

Impact of Context in Selecting Decision Tools for use in Both the Public and Private Sectors.ⁱ

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Operating systemically increases the chances that the enterprise will be of greater value than the sum of the efforts of its parts if managed separately

An appreciation of the context of business design can contribute understanding how to operate in a systemic manner. To demonstrate the affect three very different business designs will be discussed: Make-and-Sell, Sense-and-Respond and Anticipate-and-Lead. An introduction to these business designs will be followed by a discussion of how business designs and systems thinking are applied to real world business problems, and once they are applied, how they create insight for a business practice.

What is a System?

Systems and systems thinking have been described by many people. The work of Russell Ackoff provides one of the most meaningful and succinct descriptions. A system is a whole that is defined by its function in a larger containing system. Furthermore, it contains at least two essential parts without which it cannot perform its defining function.

A car, for an example, is a system. The engine, transmission, brakes, tires, steering, windows, doors, etc. are all integral parts of the system. If a tire is flat, the car cannot move well. The driver is connected to the vehicle through steering wheel, accelerator pedal, breaks, etc. The vehicle's engine, a key component in physically moving the car, if taken out of the car, cannot move by itself.

As with any other system, the essential parts of a car satisfy the following conditions:

- Each essential part can affect the properties or behavior of the whole.
- No essential part has an independent effect on the whole; the effect it has depends on the properties or behavior of at least one other essential part. Thus, the essential parts form a connected set.
- Subsets of the essential parts (also known as subsystems) can also affect the properties and behavior of the whole, but none has an independent effect.

A car then is a system that cannot be divided into independent parts because if the car is taken apart it, and its essential parts, lose their defining functions.

What is a business design? And why is it important?

In a world of more fragmented markets, extensive social concerns, and digitally accelerated opportunities, all elements of an enterprise must have direct access to what the enterprise knows about its markets, its competition, and itself. In other words the free flow of knowledge throughout the enterprise is a requirement to operating systemically. Not doing so lessens the possibility of the whole being greater than the sum of the parts. After all an enterprise no longer has the time or the resources to operate linear manner; where one group collects the information; another group translates and presents the information to another group which then decides how to develop a product. That group eventually turns that outcome over to another organization to make the product, and in turn releases it to another organization which then promotes and distributes the product or service.

Adrian Slywotzky, Author of *Value Migration* and co-author of *Profit Zone* has revealed that the primary driver of value growth in the 1980's and 1990's was business design innovation: inventing and discovering new customer priorities, new value propositions, new sources of profit and strategic control.ⁱⁱ Slywotzky has provided a clear and succinct definition of business design:

A business design is the totality of how a company selects its customers, defines and differentiates its offerings (or responses), defines the tasks it will perform itself and those it will outsource, configures its resources, goes to market, creates utility for customers and captures profits. It is the entire system for delivering utility to customers and earning a profit from that activity. Companies may offer products, they may offer technology, but that offering is embedded in a comprehensive system of activities and relationships that represents the company's business design.ⁱⁱⁱ

Section 1: The Range of Business Designs

This paper describes three prototypical business designs to anchor the endpoints of the current range of thinking and provide a midpoint that offers an emerging point of view to distinguish the traditional approach from the more visionary possibilities. The characteristics of the three business designs are captured by three terms:

- Make-and-Sell
- Sense-and-Respond
- Anticipate-and-Lead.

The following descriptions of these business designs are illustrative and not meant to be fixed or comprehensive. For example, Steve Haeckel in *Adaptive Enterprise*^{iv} provides a more complete description and broader insight into the applications of the Sense-and-Respond business design than that which is offered in this paper.

Make-and-Sell

A *make-and-sell* design does just that: The firm predicts, based on its past experience and current market research, what the market will demand. Make-and-sell

consists of providing goods and services that satisfy a need or desire of which consumers are currently aware and have, or can acquire, the means to purchase, rent, or lease. The key to success is the ability to correctly predict demand over the period of time within which the enterprise expects to gain its expected return on the capital investment. The make-and-sell enterprise views itself as an efficient mechanism for making offers, relying primarily on interchangeable parts and economies of scale. It depends on learning curves and interchangeable people -- people who execute defined procedures in accordance with a prescribed business plan. Performance measurements are gathered through benchmarking and best practice evaluation.

Dominant Leadership Personality: *The “Inner Directed” Producers.*^v

Industrious and dedicated, driven by their “psychological gyroscope,” they manage a daily routine that focuses on doing what they have always done – only better. Believing strongly that change will be evolutionary; they assure themselves of success by continual improvement in how they have conducted their business over the years. They challenge all claims of forthcoming radical change and possess interpersonal skills to persuade others they are on the right path. Others see them as conservative traditionalists.

Sense-and-Respond

A *sense-and-respond* design starts with the enterprise believing the future is neither predictable nor controllable and, therefore, organizes itself to respond to what is actually happening, as opposed to what was forecasted to happen. Sense-and-respond seeks to provide products or services that satisfy needs or desires that customers are aware of and that are not being satisfied by the current market. This process starts by reaching out to selected markets and stating, "Help me to identify your needs and let's work together to satisfy them." A sense-and-respond organization sees itself as an adaptive system for responding to an ever-changing, ever-widening range of requests. It is built around dynamically linked sub-processes and relies primarily on economies of scope, rather than economies of scale to operate profitably. The people in a sense-and-respond environment are empowered and accountable, and spend their time producing customized outcomes in accordance with an adaptive business design. In a recent exchange of correspondence, Steve Haeckel provided a performance metric for sense-and-respond; “Performance is measured by growth in net value created which is the dollar value of the benefits realized by the customer, minus the cost to the producer of providing the features that evoke those benefits.”^{vi}

Dominant Leadership Personality: *The “Other Directed” Adapters.*

With their “psychological radar” always on, they recognize that as the environment becomes increasingly unpredictable, it becomes necessary to give up control of procedures and processes, and instead to architect and control the organizational context within which empowered people improvise and adapt to changing circumstances.^{vii} Context consists of a declaration of purpose,

bounds, and a high-level role and accountability design. These people make a very perceptive team, that prides itself on knowing earlier and responding faster to changing customer needs. Alert and vigilant, they are at all times seeking to know the current needs of individual customers, and invest in understanding the underlying values that drive them. Like the bow-and-arrow game hunter, they aim just ahead of market, basing their aim on a pattern of emerging knowledge about customers, society, and business practice. Others see them as externally driven internal-change agents.

Anticipate-and-Lead

An *anticipate-and-lead* design assumes the future is largely determined by what the enterprise purposefully creates to change things—not how it responds to signals from the market place. The mindset is different from make-and-sell in that the anticipate-and-lead enterprise accepts the fact that it cannot predict what the market is likely to want, whereas the make-and-sell mindset is to produce the product or service on the assumption that the predicted conditions will lead to the sale of the amount of product or service they actually produce or provide. The anticipate-and-lead enterprise focuses on the future it wants to create. Once that future is determined, the enterprise attempts to lead the consumer to new ideas based on identifying both articulated and unarticulated consumer needs. The deep understanding of these needs are sometimes gleaned from direct observation of the consumer's behavior, including what he or she would prefer that is not now available, as he or she chooses from among the existing list of current and future products and services. The ability to anticipate-and-lead is facilitated by emerging digital technologies. Observing real-time market and actual consumer behavior and tying those findings directly to the enterprise decision process enables timely and effective decision making. Although the techniques used may be similar to those used in the other business designs, the purpose to which they are used is profoundly different—the purpose is to cause a future condition more favorable to the enterprise and the customers it chooses to serve. Performance is measured by the enterprise's share of truly new and profitable products. Evaluation of best practices is replaced by the determination to develop the next practice.

Dominant Leadership Personality: *Visionary Designers*.

Their broad interests in both topics and people help them draw seemingly unrelated things together, yielding unforeseen synergies. The manner with which they sense possibilities and how to address them makes them *enthusiastic and confident* about their solutions. They seize upon the most viable ideas and attempt to make them real. They possess a high degree of both introspective and interpersonal abilities and are comfortable both within the solitude of their own ideas and in the social world. They rely on their own judgment in the face of doubt from others and it is the power of their convictions that gets them through even the rockiest of times. Others see them as adventurous inventors.

Depending on the reader's responsibilities, experience, skills, and mental model, it is highly probable that one of these business designs would appear to be superior to the other. For example, someone with an interest improving efficiency of the manufacturing process would see the efficiency based on the economies of scale associated with the Make-and-Sell business design as, on balance, more valuable than the other designs. On the other hand, someone whose focus is on quickly responding to changing customer requirements may see more value in the Sense-and-Respond design because it demands that the enterprise responds to what customers want, and relies on empowered workers -- both good things in an increasingly service-oriented economy. And finally, someone who believes that the enterprise can come up with an entirely new approach to developing products that customers will want—even if they cannot articulate their preferences—will see more value in Anticipate-and-Lead. But it would be a serious mistake to assume that one business design is inherently better than the other. Depending on the business conditions that exist, and the ability to think creatively, it is more likely that a hybrid model, taking advantage of the most appropriate traits of each design, may be most beneficial.

An example of incorporating the full range of business designs

GM's introduction of the OnStar mobile communication system in 1996-1997 is an example of operating within three business designs. If the automobile is the epitome of the make-and-sell offering, how does an auto company create a customized sense-and-respond or anticipate-and-lead value proposition for the customer? When faced with this question, GM created an onboard computer connected via cellular phone to a satellite geographic positioning system and a central customer service center. Vehicle owners who purchase OnStar receive the ultimate sense-and-respond add-on to their make-and-sell designed vehicle. OnStar customers can call for directions, information or personalized music. An OnStar service representative has the ability to unlock a car door via phone, order flowers, or dispatch emergency help in the event that the airbag deploys.

The sense-and-respond aspects of OnStar work because the basic vehicle was specifically designed to satisfy individuals clustered in a customer segment -- the best of the make-and-sell model. Rather than attempting to make the basic vehicle in a sense-and-respond business design that would be so costly as to take it beyond the reach of most customers, GM designed an electronic infrastructure into the vehicle that allows the customer to switch on and pay for those features he or she wants.

The introduction of XM Radio, the first satellite radio systems in a vehicle, was more an anticipate-and-lead business design. In this case, GM determined that satellite radio would only be successful if sufficient vehicles had radios that could receive the satellite signals. The availability of these radios would provide enough potential subscribers to warrant the investment required to develop and deliver the appropriate programming at an acceptable price. By creating a strategic relationship with XM Radio GM changed the environment by installing satellite compatible radio in a large percentage of its vehicles. In doing so GM was able to kick start the industry to such an extent that its strategic partner, XM Radio, is currently the market leader with over

one-and-a-half million subscribers.

Section 2: The Value of Dynamic Models and Systems Thinking to Decision Makers

Defining problems in terms of the systems that underlie them has been invaluable to GM’s decision-making process. System Dynamics (SD), the formal practice of systems thinking, has played an important role in improving the effectiveness of each of GM’s business designs. Figure 1 lists some of the SD projects that were completed during the last ten years. Time and space do not allow a complete description of each project but some of them are explained in more detail in the section on models and insight.

Figure 1

Trait	Make and Sell	Sense and Respond	Anticipate and Lead
Examples of System Dynamics Models	Vehicle Leasing New Market Development Enterprise Model Vehicle Development Process Plant Maintenance	Rapid Order to Delivery Extended Customer Relationship Business	OnStar XM Radio Autonomy Vehicle Immigration policy- Dept of Census

Experience in the field of SD modeling has led to the conclusion that the primary value of SD models to decision makers is the generation of insight. Insight is difficult to define precisely but, roughly, an insight is a shift in the decision maker’s mental model that causes him or her to consider new options or to affirm options already considered but not acted upon. Insight is often associated with an “Aha!” moment occurring when mental models reconfigure themselves. In a recent paper concerning the dynamics of insight generation, Matthew Cronin explains in his article, *How Conflict Results from Perceptual Gaps in the Shared Understanding of a Problem*, that:

Insight is the ‘Aha!’ sensation that occurs when without foreseeable warning a person discovers a new conceptualization of the problem (i.e. problem representation), resulting in a new and better approach to solving it. Insights are important because they are usually associated with important breakthroughs such as scientific discovers as well as innovative business practices.

While the creation of insight will always remain somewhat random and uncontrollable, it has often been the case that decision makers, guided by a carefully designed SD model, can facilitate insight generation.

The view that insight generation is the primary value of SD models contrasts with the view of models as forecasting tools. Experience in the field has led to the conclusion that the specific model numbers or forecasts are rarely the most persuasive evidence to decision makers. Detailed financial forecasts are rarely remembered shortly after the meeting in which they are presented. Senior managers are well acquainted with the fact that all but the shortest-term financial projections are hopelessly inaccurate. It has become almost impossible to make the case that any type of model can be accurate forecasting tool.

Modeling Themes that Often Lead to Insight: Stock-Flow Physics

Figure 2 lists some modeling themes that have led to insight in past model projects. A modeling theme is a concept that frames the problem and guides the way the analyst explains the model structure and results. The modeling theme helps the analyst tell the story of why the model behaves as it does.

Figure 2

Insightful Modeling Themes

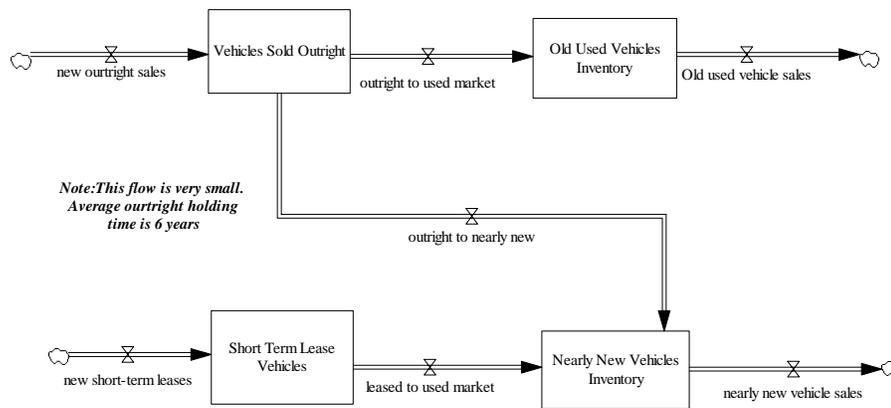
- High leverage intervention
- Stock-flow physics
- Design of businesses and markets that don't exist: Operational perspective
- Robust Policies: Value of flexibility
- What do you have to believe?
- Delays and pace of system response
- Complex systems effectively controlled with simple rules

Stock-flow physics has proven to be powerful modeling theme. Year ago Barry Richmond and Mark Paich began to discuss the importance of stock-flow physics in a variety of system dynamics models. Jack Homer significantly developed these ideas in his Forrester Prize acceptance speech. The key idea is that simple stock-flow systems often have logic of their own and the fundamental behavior patterns of these systems are extremely difficult to change.

Within the framework of the make and sell business model, the GM leasing case discussed in John Sterman's book *Business Dynamics*, is a good example of stock-flow physics leading to insight. During a period when used car prices were rising by 7-8% per year, the model predicted that within three years, used car prices would decline significantly and lenders would be stuck with large losses on their lease portfolios. The policy recommendation was to significantly reduce the number of new short-term leased vehicles. When the recommendation was made, the trend in the

vehicle business was toward increasing short-term leasing.

Figure 3



The stock-flow physics that generates the collapse in used car prices was rather subtle. A simplified sample of some of the stocks and flows in the leasing model are shown in Figure 3. It is obvious that two years after a bulge in the flow of two-year vehicle leases, a large number of nearly new vehicles will come onto the used car market. The point that is sometimes missed is that for every used car that comes onto the market there is also a car buyer. If the number of used cars coming to market equals the number of buyers then there is no supply demand imbalance and no pressure for car prices to fall. However, the important aspect of the stock-flow system showed that nearly-new vehicles would compete and divert buyers away from new cars to a much greater degree than the typical six year old used car had in the past. A significant imbalance in the supply and demand for nearly new-vehicles created a positive feedback loop in which falling used prices caused lower new car prices and still lower used prices. The stock-flow model made it clear that the increased supply of nearly-new vehicles would compete for sales with new vehicles.

The mechanism generating the imbalance between nearly-new vehicle supply and demand can be difficult to grasp. After presenting the model results, one manager created a simple game (like the beer game) in which poker chips represented vehicles flowing through the system. The manager used the game to convince himself that the model stock-flow structure was correct and wasn't missing something obvious. Physically moving the chips through the logical stages of the system helped to shift the manager's mental model and changed the way he viewed the problem. Ultimately, the results of the game were qualitatively the same as the models; the manager had an "Aha" moment, and accepted the model conclusions.

The biggest barrier to senior manager's accepting model results is the justified uncertainty about whether the model is a reasonable representation of the business reality. In the leasing case, once the stock-flow physics were understood, the model conclusions became almost inescapable. It was known how many leased vehicles

were in the pipeline and the distribution of new vehicles sales between outright purchases and different lease terms. GM could also be quite certain about how vehicle manufacturers would react to lower sales and higher inventories. Once the available data were combined into a stock-flow model, there was little residual uncertainty about the system would behave.

Modeling Themes that Often Lead to Insight: Operational Strategy

The “anticipate and lead” design often involves the development of new businesses. For example, OnStar and XM radio were businesses that were completely new to GM. When considering completely new businesses, one level of thinking that often seems to be missing is what we have turned “operational strategy.” Operational strategy lies between the highest-level visionary strategy and tactical execution. Visionary strategy focuses on the macro conception of what a new business could be and usually doesn’t consider the specific structures required to make the business successful. Tactical execution focuses on the details of who will do what and when. System dynamics has proved useful in developing an intermediate level of analysis that connects the visionary to the tactical.

Figure 4



Operational strategy models represent the stocks, flows and feedback loops that generate the outcomes envisioned by visionary strategy. The models often include flows of customers through states of awareness, product adoption, and satisfaction. The mechanisms that generate the customer value proposition, competitive dynamics, and industry evolution are also included. The models are used to determine the factors that are most important for new business success but do not try to model detailed task execution.

Operational strategy models provide insight by helping decision makers envision how a new business can become successful. For example, in the OnStar example, nobody had any experience in the telematics business because it did not exist! There was no

historical data or any existing businesses to benchmark. Furthermore the car business had primarily functioned under the conditions of the *make and sell* or the *sense and respond* business designs. The model served as a bridge that enabled senior managers to become comfortable with the structure and behavior of an *anticipate and lead* business within a *make and sell* industry. In a famous paper, “Planning as Learning” Arie de Geus explains that models can serve as “transitional objects” that facilitate transitions in mental models. In the OnStar and XM radio cases, senior management became comfortable enough the novel business models to make multi-million dollar commitments.

Although there is still far to go, OnStar has been a considerable success. Some of the relevant quantitative measures are listed below. More importantly, OnStar has become one of the few unique assets in the vehicle business. No other vehicle OEM has anything close to GM’s telematics capability. The value of the OnStar asset will become clearer in the future as GM adds services that will reduce warranty cost, improve the customer service experience, and enable new products such as variable rate vehicle insurance.

Figure 5

Qualitative Measures Used to Assess OnStar

- GM’s subscriber base as of April 2004 is over 2.5 million customers.
- OnStar is the provider of 85% of vehicles using embedded wireless services
- There are five OEM’s offering the OnStar system: Honda (Acura), Toyota (Lexus), Subaru, and Volkswagen/Audi. Combined with GM this group conducts forty-five percent of new vehicle sales—all potential OnStar customers.
- OnStar is the largest re-seller of cellular phone time in North America
- There are over 50 companies aligned with OnStar providing applications and content to OnStar subscribers. They include:
 - Verizon Wireless
 - EDS
 - NAVTECH
 - SpeechWorks
 - Fidelity
 - Weather Channel
 - Wall Street Journal
 - Disney
- On a monthly basis, OnStar:
 - Answers 250,000 routing calls
 - Answers 16,000 roadside assistance requests
 - Performs 30,000 door unlocks
 - Responds to 800 air bag deployments
 - Responds to 800 stolen vehicle location requests
 - Runs diagnostic checks on 20,000 vehicles

Modeling Themes that Often Lead to Insight: Robustness

What are robust policies and why are they important to decision makers? Robust policies are rules that lead to good outcomes under a wide range of assumptions about the system's structure and resulting behavior. As discussed above, decision makers are disinclined to accept model results if the recommendations depend on particular realizations of highly uncertain assumptions. In situations of high uncertainty, like those found in anticipate and lead and sense and respond situations, decision makers are inclined to ignore model results and to go with their "guts". Model-based policy recommendations can be much more insightful if they are shown to be insensitive to most assumptions. Robustness can give policy makers confidence that they have made the correct choice even though the environment is very uncertain. System dynamics research has discussed robustness as a criterion for evaluating policies but the topic is important enough to deserve further development.

The first step in robustness analysis is determining how robust policies are to alternative assumptions. Simulation models are essential to evaluating robustness because they are the only way to quickly test policies against a wide enough variety of assumptions. In evaluating robustness, multiple model runs are made with a single policy. Each model run uses different values for the set of uncertain parameters. The uncertain parameters can be set with Monte Carlo techniques such as hypercube sampling that guarantee that a wide range parameters will be tested. The procedure is repeated for multiple policy options with the same values of the uncertain parameters. The data generated by the simulations can be used to compare the value of different policies under the same ensemble of parameter values. Graphical techniques can be used to display the policies that are best under wide ranging assumptions (Lempert, Popper and Bankes: *Shaping the Next One Hundred Years*).

The second step in robustness analysis is considering how the system structure could be changed to increase robustness. One approach to increasing robustness that has been discussed extensively in the finance literature is real options. The real options approach seeks to limit downside risk by breaking decisions into smaller pieces and reduces the amount at risk for any one decision. For example, a real options analysis would break the decision to invest in a new product into several pieces including development stages and the commitment to build production capacity. The decision to build capacity would be contingent on successful completion of development. The decision maker has the flexibility to decide whether to proceed with the individual phases of product development instead of deciding to complete or abandon the whole project at once.

Real options thinking was an important part of the decision to factory-install OnStar on all GM vehicles. The modeling process was compelling enough to convince senior management that the OnStar business had great potential but there were still doubts about cost and technical feasibility. The potential value of the Onstar business led to an expensive engineering study that demonstrated the feasibility of rapid deployment

of the OnStar system. By spending money on the engineering study, GM bought an option to widely deploy OnStar if the result of the study was favorable. Otherwise, GM could have delayed or abandoned OnStar with little additional cost. Implementation was much easier because senior management was never asked to take, “a big bite out of the apple.”

Conclusion

Operating systemically and using the tools of systems thinking increases the chances that enterprises of any size will be of greater value than the sum of the efforts of its parts if managed separately. Furthermore, with the advances in technology and increasing availability of data, observing real-time markets and actual consumer behavior within an organized framework will prove useful to decision makers. Tying this real-time data directly to the enterprise decision process often requires using a system dynamics model, which enables timely and more effective decisions to be made by senior management.

A large business like GM consists of multiple business designs at once, system dynamics models provides decision makers the ability to conceptualize each business design in accordance with the underlying system. In the case of *make and sell* (the leasing example), thinking systematically in terms of stock and flow physics proved valuable to decision makers by gaining a deeper understanding of a business they already know well. A model tracking real-time data of consumers and suppliers over time facilitated an “ahha moment” that brought new insight to the decision-making table.

In *anticipate and lead* situations there is often a new business to analyze, and new business propositions that benefit greatly from the concepts of operational strategy. These types of models create an essential conceptual bridge between visionary strategy and tactical execution. During this phase of enterprise planning the business or organization requires guided planning before taking on the financial costs associated with creating a new business.

Once the business has gone through the process of operational strategy, robustness and real options are tools able to assess the risks associated with multiple types of business designs before they are realized. Robustness and real options can be instrumental in achieving implementation of a well thought out business plan.

Make-and-Sell, Sense-and-Respond and Anticipate-and-Lead are business designs that provide the backbone for organizing business concepts. Depending on the conditions of the business and the company’s ability to think creatively, it is more likely that a hybrid model, taking advantage of the most appropriate traits of each design, may be most beneficial. The three business designs in association with a system dynamics model have helped GM and many other organizations gain a deeper understanding of the central issues surrounding business problems in order to make well informed business decisions.

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- ⁱ See Barabba, Vincent, *Surviving Transformation*, (New York, Oxford University Press, 2004) and Barabba, Vincent, Chet Huber, Fred Cooke, Nick Pudar, Jim Smith, and Mark Paich, “A Multimethod Approach for Creating New Business Models: The General Motors OnStar Project,” *Interfaces* Vol. 32, No. 1, January-February 2002, 20-34 for a more fully documented description of this subject.
- ⁱⁱ Slywotzky, Adrian *Value Migration*, (Boston: Harvard Business School Press, 1996) Slywotzky, Adrian and David Morrison, *Profit Zones* (New York: Times Books, a division of Random House, 1997).
- ⁱⁱⁱ Slywotzky, *Value Migration*, 4.
- ^{iv} Haeckel, Stephan, *The Adaptive Enterprise* (Boston: Harvard Business School Press, 1999)
- ^v Riesman, David, *The Lonely Crowd*, (New Haven: Yale University Press, 1950) issued as Yale Paperbound June 1961. pp 15-16. In his penetrating review of 20th Century social character, Riesman identified a range of personality types. Among them were a group he described as inner directed which had “one thing in common: the source of direction for the individual is ‘inner’ in the sense that it is implanted early in life by the elders and directed toward generalized but nonetheless inescapably destined goals.” Riesman used the metaphor of a psychological gyroscope which once set by external forces keeps the inner directed person on course. In discussing the metaphor Riesman commented, “This metaphor of the gyroscope, like any other, must not be taken literally. I would be a mistake to see the inner directed man as incapable of learning from experience or as insensitive to public opinion in matter of external conformity. He can receive and utilize certain signals from outside, provided that they can be reconciled with the limited maneuverability that his gyroscope permits him. His pilot is not quite automatic.”
- ^{vi} Stephan Haeckel, recent correspondence
- ^{vii} Riesman, David. *The Lonely Crowd*, p 21. Riesman uses the metaphor of radar to distinguish between the “other directed” and “inner-directed” personality types. “What is common to all the other-directed people is that their contemporaries are the source of direction for the individual—either those known to him or those with whom he is indirectly acquainted, through friends and through the mass media. This source is of course ‘internalized’ in the sense that dependence on it for guidance in life is implanted early. The goals toward which the other directed person strives shift with that guidance; it is only the process of striving itself and the process paying close attention to the signals from others that remain un-altered throughout life.”