

## **CHAPTER 1: A TRIP AROUND SILICON VALLEY**

*There is no reason anyone would  
want a computer in their home.*

– Ken Olsen, 1977<sup>9</sup>

If we wish to understand how Silicon Valley became what it is today, it is best to break it into its constituent pieces – the people and laborers who create the industry’s vast wealth. Yet if you were to attempt to take a stroll around Silicon Valley, to follow the production chain of a smartphone or a piece of software, you would quickly find yourself transported far away from California. In fact, you would have to start in the Congo.

Silicon Valley could not exist as it is without the labor of the men, women and children in the Congo who mine the elemental metal coltan – a portmanteau of ‘columbite’ and ‘tantallite,’ the minerals from which elemental niobium and tantalum, respectively, are mined. Coltan is crucial in the manufacture of the kind of capacitors that are used in computers and mobile phones, and it is estimated that 80% of the world’s coltan supply sits in the eastern part of the Democratic Republic of Congo.<sup>10</sup> As such, Silicon Valley could never have existed and grown to the extent that it did without the resources of

the Congo, though few in Silicon Valley would see their fate as intertwined with Congolese miners. And yet, in fall 2000, when demand surged for Sony's Playstation 2 video game console, the price of coltan increased 1000%, and militias in the Eastern Congo region forced civilians into slave labor to help them mine the precious mineral.<sup>11</sup> The money from coltan mining has fueled the ongoing civil war, which has killed over 5 million and continues to kill hundreds a month despite having officially ended in 2003.<sup>12</sup>

Over the years, various Western groups have attempted to obtain coltan from legitimate operations in Eastern Congo, yet even these sanctioned mines can be tremendously exploitative and primitive. It is common for workers to work 12 hours a day, using pans and picks, digging through the mud without helmets or gloves.<sup>13</sup>

A 2016 documentary produced by the International Cooperation for Development and Solidarity (a Catholic social justice group) profiled some of the workers at the Fungamwaka mine in the eastern Democratic Republic of Congo. The Fungamwaka mine has been called a 'model' mine, in that it uses no child or slave labor, has no involvement with militia groups, and operates entirely legally.

Audry Bialura began working as a miner at the Fungamwaka mine in 2014, and came to the mine because after rebels stole his cattle, he could no longer work as a farmer. He lives in a wooden shack in the nearby village of Numbi. The wage from mining coltan is variable

depending on the global market, and currently is not as high as it once was. ‘I’ve earned nothing so far,’ says Bialura. ‘I’ve had to borrow money from my boss in order to pay for my mining license, and rent, and food. Life is expensive in Numbi, and the yield from the mine is much too low.’ Bialura spends all day shoveling sand down the hill and sifting through mud for coltan. ‘I couldn’t send a single franc to my family in the last few months,’ Bialura continues. ‘I also can’t go home. I would be arrested immediately, because of my debts.’<sup>14</sup>

Despite working at a co-operative mine that is lauded by government and tech as an example of ‘ethical’ mining, Audry Bialura’s life is not too dissimilar to that of an indentured servant. And interestingly, the conditions of his labor – working as a contractor, and paying for his own license – are reminiscent of the practices common to many tech industry contractors in the developed world. (See chapter 6 for more on contractors in Silicon Valley.)

Regardless of labor practices, there are other negative social consequences of coltan mining in this region. Many Congolese people have ceased growing food because mining is more lucrative; as a result, food shortages are common.<sup>15</sup> Likewise much of the coltan that is mined illicitly by slaves or via warlords is smuggled, often through Rwanda, and mixed with legitimate operations’ stock. It is very likely that all of us own electronic devices that contain coltan mined by slaves.

From Africa, coltan is shipped to places like Shenzhen, just north of Hong Kong in China, where the

massive factory-cities of Foxconn sit. Foxconn Technology Group is the 25<sup>th</sup> largest company by revenue in the world; many hardware companies in Silicon Valley are reliant on Foxconn to supply their gadgets, including Apple, Amazon, Nintendo, Sony, and Microsoft. We think of the latter tech companies as the visionary designers of our favorite tech toys; iPads, Xboxes and Kindles – yet the actual production of these devices is overseen by some of Foxconn's 1.4 million employees.<sup>16</sup> To put that in context: Apple Inc. – by some measures, the largest publicly-traded company in the world – has 110,000 employees, less than one-tenth of the number of people Foxconn employs.<sup>17</sup> And yet Apple couldn't exist without Foxconn; Foxconn is enmeshed within its production process. Foxconn's bureaucracy is divided into 12 internal 'business groups,' two of which serve Apple and Apple alone.<sup>18</sup>

Tian Yu was one of the 1.4 million people whose labor helped make the iPhones that symbolize Silicon Valley's innovation. Many rural Chinese people are enticed to work at places like Foxconn, by the promise of high wages and a stable job; Yu was one of them. She grew up in a small village in central China, and left home at age 17 with the equivalent of \$80 USD to work for Foxconn. 'On 8 February 2010, I was employed as a general assembly-line worker,' Yu described. 'Foxconn assigned me staff number F9347140.' Entry-level workers like Yu were paid the 'local statutory minimum' wage, around 900 Yuan a month, before overtime pay.<sup>19</sup> (In 2010, 900

Yuan was the equivalent of about \$130 USD or about £90 GBP, a quarter of the cost of an entry-level iPhone.) The company gave her an employee handbook, which was full of sunny, encouraging maxims, like ‘Hurry towards your finest dreams, pursue a magnificent life,’ and ‘At Foxconn, you can expand your knowledge and accumulate experience. Your dreams extend from here into tomorrow.’<sup>20</sup> Foxconn plastered the walls with similar slogans; these included ‘Value efficiency every minute, every second,’ ‘Achieve goals or the sun will no longer rise,’ ‘Heart to heart, Foxconn and I grow together,’ and ‘A harsh environment is a good thing,’ the latter of which is a quote from Foxconn’s CEO.<sup>21</sup>

Yu’s first days at the factory were hard and isolating. ‘I arrived late to my first day of work. The factory was too big, and I got lost. So I spent a long time looking for [my workshop]... It takes almost an hour to walk from the south main gate to the north main gate, and another hour to walk from the west to the east gate.’ Once on the assembly line, Yu was responsible for inspecting the glass screens on Apple devices. ‘Each production line in my workshop had from a few dozen to more than 100 workers. I was responsible for spot inspections of glass screens to see whether they were scratched. I woke up at 6:30 a.m., attended an unpaid morning meeting at 7:20 a.m., started work at 7:40 a.m., went to lunch at 11, and then usually skipped the evening meal to work overtime until 7:40 p.m.’<sup>22</sup>

Overtime was a way of life for Yu and the other workers; her twelve-hour day quickly became the norm. 'There seemed to be no way for me to say 'no' to overtime,' Yu said. 'Toilet breaks during the working hours are also restricted. I had to ask permission from the assistant line leaders to leave my seat.'<sup>23</sup> Yu was given one day off a week, yet as she describes, 'working twelve-hour days with a single day off every second week, there's no spare time to use the facilities like swimming pools, or to window shop in the commercial districts.' Yu said that 'checking the screens of the products made my eyes feel intense pain.' She was actively discouraged from socializing with her fellow co-workers; 'friendly chit-chat among co-workers is not very common even during the break,' Yu said, because 'the company prohibits conversation in the workshop.' She recalls 'thousands' of security guards on duty watching over them.

The competitive and fearful atmosphere was an innate part of Foxconn's working environment; Yu and other workers described how workers would be publicly punished, forced to 'stand at attention to read aloud a statement of self-criticism.' She recalled punished employees crying as they were forced to admit error in front of coworkers.<sup>24</sup>

Yu said she did not make any friends during her first month at Foxconn. Though she lived in a shared dorm with other women, she rarely saw them because of the alternating day-night work shifts. 'We were not close,' Yu recalled. 'Random dormitory re-assignments break

up friendships, increasing our isolation. Although eight girls were housed in the same room, we were strangers to each other. Some of us had just moved in as others moved out... with none of my good friends or family members around, it's a massive place of strangers.'

After her first month, Yu didn't receive her paycheck because of a bureaucratic mistake: she had initially been interviewed at Foxconn Guanlan before being assigned to the factory in Longhua, and her wage debit card had not been transferred. Nearly broke, Yu traveled to Foxconn Guanlan on the bus. The mazelike factory employed 130,000 workers; Yu wandered 'from floor to floor of building after building to inquire about my wage card... I went from office to office by myself but no one would point me in the right direction. They all brushed me off, telling me to ask someone else.'<sup>25</sup> Yu spent an entire day searching to no avail, and never got paid. 'By then it was the middle of March 2010,' Yu said, 'and after more than one month in Shenzhen I had spent all of the money my parents had given me. Where could I borrow money? At this moment of crisis my cellphone broke. I was unable to get in touch with my cousin in Shenzhen, my sole link to home and family. I could find no one to help me... I was so desperate my mind went blank.'

With nowhere to turn, Yu jumped from her fourth-floor dormitory onto the asphalt below. She awoke 12 days later, in a coma, her body half-paralyzed. While in recovery, Yu became a symbol of the struggle of Foxconn workers.

Yu's situation was not unusual. A spate of worker suicides at Foxconn factories around the same time prompted the company to install safety nets around roofs and corridors, and cover windows with wire and lock them. Foxconn also wrote a 'no-suicide' disclaimer pledge that it asked employees to sign to limit the company's liability. (After criticism, the company dropped the practice.)<sup>26</sup> Despite the scrutiny that the suicides brought to the company, the immiseration of its workers continues apace: When a PR storm encompassed Foxconn, the company responded by raising wages to 9% above minimum wage – yet at the same time the company also raised production output, meaning laborers had to work even harder to keep up with the pace of production. One sixteen-year-old employee remarked, 'I feel really constrained at Foxconn since the suicides. Now everywhere there are safety nets... it gives you a really constricted feeling. I'm depressed.' Another young worker attested: 'Every month we're to shift our work from day to night, and vice versa. This is a tough working life. When my body just gets used to day hours, I have to change to night hours. I really feel bad when I have my period.'<sup>27</sup>

The phones, laptops, tablets and gaming consoles that Yu and her hundreds of thousands of fellow co-workers produced would be shipped to the United States and other developed countries to be sold, and the profits would end up in the hands of Silicon Valley companies whose property and hands had never physically interacted with 'their' products. Distribution is an entirely separate in-

dustrial realm with its own systems of labor, and here too Silicon Valley has made its mark. As shopping has moved online, clerks in department stores have been laid off while the number of shipping center workers has grown.

Some of the screens Yu inspected would have ended up on the shelves of Amazon's distribution warehouses – known as 'fulfillment centers' – around the world. The e-commerce giant uses a reserve army of temp labor to manage its shipping needs. Just as the mining of coltan was outsourced and the factory production of gadgets was outsourced, Amazon, too, often uses contractors and temps to outsource many of the company's needs. When it's busy season for Amazon – the Christmas shopping season particularly – the company ramps up its hiring of contractors.

In 2013, journalist Carole Cadwalladr went undercover at an Amazon Fulfillment Center in Swansea, Wales – a location that Amazon chose specifically because of its poor economic situation. Amazon purposely locates its distribution centers 'in places of high unemployment and low economic opportunities,' said Cadwalladr, noting that Amazon was given a government grant of £8.8 million for building its warehouse in Swansea.

Cadwalladr describes the warehouse as a place of eternal competition between employees for the better jobs. 'There is a subtle apartheid at work,' she said. She was a 'green badge,' meaning a temp employee; permanent employees 'have blue [badges], a better hourly rate, and, after two years, share options.'<sup>28</sup> According to Bill

Woolcock, a former Amazon fulfillment center worker in Staffordshire:

They dangle those blue badges in front of you... If you have a blue badge you have better wages, proper rights. You can be working alongside someone in the same job, but they're stable and you're just cannon fodder. I worked there from September 2011 to February 2012 and on Christmas Eve an agency rep with a clipboard stood by the exit and said: 'You're back after Christmas. And you're back. And you're not. You're not.' It was just brutal. It reminded me of stories about the great depression, where men would stand at the factory gate in the hope of being selected for a few days' labour. You just feel you have no personal value at all.<sup>29</sup>

Cadwalladr's experiences tell a sordid tale of life in a fulfillment center. If temps phone in sick three times, they are fired – even if they phone in because of an on-the-job injury. Her trainer tells of how he lost 28 pounds in his first two months of working, from all the walking (15 miles a day sometimes). 10 ½ hour shifts are normal. Workers start at minimum wage. Many of Cadwalladr's fellow workers came to work at the fulfillment center after being laid off from other jobs, unable to find skilled labor in their field: