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To know where data centers are going, it can be helpful to take a glance back at the past. Here's a quick recap of where data centers have been and where they are likely to head in the years ahead:

Data centers have been around, in one form or another, for over half a century. Originally known as "computer rooms," the first data centers existed simply as places to house "data processing" equipment, typically a mainframe or minicomputer, a printer, external storage subsystems (usually tape drives and/or punchcard readers), a teletypewriter user interface (video displays were rare then) and perhaps an acoustic telephone coupler to connect with other computers.

Back in the 1960s and 70s, few companies had the money or resources to operate more than one computer. (In fact, most businesses had no computer at all.) Therefore, most early data centers were dedicated to the operation of a single machine that ran only the most critical jobs, such as billing and market analyses. Staff members, meanwhile, rarely ventured out of the center except for lunch or coffee breaks, and were typically viewed by company management and most other employees as a unique, perhaps somewhat eccentric, breed. Indeed, back in those days, it wasn't unusual for data center workers to wear white lab coats as they performed their tasks.

The data center as we currently know it arrived in the mid-1990s, along with microcomputers (in the form of servers) and local and worldwide data networks, including the Internet. At this time, data centers became responsible for the creation and management of a distributed computing environment with resources and users spread throughout the company and around the world.

Not surprisingly, data centers in the 90s underwent a radical physical transformation. Instead of tucking their IT facilities inside deep sub-basements or spare storage rooms, companies began designing data centers from the ground up with an eye toward achieving maximum productivity and

efficiency. This meant paying close attention to data center systems, organization, management tools, power sources, environmental controls, network services, security design and a myriad of other vital and often expensive practices and resources.

For many businesses, the need to build and maintain a state-of-the-art data center now suddenly loomed as a serious financial challenge. Meanwhile, companies had become so dependant on their computer infrastructures that business continuity also became another critical—and potentially costly—concern.

It didn't take long to find an answer to these problems. To reduce costs, speed data center development and find a safe, off-premises location for their IT resources, businesses began turning to facilities created and run by private data center operators. Within just a few years, enterprises spanning all industries began moving their servers and other vital IT resources to off-site shared facilities.

Today, thanks to high-speed networks and other cutting edge technologies, a data center can be located almost anywhere. Instead of being forced to create a secure and resource-rich on-site data center, companies can now move their operations to an external location and efficiently share the cost of facility and support services with other businesses.

As technology continues advancing and evolving, the shift toward off-site data centers is accelerating. In fact, even many companies with mission-critical on-site data centers now also operate facilities at remote locations in order to provide more efficient worldwide service and to have backup capabilities in the event their main data center is knocked out of action for one reason or another.

In the years ahead, with companies certain to rely on networked computers for an increasing number of vital services, off-site data centers will continue to expand in both size and importance.

And, no matter where the data center is located, staff members are no longer required to wear a white lab coat.

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