

PRTM

# Convergence of Buildings, Communications, and Public Safety

THE IN-BUILDING WIRELESS ALLIANCE

As the expanding economy pulls the commercial real estate market from its cyclical downturn, property owners are once again reassessing how to allocate their investment dollars. But this time, landlords have to consider more pressing improvement choices than the traditional décor and technology upgrades to keep tenants happy. In view of recent natural and man-made disasters—from 9/11 to Hurricane Katrina—the public now demands that landlords provide advanced safety capabilities for tenants and non-tenants alike.

This concern for public safety is driving the need for more reliable and comprehensive communications within every structure. During Katrina, and in other rescue efforts, fire and secondary rescue crews were unable to maintain a single system of communications—critical to survival. Moreover, rescue squads found that successful rescue operations required using buildings that were not part of the original emergency plan. If all buildings had originally been equipped to handle emergency traffic, communications would not have been disrupted. As a result of this experience, the current consensus calls for all large buildings to be equipped with communications systems capable of handling 15 times larger volume than the normal traffic. Although no current building code requires this minimum threshold, local and state governments are already evaluating their disaster-response capabilities and are willing to place a portion of the safety burden on the private sector.

Despite the public pressure to upgrade building communications systems, property owners have been slow to react because they lack a convincing value proposition. Recently, a group of forward-looking firms banded together in the In-Building Wireless Alliance ([www.i-bw.org](http://www.i-bw.org)) to collectively address the challenges facing the industry. The property owners' traditional technology implementation norms was first on the list. Historically, technological and safety upgrades to a building were funded and managed separately. Building operators implemented piecemeal solutions and waited for prices to drop before making other improvements. Clearly, this approach has not proved satisfactory: The difficulties of managing multiple systems rank as the second most important concern of property owners, according to a recent industry survey conducted by the Alliance (Figure 1).

New in-building wireless solutions seem to solve most of the issues raised by tenants, building owners, and public interest groups. Based on distributed antenna systems, these solutions are currently going through beta testing in some of the largest U.S. markets to demonstrate enhanced coverage at cellular, as well as public safety frequencies of operation. They have also been demonstrated to provide continuous situational awareness capability throughout the building using a system of distributed sensors. The goal of these beta tests is to give a complete financial picture of cost of ownership and return on capital. Equipment manufacturers and building owners have already identified many

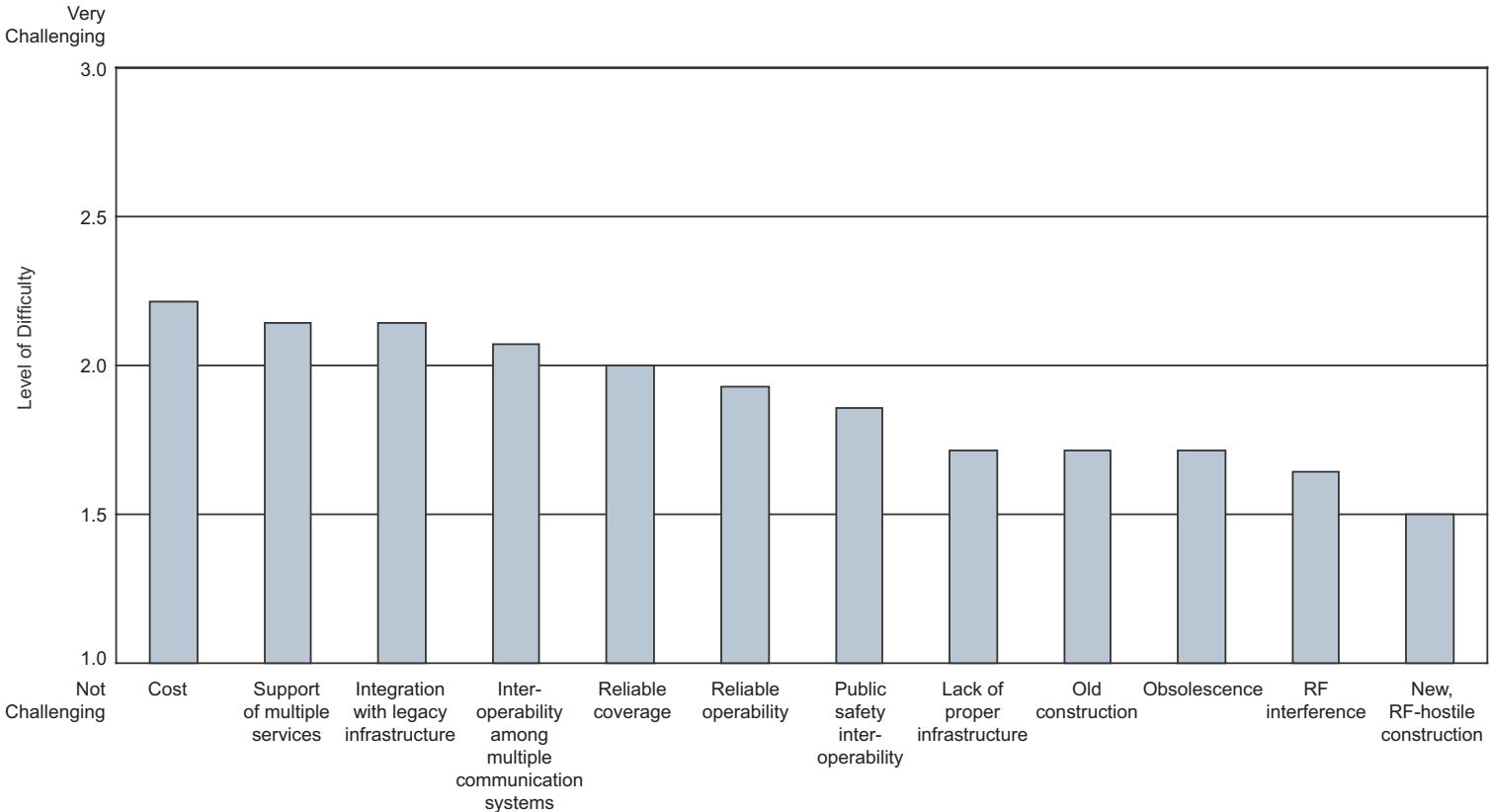
sources of cost savings, including safety monitoring, sprinkler systems management, light and temperature energy efficiency management, and property and liability insurance premium reductions. Tenants are able to enjoy fewer dropped calls and a mobile work environment free of coverage issues. Public safety groups are satisfied because in-building wireless makes

it easier to quickly assign safety resources to the problem area and guide the evacuation through its monitoring capabilities. Although some issues are still being tackled (e.g., the optimal way to allocate implementation costs), it is rare to find one technology that can satisfy the needs of so many different stakeholders.

The question then is not *if* but rather

*when* a fully functional business model will emerge for funding in-building wireless. Currently, building owners clearly prefer the cost to be born by the wireless operator (Figure 2). However, other models are likely to emerge in the future, which may share the burden and the reward differently. Several leading property owners are currently working with the IBWA to

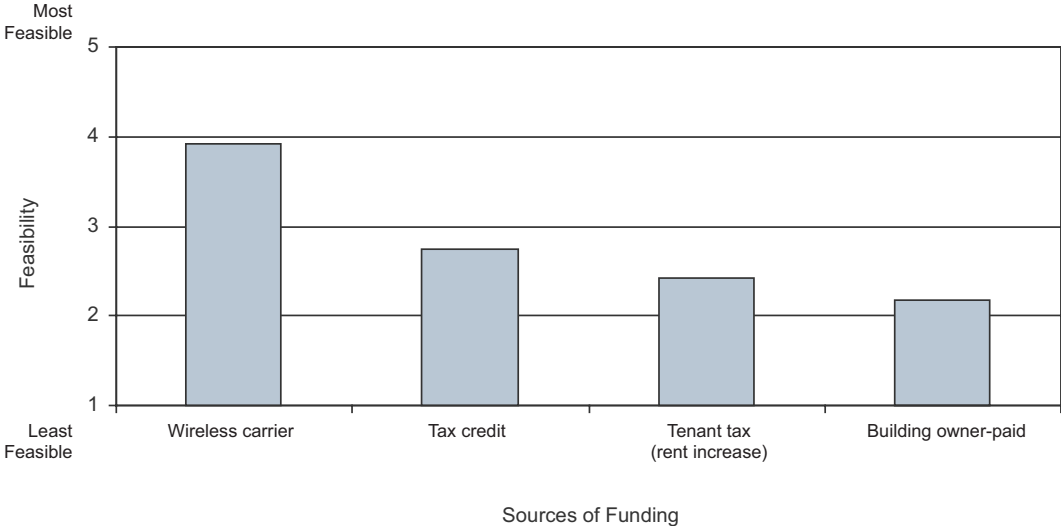
Figure 1: Ranking of Challenges to Implementing In-Building Communications



Source: In-Building Wireless Alliance, 2005 Industry Survey

resolve this issue. Through the beta testing program, property owners have tailored in-building wireless specifications and assisted with the standardization of products and services. These advances will help to reduce the overall cost of deployment and, ultimately, create a product that landlords can use to differentiate their property. In any event, movement toward private responsibility for the public safety seems inevitable, and real estate owners can work with the IBWA to tailor the in-building wireless solution that best fits their needs.

Figure 2: Ranking of Financing Models for In-Building Wireless



Source: In-Building Wireless Alliance, 2005 Industry Survey