

Teaching Case

Taking the High Road: Privacy in the Age of Drones

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Abstract

This case examines the technological, ethical and legal issues surrounding the use of drones in business. Mary McKay, a recent Management Information Systems (MIS) graduate sets up a professional photography and videography business. She gains a leg up on the competition with drone-mounted cameras and live video streaming through the free streaming app, Periscope. While Mary's star rises, Carl Davis, Mary's friend from college, gets fired from the local television station for invading the privacy of one of his stories' subjects. Struggling to make it as a news blogger, Carl hires Mary and her drones to help him report on a scandal in local government. Before Mary knows it, she's watching an illicit affair unfold through the lens of her drone. Mary must ultimately decide if she's willing to broadcast the private scene to Carl's followers.

Keywords: drones, live streaming applications, conflict of interest, privacy invasion

1. MARY MCKAY, SHUTTERBUG

Ever since her 12th birthday, Mary McKay dreamed of becoming a professional photographer. On that day, Mary's father gave her a simple Polaroid camera, and Mary proceeded to burn through two packages of

instant film before her party was over. Few of the photos she took that day were ideal—shots were routinely blurred by her exuberant clicking or obscured by an errant finger jutting into the frame—but the seed of the dream was planted nonetheless. She particularly loved capturing

candid moments in which her subjects were smiling or laughing honestly and naturally. In high school, Mary volunteered as a photographer for her school's newspaper and worked after school retouching photos for a local photography studio. When it came time to apply for college, Mary looked for schools with strong fine arts and business programs. She set her sights on dual degrees, majoring in MIS and fine art. It was an ambitious combination that reflected both her love for the artistry of photography and her dream of opening her own studio.

2. CARL DAVIS, NEWSHOUND

Mary was a sophomore when she met Carl Davis in an introductory management information systems class. Carl took the class as an elective, hoping to one day put the skills toward a career in journalism. When Mary and Carl partnered for a class project, they instantly bonded over their mutual love of photography. Although they never took another class together, Mary and Carl remained close friends over the remainder of their college years. After graduation, Mary and Carl lost touch. While Carl focused on landing a job in the competitive world of broadcast journalism, Mary pursued her dream of opening her own photography studio.

3. BIRD'S EYE PHOTO & VIDEO

In her final year of college, one of her professors encouraged Mary to put together a project for a business plan competition. Mary seized the opportunity. Even if she didn't win, she would have the opportunity to work on the plan for her dream business.

She wrote a plan for a photo studio that would cater to weddings, parties, and other special events. She put her heart and soul into the project, and it paid off. Her photographic talent, combined with her technical savvy, won over the judges. The judges were particularly impressed with her plan to incorporate low-cost drones into the business, allowing her to capture photos and videos from previously impossible angles. When the final votes were tallied, Mary won by a landslide and walked away with the \$10,000 grand prize.

Mary used the money she won at the Business Plan competition to start her company: Bird's Eye Photo & Video. Eager to get started, Mary set up a website and started advertising her business through social media. Due to her haste, Mary

failed to consider the risks of running a business or the benefits of various forms of business organizations. By default, Mary operated the company as a sole proprietor. Occasionally, Mary would contract with a friend to help with equipment setup or fly drones at her bigger events. She handled all of the editing and retouching herself as well as all the scheduling, marketing, and bookkeeping. Before she knew it, Bird's Eye Photo & Video consumed her life, but she loved every minute of it.

Mary's MIS background gave her a leg up on other professional photographers in the area. Whereas other studios were notoriously slow at producing photos and albums for their clients, Mary capitalized on cloud storage and a customer relationship management platform that let her clients see their photos upload in real time from her camera. Clients raved about the stunning footage Mary could capture from her drone-mounted cameras.

Building off of her work in the business plan competition, Mary knew that the high-end drones used by cinematographers and bigger studios were beyond her modest budget. Still, she believed drones would play a major role in the future of photography and be essential to Bird's Eye's competitive advantage. She set out to find an affordable drone that could still capture professional-quality photos and video. She scoured the internet and photo industry magazines for information before picking the Y6-Rotor drone.

The Y6-Rotor drone had three arms attached to the body and two motor-propellers mounted at the end of each of the arms. The drone's Y shaped body maximized its weight-to-lift ratio, which allowed Mary to attach a small Go-Pro camera to capture wide-angle aerial images. Still, the drone was far from perfect. With its six propellers positioned in pairs of two, the drone was less stable than high-end, eight-armed drones used by most other professionals. After a couple weeks of testing and struggling, Mary finally felt comfortable enough with the drone to try it out at a friend's birthday party.

She left the party with some usable footage, but it was far from a success. Although she had nearly mastered maneuvering the drone, she still couldn't see through the lens of the camera. As a result, she never knew if her subject was in focus, let alone in the frame. If she was going to use the drone in her business, she needed to know that it would produce high-quality shots.

She couldn't afford to waste her time, or that of a contracted assistant, flying a drone that may not capture worthwhile photos and video.

Mary wasn't able to use the drone as she intended, but she nonetheless found a way to capitalize on it. For a modest fee, a small safety deposit, and a lease agreement, she would let her clients or their guests fly the drone and capture their own photos and video. Mary wasn't responsible for the quality of the shots, but she would still edit together the pieces that were valuable into the final product for the client.

As Bird's Eye Photo & Video grew, Mary kept her eye on the market for drones, hoping to find an affordable option that would better suit her needs. Eventually, the evolution of technology and her business's growth aligned and she invested in an Eagle Vision 4K. The Eagle Vision was a photographic powerhouse capable of capturing video up to 4K resolution at 30 frames per second. It could even capture slow-motion video in high resolution 1080p. The Eagle Vision's ActiveTrack technology allowed the drone to follow a subject in motion, a type of autopilot for photographers. Best of all, Mary could control the drone from her tablet with a live feed from the drone's camera.

For the first time, Mary was no longer flying blind. Word spread quickly throughout the community that Bird's Eye truly lived up to its name. Soon, Mary started getting calls from local businesses asking her to help with their multimedia advertising. Before she knew it, Mary's time was booked months in advance. Her larger competitors took note of Mary's success, and one even offered to buy her business, and more importantly, her talent. Mary felt like her dream was coming true.

4. CARL'S TROUBLES

While Mary was hard at work building up her photography studio, Carl was having a rocky start to his career in broadcast journalism. Right after Carl graduated with his degree in journalism, he started working for the local CBS affiliate, Channel 3 News. At first, his supervisor, Sarah Moore, was happy with his work. He could be overly aggressive at times, but Sarah appreciated Carl's tenacity. After just two years, however, Carl's dogged pursuit of exclusive stories started to raise ethical concerns around the station.

The last story Carl prepared for Channel 3 News was about Amanda Overtree, an up-and-coming

country music starlet who passed through town on a national tour. Instead of waiting in front of the hotel to catch some fleeting footage of Amanda boarding her tour bus like every other "lousy paparazzi," Carl had a better plan.

Five days before Amanda was scheduled to arrive, Carl got a tip about where she would be staying. Carl scouted out her hotel and took notes on the dress code and routines of the hotel's staff. He ordered a uniform online that would help him blend in with the hotel staff, then booked a night at the hotel at the same time Amanda was scheduled to be in town.

Carl checked into his room just before Amanda arrived, taking his camera, a tripod, a bottle of champagne, and his hotel outfit in an inconspicuous duffle bag. While she got settled in her room, he changed into the hotel uniform, put the champagne on ice, and waited in his room. He cracked the door open and listened for the sound of Amanda leaving. The moment she opened her door, he popped into the hallway with the iced champagne in hand and a towel draped over his arm.

"Ms. Overtree, a gift from the hotel," he told her, nodding toward the champagne in his hand.

"Oh, how very nice," she replied. "Be a doll and leave it in my room, won't you?" She held the door to her room for Carl, who slipped in as she walked away. When the coast was clear, Carl propped the door open, ran back to his room, and grabbed his camera. Carl proceeded to rummage through her luggage and film everything he saw.

After he was finished, he set his camera on the tripod and recorded a short stand-up teaser for the nightly news. "Tonight, an exclusive, behind-the-scenes look at Amanda Overtree's life on the road."

Later, as he edited his segment for the evening news, Carl patted himself on the back. *This will finally get me to the big leagues*, he thought. With a self-assured smile on his face, he sauntered into his boss's office and presented his work. But instead of praising him, as he expected, Sarah seemed stunned.

"There's no way we can run this footage!" she roared. "Have you no decency? You could face criminal charges for invading a person's privacy like that. This is the final straw! Pack up your things. You're fired!"

Carl was recalcitrant. "I'm not wasting my time with you any longer. I can sell this to any other station and make good money." Carl yelled as he stormed out of Sarah's office, slamming the door behind him. It was the end of Carl's tenure with Channel 3 News but the start of his freelance career.

At first, Carl felt energized by the seemingly limitless possibilities of freelancing. Carl quickly realized, however, that selling stories to local news outlets was more difficult than he had anticipated. He would spend days on a story only to have it rejected by television stations and newspapers. On more than one occasion, he saw a story of his run just days after pitching it to a news editor, but it had been written and produced by one of the outlet's own reporters.

After a month of struggling, Carl decided to change his business plan. Rather than selling stories to other outlets, he would be his own publisher. Dusting off the skills he learned in his MIS classes, Carl registered a domain and subscribed to a web hosting service. Within hours, he had his own news blog up and running. He planned to generate revenue through Google's DoubleClick advertising services as well as the occasional sponsored story purchased by local businesses. All he needed now was some eye-catching original content.

5. MARY AND CARL UNITE

Only a couple of years had passed since Mary and Carl graduated from college, but Mary was so engrossed in her business that she didn't notice Carl's absence from the Channel 3 Evening News. It had been several months after Carl's falling out with the Channel 3 News brass before Mary ran into Carl at a Fourth of July Parade. The local chamber of commerce had hired Mary to film the parade and produce a short promotional video about the community to attract new businesses. Carl, meanwhile, had attended in the hopes of cornering the mayor for an exclusive interview to post on his struggling freelance news blog.

After the parade, Mary met Carl at a nearby coffee shop to catch up. "It's hard right now, but I'm finally starting to build a following," Carl told Mary.

"I know what you mean," Mary commiserated. "I've been working on Bird's Eye for two years, and I'm only now starting to earn a profit."

"Really? The chamber must have deep pockets, right? Maybe you're not charging enough," Carl joked.

"I wish it was that simple. The fact is, most of what I've made over the last couple of years, I've reinvested in the business. It's hard work, but I love it. Just look at this footage I took today with my newest drone." Mary pulled out her phone, and after a few taps on the screen, handed it to Carl.

"Wow," was all Carl said as he watched the screen. The footage panned over the parade from above the treetops before dropping down and passing through a row of the high school marching band. "How high can you fly this thing?"

"Basically as high as I want," Mary replied. "It's rated to go a kilometer in any direction, but it's illegal to fly it beyond your line of sight. Besides, most of my clients wouldn't get much out of a kilometer-high aerial shot. But they really go gaga over a live stream."

"You can stream this footage live?"

"Through a live-streaming app like Periscope. You download the app to your phone or tablet. See?" Mary said as she pulled out her tablet. "I've set up my tablet to feed from the drone's camera instead of the built-in camera. While Periscope runs in the background, I can fly the drone with the separate drone app." Mary deftly tapped and swiped the tablet screen, switching effortlessly between the applications until the drone's controls were stacked alongside the Periscope "broadcast" button. "Anyone with a smartphone or tablet can see the live feed from the drone, and they can even provide live feedback. Once a broadcast is over, I can post and share the recording with anyone or everyone."

Carl was suddenly struck with an idea. "Hey, I know you were filming for some promotional video today, but do you have any extra footage I could post?"

Mary thought about it for a moment. Technically, everything she shot at the parade was for the chamber, but what could be the harm in helping out Carl with some B-roll footage? "Sure," she said. "I'll send you some spare footage this afternoon, as long as you post a link back to my Bird's Eye website."

Carl agreed, and Mary headed back to her studio, unsure of what she could give up without using

the footage she would need for the chamber's promotional video. As she combed through the footage, she started to play with shots of the high school marching band. After she had a few minutes of video stitched together, she decided to overlay the audio she had captured of the band playing the high school's fight song. Satisfied with the result, she posted the video to her studio's Vimeo channel and shared the link with Carl.

Within hours of posting Mary's footage on Carl's blog, the footage went viral. The video was wildly popular among the high school community, with parents and students alike sharing it across social media. In short order, the video became the most viewed post in this history of his blog. It also generated a lot of traffic back to the Bird's Eye page, and Mary started getting calls from brand new clients who were blown away by the footage.

6. CARL'S BIG STORY

Weeks passed before Carl stumbled across a news tip that, if true, would generate substantial traffic to his blog. Ron Johnson, the CEO of Johnson Development Inc. recently won a bid to build a new, \$120-million public housing project. Many of his competitors who submitted bids on the project accused him of greasing palms around city hall to win the bid.

Rumors surrounding Ron's close relationship with city leaders were common in the construction industry. Although his firm was occasionally outbid, it seemed like the city always chose Johnson Development for the most lucrative projects. The local media had looked into these rumors in the past but were unable to uncover any real evidence to corroborate the claims of corruption, so no accusations were reported.

Carl, however, was desperate for a good story and decided to investigate the accusations for himself. After talking with a handful of sources in the industry, he learned Johnson Development's bid was actually slightly higher than other bids submitted. Through a meeting with one of Ron Johnson's main competitors, Carl learned of a rumor about Ron having an affair with Olivia Brown, the city planner who oversees the city's construction projects.

"If this is true, I could scoop every news outlet in the state," Carl told himself. He decided to have a closer look into Ron's private affairs. While staking out Ron one morning, he happened to hear Ron on a phone call while leaving his office. Carl heard Ron talking about a meeting in the

penthouse of the Ritz-Carlton Hotel, just a few blocks from the Johnson Development offices.

Why would Ron meet someone in a hotel if his office is just 10 minutes away? Carl thought. He decided to find out more about that mysterious meeting at the Ritz.

Carl followed Ron to the Ritz-Carlton and watched as he breezed past the check-in desk headed straight to an elevator. As the elevator doors closed behind Ron, Carl watched the floor indicator as the elevator climbed. When it stopped on the 22nd floor, Carl realized that this must be the meeting. Unfortunately, Carl was too late to attempt his fake room service routine. Carl walked outside and gazed up the side of the building. The 22nd floor was at the top, and the penthouse provided an unobstructed 360-degree view of the city through its large plate-glass windows.

Carl was frustrated. The Ritz was the tallest building in this part of city, and there was no way he could get high enough to see through the penthouse windows. Just as he was about to give up, he noticed a small flock of pigeons land on an awning just above the penthouse. Struck with an idea, Carl pulled out his phone and dialed Mary's number.

7. CAUGHT IN THE ACT

"Mary? It's Carl. What are you doing right now?" he asked, still peering up at the pigeons atop the Ritz.

"Oh, hi, Carl. I'm just editing together some video for a client. What's up?"

"Actually, I'm hoping you could tell me," Carl joked. "I'm working on a big story right now, but I need your help. Specifically, I need a bird's-eye view, and I instantly thought of you. Can you meet me at the Ritz with that drone you told me about--the one that can live stream video?"

"Yeah, I think I can pencil you in. What day and time do you need me?" Mary asked as she pulled up her appointment schedule.

"Today, and right now," Carl answered. "Trust me, it will be worth it. This could be the biggest story this city's seen in years. I'll pay you double your hourly rate."

Mary looked at the clock and considered Carl's offer. She had been editing all morning, and the

time had gotten away from her. She decided it would be good to get outside, and the premium rate wouldn't hurt. "Sure, let me grab my things. I'll meet you there in 15 minutes."

As Mary arrived at the hotel, she saw Carl standing in an open parking spot just off the sidewalk. He waved her into the spot and met her at the back of her equipment van. "I'm glad you could make it," Carl told her. "Let's get that drone flying."

Mary pulled the drone out of the van and set it on the sidewalk. "So what exactly is this story?" Mary asked Carl as she turned on her tablet and started the drone. Within seconds, it was hovering just overhead. Carl gave her in the login information for his Periscope account. With one tap, the feed from the drone would start live streaming on Carl's blog.

"The story is all the way up there," Carl said as he pointed to the top floor. "You know that new housing project on the east side? I have reason to believe Ron Johnson cheated the bidding process, and the proof is in the penthouse as we speak."

Mary recognized the name from her work with the chamber of commerce. Ron served on the chamber's board of directors, and Mary had taped an interview with him for the promotional piece she put together. She began to wonder if helping Carl was still a good idea, but Carl's enthusiasm and her own curiosity led her to start flying the drone up to the penthouse. She wasn't recording anything yet, so what could be the harm in simply looking through the windows to see what Carl was so excited about?

Carl huddled next to Mary as the drone reached the penthouse, both of them carefully watching the tablet screen. Carl pointed to what looked like two people standing in a far corner of the room. "See if you can get closer," he said.

Mary guided the drone around to the opposite side of the building, near the corner where the two figures were standing. She glanced away from the screen to watch the drone glide around a corner, beyond her field of view. She knew she shouldn't lose sight of the drone, and anxiety started to build in the pit of her stomach. *This is only temporary*, she thought to herself. *Besides, I've flown the drone farther away before. I can bring it back in a jiffy.*

Back on the tablet screen, Mary recognized one of the figures was, in fact, Ron Johnson. He appeared to be talking to a woman that Mary had never seen before. The woman reached out and touched Ron's arm, and the two met in a sultry embrace. Just as Mary realized what she was watching, Carl snapped his fingers. "That's it!" he exclaimed. "Start the feed now!"

Mary began to panic. "Wait, what are we doing here, Carl? Who is this woman?"

"Just trust me," Carl reassured her. "This is going to be big news. People will want to know what's happening in that room right now."

Mary remained frozen, unsure of what to do. "Listen, if you're not willing to do it, just give me the controls and I'll take over," Carl said, reaching for the tablet. Mary recoiled for a moment, then looked up at Carl.

"I..." she began.

8. CONCLUSIONS

With its focus on the intersection of technology, ethics, and law, this case aims to demonstrate some of the dilemmas faced by the deployment of cutting-edge technology within an ethical and legal decision-making context.

One of the reasons for the increasingly successful results of Bird's Eye Photo & Video is the competitive advantage attributed to Mary's technological acumen. By using drones, complete with live streaming capabilities through the Periscope application, Mary has helped to create an increase in demand for her products and services.

Mary's reunion with a college friend, Carl, who had a brief journalism career before being fired for ethical violations, tests Mary's mettle. Mary is forced to decide whether or not she should comply with instructions from Carl, who hires her to do some filming for his blog. Specifically, Carl wants Mary to use her drones to privately film a meeting in a hotel suite between a city official, Olivia, and a local businessman, Ron. Olivia oversees the city's construction projects, and Ron routinely submits and is awarded bids for development projects for the city.

The case probes the separate technological, ethical, and legal issues involved and also examines the intersecting areas. It illustrates

that technological advances can raise a host of challenging and complex issues when viewed from the framework of making ethically responsible, and even legally compliant, decisions.

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Appendices and Annexures

DISCUSSION QUESTIONS

MIS and Business Questions

1. What are some of the challenges that will need to be overcome before drones are more broadly used and what kinds of needs and niches might drones fill in the future?
2. How could drones potentially change Mary's business?
3. What kinds of businesses could most benefit from drones?
4. How have drones evolved in the last couple of years? What other technologies were first used by the military and then by the public (i.e., went from proprietary technology to infrastructural technology)?
5. In addition to technological issues, what other issues are customarily faced by entrepreneurs as they launch their business idea to market?

Ethics Questions

1. Should Mary push the button and stream the scene live?
2. What are some potential disadvantages/downsides and some potential advantages/upside of the ubiquitous availability of drones?
3. Does Mary owe any duty to the chamber of commerce? What ethical issues are presented by the apparent personal relationship between Ron Johnson and Olivia Brown?
4. Should law enforcement agents be allowed to use drones for security reasons?
5. What are some of the implications of using live streaming applications such as Periscope?

Legal Questions

1. If Mary starts the live video stream, is she committing a crime? What kind of penalties could she face?
2. If Mary starts the live video stream, could she face civil liability? Is her business liable?
3. Should Mary continue running Bird's Eye Photo & Video as a sole proprietor? What are her options? How could she benefit from forming a business organization that could provide her with liability protection?
4. How do laws regarding recording of private conversations vary among states?
5. What legal issues are presented by Mary entering into a lease agreement for the use of her drones? What legal issues are raised by Mary hiring a contracted assistant for occasional help with her business? What legal issues are posed by Carl being fired by Sarah?