



- [About ITInsightME](#)
- [Contact Us](#)
- [ITInsightME News](#)
- [Media Partnerships](#)

[Home](#) >> [Information Technology News](#) >> [Across-the-board solutions to](#)

Main Menu

- [Home](#)
- [Headlines](#)
- [Information Technology News](#)
- [Telecommunications News](#)
- [Media News](#)
- [Gadgets News](#)
- [Insights](#)
- [Events](#)
- [People](#)
- [Economic Impact](#)
- [Video](#)

Across-the-board solutions to in-building data access



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Across-the-board solutions to in-building data access



Colin Abrey, VP of Sales and Marketing at Zinwave gives his view on the best way for CTOs to enable consistent Wi-Fi and mobile data access

With increasing reliance on the internet for everyday business, and greater use of cloud apps and cloud storage, the data bandwidth requirements of IT businesses have never been so high.

With the proliferation of ways to access data, through different Wi-Fi and mobile standards, IT managers are under all kinds of pressures to enable a consistent wireless experience, while at the same time trying to implement solutions that are not obsolete the moment a new wireless standard emerges.

With the increasing mobility of the IT workforce, both inside and outside of the office, the problem is not so much how much bandwidth a user can get, but where they can get it, and how consistently available it is.

Unfortunately traditional Wi-Fi access points rarely deliver an entirely consistent experience around a building. The further a user is from a Wi-Fi access point, the worse their signal becomes. Also, many workers have been in the situation where, even within their own place of work, they cannot access Wi-Fi within a certain room, or where their laptop has momentarily lost signal while moving from place-to-place, interrupting processes or causing abortive internet sessions.

IT managers also know that you can't just throw more Wi-Fi routers at this problem. Within a large site, deploying a Wi-Fi access point in every room is not cost effective, involves prohibitive amounts of cabling, and is extremely time-consuming to install and maintain.

Nor does this solution cover mobile data access needs. Interestingly the vast majority

of both 2G and 3G traffic occurs indoors. Workers on-the-move increasingly use mobile dongles to access their data anywhere. Yet workers moving around with laptops and/or phones moving from an outdoor to an indoor environment are forced, by the poor coverage inside the building, to connect to a different network whenever they step through the front door.

This problem is exacerbated by the continuing growth in the Middle East of 3G data access. 3G data uses higher frequencies than 2G. This means that in-building penetration of 3G radio is weakened considerably, resulting in reduced data rates or complete loss of signal. This effect will be magnified in higher-frequency emerging standards for accessing data via mobile services such as LTE and WiMAX.

And poor in-building wireless coverage, whether Wi-Fi or mobile, is only going to get worse, with the increasing use in new builds of heavy steel, thick concrete, reinforced glass and various eco-friendly materials. The Middle East makes heavy use of polarized and highly-reflective glass, which also further attenuates RF signals.

Poor Wi-Fi and mobile data access on-site can lead to decreased productivity and other issues. It's therefore critical for the sake of continuing competitiveness that businesses in The Middle East address this issue.

What are the requirements of an in-building wireless system?

A number of solutions have been tabled to the issue of gaining consistent wireless data access within buildings. However, most of these can only support a single service; i.e. Wi-Fi, or UWB or 3G or LTE-only.

Businesses, however, not only require the use of several different radio standards to access data, but also have to spend a lot more money in order to cover large sites; with significant costs to business efficiency should the deployment prove ineffective.

When deploying a wireless system across a large building, businesses need in-building wireless (IBW) that offers 'multi-service' functionality, value-for-money, and that is as future-proofed as possible. The only effective way to achieve this, is through Distributed Antenna Systems (DAS).

At the simplest level, distributed antenna systems take RF signals and distribute them around the building via a series of antennas. These antennas are usually ceiling or wall-mounted. These systems can typically work across multiple wireless standards, 'Passive' DAS systems use a network of coaxial cables, couplers and power splitters across Ethernet cabling. This is the lowest-cost solution, and is fairly popular among small businesses looking to implement an IBW system.

However, 'Passive' DAS is so-called because it does not employ any active or remote automatic monitoring systems. This leads to some fairly major drawbacks, such as higher support costs and the potential for greater downtime.

'Passive' DAS also employs heavy cabling which is difficult to install. Most significantly, 'Passive' systems are prone to signal die-off over long cable distances, meaning that, in large buildings, they cannot reliably provide a good wireless signal.

'Active' DAS systems are a little more sophisticated, using better and more reliable optical or RF cable. 'Active' systems also tend to employ remote and automatic monitoring systems, leading to much lower maintenance costs and time.

Funding the system

Interestingly, and depending on which country a business is in, one of the strongest cases to be made for in-building wireless as a way for improving data access is the variety of methods open to paying for it.

There's a strong case for costs to be spread across IT and communications, (should the two departments be separate). IBW systems can also carry voice communications. In any case, most IT departments bear at least part of the brunt of handling VoIP communications, where applicable.

There is also a case for building maintenance to contribute to this bill, given the regulatory and security benefits mentioned below.

It could be argued that your company's agreed mobile network has a vested interest in seeing an IBW system, installed in your business's building. Networks glean higher revenue from business users than any other group. This vested interest could be translated into a monetary contribution towards the installation of the system itself. Should a business be considering installing an IBW system it may, therefore, be worth, consulting the mobile networks.

Advantages to the business

At its most obvious level, whatever the solution, achieving clear and consistent wireless communication helps companies maintain a competitive edge through more consistent access to their data. Amongst other baseline benefits, companies can react more quickly to online events, provide more immediate customer responses, and access their systems via mobile devices while in meetings if necessary.

Good wireless data access may encourage more collaborative working, increase productivity and improve staff morale. Online storage and heavy use of cloud apps can become a much more viable proposition. IT security concerns can also be addressed with reference to a single system, rather than a complex proliferation, leaving the CTO more time to manage IT systems centrally.

Certain data-access advantages of IBW are specific to individual industries. For example in the service industries customers clearly factor the availability of wireless data reception when purchasing or reusing services in venues such as hotels, cafes, shopping malls and airports.

For other industries such as factories, power and treatment plants, IBW may simply be the only solution. Large portions of these businesses may be situated in areas totally impenetrable to radio signals; underground or behind thick walls and equipment.

And, as mentioned, IBW often has cross-disciplinary advantages for other departments within a business. Some CTOs have been fortunate enough, for example, to become involved in unified communications projects. These form the classic coming-together (or collision) of the IT and communications disciplines.

Frequently such projects place a lot of stress on the delivery of any media, whether email or voicemail, via a single communications standard. One of the advantages of IBW is that it opens up the possibility of sidestepping some of the complexities involved in unified communications projects by simply allowing access to every communications protocol in the first place.

IBW should also allow companies to meet telecommunication legislation governing the provision of voice communication for the sake of public safety and emergency provisions.

Businesses can also use IBW to stream services or announcements, or use the system to monitor wireless CCTV devices.

IBW can also allow businesses to be both more secure and automated. Door locks, alarms and motion sensors can be connected via very short-range, low-power wireless protocols such as Zigbee. These can then communicate effectively via the IBW system. Light and heating sensors, connected via the same IBW backbone, can also allow a company to reduce energy costs and environmental impact by around 35%.

The uses of distributed antenna systems to Middle Eastern enterprise IT are almost limitless. By considering the 'big picture' needs of a business, IT and communications, CTOs can not only use their budgets effectively, but also solve a number of business communications issues on one system.





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