



Defining a Smart Building: The excitement on this market continues to grow - by Nora Swanson

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The excitement surrounding Smart Buildings continues to grow, but the industry does not currently have a standardized definition of what makes a building “smart” or “intelligent.” At the very least, everyone can agree that a Smart Building should use automated processes to control a facility’s operations. Using that logic, however, a Smart Building could be marketed as any real estate with a building automation system, or a lighting control system, or a security system. Given this, it is important to agree that these capabilities alone and acting independent of one another do not capture the true essence of what a Smart Building should be.

So what exactly is a Smart Building? I expect the below statement to evolve as we learn and grow, but for now:

A Smart Building uses Internet-based and transmission-based protocols to facilitate the analysis of aggregated data from multiple building systems, optimizing operational decision-making as guided by the goals of the facility.

To break down the development of this definition, we first need to understand that Smart Buildings are a category within the Internet of Things (IoT). Dissecting the words within IoT, we can define that a Smart Building needs to use the Internet for communication between multiple things, meaning that multiple building systems need to be capable of using internet and transmission protocols¹ to communicate.

Next, we need to recognize that the measure of a successful Smart Building needs to go above and beyond the quantity of devices and quality of technology in place. The measure needs to also include how well the data produced by the IoT systems and devices is aggregated and analyzed to automatically make decisions that optimize building operations. One example of this is occupancy data from badge swipes on the Security System communicating with the Vertical Transportation System so that elevators can be prioritized for the morning office rush. Another example is information from the conference room scheduling system communicating with the HVAC system to make decisions on whether to pre-cool a conference room and adjust the outside airflow to proactively mitigate the expected rise in CO₂ levels.

Finally, we would be remiss in not acknowledging that technology is fleeting and what is cutting-edge today is likely obsolete within a few years. Therefore, and possibly most importantly, a Smart Building needs to be resilient and able to dynamically and efficiently respond to both the immediate and future needs of its owners and occupants. This requires a human element within the landscape of Smart Buildings. Building owners, operators, and occupants need to be able to define the goals of their Smart Building and use them as a guide for all IoT-based decisions and solutions. Goals could include: Reducing energy costs, increasing occupant engagement, providing facilities staff with information used for preventative maintenance, or a combination of these and/or other things. How Smart Building goals are defined will lead you down paths to specific solutions throughout the lifecycle of a building and allow a facility to adapt to meet the needs of its stakeholders and inhabitants as technology evolves.

Given that the Smart Building market is forecasted to reach \$32 billion in the next two to three years, understanding how to have thoughtful and intelligent conversations about the “Smart” needs of buildings and the ability to design technologically resilient buildings are paramount as IoT and technology continue to progress.

Footnotes:

1. Swanson, Nora & Herring, Walt, “Following five protocols to achieve reliable and successful smart buildings,” New York Real Estate Journal, April 02, 2019.

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