



By Bob Stasonis

# Symbiosis and evolution – words to live by in test

The above title may seem strange, but bear with me. These words can describe your company's test strategy just as well as how we live on this earth. Allow me to elaborate.

I've been hearing rumors in the industry about new standards that will instantly obsolete existing instrument architectures, PXI included, in favor of the latest and greatest. Well, I've heard such claims in the past, and they usually do not pan out. To paraphrase Mark Twain, "the reports of this architecture's death are greatly exaggerated." VXI pundits predicted similar deaths for GPIB in the early 90's. Strangely enough, this never happened, as test systems were designed with both VXI and GPIB Instruments. I guess someone forgot to tell the GPIB instruments that they were not supposed to exist any more.

Truth be told, instrument architectures are notorious for existing in a symbiotic relationship with other architectures. Webster's dictionary defines *symbiosis* as, "The living together in close association of two dissimilar organisms especially when mutually beneficial." True, I'm taking license with Webster's, but it still applies. If you look at functional test systems, you usually see a mix of instrument architectures: PCI, PXI, GPIB, and so on. So we have always been working with other architectures in a way that is mutually beneficial. PXI is designed to work with other architectures. As the backbone is PCI, you can implement test systems with instruments in both the PXI chassis and in a PC, using a PCI-to-PXI bridge. Standalone instruments using GPIB, Ethernet, and USB interfaces connect easily thanks to hardware links and software tools.

We must also consider that as PXI vendors, we cannot abandon our installed base. It is also easier to stay focused on a particular architecture so as not to spread

your engineering resources. The bottom line is the PXISA members won't abandon you!

But all instrument architectures do change over time, which brings me to my second word. One of the definitions of the word *evolution* is, "A process of change in a particular direction". Well, if you've already read Loofie's column, you know that PXI is looking at evolving (not that it has not done so in the past). In the past eight years, PXI has added features and improved the specifications, making it easier to support your testing needs.

Now, PXI is looking at the next evolutionary step as we evaluate the advantages of adding a PCI Express feature set to the specification. This will be an exciting addition to the architecture, as it will allow us to move PXI in directions that it cannot easily address at this time.

But it's important to note that not all instruments will benefit from PCI Express. The speed will only apply to high-end applications where a lot of data will be transferred. Applications such as switching will not benefit. So that means that PXI Express, as it is becoming known, will work in symbiosis with regular PXI and other architectures.

It is important to remember that all instrument architectures focus on their strengths:

- GPIB has evolved to support instruments and resources that do not make sense in a modular environment
- PCI instruments are used traditionally in lower frequency applications
- VXI has strong support in Mil-Aero and telecoms
- PXI has found favor in many areas.

What does the future hold for PXI? Time will tell, but I think that enhancements like PXI Express will ensure that a long lifecycle for PXI is assured.

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