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The Secrets of Extraordinary Low-Cost Operators

They focus on more than efficiency and process improvements.
by Thomas Hout

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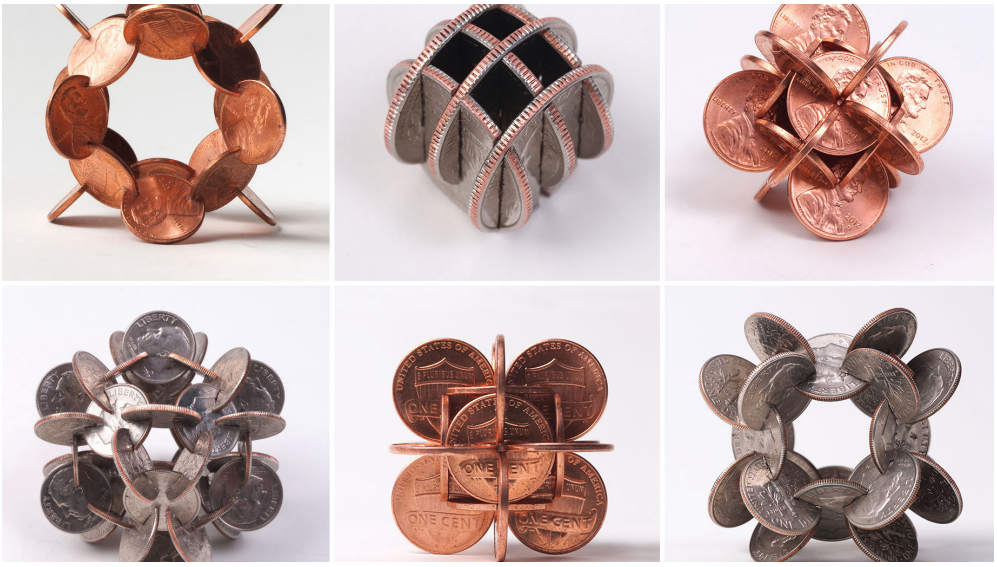

Robert Wechsler

When you think of companies that are longtime, low-cost leaders, what reasons for their outsize performance spring to mind? Many people assume that their position stems mainly from advantages in efficiency or scale and maybe a fanatical devotion to penny-pinching measures. Few would say they are innovative, creative, or customer-centric. Yet that's precisely what the low-cost exemplars are.

In fact, the lowest-cost companies are usually among the best places to work. They often pay more, and their employees tend to stay with them longer. They invest in people and technology (including AI) at higher rates than their counterparts do. Further, their customers tend to be loyal. That's because achieving the lowest-cost position is mainly about people and creativity. It almost always stems from some powerful customer-centric ideas that are exceptionally well executed—and has little to do with familiar step-by-step management programs aimed at efficiency improvements and waste reduction. Being the lowest-cost competitor is a deep capability built over time.

I first noticed large differences in cost among companies in the same industry years ago when looking at factory overhead costs in manufacturing industries such as auto parts and in industrial components such as forgings and castings. The ratio of indirect labor (frontline supervisors, expeditors, quality inspectors, materials handlers, and rework specialists, for instance) to direct labor varied by a factor of two or three. The companies with the lowest ratios were different in both what they valued and how they operated; for example, they showed greater commitment to upgrading skill levels, resorted less to outsourcing as a solution to cost problems and instead invested in technology, and questioned and redesigned their workflows more frequently. (See "The Fallacy of the Overhead Quick Fix," HBR, July–August 1991.)

I then began to notice significant differences in the total cost profile of entire companies in the same industry that could not be explained by factors visible from the outside, such as differences in scale, location, or business model. There was something deep inside certain companies that allowed them to design, produce, and deliver essentially the same things as competitors at a significantly lower cost. This realization led me, as a strategy consultant and business school professor, to a decades-

long study of how lower-cost companies differed in their leadership, ethos, operating systems, value propositions, investments, technical resources, and management of people.

In this article I distill what I've learned. Except for one automaker, which I've left unnamed, none of the companies mentioned in this article was a client. Most are well known, and while a number of them have stumbled at some point—and some are struggling now—they have all enjoyed extraordinarily long stretches of success, and their attributes make it likely that they will overcome their challenges. My findings fall into two broad categories: their leadership, organization, and culture; and the design and execution of their operating systems.

Leadership, Organization, and Culture

A company that adopts a lower-cost business model may see a great payback, but that model can be copied by competitors over time. By contrast, a company with a culture centered on competing on costs (as well as quality and differentiation) will continually find more cost-effective ways to make customers happy. I've found that low-cost exemplars have three elements in common.

Unusual leaders. The founders and subsequent CEOs of exemplar companies share some notable characteristics: respect for people, a commitment to decentralized decision-making, and a zeal for making change happen. Indeed, some of them, such as those at Toyota, Koch Industries, and Southwest Airlines, have promoted flat organizations and high employee engagement since the 1970s, well before they became de rigueur in the business world.

The leaders of these companies tend to see their business as their life's work and have made a long-term commitment to the organizations they helm. In fact, the average tenure of the formative CEOs of the

companies featured in this article is roughly three decades. They are the polar opposite of careerist CEOs.

These leaders understand that for employees to be fully engaged, they must feel valued and competent. They work to convince their people that every individual's initiative is crucial to the company's performance. They do this by being demonstratively hands-on and by performing their own job in a unique way.

For example, David Overton, the founder and CEO of the Cheesecake Factory, one of the lowest-cost of the full-menu restaurant chains in the United States, comes up with ideas for new dishes himself and vets them with his test chefs. Herb Kelleher, the late founder of Southwest Airlines, believed that if your people can't smile at the office, they can't be expected to smile at customers, so he insisted that every employee be treated with respect. He famously told his earliest investors that he would pay the then-startup's legal bills out of his own pocket until lawsuits filed by rival airlines to try to stop him were resolved—a dramatic display to both his investors and employees of his commitment to the company.

Leaders of these companies share another distinguishing trait: They have ideas on how to run their business that were originally, and in many cases still are, well outside their industry's norms. For example, Joe Coulombe, the founder of Trader Joe's, wanted to position his grocery store uniquely by selling good-quality wine at prices far below those of conventional wine retailers. He knew he'd need to cut out the middleman and buy small vineyards, but to do so he'd need one of the rare wholesaler and grower's licenses issued by the state of California—and the lucky few license holders he initially approached didn't want to sell. But he didn't give up, and after months of searching, he found a willing seller in a long-eclipsed wine-growing area east of Los Angeles

called Cucamonga. His vision for Trader Joe's would not have lifted off without this license.

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Leaders of low-cost exemplars see risk differently: as something to be explored, not avoided. They view decisions as reversible and a source of learning. A hands-on CEO running a flat organization who is engaged at the ground level in day-to-day operations is more likely to train employees to demonstrate the same traits. They'll be encouraged to peel back the layers of a challenge to see how its risk can be broken into pieces that are testable and controllable—such as questioning the specifications of the raw materials they buy to see if they are either overpaying for attributes they don't need or being penny-wise and pound-foolish by buying cheaper materials that compromise the yield and quality of the final products.

Exemplar leaders see most decisions as experiments—and the more operations experiments that are undertaken and the more entrepreneurial ventures sponsored, the greater the chance they'll spot a new possibility and reverse a suboptimal decision. To make the most of this mindset, they need talented and seasoned people in their organizations, and decision rights have to be widely distributed. So it's not surprising that the lowest-cost companies, in general, recruit better, pay more, and retain their employees longer than higher-cost companies do. They also buy and sell businesses less often than their

industry's average. After all, it is easier for employees to love and commit to a business that is not for sale.

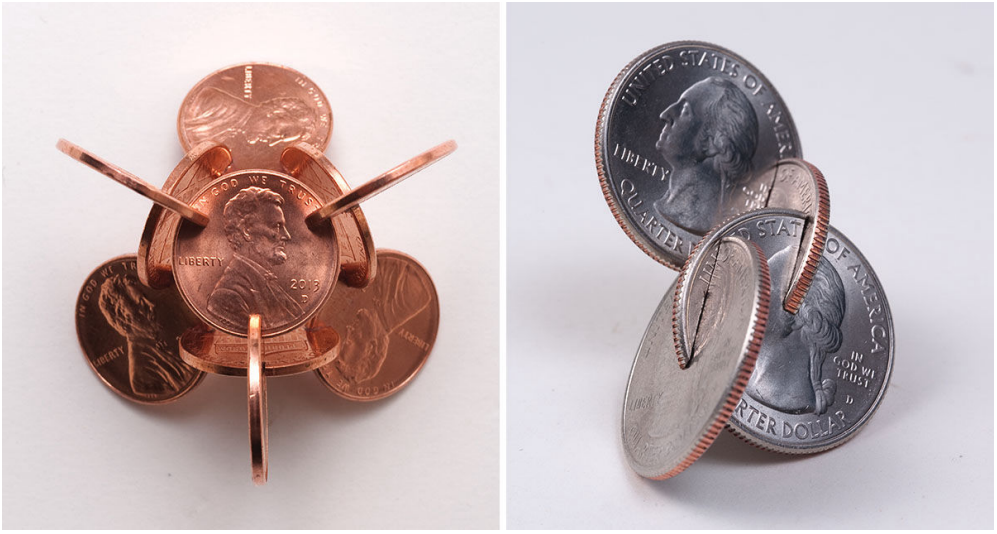
Two such leaders come to mind: Charles Koch, the longtime CEO and now co-CEO of Koch Industries, and Jeffrey Romoff, the longtime head of the University of Pittsburgh Medical Center health system (UPMC), who retired in 2021. Koch, who is known more for his libertarian politics than for his leadership style, runs one of the best-managed, lowest-cost, and most-profitable companies in the oil and chemical-processing and transporting industries. He has three engineering degrees from MIT and has worked in the family company for more than 60 years. He runs a relatively flat organization, where taking initiative and being candid, even combative, are prized. He meets with all business unit heads together weekly to discuss market tactics and share learning on how to compete, operate, and take initiative. They obsess about manufacturing process excellence, logistics efficiency, and keeping overhead low.

In his nearly 30 years at the helm, Romoff built the UPMC system into a behemoth, with 40 hospitals and 100,000 employees in Pennsylvania, Maryland, and New York. He also made it one of the lowest-cost major health systems in its region of the country. His vision was to create a fully integrated care system whose pillars would be the acute-care hospital, a staff of employee doctors, a medical school that excelled not only in training future doctors but also in basic and applied biomedical research, and an insurance company that offered lower-cost health plans than did competing insurers in its markets. He met every week with all clinical department chairs and the medical school dean to forward their agenda: to ensure that the medical school's advances found their way into UPMC hospitals' clinical practices; to eliminate unnecessary medical procedures; to move from fee-for-service medicine toward value-based care that pays for outcomes, not

the volume of services provided; and to use aggressive pricing to gain market share.

Foundational work disciplines and tools. Cost excellence rests on the deeply embedded properties of an organization, including rich knowledge of processes, obsessive attention to detail, a collection of reliable real-time operating data for decision-making, the in-house development of process specifications and the software that manages operations, continual short-cycle experimentation on every step of work, and rigorous hiring and training practices.

UPMC, for example, meticulously compares the outcomes yielded by different approaches to treating a particular health condition in order to develop the best protocols. And it uses AI to help predict which patients will benefit most from a new type of treatment in terms of the best outcomes and the fewest hospital readmissions.



Robert Wechsler alters objects to create sculptures that challenge commonplace associations. His geometric coin sculptures are made by notching and joining coins without the aid of adhesives or welding.

Toyota is known for its insistence on standard documentation and a common engineering language to ensure that engineering terms, definitions, and specifications mean exactly the same thing to everyone —both in its own operations and in its suppliers. Taiwan Semiconductor Manufacturing Company's position as the world's most advanced chip foundry stems, in part, from its deep knowledge of materials science and its proprietary coding language for writing the software that designs its workflows, allowing TSMC to achieve more-precise process designs and ultimately higher production yields. Koch Industries created its own construction company to protect its unique process technology. To accelerate the digital transformation of its operations, the company spent billions of dollars to acquire Infor, a cloud-based software company. And Progressive's AI initiatives that lower costs cover practically the whole of the insurance business—automating claims management, refining underwriting risk, improving fraud detection, and monitoring automobile driver performance through telematics.

The exemplars stand in sharp contrast to the many firms that have hollowed themselves out over the past three or four decades —by reducing technical staff, outsourcing the manufacture of key components, and licensing technology rather than developing it themselves (see "Restoring American Competitiveness," HBR, July–August 2009). Not surprisingly, these enterprises have not been able to keep pace with the exemplars in moving down the cost curve.

Bigger roles and greater responsibilities at all levels. By distributing intelligence throughout an organization, the company continually gains new insights into operations. Low-cost exemplars enable the employees doing the work, regardless of their level in the organization, to solve the problems they confront. The difference between a production line that can turn out 1,000 products a day and one that can turn out double

that number is often the intelligence and discipline applied to each of hundreds of tasks in the long chain of work.

Part of Trader Joe's cost advantage stems from its practice of employing fewer but better-paid and more-capable purchasing executives than big supermarket chains do. Their jobs are broader and deeper—they do everything from assessing the current product lineup to locating and working with suppliers to develop new products and packaging to figuring out how to get items onto store shelves. Similarly, research by Jeffrey Dyer and Wujin Chu shows that the productivity of Toyota's purchasing department is much higher than that of competitors (as measured by the supplier dollars managed per purchasing staff member), and suppliers' trust in the department is high. Again, Toyota makes the job role bigger—the procurement staff manages the whole supplier relationship—than many other companies do.

Fragmentation of knowledge and responsibility inside a company is a major cause of design flaws in both products and processes, which can prolong disputes between functions inside the company or between a supplier and its OEM customer. It is much easier and faster for leaders to identify and solve problems between two companies if both people at the table are seasoned individuals with a large charter and extensive knowledge.

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Placing more intelligence on the production line can deliver an even bigger payoff. TSMC has likened the development of each new, more-

demanding generation of advanced logic chips to a moon program, requiring many learning cycles—first in the lab, then in a pilot, and finally on the full production line. Accordingly, its R&D engineers are not only involved in the R&D and pilot stages; they also staff selected shifts of all three shifts of the regular production operations. By contrast, R&D engineers at competitors staff only one shift. TSMC's decision to invest in staffing this way ultimately reduces costs through superior yields and cycle times.

One major auto company (not Toyota) that I worked with dramatically improved the speed and cost of its new-product-development process by putting each of its functional vice presidents in charge of a project for developing new models. This move not only brought down the cost and time of new product development but also solved a big political problem: the lack of cooperation among the functions. Now the functional heads were dependent on one another. They all became both providers and users of critical services.

Operations

Exemplars have different ways of achieving lower costs in operations, but all seem to share a few basic principles.

Eliminate long-standing industry barriers to lower costs. Every industry has legacies and norms that add cost without adding value. Giants like Toyota and Southwest succeeded because they ignored standard industry practice. In the healthcare industry, mavericks such as Intermountain Healthcare and UPMC are doing the same. They're taking similar approaches to developing protocols, are trying to move from fee-for-service to capitated care, and have created their own insurance companies.

And consider the auto insurance business, where litigation from policyholders is the single largest operating cost. Progressive devised a creative remedy: It introduced a mobile cadre of insurance adjusters who go directly to accident scenes, estimate the damage, and surprise the motorist with a check on the spot. Litigation expense and the cycle time of claims resolution both fell, helping make Progressive one of the few auto insurers that makes money on its core underwriting business, not just its financial portfolio. Progressive has even experimented with performing repair work on damaged vehicles to see what it could learn about how to reduce that cost and more precisely write insurance policies.

Ensure that product design and process design reinforce each other. The more each is developed with the other in mind, the lower the costs of complexity and the greater the potential for a smooth flow of operations. Think about how a good Chinese restaurant can offer a large menu of great dishes and get your food to the table quickly yet charge lower prices than a typical Western restaurant. It's possible because the product and the process are designed to match perfectly. A Chinese menu is based on a common set of ingredients that are combined in many different ways and are almost all prepared in a wok. All steps are performed on a cellular work line: The raw ingredients are first chopped into just the right cooking size and then heated with a sauce in a wok. Most dishes have the same total processing time, and plates arrive at the table immediately after the food comes out of the wok. Using the same equipment and sequence of operations for all dishes minimizes down time, food waste, space, and investment in equipment. The Cheesecake Factory's kitchen operation is designed along the same lines.

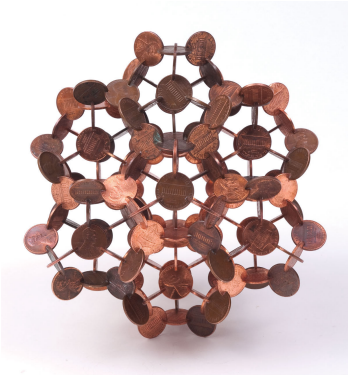
That's in contrast to how most Western restaurants operate. Typically, each meal requires a combination of different ingredients and is prepared in semi-independent workstations—using sauté pans, ovens,

fryers, blenders, kettles, and so on—with different processing times and labor intensity. The meals for a table of four will be ready at different times, and dishes that took less preparation time sit under a heat lamp. Food waste, equipment overhead, and table turnover time are all higher.

During the 1990s and 2000s, Quadrant Homes, a regional home builder in the Pacific Northwest and a division of Weyerhaeuser Real Estate, had some of the lowest prices and costs in the industry. (In 2014, Quadrant was acquired by Tri Pointe Homes and shifted to become a premium homebuilder; it is now called Tri Pointe-Washington and uses different techniques than what's described here.) During that period it operated much like a Chinese restaurant. Scheduling at each stage in its value chain—from the number of daily prospective customer appointments at the showroom to the number of new homes started per day to the work done each day on each house—was "time-definite" (all scheduled tasks must be finished that day even if more-expensive overtime was required) and coordinated to synchronize the serial throughput at each consecutive stage, avoiding idle capacity at any one stage in the system. At the start of the process, new customers configured their desired home on a gamelike console from a large set of pre-engineered modular options. The specs were then frozen, which enabled upstream suppliers to produce to order, and the house was entered into the Quadrant backlog. In practice, that meant that Quadrant could select a mix of difficult- and easy-to-build house projects to balance out the daily demands on its fixed workforce. Materials waste, time with an idle workforce, and time to completion were all low, and each home finished on schedule.

Develop original multipurpose technologies that connect the company to the customer and reduce cost. Low-cost companies' desire to be different shows up in multipurpose innovations. For example, before its move upmarket, Quadrant Homes' house configurator flagged any

features or dimensions of the desired house that had been chosen by the customer but wouldn't physically fit together. It also priced out the customer's selected house. Finally, it recorded all the building materials to be ordered from suppliers. The company allowed customers multiple visits so that they could change their minds about options, but then it froze the specs; no changes were allowed after building had started, which would most likely have been costly to the builder.



Robert Wechsler

7-Eleven Japan combined its superior ability to capture customer data with AI-driven decision-making in order to know what and when during the day different customer groups buy fresh food. It uses this information to order from suppliers in real time three times a day, making adjustments on the basis of the weather forecast or special events in the area. Customers know they will find what they want on the shelf, and unsold items are minimized. Suppliers deliver in vans with customized company-designed interiors. Inside the store, shelves outfitted with digital sensors monitor where customers linger, triggering the display of more information about the product. The company is now experimenting with using AI for unmanned stores and robotic delivery.

Use cycle time and variance as a management tool. Together, cycle time and variance are the best metrics of the operating cost and quality of systems. Think of the basic physics of operations this way: Cycle time is minutes elapsed per finished unit of any process. Throughput is the number of units per minute—the inverse of cycle time—and determines capacity of the process. Low variance reflects consistently good outcomes, step by step, along the way, which results in high yields

and enables shorter work-completion cycles: It means there has been little or no wait time and rework, and few (or no) adverse surprises. Shorter cycles combined with low variance produce low cost per unit, because shorter cycles use less staff and less facility time and raise throughput capacity.

The more complex the operation, the greater the differences in cycle time and cost. For example, in advanced semiconductor fabrication, there are roughly 700 processing steps as layers of patterns are printed and etched on top of one another; end-to-end cycle times can vary from 80 to 130 days among competitors, depending on the yield at each step and wait times between steps. TSMC's investments in materials science and process know-how can mean fabrication cost advantages over competitors of up to 30%.

> **There are always better ways to operate than following industry norms, and looking at how every customer group is served may spark your imagination.**

How Amazon achieves short cycle times is well-known except for one important—and highly counterintuitive—algorithm. Traditional warehouses assign a fixed location within the building to each SKU so that workers know to go to that location. But Amazon uses an AI algorithm that assigns incoming inventory from hundreds of thousands of suppliers to available locations in the warehouse on the basis of customers' changing purchase patterns and nearest space available, and then floor robots bring the shelf to the picker. It may stock the same SKU in more than one location in the building or move inventory from one building to another. While this defies conventional cost logic, the physicists who designed this system recognized that

when you have perfect real-time information on inventory location and customers' constantly changing purchases of millions of items, this counterintuitive method optimizes warehouse utilization and minimizes the time and distance needed to deliver items to customers.

Can Your Company Become a Low-Cost Exemplar?

Becoming the lowest-cost business in an industry isn't easy; it's not something a program or a lean transformation effort alone can accomplish. Rather, it needs to start with a radical idea and then be built over time, supported by the right culture and operations. Here are three questions that can help executives assess their company's prospects.

Do we have a powerful strategy or operations idea that can serve as a starting point? Radical ideas that change a company's cost profile come to leaders in different ways. Necessity breeds some: Toyota's low-waste production system arose from a scarcity of materials and capital. But most come from thinking long and hard about standard industry practices that impose compromises on customers and that cost too much. That means studying the interface between all operations—yours and your partners'—and the customer from every angle. There are always better ways to operate than following industry norms, and looking at how every customer group is served may spark your imagination. Remember how Coulombe of Trader Joe's met the needs of an underserved customer group? Eliminating the distribution middleman and producers' brand premium freed the company to create unusual new products and product names that customers responded favorably to. Looking at other industries and seeing what mavericks have done can help, but the key is a conviction that something both customer-pleasing and less costly can be done. It may start with a revolutionary goal. For example, 7-Eleven Japan's founding team decided it would become the first retailer known to it to turn over

total store inventory once a week through aggressive data capture and analytics and by putting together local, fast-response supply chains.

Do we have the capability and the patience to become lowest-cost? Many more companies have the resources to disrupt and redesign their operating system than do so, at least in part because they lack the leadership and patience required. A long personal time horizon and "fire in the belly" of the leader are needed to exert the kind of influence that builds people's trust in the rightness of a new direction. Startups have some advantages: risk-tolerant investors and no legacy drag. But existing companies have some too: a big customer base, deep experience, and a large cash flow. The kind of change needed to become the lowest-cost operator requires not just determination but also experience-based intuition to guide the many decisions about what might work and how to proceed. Good companies have these people, but they need a strong leader to set the course.

What can get in our way? Most companies are swimming in cost analyses, but analysis is not necessarily insight. Everything the company does has a logic tied to its historical success. Legacy management practices and performance metrics can be an obstacle to becoming a low-cost leader. For example, a CFO who screens new investments by their projected rate of return may be missing experiments whose outcomes are uncertain or whose value is hidden. And salary limits that HR has compiled on the basis of industry averages or current job descriptions can trap the company into mediocre hires—a common occurrence that can undermine a bold new direction.

Another potential obstacle is turnover among key people. Leaders must be clear about what needs to change, and employees need to believe that their leaders are committed to the changes for the long run. That

will allow employees to decide early whether they want to remain on board. If they don't, the company can fill their positions with hires who are enthusiastic about the new direction.

Finally, poor communication can undermine the effort. A new direction requires continual communication about what the organization is doing, why some people are in leadership positions on new initiatives, and why others are continuing in existing roles to meet current obligations to customers. This will create stress among status-anxious employees unless there is clarity on direction and management prepares them for change.

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Except for Amazon, none of the companies in this article succeeded by using a disruptive new technology or achieved its position by relocating to regions with lower labor costs. No single breakthrough carried the exemplars into their strong market and cost positions. In each case, the leader not only imagined a new, powerful way to compete but also stayed in place long enough to build a culture that could keep pushing the envelope. These companies have continually re-earned their low-cost position.

Editor's note: An earlier version of this article referred incorrectly to Quadrant Homes' current strategy. During the 1990s and 2000s, it was a low-priced home builder, but since its acquisition in 2014, the company (now called Tri Pointe-Washington) has shifted to become a premium home builder. The article has been updated to make clear the operating methods described here were from an earlier chapter in its history.

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