Securing the Future

The Emergence of Wireless Technology Within Access Control

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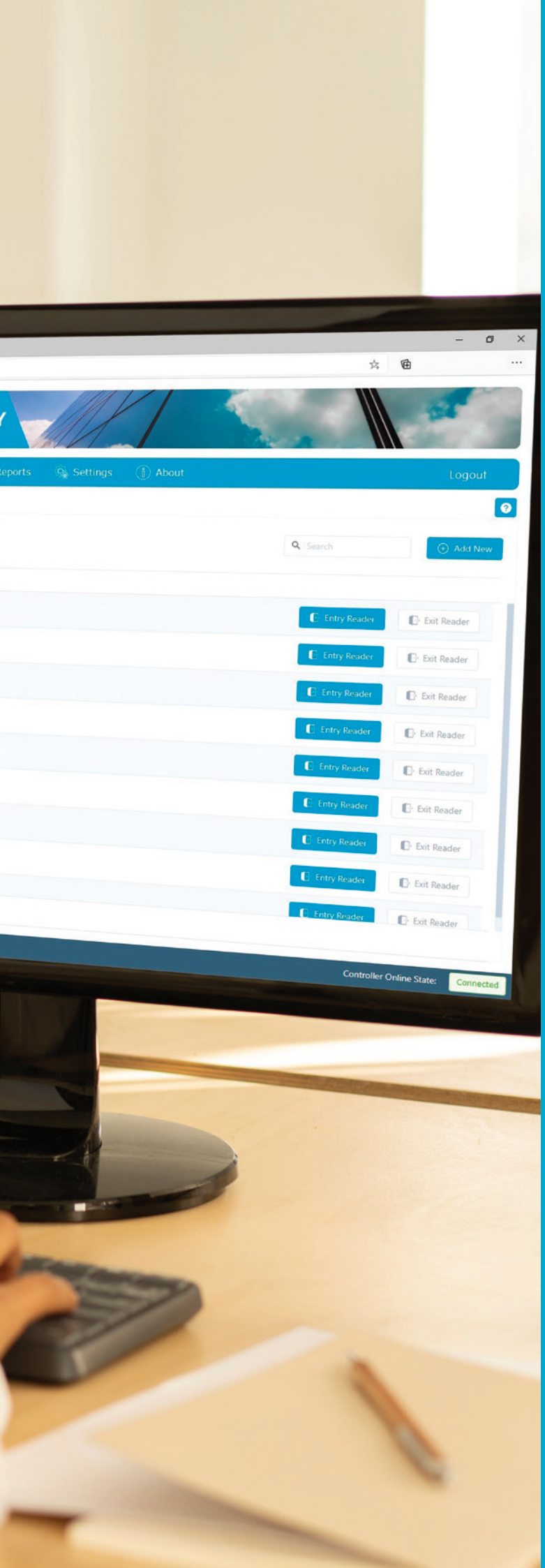

INTRODUCTION

In many fields, including consumer goods, smart home technology, and security products, wireless technology continues to experience both falling prices and rising acceptance. Recently, the number of products intended to install or function wirelessly has increased in the access control market, coinciding with greater demand for cloud-based management solutions and mobile phone integration. However, many integrators are still hesitant to specify wireless systems unless they have no other option and thus risk falling behind the current trend.

Smarter access control is becoming increasingly necessary as building security technology advances and user requirements evolve. Although wired security doors and access points have long served as the foundation of access control systems, the most recent generation of wireless locks can easily replace them and integrate with almost any access system, without any loss in performance or functionality. Additionally, leading Internet of Things (IoT) technology and security providers are collaborating with leading smart lock manufacturers to further advance security capabilities and boost overall reliability.

There are many practical reasons to go wireless as well. Wireless installation is less intrusive and much faster than traditional systems. Compared to wired access control, leading wireless locks require little to no drilling around the door or opening, whereas the latter requires cabling through and partially around the door. With an integrated wireless access control system, you can increase building security without requiring staff to manage multiple credentials or causing disruptions to regular business operations. You can not only expand security coverage, but also eliminate the administrative overhead of managing physical keys.

Hardwired systems still have the majority of market share based on old habits and behaviours. This whitepaper looks to address those concerns by highlighting opportunities for wireless technology in access control projects and dispelling misconceptions around cost, suitability and functionality.

The fast-moving shift towards wireless access control

A wireless access control system grants authorised users access to a building using a platform that enables door access permissions to be transmitted over wireless signals. Wireless systems generally rely on wireless communications technology and battery power to operate, unlike traditional systems which are hardwired into the building's power supply and directly connected to a central control hub.

The following components make up a wireless access control system:

- Access controller panel.
- Electronic and magnetic locks.
- Wireless card reader access control device that verifies credentials.
- Access credentials, such as key fobs, key cards, or mobile devices.
- Software to manage the entire system.

Note that wireless refers to a form of communication from one device to another. It is commonly associated with cloud-based solutions, which refer to the ability to manage, configure and update systems remotely from any device.

The use of wireless technology has increased significantly in recent years for several reasons. Customers now want to replicate their expectations and experiences with wireless technology in their offices and other commercial spaces.[1] Organisations are also recognising the benefits of wireless access control in terms of cost, flexibility and accountability. In special circumstances where cable installation is problematic, such as concrete buildings, historical landmarks, buildings containing asbestos, and outdoor locations, wireless solutions expand the ability to electronically control access. In addition, they can realise valuable security and user convenience benefits, especially given the growth of hybrid workforces, through integration with smart phones.[2]

Adoption of wireless solutions is being helped by easy-to-use products that prove to users that the technology does not have to be 'all or nothing'. In most cases, it is possible to combine wired and wireless technology, and even a number of different wireless protocols, within a single installation.[3] It is also very simple to integrate wireless devices into an existing access control system because many of the popular wireless access control solutions have strong compatibility with the leading electronic access control software platforms.

Dispelling the myths

Even with all the enhancements, developments, and design options, there are still substantial obstacles to businesses adopting wireless access control systems. Some people may have issues with wireless locks because they dislike them personally, think they lack the expertise or doubt their dependability, or all of the above. Early adopters experienced issues with installation and communication, and may not be aware of technological advances that could make their lives easier.

The market for wireless access control is growing and is likely to eventually overtake traditional wired access control. However, for this to occur, pain points regarding connectivity and reliability, price, integration and expansion capabilities, and energy efficiency need to be addressed. Below we dispel some of the major misconceptions surrounding wireless access control technology.

IS WIRELESS RELIABLE?

Wireless access control systems suffer from a perception that they are plagued with connectivity issues and are not reliable. There is a fear of a 'loss of connection' and uncertainty about what happens if the wireless connection drops out or the battery dies.

As technology has advanced and grown quickly over the past few years to eliminate and minimise connectivity issues, these worries are now entirely unfounded. While interference can cause communication errors, manufacturers of wireless systems can provide guidance as to the correct placement of nodes to provide the necessary coverage. If an internet connection is required for reporting and alerting, systems with cellular backup provide a dependable option.

Battery life has also increased significantly, with some leading locks running for approximately two years before needing a battery replacement. In any case, leading access control solutions offer comprehensive servicing and maintenance plans that ensure batteries are in

IS WIRELESS TOO EXPENSIVE TO INSTALL?

Compared to a hardwired system, a wireless access control system can deliver significant cost savings. A hardwired access door costs between $3,500 to $4,000 per door, whereas a wireless access door is $1,200 to $1,500 per door. Labour and cost of goods are the biggest areas for cost reductions, with easier installation, configuration and programming adding even further savings. In addition, installing a wireless system is less disruptive to a building site as it does not require invasive building work, which helps increase efficiency and helps ensure on-time and on-budget project delivery.

Most people do not factor waste into the equation when comparing the cost of access control systems. By using wireless technology, consumers can more accurately match their individual capacity requirements and save money on hardware purchases and software license expenses. It will also make upgrading the system easier and cheaper when business requirements change in the future.

IS WIRELESS TOO EXPENSIVE TO RUN?

The common misconception is that wireless access control systems are energy intensive and have high operational costs. The truth is wireless locks utilise a minuscule fraction of the energy that 'always-on' wired magnetic locks use because they are battery-powered and only 'wake up' when a credential is supplied. Wireless locks have very low electricity costs, and the only expenses would be the cost of purchasing and installing fresh batteries as well as labour charges for routine maintenance and battery inspections.

Remember that operating costs of conventional wired access systems will only increase if the cost of electricity, which is based on fuel prices, continues to rise.

HOW FLEXIBLE IS IT REALLY?

Most manufacturers are aware that the wireless access control market is expanding and that they must meet the rising demand from clients for integrated wireless solutions and increased security capabilities. The majority of wireless access control systems support other building services, including CCTV (closed-circuit television) and energy management features, and can operate in complete integration with a wired system.

There are a multitude of products offering multi-authentication via PIN, smart card or smartphone, and even biometrics. Beyond doors, even non-traditional openings such as server racks, cabinets and display cases can be integrated and controlled with modern wireless systems. New doors and openings can be linked to the same system wirelessly, without requiring staff to swap key cards or carry more than one credential.

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A new standard for security

According to survey results reported in the International Security Journal in 2021, 38% of end users have now installed wireless locks as all or a portion of their access control system.[4] This figure is up significantly from ASSA ABLOY's 2014 Report, which had the corresponding data point at 23% for that year.[5] In little more than five years, the role of wireless access control has grown rapidly.

As more doors become connected, wireless access is beginning to be used to offer features beyond access control. Customers are requesting more real-time data from wireless systems. This allows organisations to better manage their property and prepare for potential emergencies. In the event of a fire or other emergency, wireless systems are being used to count heads and track where people are in buildings.

The modularity and flexibility of wireless systems makes these new security applications possible.

The growth of wireless access control in the commercial sector is being matched in the residential sector. The challenge of providing a comfortable, secure, and technologically-advanced lifestyle to property owners and residents is growing as smart home living becomes more popular. Residents demand seamless access without managing multiple keys. Property management wants to make it easy to onboard new residents, and grant access to contractors and visitors, without being on-site. All parties want physical security and protection for their assets in a hassle-free and cost-effective manner. When compared to hardwired solutions, wireless technology offers more potential for application in a wider variety of projects.

How ASSA ABLOY is changing perceptions about wireless access control

Today's access control users have more complex and sophisticated demands. They desire access control that does more than just unlock doors, including support for mobile credentials, integration with other security systems, cloud management, and sustainability. In this regard, ASSA ABLOY Opening Solutions has succeeded, offering a range of wireless access control solutions that meet users' various needs and requirements.

ASSA ABLOY's wireless access control solutions can upgrade existing security or build a completely new access system. You can choose between programmable key-based electronic access control and a system with smart cards or mobile keys stored on a smartphone.

ASSA ABLOY's battery-powered solutions protect small and large organisations with devices for any type of door, as well as non-door openings such as cupboards, gates, elevators and more. A choice of software and administration options enables security managers to run access control from an app, locally from a dedicated PC or securely in the cloud, with a fully hosted solution if required.

- **Highly Secure:** For entrance to a building or door, wireless access control systems require unique credentials via keycard or key fob. This enables you to prevent unwanted entry and grant access to only necessary personnel.
- **Customisable:** You can grant entry to particular staff members, guests, or personnel using wireless locks and access control systems. You now have total control over who enters particular parts of your facility.
- **Variety of Options:** Intelligent wireless locks and real-time technology, like those in Aperio® wireless locks, are made possible by wireless access control and building entry systems.
- **Easy To Upgrade:** ASSA ABLOY's wireless locks and entry systems are easily retrofitted into existing doors.
- **Mobile Access:** As the "control centre" of our lives, smart phones have made it simple to link mobile access solutions with locking and entry systems.

In special circumstances where cable installation is problematic, such as concrete buildings, historical landmarks, buildings containing asbestos, and outdoor locations, wireless solutions expand the ability to electronically control access.

ABOUT ASSA ABLOY

The ASSA ABLOY Group is the global leader in access solutions. Every day, the company helps billions of people experience a more open world. ASSA ABLOY Opening Solutions leads the development within door openings and products for access solutions in homes, businesses and institutions. Their offering includes doors, door and window hardware, mechanical and smart locks, access control and service.

Key Benefits

- Complete end-to-end solutions for access control
- Cloud-based systems
- Dominance in high level integration market
- Non-proprietary system with seamless integration with all leading 3rd party technology
- Global partners
- Market-leading warranties
- Comprehensive training, technical support and expertise
- Track record and pedigree of delivering successful projects outcomes
- Market-leading products and brand

References

1 Hodgson, Karyn. “Pros & Cons of Wireless Access Control.” SDM Magazine. https://www.sdmmag.com/articles/92109-pros-cons-of-wireless-access-control (accessed 24 November 2022).

2 Ibid.

3 Ibid.

4 Thorpe, James. “Exclusive: The data which predicts the future of access control.” International Security Journal. https://internationalsecurityjournal.com/the-future-of-access-control (accessed 24 November 2022).

5 Ibid.

All information provided correct as of December 2022.

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