APP DEVELOPMENT, THOUGHT LEADERS

Should Small Businesses Invest in IoT Despite Security Risks?

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by Mark Anderson

The Internet of Things (IoT) is a growing market. For small businesses, the technology has the potential to save money, time, and energy. Understanding the security risks and establishing safeguards against them is imperative as IoT becomes more popular for small businesses.

The growing Internet of Things (IoT) market offers new solutions and opportunities for small businesses.

IoT refers to a developing network of Internet-connected devices, such as wearables and smart televisions. When securely configured and properly implemented, IoT has the potential to reshape small businesses by saving costs, time, and energy.

Small businesses are only just beginning to tap into the potential IoT offers. However, security is vital for small businesses, and Internet-connected devices present many challenges. It is important to understand how to protect your business from the risks associated with IoT before embracing the technological advances.

Despite Security Risks, IoT Sees Rapid Growth

IoT devices are growing at an explosive rate. There are already 6.4 billion IoT devices in the United States, and a recent survey reveals that small businesses are showing interest in IoT technology, such as wearables.

A 2017 small business survey conducted by Clutch found that 43% of small businesses plan to create a

wearable app in the future, while 8% already have a wearable app.

Overall, only 30% of small business surveyed say wearables will not be in their future.

The burgeoning popularity of the IoT market is impossible to ignore, even as security technology races to catch up to demand.

Symantec notes increasing attacks on smart cars, smart home devices, smart monitoring devices, and smart TVs. Despite these threats, it's projected that by 2020, the US will be home to 20.8 billion devices designed to make life easier for users, but they may unintentionally create new avenues for unauthorized access.

Small Businesses Use IoT for Mobile Payment, Temp Control, Surveillance

Many small businesses already use IoT, with some popular devices including Square, a mobile device payment service, Nest, a smart thermostat that adjusts based on user preferences and schedules, and AT&T Digital Life, a monitoring and surveillance system.

First, Square, an easy-to-use payment processor, allows businesses to bypass expenses like cash registers or standard credit card readers.

It helps businesses be more mobile. For example, a custom jewelry maker may set-up-shop at a local farmer's market on the weekend, use Square to process credit card orders, and then return to a brick-and-mortar store on the weekdays.

Second, devices like the Nest Learning Thermostat or ecobee3 Smarter Wi-Fi Thermostat, track user preferences and schedules and then auto-adjust temperatures to reflect these patterns. Some, like the Nest Protect, serve as smoke and carbon monoxide detectors and

send remote alerts to a designated phone to keep offices safe, even when no one is around.

Third, IoT services, such as AT&T Digital Life, provide new types of monitoring that send alerts to mobile devices and allow users to control home and office systems remotely. Everything from faucets to door locks can be managed via a smartphone with an Internet connection.

IoT Has Cost, Time, Energy Saving Benefits for Businesses

IoT technology changes how businesses approach different tasks, often streamlining them to reduce costs, save time, and conserve energy.

1. Lowers Costs by Collecting More Accurate, Individualized Data

IoT makes the process of filing claims and pricing premiums more accurate for insurance companies and customers.

For home insurance, smart sensors compile data about your home, including water usage, energy consumption, and temperature and alert you to a pending catastrophe, like a leak, before it happens.

For life insurance, data from wearable devices like Apple Watch or FitBit visualize customer health information, making it easier for companies to create accurate risk assessment models.

Similarly, in the auto insurance market, smart devices, like Snapshot from Progressive Car Insurance, track driver behavior to assess risk more accurately.

2. Saves Time by Making Business Processes More Efficient

IoT saves time by making crucial data available in real-time. Consider Bigbelly, a small company that creates solar-powered trashcans.

The cans have sensors that monitor fullness and send notifications when they need to be

emptied, enhancing trash collection efficiency and reducing costs.

3. Contributes to Environmental Sustainability

IoT has energy saving potential. An article about using smart tech to make your business more sustainable argues that decreasing your business' environmental impact not only helps the planet but also saves money. The writer goes on to suggest that smart lighting, like LED bulbs, or smart climate control, like room occupancy sensors, can reduce energy usage by up to 15%.

Brian Jepson, writing for O'Reilly, notes, "You pay for the energy you waste; not only is energy expensive, but poor resource usage is intimately connected to operational inefficiencies." These innovations benefit the environment and generate cost savings over time with more efficient energy use.

4 IoT Security Risks & How to Avoid Them

IoT technology's proven benefits drive the market for these devices. However, it is important to know the risks that Internet-connected devices pose. IoT's rapid innovation comes at the expense of strong cybersecurity measures, leaving many devices vulnerable to hacking, without the safeguards of more established technology.


IoT's rapid growth comes with security risks

To avoid falling prey to security breaches, it's important to understand these vulnerabilities so you can implement safeguards.

Risk #1: Personal Data Storage

As with any technology, if a security loophole exists, hackers will try to exploit the vulnerability.

Internet-connected devices that store credit card numbers or other personal information can be used as a key to your small business network. Hackers can hold devices for ransom or even use hardware to launch attacks against others.

Many IoT devices collect passive data in order to create a personalized user experience, and they often are vulnerable to leaks. In the case of Nest thermostats, zip codes and the locations of nearby weather stations were leaked.

Risk #2: Lack of Regulations

In the relative infancy of IoT, devices are often unregulated. With the uptick in attacks, it is important for developers to create "a standards-based approach" to security and keep IoT updated, according to Charlene Marini, VP of Embedded at ARM.

Standards that mandate regular updates, identity management, and authentication make huge strides in reducing the risk associated with IoT.

Risk #3: Non-Existent Commitment to Upgrades & Security

When choosing IoT devices, it's important to look into the vendor's dedication (or lack thereof) to upgrades and security. Could the providing company go under, like what happened with Revolv's smart home hub, wasting invested time and money?

An unmonitored or otherwise abandoned piece of Internet-connected technology could be a huge security risk.

Risk #4: Unknown Surveillance, like Video or Voice Recording

Another potential risk when inviting Internet-connected devices into the workplace is unknown surveillance. A remote user potentially can activate any device with a microphone or camera.

This is how sites that seek out the IP addresses of webcams with unprotected open ports stream

millions of private video and image feeds to viewers willing to pay. Images may come from cameras in stores, public swimming pool locker rooms, or school classrooms.

It's important to become familiar with a device's terms and conditions, as well as its software permissions, in order to mitigate the chances of eavesdropping. Devices that listen for voice searches like Amazon's Alexa may not be a good match for small businesses dealing with sensitive information.

How to Tackle Security Risks? Get Educated

Small business employees need education on best practices for interacting with IoT devices.

First, when working with private information and IoT, ensure a professional IT expert reviews the network and provides adequate security for all IoT devices.

Second, consider limiting administrative functions to a select group of people. The more people that access security settings and sensitive data, the more likely cyber criminals are to find vulnerabilities.

Finally, beyond technology-specific risks, think about how a coverage gap due to a power outage or Internet loss may disrupt business. Internet accessibility is vital to most small businesses, and employing connected devices could compound downtime.

Checklist for Choosing IoT Devices for Business

When deciding which IoT devices to use as a small business, consider the following checklist.

Know the Risks

1. Where is data stored once it's collected?

2. Does the product cause security vulnerabilities? Are these vulnerabilities easily fixable or

preventable?

3. Does IoT implementation align with the needs of your business?

4. Does the IoT vendor you choose approach the technology with the same discipline as other IT systems, with regular updates, patches, and management?

Know the History of the Service Provider

1. How long has the service provider existed?

2. Does the product have a positive track record?

3. How has the service provider responded to past problems?

Know the Budget

1. What do you spend on an equivalent service?

2. What are the upfront costs for the service?

3. Are there future costs for the service? Upgrades? New equipment?

Know the Market

1. Have you accurately weighed the balance of demand for new IoT technology against the risk of loss for your small business?

2. Can you provide clients with information about where their data is going, including potential security vulnerabilities?

3. Have you researched IoT threat history to prevent making the same security mistakes as other small businesses?

IoT Has Potential for Small Businesses But Weigh Pros & Cons

IoT is an expanding market with exciting potential for small businesses. However, it is important to carefully weigh the features and vulnerabilities of a particular device before adding it to your technology infrastructure.

The implementation of IoT can bring many advantages to small businesses, including convenience, cost savings, and innovation, or it can invite criminals looking to take advantage of gaps in security.

Despite these risks, when properly secured and maintained, IoT offers a world of new opportunities for small businesses.

About the Author

Mark Anderson is Co-founder of Anderson Technologies and an IT Strategist who loves digging into technical challenges – the thornier the better. Clients are initially drawn to Mark because of his expertise across a wide variety of computer infrastructure. They soon come to love and appreciate his patience, his desire to implement the best and most cost-effective solutions for any given opportunity, and his eternal equanimity, no matter what computer crisis presents itself.

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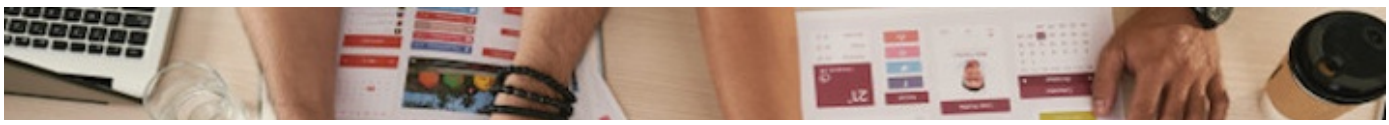

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