Getting an Open System:
The Open System Survival Guide

The HVAC controls industry is extremely unique. The majority of our customers have very little understanding about what we do or the impact their buying decisions have on their business. Misinformation and lack of accurate information have slowed the acceptance and delivery of open systems in the global marketplace. One significant reason is the rampant dialogue regarding open systems and the lack of open systems being installed. This has lead to a lowered expectation of what "open" means. "Open systems" customers are prepared to buy systems that are "mostly open" or "sort of open" as they are usually misdirected by discussions about Protocols (BACnet, LonWorks). They accept this because the experts around them advise them that this is as open as it gets. These relationships frequently get exploited and there is basically no recourse for the customer. Protocols and emerging technologies are too confusing for customers and consultants to keep up with, in fact most sales people (the experts) don't truly understand the technology themselves.

The only way to get an open system is to solve two problems:

First, understand the role protocols play in open systems (this is the bait part of the bait & switch).

Second, define what an open system really is.

Our business can be complex but for the customer or consultant who wants to associate themselves with truly open systems, the key is to ask **simple questions** and to avoid the technical aspects. Incidentally, two additional requirements are the confidence to ask questions and the courage to refuse a tainted offer.

Having said that, let's get started.

Product vs. Protocol

If anyone dares to ask a vendor or a consultant for an open system they could be bombarded by all kinds of technical information from any number of sources that undoubtedly will leave the customer both confused, intimidated and willing to accept whatever their professional considers "open".

We will sum up and solve, in plain English, the largest single point of confusion in this industry - The difference between product and protocol.

When people talk about open they talk about BACnet, LonWorks, SOAP, XML and many other things that are great sources of disagreement that have nothing to do with open. The best analogy we have come across is as follows:

I approach someone on the street. I say "Hi, how are you?" They reply "Good, thanks for asking".

I have established that we both speak English. It's probable that we have the same vocabulary, the same sentence structure and phrasing. Does this mean I am under any obligation to provide this person with any information? Does this mean I will ask for any information from them? Does this mean I will provide the answer they want even if I do choose to answer at all?

Truly open protocol means there is an open channel of communication and a common language to use. **Nothing else, period.**

When someone tells you not to worry, this is a BACnet system when you ask if they are open, you should worry. Either this individual has no idea regarding the relationship between open and open protocols or you are experiencing the "bait & switch". The same is true, to some degree, for a LonWorks system.

Protocol is the first 5% of an open system. Rest assured that a manufacturer can build a completely proprietary product using any open protocol.

If you are non-technical you can still navigate this situation with confidence and wisdom if you **ask simple questions**. If you want to move your organization forward and reap the many rewards of an open system, you need only to ask these simple questions. Don't forget the follow up questions. You need to make sure the answers you receive are accurate.

Facts:

1. Customers all over the world are getting open systems and taking back control of their business relationships.

2. This technology is mature, reliable and is available everywhere.

3. Certain markets have been strongholds for certain vendors; most customers are still unaware of how to get an open system. The prevailing level of knowledge is the only thing that is holding them back.

4. Many manufacturers that everyone is familiar with make open products but don't sell an open system.

5. The open systems market is expanding very rapidly and more open products are released into the market every month.

6. The information is available; you only need to ask for it.

7. Product that complies with the "simple questions" not only exists but is installed on thousands of projects world wide.

Survival techniques for the non-technical

- Tell your consultant or vendor that you require this level of functionality.
- Do not engage in technical arguments regarding protocol, do not talk "tech" with vendors. You need yes or no answers to your simple questions.
- Tell your consultant or vendor you will neither accept nor pay for systems that do not meet these requirements. To avoid problems and to be fair they need to know this upfront.
- Enforcement is the key.
- The more you know the more control you will have in your business relationships.
- Establish your level of acceptable functionality and accept no substitutes.
- Stand firm in the face of objections: It's your business, money and reputation.
- Do not be sold into another one-sided business relationship by someone's inability to provide you a solution!

Frequent Objections:

- **Consultant: *There aren't any vendors doing these systems locally:*** This may mean that this consultant doesn't specify open systems and has no contact with open vendors. Consultants are multi-discipline experts. They have many responsibilities and it's very difficult for them to change the way they operate. It is also difficult for them [organizationally] to change their master specification so have some patience with them. If you are able to work with your consultant to move forward they may even thank you in the long run. If they hold firm on providing anything short of your requirements, you may have to try another firm that is more in tune with this ever changing market. Remember, only in the last five or six years have these products become truly open. The same is true for the "systems" as well. Many people in our industry have had a hard time keeping up.

- **Vendor**: ***Nobody can comply with your requirements:*** This actually means "we don't comply". Do not accept "expertise" from someone who cannot back up their claims with facts, proof and reference projects and customer contacts. This includes this document. Read the reference materials and ask for proof.

- **Vendor or consultant**: ***Lon vs. BACnet or similar:*** This objection, either way, has no productive value to any discussion. It has nothing to do with an open system. Do not be distracted by this argument.

Of course there will be a time when some technical expertise will be required. It is acceptable to seek assistance from a vendor but always stick to your requirements and ask for some kind of verification or proof. In the real world, whenever you lower your requirements you are increasing the amount of product that complies. Remember that if you lower your requirements too much, you will no longer have an open system. Some examples and other information will be provided in the reference information section at the end of the document

Simple questions:

"Can I use a third party software tool to build the network, program the controllers and create and operate the User Interface for the system you are installing?"

You could have an integrator use the Echelon's LonMaker for windows (3rd party) and install any devices that can be programmed with a LNS plug-in. Another option would be to use the Niagara Framework Work Place Pro tool.

Which products would you use for programming?

Any product manufacture that comes with a LNS plug-in or a Niagara Framework wizard to configure that product **(at no charge)**. This means that any software on the market that operates as an LNS or Niagara Framework environment can launch these plug-ins or wizards. Many manufacturers offer products with plug-ins.

Caveat: This does not mean their plug-ins are free or that the entire line has plug-ins, especially for custom programmed controllers.

"Can I standardize on one software package for all of my sites and install different products?"

As previously stated, you can standardize on any LNS or Niagara Framework software from any manufacturer and use any product that comes with a plug-in or wizard.

I need to program all controllers line by line through this software.

Remember to consider how your vendor intends to program these controllers as you don't want too many different software packages to buy or use. This defeats the whole purpose. You may want to uphold this requirement as new products arrive on the market all the time and if you start with the most open system you can, you will always be better off in the future.

Caveat: *Few people are experts on all software by all manufacturers but these types of applications have been deployed, proven and operating for years.*

"Am I guaranteed a minimum level of interoperability so that I can select the product myself?"

Please explain how this works to me, in non-technical terms. (Functions not protocol)

The LonMark Interoperability Association tests and verifies product for compliance with an established minimum standard of interoperability. This is based on a standard "device profile". This means that if I want to market an "open" roof top unit controller I have to comply with this standard to carry the logo. The benefit is that the non technical can choose a product from the never ending list of certified products and be guaranteed that it will function exactly the same (at a basic level) as any product of the same profile. The true race for your business is in the optional features each product offers. For example, Distech Controls has exposed all of their internal software points to the network to make their products more open for integration and thus more appealing. The end user, if interested, can compare these optional improvements to other products and decide on a feature/benefit basis. The net result is that you know another product will work at the basic levels of operation (no question) and you are free to install other products because you want different features etc.

"Can I swap out a controller with one from another manufacturer no differently than the original?"

Yes if that manufacture's controller is LonMark certified and provides a plug-in that is LNS compatible or uses a Niagara Framework wizard.

I do not want to buy or require additional software. If required it should be free. *This has been explained in the answers above.*

"I need a wide variety of products and service agents available to leverage my investment."

A great example of open systems exploding in the global market is **www.engenuity.com**. This is an online source to thousands of compatible products from web servers to front end software to controllers.

Could you please give me several examples and the reference material as well?

Ask open manufacturers for local contacts. As far as product is concerned, check out **www.lonmark.org.** Get to know some of these open manufacturers and you will find the answers.

Can you show me 5 local multi-vendor installations?

Get to know some local open system vendors and this should be easy. Remember, having a control system and tying into a chiller to pull out some info is NOT a multi-vendor installation.

There is no shortage of proprietary manufacturers in the marketplace benefiting from open system marketing. They will not advertise that they are proprietary nor will they feel obligated to refund your capital once this is demonstrated. It is up to the end user and the design community to establish what benefits an open system was meant to provide and to ensure that it has been delivered. The easiest way to do this is ask simple questions relating directly to the benefits you would expect from an open system.

For more information feel free to contact us.