



Geek Architecture

An interview with Gartner analyst Jeff Schulman.

To achieve the extraordinary efficiencies of doing business in real-time, enterprises will have to create a fully integrated, interoperable, always-on technology environment: Enterprise Architecture. It doesn't replace what you already own. It integrates it and augments it. Start by tearing down the walls within your IT infrastructure that impede flow of information, then building bridges that make the flow faster. The ultimate goal, as Gartner analyst Jeff Schulman explains, is an IT foundation that can support any business you want to build.

Q: What is Enterprise Architecture?

Two things. It's the structure of your information systems – the components and the relationships between those components. Secondly, it's a structured family of guidelines for building out this architecture – principles, rules, patterns, models, and standards.

Q: If I walked into the IS organization of a fairly large company today, what sort of architecture would I see?

Think of a starter house. You've been married for a while and you have a starter house. It has two bedrooms and a small foundation. It was adequate for when you were thinking in a very narrow way about your needs. In an IT environment, the foundation would be the operating systems, the accessing technologies, and the communications frameworks. The house on top would be the users who are at the terminals and the reports that come out the applications that sit on that

foundation. What has happened is that we've grown. We've added on. We've enlarged the kitchen. We've put on another three bedrooms and three-car garage. A lot of this has evolved through parallel architectures, where business units were developing their own solutions outside the IS organization – at the “edge.” But in the meantime, the IT foundation has not been enlarged. We are still working with small function operating software and unconnected systems. The foundation no longer supports the needs of the enterprise.

Q: So with all this hodge-podge, what makes The New Enterprise Architecture possible?

Tremendous leaps in application integration. It used to be that if you wanted to talk from one system to another you had to do surgery on each of the systems, so that you could provide for some level of protocol management, some level of business activity management, a process management. You had to put them on the operating table. Now what you can do is use specific technologies that allow for linkage of unlike systems – mainly Internet portals and translation protocols like XML and SOAP. The overall discipline is Application Integration. It's happening today with ERP systems. You can link ERP systems, or make connections between various collaborative commerce or supply chain systems.

Q: Is the Internet the glue?

Yes. The Internet is the communications backbone for multi-enterprise architecture. The Web provides multi-point capability, as opposed to EDI, for example, which is one-to-one. Every time you want to build a new relationship in EDI you've got to establish another one-to-one capability. With the Web, you can bring everyone together into a common communications framework.

Q: What is the ultimate goal of The New Enterprise Architecture?

To allow for dynamism in business process. When you build out an architecture, that architecture has got to be flexible enough to enable business models – including future business activities that you can't foresee when you create the architecture. You want an architecture that accommodates change easily. What you don't want is an architecture that can become antiquated. It will then become a “disenabler” of change. You need to remember that architectures need to be built to change, not built to last.

Q: What stage are the leaders at?

The leaders are those actively collaborating today out of need. For them, it's not a future, it's a now. An example: We were talking with an insurance company not long ago. They need to interface with all kinds of agents, agencies, reinsurers, and others whom they cannot select as partners in a long-term planning effort. They come and go. There's a need to collaborate but be flexible too. That company is out in front as a real-time enterprise because it has to be.

Q: So insurance is a good example. What else?

Another incredible example is life sciences. That whole value chain is changing dynamically in that world. FDA regulations need constant updating. Drugs are coming into the marketplace faster than ever. There's a need for everyone to share information disclosure, billing, patient's rights information, and so much else. The life sciences industry is being tied together through its IT systems on a global basis.

With the New Enterprise Architecture, it's not only about dynamism and rapid change, the viewpoint also changes depending on where you are in the value chain. In life sciences, from the customer standpoint – the customer being the patient – the patient wants to see the world from their viewpoint. It's a unique viewpoint. The FDA wants to see it from the FDA viewpoint. The doctor wants to see it from the doctor's viewpoint. It might be that the doctor's information and the patient's information may be similar and may intersect but each needs a unique way of viewing the whole of the database. The New Enterprise Architecture creates those unique viewpoints or allows for them through applications arranged in what we call "bricks" and "patterns."

Q: The Gartner-defined elements of the New Enterprise Architecture are "bricks," "patterns," "styles," and the "multienterprise grid." Explain what these are in simple terms.

The grid is the highest-level operating environment. All of an enterprise's communications and connectivity technology worldwide resides on the grid in a dynamic state of constant connectivity. It includes the application integration software, the protocol translation, the business management and process management, the enterprise nervous system, the integration competency center. Everything is plugged into the grid, and unplugged from the grid when it's not needed any longer.

Styles are business processes. Logical business models. The connection between the enterprise architecture and the business architecture. For example, an enterprise might say, "We are the fastest, cheapest provider of reservations" or "We have the largest variety of insurance policies available and we can quote you in the field." Those business processes or "styles" each leads to an architectural style that will provide optimal support. Styles are your competitive edge reflected in your information technology.

Patterns are groupings or design arrangements of bricks – the core technologies. Patterns are kind of like client/server. Where do you want to have the bulk of your technology? Is it server-based? Is it client-based? Patterns support your business style, and they are reusable. Whether you have an implementation that is worldwide, global, multi-enterprise or whether it's single CPU, you can continue to use those same basic patterns. In the real estate world think of Tudor house, ranch house – those would be patterns. And whether you want to build a small ranch house or a big ranch house, you still could use the same basic patterns. They are models.

The bricks are the physical hardware and software that you put in place –the architectural elements at their lowest component level. A data base. An operating system. Any application. The bricks in total would be your hardware and software inventory.

Q: These things exist today. What doesn't exist is the interoperability, is that right?

Yes. The elements of The New Enterprise Architecture exist in their infancy and in their incompleteness. They will now begin to develop around interoperability. That is the prime mandate. Things will be built around that.

Q: So, a diversity of technologies must fit seamlessly into a grid of interoperability. Policy and standards and governance must be crucial.

Governance is very important. But we are careful of the word "standards" because the next term usually after standards would be "buy list" and buy list leads a lot of us into Never Never Land.

That's a quicksand issue because lots of companies have problems with how you get stuff on that list, who manages that, how do you get an exception to that. It's endlessly problematic. As long as there is interoperability, what you use isn't going to matter very much. If you use XML or Soap or UDDI – these are web services standards – then the actual web service itself doesn't really matter.

Q: Let's talk about the challenges. We are at a very important point in time. Enterprises are highly are very cost sensitive. For many IT buyers this is going to sound like clean the house and get rid of the legacy and start over. What are the legacy implications? What are the cost implications?

That's the beauty of it. You don't have to clean the legacy because there is no way to do that effectively. The opportunity is to leverage the legacy. Because a large part of the grid is web services, you can leverage legacy data and integrate legacy applications by surrounding them in this new architectural frame. It gets picked up and used productively within the new application structure. Of course, one of the essential qualities of any new application will be its ability to facilitate this interchange.

Q: And cost?

It's a new way of thinking, a new way of implementing strategies, but we are not calling for massive new investments for this purpose. It's simple not necessary.

Q: What about vendor issues?

Vendors will need to understand and accommodate the interoperability factor going forward. But this is also not a dramatic vendor play. Again: as long as it's interoperable, then whatever application you've got, however inventive it is, however proprietary it is, it can still work within the system.

Q: Then what will be the biggest challenges?

A major one will be justification to superiors. "Why do you need architecture?" "What does it do for you?" "Why can't we continue to do without it?" "How do you explain the business value?"

It all comes back to the business model. The greatest success will be where there's a layer of trust and a shared sense of strategy between the business units and the IS organization. In enterprises where the CIO's domain is considered a cost center, it will be more difficult.

Gartner and many others have spent the last few years talking about these new business models. Collaborative commerce, supply chains, e-business, customer relationships, the viewpoint of the customer, empowering the customer, portals and the web, and facilitation of business ideas. There are many enterprises today not only working with these models but gaining huge competitive advantage and making big profits. They are the front-runners in the race to The Real-Time Enterprise. Gartner has also been doing important work around The Business Value of IT (BVIT) – a valuation methodology based on the Total Value of Opportunity. Using BVIT, an enterprise can formally quantifying the real business value of achieving The Real-Time Enterprise, including investments in The New Enterprise Architecture. [

Q: Other challenges?

Trust. Fear of change. Those are going to be very big issues. If I am going to collaborate in real-time with someone I don't necessarily know and haven't had a decade-long relationship with, what will substitute for trust? How do you manage change in a dynamic world? That's a big stumbling block.

Q: Imagine that in a few years an enterprise has a New Enterprise Architecture in place and is operating in real-time with partners. What will it be like?

It will be extremely agile. It will be making real-time decisions about its business based on what is happening in its universe right now. It will be working widely outside its own walls. It will be partnering with anybody who is opportune at the time. Its status quo will be global and instant and informed. Interestingly, we also predict that M&A activity will fall dramatically. If companies can interoperate so smoothly, they won't need to waste the time and money, and incur the risk, to acquire each other. The key is this: your technology will never again stand in the way of your business goals. It will be the engine that pushes them forward.

For more information on The New Enterprise Architecture, visit gartner.com/ea.

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