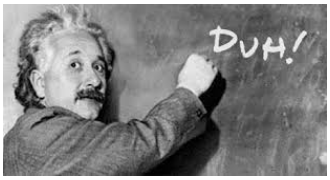
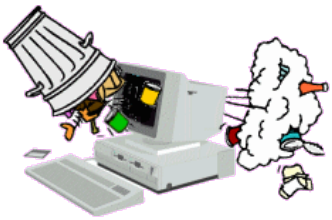
Big Data

Big data, analytics, the cloud, Internet of things is very exciting, **but keep it simple stupid.** How are you going to get all that data out of the old buildings?



Nothing in = Nothing out.

Getting the data out of the facility is tough. Older buildings started installing DDC control systems in early 80s. There are millions of facilities with difficult access to data. Once you connected up with the building's old DDC control system to collect the data then you could be held responsible for anything that goes wrong with their system. Plus, there are millions of old DDC control systems that have inaccurate, sensors etc. why tap into something that the building owner is looking to upgrade. **Garbage in = Garbage out.**



Two of the most important HVAC data points are zone temperature and supply air temperature. (VAV Systems include CFM.) Unfortunately, there are **40 million pneumatic thermostats in the nation today.** Pneumatics cannot provide data. The high costs to retrofit pneumatic zones have left the facilities only wishing that they could upgrade.

I'm sure the big data and sophisticated software can identify the building is not saving as much energy as it should, but it is not going to evaluate how you're going to achieve your energy goals without quality data.

One piece of data that's missing in most DDC control systems is the **amperage** of the A/C compressors, pumps, fans etc. Without this valuable information you can't

determine your direct costs of your energy consuming pieces of equipment. Old wired technology makes amperage a costly opportunity. Economical wireless amperage sensors are vital to the decision-making process because it provides the dollars per time of each piece of equipment. Once you've got the wireless network it provides additional wireless sensing opportunities.

One of the challenges of working with data is it can be very hard to organize and use across different applications. It is stored in different formats, has inconsistent naming conventions and lacks information to describe what it means. This can take a great deal of time and money. Plus, you're not getting the important data required to make intelligent business decisions.

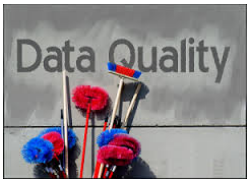
The most economical solution is to tap in to the wireless market that will allow the buildings to come alive with easily to use common naming conventions and tagging. And hopefully in the future use existing upgraded DDC building data.

Listen to the Building Owners; they want to see the costs of pumps, fans, chillers and cost per BTU of the HVAC system or systems. If your costs went up then the analytics could identify this. They don't care about the Cloud, the Edge or IOT. "Please tell me about the costs of my **HVAC, lighting and plug loads**". With that information I can manage and reduce my energy costs. If the cost to operate the chiller goes up then there's something wrong with the system.

Cost of HVAC?

Quite often I see two large pumps running together in the HVAC piping system. The engineer designed the system for only one pump to operate and the other pump as a backup. Sensing flow and amperage would allow average building operator to evaluate the energy waste and correct the situation.

Building owners want to manage their energy usage and it starts by providing the proper data. They would love to have the cost of HVAC, lighting and plug loads for individual offices and workstations. See www.ecWizard.net



When the costs of your individual pieces of equipment go up you have energy waste, it's that simple. Individuals will be held accountable for their energy use. Owners will be able to make equipment upgrades with the knowledge of knowing the ROI before the purchase.

You may have state-of-the-art DDC controls operating your HVAC system and still be wasting a considerable amount of money. Operator error can cause considerable damage to your equipment and waste thousands in energy. **Sometimes there's no incentive to reduce the HVAC costs by the operator**, because there's no way of knowing if the operator is operating the system inefficiently or not. Analytical software and the correct data can provide you with this information automatically.

Keep it simple stupid. My suggestion is to install low-cost sensors that wirelessly communicate to the cloud and Internet of things. Do this before you even try to tap in to the old DDC control system. See the **ecMech** (Invisible Maintenance Man System)

ecMech would allow you to evaluate the existing control system, and provide HVAC Costs and predictive equipment alarms. **There's a big market to upgrade the old DDC system, good data, provide improved comfort and energy savings with a 2018, state-of-the-art system.**

Remember garbage in = garbage out. Your existing system doesn't have all the data and what it has may be garbage.

Wireless sensors are economically better solutions because you get quality data that can monitor the existing control system and equipment.

ecWizard-P100, ecWorkStation/Office Sensor System, ecWizard-E100 are George's

About the Author

George Fincher, the old pro is currently semi- retired. See http://www.ecwizard.net/about