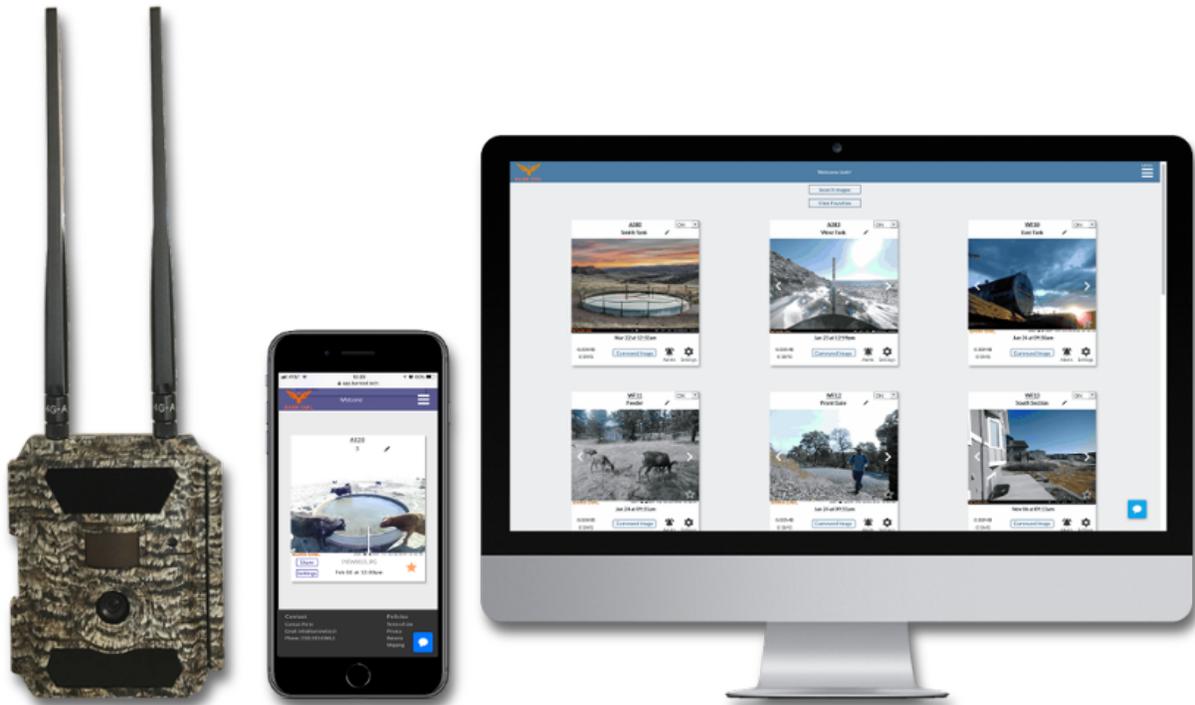


The Guide to Remote Monitoring



Choosing the right cellular camera solution



Introduction

Industries with valuable assets have been using surveillance systems for decades. However, surveillance systems used by most industries are complicated, expensive, and require infrastructure for power and communications.

In recent years, the development of cellular-connected cameras has enabled surveillance in remote areas that don't have the infrastructure to support traditional camera systems. This document will discuss why you should consider adding cellular cameras to your operation and what to look for when deciding on which system to purchase.

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1. Why Use Remote Surveillance?

The reasons to use cellular cameras depend upon your specific operational needs, but it's clear that remote camera systems create significant benefits in a wide variety of scenarios. The benefits include real-time awareness, security, cost savings, improved operational efficiency, and peace of mind.

Based on survey data, our ranch customers reduce monitoring labor (mostly for checking water) by an average of 60%. This results in a huge time and cost savings for ranchers with large operations.

Check out our [Savings Calculator](#) to see how much you could be saving.

"On our ranch, our most valuable resource is our time. A network of cameras providing images twice a day on schedule, or at any time at my command has saved 15-20 hours per week. The time that otherwise would have to be spent examining these water supplies in person, has been diverted to spending more time with the cattle and most importantly my family."

Nebraska Rancher

View the Case Study: www.barnowl.tech/info/nebraska-ranch

"It has allowed me more time to get other things done around the ranch and has given me the ability to be gone for a day and still know my cattle have water."

Luke Perman, South Dakota Rancher

View the Case Study: www.barnowl.tech/info/south-dakota-ranch

2. How Cellular Cameras Work



Cellular cameras transmit photos or videos through cellular networks, so you do not need any infrastructure, such as a wired internet connection or wifi, to install the cameras. However, you will need cellular signal at the location you want the cameras. While this is a challenge in some areas, like mountains and ravines, the large majority of areas are covered. Cellular signals now cover 98% of the US population and about 76% of US land.

To get a camera to connect to a cellular network, you must purchase a SIM card—a small card that’s inserted into the camera that “talks” to the cell tower. Because the cameras use cellular networks, you will pay a data fee to cellular network providers. However, the benefit of having surveillance and the savings from not needing to install internet infrastructure can easily outweigh the cost of cellular data fees.

When you buy a cellular camera, it’s not just about the camera. You must also understand how the cellular data plans work, how much they cost, how flexible they are, and how easy they will be to manage. This is particularly important if you need to install multiple cameras. Section 4 will discuss cellular data plan considerations.

Why Not Satellite?

We are keeping a close eye on the development of satellite technologies for remote surveillance. While satellite can be used in high-end applications for government and enterprise surveillance, the data costs are well beyond what the average consumer or business owner can afford. We believe this will change in the next decade due to improving technology and the increasing number of satellite providers. However, cellular surveillance is much more affordable and feasible for the vast majority of businesses at this time.

3. Camera Types and Capabilities

Cameras come in a variety of shapes, sizes, and prices. Even when they look the same, the capabilities vary widely. As a consumer, it's good to understand the basic types of cameras, but, more importantly, you need to understand if the cameras will meet the needs of your remote surveillance situation.

- **Camera Types**

- **Home & Office Security**



- These cameras are typically compact and consumer-friendly, but they may not have the reception strength needed for remote surveillance applications.
- Data plans for these cameras are currently very confusing and limited.
- Example: Arlo Go

- **Industrial Surveillance Camera**



- Industrial cellular cameras are used for high-end construction projects and security applications. These cameras have great capabilities, but they also come with high price tags, usually thousands of dollars per camera. They also require significant power. As a result, they are not a scalable solution for rural businesses or consumers on a budget.
- Examples: Sensera Systems, TrueLook

- **Remote Scouting or Cellular Trail Cameras**



- Originally designed as hunting cameras, or “scouting” cameras, these cameras are affordable and effective remote surveillance cameras when they have the right features. Due to their flexibility, these cameras are used in a wide array of remote monitoring and security applications
- Examples: [Barn Owl](#), Spartan, Spypoint



- **Camera Features**

The following features and factors should be considered when selecting a cellular camera system:

- **Media Type**
 - Do you need videos, or are photos sufficient?
 - Photos will use significantly less data and have much lower monthly data fees.
- **Image Resolution**
 - Do you need high-resolution images for detailed monitoring needs, such as seeing license plate numbers, or will lower-resolution images suffice?
 - Lower-resolution images will significantly reduce data usage.
 - Most cameras will only transmit lower resolution images. If you need high resolution, make sure to get a camera that transmits high resolution images.
- **Video: Live Streaming vs Near Real-time Video Clips**
 - If you do require video, do you need real-time streaming, or are near real-time video clips sufficient?
- **Trigger Type**
 - Do you need motion-activated cameras, time-lapse cameras, or both?
 - Do you need on-demand photos and/or videos?
- **Camera Field of View**
 - Do you need a wide field-of-view to watch a wider area, or are you only monitoring a narrow area, such as a wildlife trail?
- **Battery Life**
 - Do you need long-term surveillance, or will the camera be on location only temporarily?
- **Cellular Signal Strength**
 - Are you in an area with a strong signal?
 - If you have weak cellular signal, does your location and cameras allow you to use larger, high-gain antennas?



Find this confusing? Check out our [Cellular Camera Comparison Chart](#).



4. Cellular Data Service

The ease and cost of cellular data is a major factor when selecting a cellular camera. Cameras come with a wide variety of cellular service options. Some cameras are completely “do-it-yourself”, and some cameras come with built-in cellular connectivity and management.

You should consider the following factors when selecting a cellular camera provider:

- **Number of Cameras**
 - One camera is relatively easy to manage, but the more cameras you have, the more important it is that cellular service is built into the camera’s service.
- **“Pooled” Data?**
 - Pooled data allows you to put all the cameras under the same data plan, so they share data. This allows you to save on data costs and is easier to manage because you only have one bill.
- **Data Demands**
 - For low data users, it’s usually cheaper and easier to use a provider that has cellular connectivity built into the service.
 - For high data users, you may save money by managing cellular service directly with the carrier, but you will likely have to commit to contracts to obtain data pricing low enough to make it worth your time.
- **Data Variability (Pre-Pay vs Pay-as-you-Go)**
 - Motion-activated events are unpredictable. One month you might have 200 events, and the next month you might have 2,000. Most cellular providers require you to purchase a data plan upfront, which means you may or may not use the data.
 - To reduce the risk associated with paying for data you won’t use, we recommend looking for a provider that pools data across cameras because the variability across multiple cameras is usually less than an individual camera.
 - To further reduce data plan risk, it can be beneficial to use a provider with a “pay-as-you-go” system, where you only pay for the data you actually used at the end of the month. This results in zero upfront risk.



- **Seasonality**

- Do you need to run the cameras all year, or do you need the flexibility to pause the data charges in the off-season?
 - If you're running cameras year-round, committing to a contract with a cellular carrier can be a viable option.
 - If you run them seasonally, look for a provider that provides flexible contracts, or, better yet, no contracts at all.

Our online [Cellular Camera Comparison Chart](#) details data plan options available from different cellular camera companies.



5. Ease of Setup

Setting up a camera system can be a big hassle. The ease (or difficulty) of the setup process is a big differentiator between camera systems and should be an important consideration, especially if you are new to cellular cameras.

Some camera companies require you to activate the camera and the cellular service separately, which is cumbersome and time-consuming. If you're looking to set up a larger network of cameras, you'll be frustrated going through the setup process for each camera.

If you set up your own cellular service, the difficulty of getting started can vary widely. Cellular companies can be hard to deal with since their services and data plans are designed for phones and tablets, not cameras. You might end up spending hours on the internet or the phone trying to figure out the best way to initiate and manage cellular service for your cameras. You might even find yourself at a cellular carrier store talking to a representative who has no idea how to work with cellular cameras...trust us, we've been there.

At Barn Owl, we do the hard work of managing cellular service for you, and we've made our camera setup the easiest in the industry.

"Barn Owl's system can be set up by anyone. If you are unsure or have a question, the support provided by phone or instant message is superb."

Nebraska Rancher

View the Case Study: www.barnowl.tech/info/nebraska-ranch

6. Ease of Use

Cellular cameras require a variety of components. Making sure all of your accessories are reliable and compatible can take a significant amount of time and experimentation. If you're looking for an easy to use solution, we recommend looking for a camera provider that bundles all the accessories you need into the package.



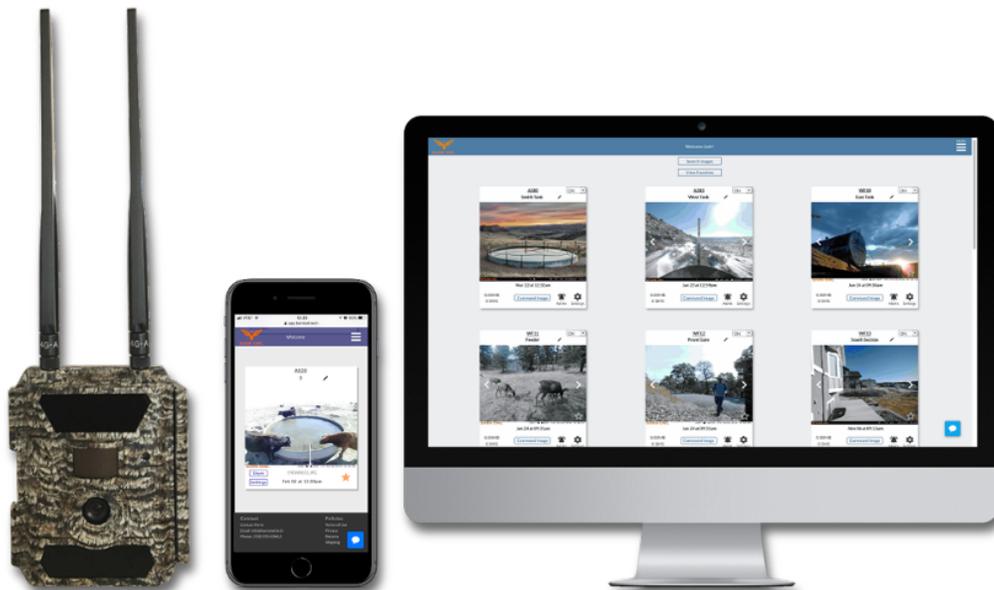
Configuring the camera settings to meet your surveillance needs can be quite confusing if you don't know the technical details of the camera. To make it easier, we recommend purchasing a camera system where all the settings can be configured remotely, either from a smartphone app or a website. It's a big hassle to have to travel out to the camera each time you want to change a setting.

Refer to our [Cellular Camera Comparison Chart](#) to select a camera system that meets your needs for ease of use.

7. Multiple-camera Setups

Adding and managing multiple cameras can be a pain with some providers. Most cellular camera systems require you to set up cameras on individual cellular data plans, so you have to keep track of which SIM cards are active. This can get quite cumbersome if you have numerous cameras.

While most cameras have an app or website you can use to monitor your cameras, make sure the camera provider you are considering has an app that makes it easy to view and manage all of your cameras. Most apps require you to view each camera independently. This is fine if you only have a few cameras but becomes cumbersome as you add cameras. Additionally, most apps lack the features required to fully manage your cameras and cellular data.





8. Customer Support

No camera system is perfect, and issues are inevitable no matter how much you pay for it. Keeping this in mind, you should always be able to reach helpful (and human) customer support via phone, live chat, or email to get your issues resolved ASAP.

The level of support cellular camera providers can provide largely depends on how the cellular service is setup. If the cellular service is independent of the camera, the camera company will have limited insight when a malfunction occurs. When the cellular service is integrated with the camera, customer support will have better information to be helpful when a camera issue arises.

At Barn Owl, we've built customer support into our products from the beginning. Because we manage the cellular service and software, we can see technical details of issues when they occur, often before customers are even aware there is a problem. We can even remotely troubleshoot and resolve some issues remotely.

"The support from the Barn Owl staff is very responsive. The person who answers the phone has always been the one who gets my problems solved. The technology has been very reliable, but it is the technical support that gives me the confidence to recommend Barn Owl to anyone."

Luke Perman, Barn Owl Customer

View the case study: www.barnowl.tech/info/south-dakota-ranch



8. More Information

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