



[Home](#)

## Opportunities In Choice

By [Mr. Toby Considine](#)

August 10, 2007

The grid is big. Very big. The grid and all its end-nodes, e.g., buildings, are bigger still. We are not going to standardize it. We are not going to develop a single program to control it. The grid must embrace heterogeneity, or, if you prefer, diversity. Diversity offers choices. Choices create markets.

Control systems, on the other hand, are extremely detailed and specific. They need to know every detail that goes on. This means that control systems do not and cannot scale to the size of the grid. They must be wrapped up and packaged, with all of the execution detail hidden. These packages will have a standard interface, one that supports the needs of diversity. That is the goal of oBIX. The intelligent grid will require intelligent end-nodes; intelligent buildings whose systems are exposed as discoverable services accessible by architectures both within and without the building. These buildings must offer up services to be orchestrated or choreographed, not processes to be programmed. No other approach will scale to a system as large as the grid.

### Using The Printer Model

Why are there so many printers at Best Buy? It's because you can plug them in and your computer will recognize them. Computer peripherals have abstract discoverable interfaces that support heterogeneity. Do you have a color two-sided printer? You find that out when you connect. You do not need to know how it works. If you don't like your printer, you get a new one. Consequently, a lot of printers are sold. Similarly, what markets could you open if your system had an abstract discoverable interface?

What if you had a choice as to when and at what price you buy power? Would you buy it all the time, or buy it when it was expensive? What if you could choose the interface you wanted? Two examples are the Olympic Peninsula Project, which devised a simple economy/comfort slide bar, and Constellation Energy, which buys call options to get power back from its customers and writes checks. User interfaces and service interfaces offer autonomy, procedural interfaces do not. People and businesses want autonomy and will pay for it.

## The Question Of Energy Storage

What if you could get money for storing energy? Energy storage can be anything from the water tank 40 ft in the air storing wind power on the ranch I grew up on, to only using air conditioning early in the day, to new technology battery systems.

What if you could get cash, not cost avoidance, for storing energy? What if the customer had a decent interface to storage systems, encapsulating storage system engineering knowledge, so the customer could make decisions? Would you buy more energy storage?

What if you could choose who would operate your home's systems? What if it was easy to orchestrate each system, A/C or pool, hot tub, or storage, and how they respond to energy prices? Would you want the software to run them yourself? Can we make home systems as discoverable as the home printer? Would you run it as a service on Microsoft Home Server? Would you outsource it to someone who already has an Internet connection in your house? Would it be the cable company, the phone company, or the home security company? What if you could choose between setting and forgetting, or personal control? What if you could maximize comfort when you have guests, or maximize economy when your in-laws are visiting? What if you could be in control?

## Choice And Control

What if the home or business could choose these benefits and not have to worry about them? What if you could be a neutral intermediary for your customers? What if you could find the systems in their house, and offer them options on the Web as to how to operate them? What if you could aggregate a thousand homes into an effective energy strategy, even if those homes were all different? What if you could buy power to meet their needs on a variety of markets? What if you could monitor their systems and dispatch service personnel before problems arise? What if you could go beyond managing operation of systems or managing performance of systems? What if you could grow your customer's homes into high-performance, near-grid houses, paid for by real demonstrable cash payments?

What if home and business owners could feel good about their power? What if you could aggregate your customers on one side and energy purchases on the other, to offer green portfolios or reliable portfolios? Could you sell specialty portfolios (e.g., Wild Rivers: renewable but no dams. Shade Tree power: renewable with no bird kills)?

People want to be in charge of their own lives and homes, and to feel good about themselves. People do not want to relinquish control to anyone. GridWise Architecture will shed the mass-market structures developed during the Great Depression and offer choice of power provision. oBIX will hide the complexity of building systems and offer control of services.

American consumers buy autonomy, self image, and status. American consumers do not buy efficiency. American consumers do not buy economy except under duress. American consumers will buy energy solutions that put them in control of their own lives. American consumers will buy energy solutions that help them feel good about themselves. American consumers will buy energy solutions that let them demonstrate they are cool. **GIB**

Considine is co-chair of the OASIS oBIX Technical Committee and has been working with enterprise applications and integration of embedded control systems for 20 years. As a systems specialist in facilities services at the University of North Carolina, he has struggled with the network demands, poor data sharing, and non-scalable security issues posed by last-generation control systems. This led to his focus on open discoverable data standards for control systems. Before coming to UNC, he worked to integrate other silo processes into the enterprise for companies including The Architect's Collaborative, Reebok, and Digital Equipment Corporation.