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Rosalind Fox at John Deere

In late January 2020, Factory Manager Rosalind (Roz) Fox strapped on a pink hardhat and stepped onto the factory floor. The sounds of power tools and clanging metal reverberated around her as she passed a line of cotton harvester machinery in various stages of assembly.

Since Fox took over as factory manager of John Deere's Des Moines Works in 2016, financial results for the factory had significantly improved. During 2019, the factory achieved record profitability through a combination of robust sales of cotton harvesters and a program to reduce and manage overall costs. Despite the strong financial performance, employee engagement scores—which measured employees' satisfaction with working conditions and enthusiasm about their work—had not kept pace. This discrepancy nagged at Fox, who had achieved high engagement scores at her previous factory, a turf care plant in North Carolina.

The Des Moines Works leadership team had already identified two possible causes of low engagement. The first and largest cause stemmed from dissatisfaction with pay, even though wages were considered competitive. Second, employees complained that the factory's leaders were absent from the factory floor and as such, out of touch with their needs. As she made plans for the upcoming fiscal year, Fox wondered what she should do to improve the level of employee engagement at the factory without sacrificing financial performance.

Company Context and Industry Landscape

Founded in 1837, Deere & Company (Deere) was a major producer of farm equipment sold under the brand name John Deere. Its fiscal year 2019 revenues totaled $39.2 billion, and its net income was $3.3 billion.[1] In November 2019, the company employed 74,413 people.[2] (See **Exhibit 1** for more financial information.)

Deere had four major lines of business. It was the world leader in Agriculture and Turf, manufacturing a broad array of products including tractors, harvesting equipment, and lawn mowers. Its second-largest product area, Construction and Forestry, included construction, roadbuilding, and logging equipment.[3] Its third business line, Financial Services provided financing and lease arrangements through its dealer network to customers of its products.[4] The fourth, Lifecycle Solutions, sold parts and provided product support services for Deere customers.

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Challenging Times for Farm Equipment

In November 2019, the company lowered its earnings forecast, warning investors that farm and landscaping sales would fall 5% to 10% in fiscal year 2020.[5] "Lingering trade tensions coupled with a year of difficult growing and harvesting conditions have caused many farmers to become cautious about major investments in new equipment," said CEO John May.[6] Despite the headwinds, May stated that the "longer-term outlook for our businesses remains healthy and points to a promising future for Deere."[7] To counteract lagging demand, Deere was developing sophisticated equipment that it hoped to sell at a premium. For example, its precision agriculture products used artificial intelligence and machine learning to improve crop yields and reduce costs.[8]

Deere expected farmers to begin replacing their increasingly obsolete equipment at a faster rate in the future.[9] One analyst wrote: "Although Deere has done a great job of introducing precision-agricultural technologies and driving pricing power, many investors remain skeptical that there will ever be a recovery for the agricultural-equipment industry. However, we continue to believe that, following six-plus years of weak demand for agricultural machinery, an aging fleet will start to mitigate the downside in volume."[10]

But with the arrival of the coronavirus pandemic, Deere's business saw supply chain disruptions and weakening demand. Wrote one observer, "Dogged in the past year by trade war uncertainties and low crop prices that kept farmers from ponying up cash, the world's big machinery companies are now struggling to deal with the ambiguity surrounding a deadly pandemic, unable to say how long it will last or how economically damaging it may be."[11]

Des Moines Works

Deere's manufacturing operations spanned nine states[12] and several countries, including Brazil, Argentina, Russia, China, and India.[13] The Des Moines Works factory was among the company's largest. Located 10 miles outside Des Moines in Ankeny, Iowa, the factory measured 3.5 million square feet and included 17 buildings.[14] During World War II, the factory housed a large-scale munitions production effort. When the war ended, Deere purchased the factory in 1947. In 2009, the factory created the first cotton baler, which harvested cotton and collected it into a round bundle (a "bale").

While most of Deere's factories specialized in one product type, Des Moines Works produced four: sprayers, cotton harvesters, grain drills, and tillage equipment. (See **Exhibit 2** for the factory's major products.) This made it one of the company's most complex facilities. But there was an advantage to this complexity: having four product lines enabled the factory to counteract seasonal changes in demand for certain products by switching workers from one production line to another.

Of the factory's 1,600 workers, roughly 1,000 were represented by unions —900 by the United Auto Workers (UAW) Local 450 and around 100 by the International Association of Machinists (IAM) Local 254. The employees represented by unions were production and maintenance employees—they were paid by the hour—whereas non-union personnel were salaried.

Rosalind Fox

Born and raised outside St. Louis, Missouri, Rosalind Fox was the youngest of six siblings. Her mother drove a school bus and her father worked for an aircraft manufacturer. Their hometown of Kinloch was the first city to be incorporated by African Americans in the state. Fox remembered it as a

community where she could be herself. "We had our own school district, so I had all Black teachers. We had our own library, our own post office, our own grocery stores. I received a lot of support growing up."

In fourth grade, Fox was bused to a previously all-white school as part of a desegregation effort.[a] Fox remembered being bullied on the schoolyard while teachers turned their backs: She also recalled:

> One day we had a test and I was so excited because I did well and I was the first to finish. I got up and turned in my test. But the teacher had told us to stay seated. So when I got up, she said, "Rosalind, are you deaf and dumb? Go back to your seat." I'm 51 and that statement still haunts me. I operated in two worlds at that point. Go to school, you're the minority and then go home, and you are the majority again.

Though she was accepted to the University of Missouri, Columbia during her senior year in high school, Fox did not attend. Her father felt she was not ready. Instead, she worked in a department store hanging clothes, stocking shelves and working the cash register until one day she realized that this was not the life she had envisioned. She asked her father for a check to enroll in community college, and he encouraged her to reach out to the University of Missouri. She recalled:

> I literally pulled out the yellow pages and looked up the number for the admissions office. I told them that I applied a year ago, got accepted, but didn't show up. They put me on hold and after what seemed like two hours but was probably five minutes they said I could enroll. It was just a few days before the semester was scheduled to begin. I asked if they had a place for me to stay, and they said there was a place on the edge of campus. That very day, my mother took off work and drove me to college.

Though Fox aspired to be a nurse, her father agreed to pay the tuition on one condition: she would study engineering. She remembered, "My father worked with engineers at the aircraft factory and had observed the respect afforded them. He wanted that—and the pay—for me." Earning the degree was a challenge. Academically, Fox lacked the prerequisite courses in math and science. "I spent the first year of college taking basic courses and getting caught up to the rest of the students," she said. Eager not to disappoint her father, studying became her job. "I would go to class, go to the library, go home, have dinner, come back to library, close the library. Same thing on the weekend. I did that so much the librarians knew me. They knew where I sat, and they started to leave candy for me," she remembered.

In her final year of college, Fox joined the National Society of Black Engineers and through this association found a part-time position at 3M Company, an industrial and consumer goods manufacturer. In this role, she had the opportunity to observe the factory manager. "I was just so impressed with this guy," she said. "He just had it all together. He was very nice, he had strong business acumen, and he just really cared about the people. I decided I would love to be a factory manager someday."[15] Once she identified that goal, Fox used it to guide her life decisions. "I didn't know how I would get there, but it was literally my beacon for every job I had after that point."[16] (See **Exhibit 3** for Fox's career trajectory.)

Joining 3M Company

Fox graduated college—the first to do so in her family—and stayed on to complete a master's program in electrical engineering. Upon graduating in 1995, she joined a rotational leadership training

[a] Desegregation busing was a government initiative to racially integrate schools with the intention of distributing educational opportunity more equitably.

program with 3M Company. Her first six-month assignment was in Prairie du Chien, Wisconsin, a town of 6,000 inhabitants. Although she enjoyed the work, she felt isolated: "I was the only Black person in town. At that time, they only had one stoplight. I got pulled over a couple of times. I had a nice car. It was just that experience of being a Black woman in a geographic area where there's not very many of me. I always felt like the spotlight was on me. Whether it was when I went to church, the grocery store, to the gym, or any outdoor activities… I knew I couldn't do or say anything wrong or go against the grain. I had to be very intentional in my assimilation."

Her subsequent assignments were in Belgium, Minnesota, Kentucky, and finally, Illinois. In each factory, Fox worked on engineering initiatives designed to improve factory processes, production line layouts, and business outcomes. As she moved up the ladder at 3M, however, the lack of diversity in senior leadership led her to question her future there. "3M is a great company, and I can never talk bad about it, but it's just the diversity thing. I just didn't see a lot of people that looked like me in higher levels of the organization and decided to reach out to some friends to see what was happening at other companies," Fox said.

Ford Motor Company

Fox found her next opportunity at the Ford Motor Company, where she entered a manufacturing leadership program in 1999. Beginning with the interview, she realized the culture was going to be different. "There was so much diversity on the interview committee. I was dumbfounded. There were women and people of color. That was so impressive. And the position was in an area I wanted to go into long-term, so it was a good fit." Ford's rotations were 12 to 18 months in duration, beginning with a stint as a production supervisor, a hands-on position overseeing line operations. In that role and subsequent roles, she worked closely with union workers.

During her six-year career at Ford, she held a variety of positions of increasing responsibility. During a two-year stint in England, she and her colleagues launched the Jaguar X-Type, a luxury vehicle, as well as a new version of the Land Rover Range Rover. The manufacturing environment at Ford was intense. "Working in the auto industry provides a great manufacturing foundation," Fox said. "It's a high volume, high pressure environment. In most Ford factories, you've got vehicles coming off the line every minute. The pace and the energy it takes to perform at that high level every day is exhausting. To keep up with the fast pace, you've got to have solid processes. It's a highly competitive environment. You never want to be at the center of attention for a quality, safety, or throughput issue."

At Ford, Fox cultivated a strong network and mentors. Given her advancement thus far, she felt she was on track to become a factory manager. But in 2005, she received a call from a recruiter for Deere.

The Path to Deere

The interviews at the company's Moline, Illinois headquarters went well, but she had no intention of taking the position. "I had a good network at Ford and strong mentorship and I knew starting from scratch would not be easy," she said. When Deere called to offer her a position, she turned it down. She was wary of relocating. Deere's headquarters and much of its manufacturing operations were located in a Midwestern region of the U.S. known as the Quad Cities. The Quad Cities straddled the states of Illinois and Iowa, and shared a population of 400,000. Fox had lived in the area during her time at 3M Company, and did not have fond memories of it. "I always promised myself I would never move back there," she said. She also bristled at the lack of diversity in senior leadership.

One of her interviewers was Tony Worthington, Director, Operations for Deere's Worldwide Construction and Forestry Division. "I saw a spark in her," he recalled. "She had an engaging personality, and I liked her from the start. But she was very skeptical. She said, 'I'm going to be the only African American female, and people are going to think I got hired as a token.'" When Fox called him to reject the offer, Worthington negotiated. Fox recalled:

> I'm telling him, "Well, there's no diversity there." Tony said, "Well, you could help us with that." I said, "There's nothing there for me in the Quad Cities." I said, "It just doesn't fit my lifestyle." He was like, "That's an issue that you can help us with. What else?" I told him, "I have a good network at Ford." He told me, "I want to partner and mentor you. I will help you develop your network and I will help you develop and grow your career." Then, I just ran out of excuses. On the drive from Detroit to the Quad Cities, I was close to tears, wondering if I had made the right decision.

Joining Deere

When she started at Deere in November 2005, Worthington placed Fox in a high visibility developmental role. "Historically, Deere has had a build-from-within culture," Worthington said. "In these Midwestern 'We move dirt' companies, people respect hard work and earning your way. I wanted her to have a chance to quickly prove herself and work her way up to avoid any misconceptions." As a Master Process Pro in the Construction and Forestry Division, her first assignment was to help shutter a factory in Canada and relocate four production lines to Iowa. Next, she moved into a supply chain management role with 10 direct reports.

Her third position was business unit manager, an operations role overseeing two production lines at a construction equipment factory in the Quad Cities area. Her reports included eight production supervisors and manufacturing engineers and 82 line workers. She and her team established a manufacturing process for a new product: the G-Series Motor Grader, a vehicle to level road surfaces.[17]

At first, Fox was one of two Black female leaders in the entire manufacturing division, and one of few women. "I wasn't myself for the first few years because I was trying really hard to assimilate to the predominantly white male culture," she said. "I felt if I was more like them, they would accept me."

To fit in, Fox straightened her hair and wore button-down shirts. She made efforts to socialize with her peers outside of work: "I knew very early on that you had to have the right relationships. If you weren't part of the group, you weren't going to make it." Above all, she focused on delivering stellar performance. "If you deliver on your metrics, they can't take anything away from you," she said. "I have to kill this job. I have to fight to earn respect and credibility in this company because there's no one else like me." On the advice of her mentor, she enrolled in the executive MBA program at Kellogg School of Management at Northwestern University in Chicago in fall 2006.

Global Diversity and Inclusion

In January 2010, Fox was asked to take a new role as director of global diversity and inclusion. Initially, she was reluctant to accept the position. "The Black woman who was in the role was retiring and they wanted another Black person who had credibility and would push the needle on key initiatives. When they approached me, I said, 'I'm an engineer. I don't know anything about diversity and inclusion other than the fact that I'm a Black woman. Why do you want me in this role?' They talked me through the pros and cons of why I should take it. And so I took it." The role would give her visibility to the senior leadership, including regular meetings with the CEO. Unlike her previous role,

this one was global in scope, allowing her a broader view of the company's operations. She was also motivated to help Black people advance at the company and promote internal conversations about racial equity. But she worried that the role would derail her career in operations. Senior leadership agreed that after two years, she could return to operations.

Fox knew it would be challenging to diversify Deere's workforce. Deere and its competitors drew talent primarily from the engineering and manufacturing workforces. Women and minority groups were underrepresented in both areas. In 2017, males made up 79.7% of individuals earning bachelor's degrees in engineering.[18] Black workers accounted for only 5% of the total engineering workforce, though they accounted for 11% of the total U.S. workforce.[19]

Fox found it to be emotional work. She had access to Deere's diversity data, including employee diversity statistics, performance ratings by race and gender, racial disparities in succession planning, and civil rights and discrimination cases. When an employee at Des Moines Works sued Deere for alleged racial discrimination, Fox traveled to Ankeny to speak with the Black employees and get a sense for the climate there. Fox already knew that the company had a lot of work to do to achieve racial equity, but it was important to her to understand the perspective from the front line.

Fox learned to apply her operations training to the diversity and inclusion position, improving the department's processes and establishing protocols for data collection. During Fox's tenure, female representation increased across the Deere workforce. She and others started an employee resource group in 2011 called "Women in Operations" to help women build community. Under her leadership, Deere also solidified partnerships with professional groups including the National Society of Black Engineers, Society of Women Engineers, and National Black MBA Association. In addition, Fox founded John Deere Inspire, a community service program that sought to foster interest in science, technology, engineering, and math (STEM) careers among young people.

Around the same time, Fox stopped straightening her hair. This was not an easy decision: at the time, few Black women at Deere wore their hair natural.[b] "I felt like I couldn't encourage others to bring their whole selves to work if I wasn't doing that myself," she said. The week before the change, she prepared her white colleagues, including her mentor Tony Worthington:

> I had that prep conversation with the white people the Friday before. I said, "Listen, when I come back to work on Monday, my hair will look different. Don't be shocked." On Monday, I didn't tell Tony [Worthington] why I needed him to see me. I just said, "I need to come see you." And I said, "What do you think about my hair?" And he said, "I love it. Don't shy away from the fact that you're an African American female. Embrace it and be yourself because people love genuine people." At that point I felt like it was okay. When you can be your whole self, you're more confident.

Fox was proud of her work in diversity and inclusion, but felt there was more to do:

> Our company loves to measure ourselves and set goals. To me, diversity should be measured the same and handled the same way. But the company is not there yet. Our senior officers get it and they really want to do something about it. When it comes to

[b] Anti-Black hair discrimination was widespread in American culture. In the workplace, many Black women felt pressured to straighten their hair to conform to white standards of professionalism. In 2019, three states banned such discrimination. Source: Mariel Padilla, "New Jersey Is Third State to Ban Discrimination Based on Hair," *The New York Times,* December 20, 2019, https://www.nytimes.com/2019/12/20/us/nj-hair-discrimination.html, accessed March 2020.

> hiring and firing, it's not them making the decisions. It's the mid-level managers, who rely heavily on existing relationships.

A year and a half into the role, senior leadership discussions started in earnest about Fox's next role. They collectively landed on her dream job: factory manager.

Breaking Barriers

In 2012, Fox became the company's first Black female factory manager when she assumed the role at the John Deere Turf Care plant in Fuquay-Varina, North Carolina. The 335,000-square-foot site produced commercial mowers for golf courses and landscapers. The factory employed 270 wage workers and 180 salary workers. As factory manager, Fox oversaw all functions and processes from human resources to quality, product engineering, and customer support. The plant manufactured 10 models of mowing and golf equipment that were sold in the U.S. and over 100 countries.

Fox was happy to be back in operations. "My first daily production meeting felt like home. I knew I could jump right into the conversations because I know operations. It felt so good to just hit the ground running." She felt welcomed as the factory's first female leader. In general, the factory had one of Deere's more diverse workforces. Fox's predecessor was a Black man who had advanced a number of initiatives at the facility.

The factory had solid metrics, but low volumes. Demand was seasonal, so production only occurred for part of the year. To increase volumes, Fox worked with her colleagues in marketing and other departments to bring new products to the factory including a new mower model. As a result of these efforts, the plant reached its highest profitability in its history, and employee engagement improved to 80%, among the highest in the company. On the safety side, the factory achieved 10 million consecutive employee hours without an employee injury. According to her Deere colleagues, Fox was a popular leader in Fuquay-Varina. "She was really in tune with the production staff," said Data Catalyst Project Manager Brian Miller. "She has the ability to work with people and make them feel heard."

In 2015, Fox received the Prism Award from the Society of Women Engineers, which recognized a woman "who has charted her own path in the STEM fields by demonstrating a variety of outstanding career leadership activities in a technical field, as well as leadership in professional organizations and the community."[20]

A year later, the factory manager position opened at Des Moines Works, the fourth-largest factory in the company in terms of financial contribution. Once again, Worthington (now retired but still her mentor) had to convince Fox to take the role: "She had so many questions about whether it was a good move, if she would like living in Des Moines and what career message, if any, was being sent with this offer? Most would have simply said, 'You're going to send me to run a bigger factory? Yes, of course, when do you want me there?' But with Roz, I knew there were legitimate questions about being an African American female running a large factory in the middle of Iowa, so we talked it out and I encouraged her to accept the offer."

Reflecting on her relationship with Worthington, Fox said, "He kept true to his word. He took me under his wing and made moves for me that I know he caught flak for. He helped me develop. He told me when I was messing up, and he helped me step into who I am as a Black woman. And let's be real. It can be hard for a Black person to trust a white person, especially an older white man, but I grew to literally love him and to trust him because he was just so transparent with me."

A Complex Factory

Fox had a rough start. Her predecessor, Andrew (Andy) Hansen, was a life-long Deere employee in the company's agriculture division. "Andy knew the unions, he knew the people, he knew everybody in the local community," said Joaquín Fernández, Deere's global application product line director and Fox's boss. "He knew the factory intimately." Having started her career at 3M and Ford, Fox was considered a mid-career hire. She was the first woman and the first Black person to lead Des Moines Works.

The factory's complexity exacerbated the challenge. Due to the presence of multiple product lines, Fox had three bosses. Said Fernández:

> We produce four product lines under the same roof with three product line directors. On one day, you may have three different problems affecting your production—cost for this product line, quality or output for the others. Three different problems under one roof. To complicate things further, the physical plant is optimized for 1940s ammunition production, not for the flow of agricultural products.

The sheer scale of Des Moines Works—17 buildings and 3.5 million square feet—was overwhelming. One of Fox's first actions in her new role was to bring the entire factory together, across multiple shifts, to introduce herself and listen to employee comments and concerns. After opening the meeting with a brief summary of her background, Fox asked for questions. Immediately, employees began grilling her on the technical aspects of the factory.

Fox could not answer the questions to her satisfaction. She felt like a failure. When she called Worthington for advice, he downplayed the importance of such technical knowledge: "I told her, 'Your job is not to know the answers to all the questions. A factory like Des Moines Works is too large and too complex for any one person to know all the answers. Your job is to ask the best questions and to know who you can direct questions to for the best answers.'" Fernández echoed: "In this complex business, you need to decide how deep to go on the day-to-day operations. At first, Roz was trying to understand every single detail. Over time, she has been able to identify what level of detail she needs to understand the factory."

Although she felt shaky at that first meeting, some of her staffers experienced her differently. Quality Manager Francisco Verastegui recalled, "It's always a challenge when you have to stand in front of hundreds of people and tell them you're going to do things differently, especially in a union environment. It's intimidating. Roz appeared very secure of herself. You could tell she had experience."

Learning the factory and figuring out what level of knowledge was truly needed became Fox's first major hurdle. She had understood the North Carolina factory intimately, but there was a key difference. In North Carolina, Fox's role as factory manager included direct management of all aspects of factory operations. In Des Moines however, that task fell to her operations leader—Tony Rollin. "We both knew that all eyes were on us," Fox said. "It was the first time that number one and number two were both Black people." At first, Rollin and Fox clashed over roles and responsibilities, but with time, Fox learned to separate herself from the tactical day-to-day operations to focus on higher-level strategy.

> That was a hard transition for me. It's just a completely different level of expectation in terms of performance. I had to transition from being a tactical leader putting out fires and driving the metrics to being a more strategic leader in setting the vision for a bigger facility and how to move this facility forward for the next five, ten years.

Fox was conscious that her gender and race defied expectations. "Male factory managers don't even wear a suit jacket," she said, "but I do because it adds that layer of professionalism and credibility. Even so, when I meet customers, some ask, 'Well, what part of the factory do you actually have?' Or, 'Well, where does your boss sit?' As if I can't be the boss. I am conscious that I have to expend extra energy than my white counterparts because I am not who they expect to see."

Her original 90-day plan included three goals: learn the business, set a strategy, and improve employee engagement. She quickly discarded this plan when she realized it would take much longer to get up to speed. Then, one of her line directors died while hiking, an employee lost a spouse, and a production worker died by suicide. Crisis management consumed her first quarter as sales lagged. Fox had to oversee a headcount reduction plan to preserve margins. She considered quitting: "I was tempted to call the senior leaders and tell them I couldn't do the job. I felt like I couldn't get my legs underneath me. I felt like they put the wrong person in here. In the end, I was just too embarrassed to make that phone call."

Once she started asking for help, however, things improved:

> As a Black woman, I have to be cautious about admitting what I don't know. I often feel like I am under a microscope. At the beginning, I was too embarrassed to ask questions because I felt like people would say, "Why did they put you in the charge if you don't know these things?" But I just literally didn't know because I had never worked here before. I had never even worked on the agriculture side of the business. I needed to know these things to be successful and so I just started being a bit more vulnerable with my team and said, "I don't know anything about this. Can we go spend a day out on the floor?" As I began to learn the business, my confidence grew.

Building and Leading the Senior Team

When Rollin was promoted to a factory manager position at Deere's Augusta, GA facility in November 2017, company leadership replaced him[c] with Kristi Christensen, the factory manager at the John Deere facility in Paton, Iowa. The 25-year company veteran had grown up on a farm in Iowa and had held a range of positions of successive responsibility in Deere's manufacturing division. In addition to Christensen joining the team, Fox made several key internal hires including Francisco Verastegui as Quality Manager, Lindsey Forche as Labor Relations Manager, Quintin Murray as Material Flow and Logistics Manager, and Brian Miller as Data Catalyst Project Manager. (See **Exhibit 4** for an organizational chart).

In 2019, Fox asked Miller, who was working in Business Improvement, to lead the smart connected factory initiative for Des Moines Works. The leadership team was working on a proposal about how Des Moines Works should be thinking about digital tools and technology. He recalled:

> We wrote a list of people on the board that might have good skill sets to do this new role, and after the presentation, Roz pulled me aside and said, "What do you think about doing this?" I did not know what to think. She saw something in me that I did not anticipate. And I think that was something that is maybe unique to her, she sees people's potential more than what they've done. Because there was nothing to show in my work history that would have said I'm the right person.

[c] At the most senior levels of factory management, hiring decisions were made by Deere's senior leadership.

Soon, the Des Moines Works leadership team was the most diverse in Deere's manufacturing organization. The top three leaders—factory manager, operations leader, and labor relations manager—were all female. Half the business unit leaders were female, as was the accounting manager. Gender was not the only dimension of diversity. There were now more people working at Des Moines who had been trained at other Deere plants. "When I first started here, everybody was a Des Moines person," said Manufacturing Engineer Manager Dejan Djordjevich.

The diverse makeup of the senior team created additional pressure to perform. "We all want to be that example for others to follow," said Fox. "If we aren't performing, then the story will become, 'Well, see, that's why we can't have diverse teams because they don't work.'" Fox explained: "We're going to work together; we're going to stay together; we're going to die together. If you've got a problem, we've got a problem." Djordjevich agreed: "When we are together, we all have our own opinions; we cuss and discuss, and when we leave the room, we are aligned. The diversity brings different perspectives and makes us better overall."

Christensen reflected on why the diversity worked: "Maybe it's because we all feel a little bit like we're the odd man out in some point. Whether it was because we're Black or we're the female engineer, or we're the person who started their career in Mexico, or whatever."

Leadership Style

Fox's direct reports described her as approachable and democratic. Said Murray, "She asks probing questions. There's very little ambiguity in what she wants, but she allows us the freedom to get there the way we see fit." Echoed Christensen, "I have gained confidence from her in part because she gives us autonomy. If I'm within these bounds and produce the right metrics, she lets me do that. That's how I thrive. Of course, if I'm out of bounds, she's going to call me out on it." Fox concurred:

> I always tell them I'm not going to get in your business unless I have to. If you're not performing or if we're not meeting metrics, then I need to be intimately in your business. I like them to treat their own organization as their own businesses and let them manage it. So they set their organizational strategy, the development for their teams. Obviously I have goals that are dictated to me and I dictate those goals to them. But they still have some liberty to modify the goals for what they need to deliver.

Fox scheduled weekly meetings with her reports. She explained:

> When I came into this role it was overwhelming, and I didn't understand a lot of what was happening in the business. And I felt like my team didn't need me because they knew so much more than me. What started to become apparent to me was that it wasn't necessarily the business side where they needed my help, it was the personal side in terms of their development and helping them see their potential.
>
> And those conversations can sometimes be hard, but I believe that's why we have such good trust because I tell them, you need to work on this or else this will not happen. Or here's what things I want you to work on. So it became apparent to me that I had to be a leader in serving them.

Verastegui recalled how Fox had helped him become more comfortable speaking in public. He noted, "In our coaching sessions, I told her that I did not like presenting to a lot of people. She shared some strategies with me and worked with me to build my confidence and now I feel so much more secure. I really appreciate that she took the time to really get to know me."

Over time, the team developed personal relationships. "I've been with the company 19 years, and there has only been one other occasion where my manager has invited me to their home," said Murray. "I really appreciate her openness and sense of caring. I think she creates an environment where we're more like family or friends versus strictly coworkers." According to her team, Fox brought her "whole self" to work. This empowered them to show their true personalities. Said Communications Manager, Lydia Hornung, "When I started working for Roz, I could tell her my thoughts and my feelings and just be myself at work. I had never worked for a female factory manager. I was so excited, and she became an instant role model for me."

In addition to the quarterly All Hands meetings, Fox and her team conducted a series of daily, weekly, and monthly meetings to keep connected and ensure that production was running smoothly. Each day started with a 15-minute stand-up department-level meeting focused on quality, safety, production, or other operational issues. The senior team met weekly to share updates on cross-department issues and to plan for the future, and each month, the team reviewed their performance scorecards to assess progress toward department and factory level goals.

Verastegui reflected on Fox's communication style: "She's very transparent. I always know where I stand with her. I love that. She's not going to be hiding anything from me. If somebody provides feedback around a discussion that didn't go well, she's going to tell me right away, and help me get through it." Forche added: "She's not a dictator. She wants to have open conversations, and she wants feedback. She really wants our staff meetings to be collaborative. You feel empowered." Hornung concurred, "She always likes to be the last person to talk because she doesn't want to influence anyone. She's open to peoples' suggestions and ideas for change."

Apart from leading and empowering her team, Fox's other main responsibility was managing up to senior leadership—including the three product line directors and their superiors. When Fox started in her role at Des Moines Works, she found it difficult to manage the often competing needs of her bosses—the three product line directors. While she officially reported to Fernández, she had a "dotted line" into the other two directors. When friction arose between the directors over factory resources—plant space and wage workers—Fox often found herself in the middle. Fernández recalled, "When she came here, there were a lot of fights between us. Roz had the great idea of holding quarterly meetings in which we would all present our projects and our needs at the same time in the same room. Arguments have diminished because we discuss everything together."

Fox's staff credited her with advocating for them with senior leadership. Said Forche, "Roz is not afraid to push the envelope. She'll say, 'All they can do is say no, so make me ask.'" Beyond the factory, Fox met with city leaders to develop the local relationships that would help the factory thrive. Said Fernández, "That was a challenge because she was not from the area and the former factory manager knew everyone so it was simple for him. Overall, she has done a good job putting a cohesive team together and fostering good working relationships."

Worker Relations

The majority of the plant's workforce—1,000 out of 1,600 employees—were represented by unions and paid by the hour ("wage employees"). The rest were salaried office employees. The terms of the union workers' employment were specified in a six-year contract, which would be renegotiated in 2021. The contract specified the workers' pay, overtime rates, and benefits. Many employees earned incentive pay based on the productivity of teams throughout the factory. The incentive pay could vary between different teams and fluctuate within a team over the course of time.

Each union had local leaders that represented workers' concerns and participated in contract negotiations. The UAW committee consisted of a president, shop chairman, head of the committee, and three committee members (no women served on the committee in 2020). These leaders were elected every three years. IAM members elected a captain and three committee members for one-year terms.

Depending on who you asked, the relationship between wage workers and management was either good or adversarial. Said Forche:

> Historically we have had a very good relationship. The problem we have is the newer generation of employees is not aware of that history, and doesn't understand why our organization is the way it is. A lot of them have never worked anywhere besides John Deere, so they do not understand the cost of benefits and how those exponentially grow in comparison to everywhere else in the country. We have not been good at explaining that to them. So they compare their wages and decide they can make more down the road.

The vast majority of workers were white men. According to some members of Fox's team, her race, gender, non-farming background, and status as a mid-career hire made it difficult for some union members to accept her. Some employees frequently complained that Fox and her leadership team did not spend enough time on the factory floor. "We all should do a better job being on the shop floor," said Hornung. "It's not just walking on the shop floor, it's intentionally being present there. In contrast, in the office, people see Roz all the time." One way that Fox attempted to address some of the distance between the staff team and the factory workers was to move some of the staff functions from the office center to the factory floor. For instance, Fox decided to place all the Safety Analysts in the factory so that they could better understand the core safety issues on the line.

Said Djordjevich, "I think Roz has done a good job of engaging not only the salaried folks but also the wage folks. She tries to bring everybody together as a team. She's put break machines out here, where we can grab a cup of coffee or snacks and she's put refrigerators out on the shop floor." Although Fox had invited union leaders to attend her management meetings, they had not yet done so. "If you're a union leader, the last thing you want to be seen as is member of factory staff," said Forche.

Employee Engagement Survey

Every other year, Deere surveyed workers at each of its plants on their level of engagement. Overall, union facilities had lower engagement scores than non-union plants. Des Moines Works was no exception. The survey covered topics such as whether the employee felt their opinions mattered at work and whether they had opportunities to learn and grow.

According to the 2019 survey, employees' major concern was pay. Some believed the pay scheme was inequitable as there was variance in incentive pay across teams. Other wage workers expressed frustration that they had not been able to move into a salaried position. In response, Fox started an internship program for wage workers in divisions such as quality, manufacturing, engineering, customer support, and material flow and logistics. Said Hornung, "This way, they get experience in the area and then when they actually go to interview, they can compete."

Factory leadership was eager to improve its relationship with staff. But they also felt it was difficult to ascertain whether the employee survey adequately represented employees' true level of engagement. Hornung explained:

> If I looked at just the employee survey results, I'd feel like the results do not actually reflect what the people in the workplace feel. The reason I say that is because we had

> outstanding financial performance last year, outstanding metrics from a productivity standpoint from the shop floor, and you don't get those two things if you don't have engaged employees, so I really struggle with that question because I don't have employee survey data to back up my feelings. We don't have a factory full of cheerleaders, we have a factory full of doers with their heads down focused on their task.

Fox used the quarterly All Hands meetings to share information with the factory workers about the performance of Des Moines Works and to address any of their questions and concerns. She regularly asked her staff to present and even included some outsiders on the agenda. Murray said: "She once invited folks from [Washington] DC to talk about the political environment and how it will affect us. She brought in a comedian who talked about how you should inject humor in the workplace. There was also a DJ that came to speak with our leadership team. I had never witnessed anything like this before, and it was very well received."

Record Performance but More Challenges Ahead

When Fox originally came on board, the factory was in a trough business cycle—demand had decreased and profits were lagging. By 2019, however, the factory achieved its most profitable year—measured by shareholder value added (SVA) —in its history. Several factors accounted for this success, most notably a reduction in costs, such as budget reductions of non-essential items including travel, as well as better-negotiated pricing for utilities. In addition, overtime was reduced and factory shutdowns were selectively utilized to better align with demand. Since the layoffs in 2016, the factory had increased its headcount by roughly 275 people. Unlike other large machines, there was still considerable demand for cotton harvesters because cotton prices remained strong amid the slump in other sectors. Said Fernández, "Everybody is now saying, 'This factory is well run and delivers great results.' Last year was our record result in volumes and also in financials, despite sales being down in our industry, particularly with big equipment because of the concerns about China and the trade war and the tariffs and commodity prices being low. So it's amazing that in 2019 we had an exceptional year profit-wise." Hornung noted:

> In 2019, we had great financial performance, but we couldn't do a party because of the concerns around next year and what that would bring. But Roz said: "I still want to give a gift to employees." We proposed to do a crowd-sourcing contest for a T-shirt slogan and we received over 300 different taglines from employees. We narrowed it down and selected: "Des Moines Works: #ActuallyInAnkeny." People always joke about our factory's name because we are not in Des Moines. People loved it.

Fox continued to look for opportunities to improve the factory's financial standing. "I'm still proving myself, even though I just had this factory's best year ever," she said. "How do I up the game again? What do I do this year that we didn't do last year? That's the pressure I carry with me." Looking ahead, Fox considered the factory's four main strategic initiatives: (1) ensuring operational excellence in terms of material flow, quality, safety, and productivity; (2) implementing new digital technologies to increase efficiency; (3) driving employee engagement; and (4) preparing the "connected factory of the future" through investments in artificial intelligence. In essence, these four initiatives were intended to improve productivity/efficiency and strengthen employee relations.

To boost employee engagement, Fox planned to increase her interactions with employees. Today, she was headed to the workers' break room in Building 12 to listen to the concerns of a group of union workers over a catered lunch. The monthly event, "Lunch with Roz," convened various workers across the facility. Fox commented:

> I'm trying to get more integrated and develop relationships with factory workers. I'm doing the monthly lunches with people in different departments, and I asked my team to invite people for recognition that have been doing a good job, but also I asked them to invite people who they know tend to be the squeaky wheel or tend to be vocal in our quarterly meetings so that I can understand their issues in a one-on-one conversation versus a one-on-200-person conversation. I go where they normally have lunch anyway and bring one member of my staff each time so that they can hear what's on the employees' minds as well.

Would these efforts help her bridge differences with the factory's workforce? What else could she do to improve the factory's employee engagement score?

Exhibit 1 Key Statistics, Deere & Company, 2015-2019 (in millions USD)

For the Fiscal Period Ending	12 months Nov-01-2015	12 months Oct-30-2016	12 months Oct-29-2017	12 months Oct-28-2018	12 months Nov-03-2019
Total Revenue	28,780.8	26,549.0	29,071.0	37,318.0	39,233.0
Growth Over Prior Year	(20.2%)	(7.8%)	9.5%	28.4%	5.1%
Gross Profit	6,783.6	6,153.9	6,777.6	8,985.0	9,178.4
Margin %	23.6%	23.2%	23.3%	24.1%	23.4%
EBITDA	3,894.5	3,812.0	4,524.0	5,941.0	6,179.0
Margin %	13.5%	14.4%	15.6%	15.9%	15.7%
EBIT	2,615.1	2,354.2	2,926.0	4,159.0	4,310.0
Margin %	9.1%	8.9%	10.1%	11.1%	11.0%
Earnings from Cont. Ops.	1,940.9	1,521.5	2,159.0	2,371.0	3,257.0
Margin %	6.7%	5.7%	7.4%	6.4%	8.3%
Net Income	1,940.0	1,523.9	2,159.0	2,368.0	3,253.0
Margin %	6.7%	5.7%	7.4%	6.3%	8.3%
Diluted EPS Excl. Extra Items[3]	5.77	4.81	6.68	7.24	10.15
Growth Over Prior Year	(33.1%)	(16.6%)	38.9%	8.4%	40.2%

Source: Capital IQ, Deere & Company Key Stats 2015-2019, a division of Standard & Poor's.

Exhibit 2 Des Moines Works Products

Cotton Picker

Grain drill

Self-propelled sprayer

Tillage Equipment

Source: Company documents.

Exhibit 3 Rosalind Fox – Background

Experience:

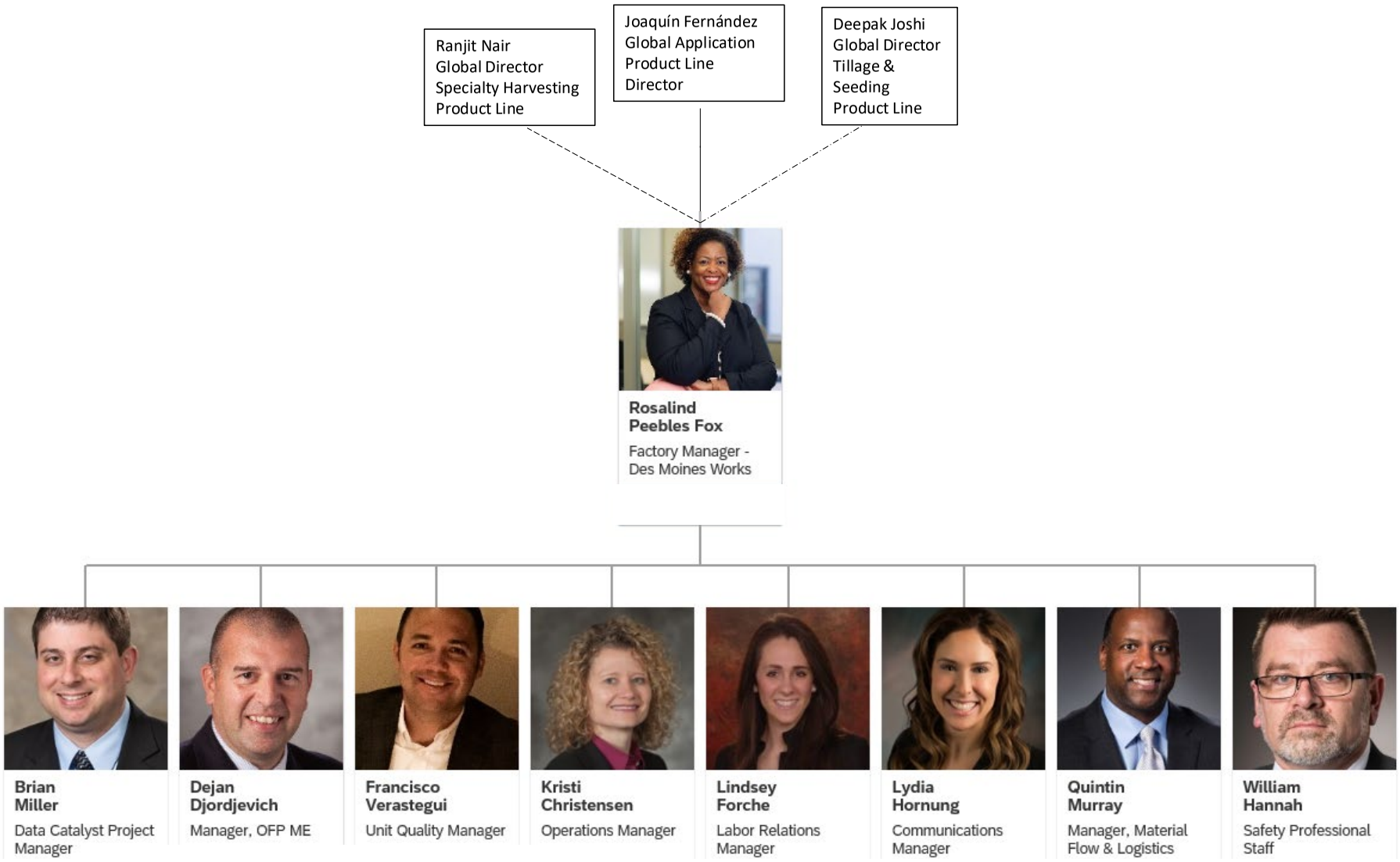
2016-Present:	Factory Manager, Des Moines Works, John Deere
2012-2016:	Factory Manager, Turf Care, John Deere
2010-2012:	Director of Global Diversity and Inclusion, John Deere
2009-2010:	Business Unit Manager, Construction and Forestry, John Deere
2006-2009:	Manager, Supply Chain Management, Construction and Forestry, John Deere
2005-2006:	Master Process Pro, Construction and Forestry, John Deere
1999-2005:	Manufacturing Leadership Program, Ford Motor Company
1996-1999:	Advanced Manufacturing Engineer, 3M Company

Education:

2008:	Northwestern University, Kellogg School of Management, Executive MBA
1995:	University of Missouri, Columbia, Master of Science – Electrical Engineering
1993:	University of Missouri, Columbia, Bachelor of Science – Electrical Engineering

Source: Casewriter.

Exhibit 4 Des Moines Works Leadership, 2020



Source: Company documents.

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