

**Contact: Peter Andrews/Armonk/IBM**

**Consultant's Edge #29: New Business Models: A closer look at Sense and Respond  
by Joe Arteaga**

**Executive Summary: e-business is a term describing the environment resulting from the increasing connectedness of information technology and business. A myriad of interconnected networks, the Internet, pervasive computing, gobs of customer data, dot.coms, merging of media and telecommunications are a few of the technological innovations resulting in constantly changing markets, business models and interplays between partners and competitors. Steve Haeckel's Sense-and-Respond model is an opportunity for organizations in the knowledge-based economy to shake off the restraints of the industrial business model of forecasting and predicting customer needs. He proposes that the only strategy that makes sense is one where the enterprise is organized to be adaptive.**

What if we can't predict the future? What if every time we turn around there is discontinuous change -- a new customer requirement, an environment that's completely different from what we thought we understood? Given this kind of environment, can you lead and run a business the traditional way of maximizing efficiency at producing products for planned demand?

Steve Haeckel, Director of Strategic Studies at IBM's Advanced Business Institute, suggests that in today's environment of discontinuous change, we must look for a different way and has termed it the "Sense-and- Respond" model. His book, "Adaptive Enterprise: Creating and Leading Sense-and-Respond Organizations" delivers a prescription for creating and leading in environments of unpredictable, discontinuous change.

The Sense and Respond Business model is founded on the basis that a purposeful adaptive system design can be more effective at dealing with discontinuity than the traditional Make and Sell planning approach.

- It specifies strategy as the business model, as opposed to strategy creating the business model.
- It replaces command and control of the typical hierarchy of authority with a new governance model based on context and coordination.
- It changes the focus of leadership from managing activities in a problem-solving style, to enabling a viable context where accountability to outcomes is negotiated through commitments.

Although the concept of the words "Sense and Respond" can be easily thought to mean that people in organizations must be open to change so they can react quickly, the Sense-and-Respond model deals much more with large-scale organizations knowing earlier what the change in their environment means, so they can pre-empt and respond appropriately. The Sense-and-Respond model prescribes enterprises designed from customer requests back, not based on planned responses to forecasts about the future. This is because organizations

have increasingly seen low returns from efforts to predict what products and services customers will need in the future.

The need to become adaptive enterprises is being brought about by the explosion of connections between enterprises, institutions, government and people through the Internet. This is driving the need for business model innovation. Secondly, the pervasiveness of computing, along with ease of codification and sharing of the knowledge globally, allows anyone to use that knowledge to create radically new business value propositions quickly and effectively. The Internet then allows these one-off business models to be deployed for very low transaction rates to very large and captive customer segments. The Sense and Respond organization operates in information intensive environments, where -- by manipulating symbols representing capabilities -- companies and markets can undergo tremendous changes overnight, as in the case of Amazon.com or E\*Trade.

IBM coined the term "e-business" to talk about a broader, more powerful set of changes. About a new mandate: The requirement to explore -- in every institution in the world -- new models, and either validate them, or discard them. ....We're early -- very early -- in a cycle of institutional transformation that will play out over the next quarter century. Nobody sits this one out. Nobody plays a pat hand.

**Lou Gerstner**

**Finance Conference 2000: The New Economy**

### The effects of Internet and e-business and the opportunity for IBM

IBM has led the world in understanding the impact of the Internet. Whether it's business-to-business or business-to-consumer, the potential of the Internet can not be disregarded, and is therefore attracting all kinds of creative approaches to its use. IBM coined and made popular the term e-business, and has led the way in transforming itself and other organizations to adopt the interconnectedness of the Internet to provide solutions for customers. Individuals and organizations are turning whole markets and industries upside down with revolutionary ways of doing business. This spells trouble for the traditional large company which has invested many years and lots of money in maintaining an efficient structure. In desperation, large organizations want to become e-businesses as agile as those who have never been anything but e-businesses.

IBM is at the core of being able to help these businesses, given our deep knowledge of how technology and business integrate. IBM has end-to-end technology solutions, skills and expertise to implement e-business solutions. But what about the changes that we must make in leading and running e-businesses? Descriptions of the difference between brick-and-mortar organizations and those businesses, like Amazon, which are above the e-line are plentiful. (The e-line is a fictitious line describing a point above which companies operate a major part of the business online, where e-capabilities outnumber the traditional ways of serving customers.)

But we have not attempted get around the complexity of describing the management and governance processes that an e-business requires. We've avoided the complexity of getting large companies to become adaptive and respond effectively under unpredictability. It's not an

easy situation -- on one side, organizations recognize the need to change, to adapt and to respond with speed and urgency. On the other side, they are constrained by the investments in infrastructure, the chains of hierarchy of authority, the ambiguity of matrix reporting lines and the cultural malaise of bureaucracy.

Steve Haeckel's Sense-and-Respond model is a prescription which deals directly with this issue. It defines the approach that we must take at IBM and other enterprises, to lead sustainable organizations in the face of increasing and discontinuous change. As such, the Sense-and-Respond prescription is not merely a change in behavior, but rather a transformation of the way companies are currently structured, a change of the way leadership leads, a change in the cultural DNA. It is by no means an easy cure, but one which will take courage and will to undertake.

The Sense-and-Respond model is therefore, not only a prescription for successfully adapting systems -- mom and pop shops can easily be adaptive systems. Sense-and-Respond's foundations represent adaptiveness, as a scaleable characteristic, possible for large, complex systems to acquire. It is this characteristic, that will ensure the viability, success and sustainability of the enterprises of the 21st century and beyond regardless of where the Internet takes us.

The direct link and alignment of Sense-and-Respond (S&R) with the interconnected world of e-business creates tremendous opportunities for IBM which include:

- partnering with clients in business consulting opportunities to create top level e-business based strategy, based on S&R's business model for a networked world. We thereby cement account relationships for downstream opportunities in services and technology solutions
- creating new markets with partners and clients leveraging streamlined supply chains based on S&R modular e-capabilities
- helping clients to become customer-back focused through our current capabilities in Customer Relationship Management (CRM) and Customer Value Management (CVM)
- leveraging our business intelligence solutions to create support for market sensing and interpretation of environmental signals required by adaptive organizations and roles
- leveraging our knowledge management methodologies and collaborative solutions to increase and enhance the connections between people in the open, empowered, social system of S&R
- leveraging our e-business competency and connections to create new dot.coms, and new e-capabilities for clients based on S&R definition of modular capabilities.

To understand the model a bit deeper, let's look at four key S&R areas: Context Definition, Coordination of Outcomes, Adaptiveness and the SIDA (Sense, Interpret, Decide and Act) loop

The Sense-and-Respond governance model is defined through Context and Coordination of the Organization.

Organizational Context creates and communicates a clear, unambiguous description of the enterprise and its interaction with the environment. It means managing a business as a system. (A system is a collection of subsystems, or parts, that interact with one another to produce an outcome that cannot be produced by any subset of the parts.) Ambiguity about the purpose of the system or how the parts relate to one another increases inconsistent behavior and allows for variable prioritization in making decisions.

The leadership of a Sense-and-Respond organization, must unambiguously create and communicate the following aspects of the system design.

The primary purpose of the system and its primary beneficiary -- The primary purpose is called the Reason for Being. It allows the leadership to communicate to all the people in the organization what we exist to do, not what we do to exist, thereby increasing coherency of the system. Identification of the primary beneficiary or constituent is no trivial matter as well. It's ambiguity can lead to radically different strategies and business designs. The Sense-and-Respond organization defines its primary customer so that all its design is optimized to deliver on the commitment to the primary constituent.

Governing Principles are the bounds on acceptable behavior within the system. They clearly demarcate what is within the system and what is outside. Governing principles identify constraints which if broken carry consequences to the system being able to fulfill its purpose. They are the enablers of true bounded empowerment of people in roles.

High Level Business Design is the identification, for the first few levels of subsystems or capabilities. It is described in terms of what outcomes each role identified owes to another role. In other words, it defines the interactions in the system.

Sense-and-Respond organizations also leverage the knowledge available in the multiple perspectives of leaders and designers. They elevate the level of solutions created by replacing the typical consensus-driven approach used for decision making. Instead, they encourage learning through diversity and dialogue-based communication and inquiry. In doing so they create higher returning 'hybrid' solutions for customer requests.

Coordination of Commitments is the Sense-and-Respond model's control mechanism to ensure consistent behavior of the people within the purpose and bounds of the current context (to support coherent purpose). It recognizes that enterprises are value producing systems composed of commitments between people in a social context where everyone has choice in what they take accountability to.

Coordination of commitments through a commitment management approach, provides a supportive environment to manage the chains of accountable interactions that people in roles create to produce outcomes. Given unpredictability of customer wants and needs, activity cannot be easily managed, since there is constant innovation and choice in the people. Therefore, leaders do not manage the activities of people- but they empower people in roles to take accountability to creating outcomes.

Commitments are created through negotiations between two people in roles-- one as customer and the other as supplier. The customer makes a request to a supplier for the delivery of an

outcome. The two parties then interact through a negotiating protocol which uses a set of defined set of steps. This rigorous protocol enables explicit conditions of satisfaction to be agreed upon, executed on and then assessed. Both parties also agree to create this commitment within the purpose and bounds of the enterprise.

### Adaptiveness

A Sense-and-Respond system is by definition, open and adaptive. The definition of the context mandates that signals on how the context is doing be received to enable redesign if necessary. It must be open to be adaptive, as environmental signals are the system's main source of information for appropriate responses to change. This feedback model follows the basic characteristics of any successfully adapting system by leveraging two types of feedback:

- Operational -- are the signals created by the interactions of the people in roles in the Coordination of commitments to create outcomes for customers
- External -- signals from outside the organizational bounds which are available as data or signals for sensing and interpretation

These signals, are available to leaders, system designers, as well as any role to take appropriate responses :

- leader and system designer role - to design available context for a value producing system
- customer role- to understand changing conditions and suppliers capabilities
- supplier role - to make sense of intrinsic customer value attributes and fashion a response appropriate to that customer request.

The SIDA adaptive loop is defined to be capable of dealing with these feedback signals effectively in order to support adaptiveness.

### Sense, Interpret, Decide and Act (SIDA) Adaptive Loop

Steve Haeckel describes the generic adaptive loop called SIDA, which all adaptive systems must be able to cycle quickly through to make appropriate responses to rapid change. The SIDA loop is broken down in to the following components: Sense, Interpret, Decide and Act. A person in a role will need to cycle through this loop at the speed which the environment warrants.

Sense-and-Respond organizations require technological support of the SIDA components for people in roles. This technology support accomplishes the following:

- enhances a manage by wire capability
- enables appropriate signals to be delivered and sensed by people in roles
- enhances availability of interpretation frameworks to make sense out of apparent noise
- provides optimal support for decision making and action.

### **Interview with Stephan Haeckel**

EDGE- What are the measurement systems of the Sense-and-Respond Organization?

S. H - There are two generic types of S&R measurement systems. Operationally, measurement occurs in the assessment phase of the commitment management protocol for each instance of a commitment. Did the outcome meet the CoS's (Conditions of Satisfaction) agreed to? The adaptive loop of individual roles will also require measurements -- probes placed to pick up signals about the impact of previous decisions, changes in customer preferences, etc. For example, the role of leadership will undoubtedly want to capture signals about such things as which commitments fail most often, which are subject to most renegotiation, etc. This will help identify where risk resides, and where change occurs most frequently in the existing design.

**EDGE- Why do you emphasize the need for authentic commitments between people -- how does it relate to adaptive enterprises?**

S. H - Rigor answers the requirement for minimizing ambiguity about what has been agreed to. Authenticity is required to minimize "gaming of the system" in negotiations, and to surface where risk lies and how the two roles will share it/deal with it.

**EDGE- How will S&R organizations work with/interact with non S&R organizations?**

S. H - Through customer-supplier agreements about outcomes.

**EDGE- How can organizations, which are growing rapidly through acquisition, benefit from S&R?**

S. H - By understanding in advance how the acquisition's capabilities will relate to the existing capabilities -- that is, how the HLBD (High Level Business Design) will change and create more value because of the way the acquisition's capabilities relate to one another and to the acquiring firm's capabilities. Also, by incorporating the prospective acquisition's capabilities, through the CMS (Commitment Management System), in the current design to validate the change in value that the system produces PRIOR to acquisition. Acquisition per se is only needed where there is risk of losing access to a capability, or where the new capability's productivity is enhanced by eliminating some of other outcomes to which it, as an external organization, may need to be committed.

**EDGE- What role does knowledge play in today's economy, in Sense and Respond organizations?**

S. H - Leaders of S&R organizations, as systems designers, will require more than Know-how, they will require Know WHY -- which is holistic, or system knowledge. Secondly, people who are better than others at creating ad hoc solutions should be identified and put in roles where improvisation is a requirement. People who are better at accurate execution of procedures should be put in positions where efficient operation is the predominant requirement. Creative people tend to rely on latent knowledge -- to which they don't have conscious access. People who are good at precise execution of a task tend to rely on explicit knowledge. Both are important, but populating organizational roles with the right people will require an ability to identify and develop different aptitudes, depending on the degree of unpredictability in a given role.

**EDGE- How would you describe S&R to a child?**

S. H - In terms of sports metaphors. Role model athletes such as Michael Jordan, Pete Sampras, and Wayne Gretzky, consistently exhibit an ability to sense earlier and respond better to what their opponents do. And they do so within a clear context of purpose, bounds, and high-level design. Gretzky kind of said all that needs to be said about "anticipate and preempt" when he answered a question about his "secret of success." He said, "I skate to where the puck is going to be, not where it is."