systems, creating whole new systems rather than only components for the systems that others had created. This is why he was like Thomas Edison, who invented a system of electrical lighting, with generators and electricity-distribution, as well as a filament that glows. This inventive method was critical for transforming apparel manufacture. My father developed the automated cloth-cutter in 1969. A leading market research firm predicted he’d sell just a couple of machines, because manufacturers saw “no problem in the cutting-room”. And there’s an important extra dimension here because the market research firm was right; there really wasn’t a problem in the cutting-room. The problem was that manufacturers weren’t taking a system view and their whole working process was not nearly as productive as it could be. My dad determined that a new factory system for making apparel would be highly productive, and that his automated cutter could open the whole industry up to further automation. It was for a new process that the cutter made sense. Within a couple of years, he introduced several other components, including automated products for plotting markers and sewing.

Technology can save costs, improve quality and service, and create new jobs. Which of these benefits did your father regard as being the most important, and why?

I wouldn’t say he valued one class of benefits above another. He believed technology could foster all these important benefits—because of the transformational, systems-level change. People often emphasise trade-offs between technology and jobs. My father believed his technology would preserve many jobs, which were threatened by increasing competition from lower labour-cost markets. He pointed out that a GERBERcutter might displace 10 manual cutters but enable cost, quality, and process efficiencies that could save a factory with 100 jobs from closing. In the mid-1990s, the president of the industry’s largest labour union thanked him for technology that had preserved “good and productive jobs”. Automated manufacturing is a whole new system and it has made companies change their whole perspective. You have to look at the big picture to see all the pluses. It’s not about taking labour out of the equation, but about changing the value proposition and taking



*David Gerber has published a book about his father’s life and work with the title **The Inventor’s Dilemma**.*

 Gerber family

a new approach. I think developments such as Under Armour’s Lighthouse centre, adidas’ Speedfactory and Nike’s partnership with Apollo would resonate with what my dad wanted to do.

He anticipated that an expensive, labour-intensive garment industry in the US would lead to production going offshore. What would his reaction have been to the voices now calling for production to return to the US (or Europe)?

US government policy as early as the Kennedy administration encouraged the labour-intensive garment industry to move to underdeveloped countries, believing the US should have high-tech factories and high-paying jobs. My father had a more optimistic and imaginative viewpoint; he believed this industry could provide high-tech factories and high paying jobs in the US — it was just a matter of innovating. He opposed import tariffs and quotas, and focused instead on technology. He believed that automation created re-shoring opportunities in terms of productivity, quick turnaround, and customisation, that you win by being the most productive and having the best products, not by putting tariffs in place. He was a strong believer in patents, though, that, economically and morally, it was simply unfair to copy the work of a person who had invested time, money and effort in new technology and just have a free ride.



In the 1970s, apparel manufacture was the world's largest non-automated industry. Joe Gerber developed a whole new system to make it more productive.

 Gerber Technology

What would his response have been to people who argue that too much automation will leave too many people jobless and hence too many potential customers unable to buy the products companies make?

He believed apparel automation, at least through the mid-1990s, preserved jobs as a whole. Of course, he realised that apparel automation displaced certain workers and imposed human costs on these people and their families. Generally, he was sensitive to ramifications of economic instability. Born in Vienna in 1924 into a Jewish family, he saw and felt how this instability fostered hatred and political extremism. Automation creates productivity. The increased wealth and opportunities should be distributed fairly. I'm sure he would have been pleased about people in Sri Lanka, for example, gaining employment opportunities in the garment industry and for their jobs, through the use of technology there, to become better-paid jobs. People need a safety net, the dignity of work, and other ways to contribute to society. In general, his view was optimistic. He believed automation should provide for a better standard of living and lifestyles in which people can be creative and not saddled with drudgery.

In the 20 years since Joseph Gerber died, the garment and footwear industries have become totally globalised. Which aspects of this globalisation would he have liked and which would he probably have disliked?

My father sought to strengthen the US's domestic manufacturing capability in the face of increasing competition from countries with lower labour costs. He was motivated partly by a

patriotic feeling, which came from his early experience as a refugee in the 1940s. From a human standpoint, he was concerned by the working conditions in certain countries. Because automation brings efficiency in many forms, such as better material utilisation, he believed manufacturers in underdeveloped countries would ultimately embrace automation. This view was about taking best advantage of resources and efficiencies, not simply creating a system where manufacturers would constantly find the cheapest labour to exploit.

You called your account of his life, "The Inventor's Dilemma". Please share a summary of what that dilemma was.

Actually, the story presents many kinds of dilemmas. It begins with a boy, who must use his inventive talents to solve seemingly impossible problems in order to survive and save his family under Nazi rule. As an inventor of systems, he faced the challenges of convincing an industry to adopt a new system of manufacture. He needed to convince labour unions that automation was in their interest, and manufacturers that they should invest in his vision even before he'd introduced most of the components of this new system.

The story also ends with a dilemma. His career shows a close relationship between manufacturers and inventors. The rise in US manufacturing during the twentieth century depended on inventing new manufacturing systems, the development of these systems depended on the inventor's close proximity to manufacturers—to recognise the problems, which needed solutions. As manufacturers went abroad, the development of new manufacturing technology in the US has become increasingly difficult, a dilemma both for inventors and manufacturers. 🌐