There is always an excuse to do nothing

Although with the unprecedented popularity of Smart Grid, one could expect an explosion of wide variety of new technolgies - **the reality is that most utilities are still waiting.** The reasons for that might surprise you.

Now that in different economies stimulus programs are in place, the financial crisis appears to be receding and the world seems to be bewitched by Smart Grid to an extent that is unprecedented in the history of the power industry, one would expect an explosion of new technologies being deployed.

However the reality is that most utilities are still waiting…

During the last six months I have attended various conferences and trade shows and participated in a variety of projects. During this time it was proven to me that the time seems to be right to improve the performance of the utility industry by using new technologies as they seem to be available now. Nevertheless most utility representatives I have met as of late (or recently), seem to have used this time to gather excuses for them not to do anything.

An example is the IEC 61850 "process bus". Most manufacturers have developed a working solution for merging units, network architectures, sampled values, GOOSE messages, etc. allowing for an optimization of the substation design that has been a dream to many substation engineers. So it would be expected that utilities would be purchasing these solutions by the dozen.

When asking the manufacturers they gave me a glazed look and made it clear that they are still waiting for the utilities to get interested. Based on this I conducted my own little survey and asked several people if they are developing substations using the so-called "process bus" solution and if not whether they are considering such a solution in the near future. As you probably guessed, the answers I got really surprised me.

What surprised me when talking to utilities about new technology wasn't the fact that utilities are still not really investing in process bus, but the reason why. In many cases they justify not deploying new technology with reasons that to me look more like a list of excuses. Magic words in the list of excuses are:

- "risk"
- "bleeding edge"
- "lack of practical experience"
- "limited number of solutions"
- "price"

But are these valid reasons?

So what is the risk associated with the use of process bus?
Isn't it true that a simpler infrastructure with two fibers instead of hundreds of wires is inherently safer?
Isn't it cheaper? In conventional systems crucial circuits can be out of service without us knowing it

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because they are not supervised. The process bus allows for continuous supervision of all circuits thus increasing their availability and reliability. Because of the standardized definition of the process bus the engineering process can be standardized as well, thus limiting the risk of mistakes.
Of course, if a utility chooses to implement only part of the solution, the benefits may not be achieved in full and certain risks may remain or can even be introduced. But is this because of the technology or because of the approach the utility is taking?

Is process bus "bleeding edge"?
True, the IEC 61850 process bus is relatively new, but the concept and solutions themselves are not new at all. Several manufacturers have developed (proprietary) solutions already back in the eighties and have included the knowledge obtained during the development of these first solutions to define the process bus as we find it today in IEC 61850.
So how "bleeding edge" is "bleeding edge"?

Regarding "lack of practical experience" one can only conclude that we are dealing with the chicken or egg problem. If utilities buy a solution only if it has been already deployed for several years, then no solutions will ever be sold, as no one would be willing to be the first to deploy them.
No matter how much we want solutions to be based on experiences obtained in real deployment, someone has to be the first to buy it. In many cases being the first also has benefits. Manufacturers want to work with utilities to develop solutions that meet their requirements.
The utility that buys the solution first thus gets influence on the final result being developed.

The number of solutions: The statement above also applies to the comment that only a limited number of solutions exist today. Why would a manufacturer develop more solutions if no one wants to buy them? If there is a market (read money) there will be products and solutions. So again we are dealing with the chicken and the egg.

And then there is the excuse about the price. Applying a process bus allows for standardized solutions that eliminate hundreds if not thousands of wires, simplifies the architecture, provides supervised circuits, allows for automated testing and can simplify maintenance by "unplug and replace" strategies.
These of course do not come for free but have to be engineered by both the utility and the manufacturer. Once they exist, they can be re-used in every project. So when we look at the real life cycle, significant costs savings can be achieved.

So are the utilities wrong?
No, of course not. There are still a number of issues to be resolved including:
- the shorter life cycles of modern equipment and
- the different skill sets required from their staff.

Utilities have to learn to deal with these issues while maintaining a high performance. They are still responsible for providing entire societies with electricity, the most important commodity of our time. In many cases the utility's organizations are not yet in synch with the changed environment they operate in, leading to the response described above.

However, I think that this should not be used as an excuse not to invest in new technology.
It should be a driver to learn about the new possibilities, develop migration strategies, try out the technology, develop standard solutions, provide feedback to the manufacturers and last but not least stimulate the industry to keep innovating.

This will lead to the true development of solutions that support the development of Smart Grids and

move the utility industry into the next era.

Remember, there is always a reason to do nothing!

It takes vision, strategy, and some guts to go for change -

but I was taught that standing still means going backward…