

Using the Theories of Innovation to See What's Next

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Synopsis by Rod Cox

"Much of the way we train managers and do research about management (is based on) a flawed paradigm – the belief that decisions should be grounded in solid analysis of data. The problem with this paradigm is that when managers attempt to do something that has not been done before, or when the future is going to be different from the past, the paradigm breaks down. Data is only available about the past."

This means that organizations can do everything right and still fail. When they continue playing the game with rules that have served them well in the past but are no longer valid – often as a result of new technologies – they cannot hope to win. Consider the impact of the MP3 revolution on CD sales. In 1998, CD sales revenue was growing at an annualized rate of 15%. MP3 players (e.g., Rio Diamond) were just coming onto the market, and were competitive only in that they allowed the listener to hear his or her own music whenever and wherever. But sound quality was poor and capacity was only 32 MB. Just four years later, hard drive-based players offered 20 GB storage, battery life was extended and sound quality was much improved. CD revenue had begun to decline precipitously. At issue wasn't the quality of CDs; rather, it was the rapid technological advances in MP3 devices and the availability of downloadable music that made CDs increasingly cumbersome and obsolete. To that point, many automobile sound systems now offer MP3 docking ports giving the driver access to thousands of songs on demand.

Spotting disruptive innovation is as difficult as initiating it. It's easy to miss the transformation even when it has already begun, or when companies you would expect to get it, don't. Organizations with great historical and marketplace strength are particularly susceptible. Their momentum can carry them over a newly emerged cliff. But those that understand the patterns of disruptive innovation can utilize them to understand how their industries and opportunities are changing. By spotting changes, facing the challenges and thinking differently, they can respond appropriately.

Anthony's presentation focuses on a belief that innovation is built on principles, not miracles. Many successful organizations are skilled at initiating sustaining innovations; i.e., improvements to their established practices. But, as Anthony argues, in today's world that may not be enough. To survive and thrive, organizations need to embrace the disruptive innovations that can radically alter their playing fields.

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Anthony's *Management Forum Series* presentation was notable for the unusual clarity of his thinking as well as his extraordinary facilitative skills. The quotes and concepts in this synopsis are from his book and his presentation.

Organizations are facing formidable challenges in every industry:

- **Perpetual growth is elusive.** *"Historically, fewer than 10% of companies have been able to sustain for more than a few years the growth that creates above-average shareholder returns." Survival is hard enough; thriving is even harder. "Once a company's growth has stalled, historical evidence suggests it has a 6% chance of successfully re-accelerating growth."*
- **Individual initiatives are unpredictable.** *"Only 20% of venture capital-funded start-ups succeed. Only 25% of new products launched by established companies succeed. Almost all acquisitions wind up being negative contributors."*
- **A history of success can be a liability.** *"Leading incumbent firms often catch transformational trends too late, or not at all."*

Note these high-profile examples:

Organization	What Happened	The Reason
Western Union	Was offered the telephone by Alexander Graham Bell, but turned it down. Today, Western Union's share of the communication market is negligible.	Phone technology at that time could offer only a 2-3 mile range, not the continental range needed by the railroads who were Western Union's customers. "The device is inherently of no value to us."
AT&T	Did not jump into cellular phone business despite Bell Lab's extensive work on cellular phone technology. Had to buy its way back into the industry at exorbitant prices in the 1990s.	A 1980 study commissioned by AT&T forecast a total marketplace for only 900K cell-phones. The company was blinded by its huge investment in hard-wired infrastructures.
Digital	Although a giant in early mainframe computer technology, Digital didn't grasp the PC revolution. After phenomenal early growth and record profits, sales dived and the company was purchased by Compaq.	"There is no reason anyone would want a computer in their home." Digital saw computers as being suitable only for centralized (mainframe) usage at very large organizations.
Sony	Despite creating the Walkman, Sony did not recognize the MP3 revolution. Sony now commands only approx. 1% of the total MP3 player market.	Sony had competing internal interests ("We're a music company"), and was burdened by high-minded thinking ("Hard disks aren't Sony technology and they aren't interesting").
American Auto Industry	In 1960, foreign cars represented a tiny fraction of the American market and were seen as being cheaper and cruder. Today, they represent over 50%, and attitudes about their quality (Japanese in particular) have flip-flopped.	American auto industry large-car technology and outlook did not work well for small cars.
Kodak	In 1976 Kodak commanded a 90% market share for film and 85% market share for film cameras. By 1988, Kodak dropped to 80% of film and 45% of film camera market share. After much turbulence and leadership turnover, Kodak now has 60% of film and 25% of digital camera market share.	Kodak regarded itself as a film company and resisted the digital revolution. It began recovering when it harkened back to an original Eastman tenet: make picture taking easy and affordable for everyone.

The Disruptive Innovation Model

Innovation often outstrips the capacity of the marketplace to assimilate it. Companies almost always seek to solve the hardest problems, and to do so a pace faster than consumers can absorb, failing to recognize that the performance level customers can utilize is relatively flat. Thus, innovation for innovation's sake is seldom financially successful.

The characteristics of sustaining innovations and disruptive innovations are separate and distinct:

Sustaining Innovations	Disruptive Innovations
Better	Different
Premium price	Low price
Next-generation	Good enough for now
Leap forward	Leap down
Complicated	Simple

To survive, companies must use the innovation model appropriate to where they are positioned in the market:

- When the point of innovation is to make products or services better and faster in established markets, incumbent firms generally win. **Incumbent firms are often great at sustaining innovations**, especially when they take small leaps to advance in the face of technological progress.
- **Entrants nearly always win battles of disruptive innovations**; hence, disruptive innovation is a good strategy if a company seeks to create new growth businesses or to defend against attacks from below. Use disruptive approaches to connect in new ways with overshot customers, take advantage of competitor weaknesses and blind spots, and to create differentiated, defensible growth strategies.

"(Although) disruptive innovation appears to be random and unpredictable, there are actually patterns that connect successful innovations. Behind these patterns are principles that guide companies seeking to create growth through innovation. Companies that utilize the patterns and follow the principles can spot new growth opportunities that previously were invisible or appeared only as threats. However, successfully commercializing these new growth opportunities can require overcoming internal barriers and breaking organizational mindsets that act as organizational anti-bodies."

"Disruptive innovations offer 'good enough' performance along traditional dimensions and new benefits such as simplicity, convenience or low prices. They appeal to overshot customers or 'non-consumers' looking for something different, and often utilize 'low cost' or 'start small' business models. Disruptive innovations take advantage of competitive weaknesses and blind spots."

Consider the potential of disruptive innovation:

- Making the ugly attractive to overshot customers who don't value or use all of the benefits of existing products; providing cheaper, simpler or more convenient solutions. For example, MinuteClinic provides kiosks located in retailers such as Target and Cub Foods,

that are staffed by nurse practitioners who offer treatment for everyday cold, flu and sprains at a cost lower than visiting the emergency room.

- Scratching the unscratched itch by providing solutions that make it easier and simpler to get the job done; by taking care of jobs that customers find messy or inconvenient. (FedEx and Swiffer)
- Offering simple solutions that break bottlenecks and democratize a limited market for customers who lack the skills, wealth or ability to do it for themselves. (eBay)

Many organizations have missed the mark. But consider some high-profile organizations that got it right:

- **HP** set up a separate division from its laser printing business to successfully commercialize ink-jet printing technology.
- **Dow Corning** created its Xiameter distribution channel to cost effectively serve less-demanding silicone customers.
- **Intel** introduced the low-end Celeron chip that fits the needs of many home computer users that had been overshoot by powerful processing speeds of high-end chips. This blocked advances by AMD, and is now Intel's highest volume product.
- **Procter & Gamble** built and/or bought blockbuster products for which there was no previous market. (WhiteStrips, SpinBrush, Swiffer, Febreze)

Why Disruption is Hard

A company's strengths define its weaknesses. What a company is good at often determines what it is bad at; i.e., the entrenched resources, processes and values that have made it successful often get in the way of successful new business. This is easy to understand, yet difficult to integrate. Making disruptive innovation work requires overcoming a number of formidable challenges:

1. A disconnect with the existing resource allocation process – Companies tend to allocate resources to support their existing technologies, processes, values and priorities, and to block disruptive innovation proposals. Existing filters (paradigms, habits, outlooks, ways of doing business) get in the way. Hence, Budgeting is likely to declare the market too small and the margins too slim; Production may counter with "it's not good enough, it's too simple"; and Marketing may push back with "customers aren't going to use it."

2. The tendency to "cram" into existing markets – Those that see innovations as threats tend to turn them into self-fulfilling prophecies. Many makers of vacuum tube-based consumer products responded to the threat of transistors by taking the technology into their labs and investing heavily to force the technology into existing products, such as floor-standing televisions. They missed opportunities to go into new applications, like hearing aids and portable radios. They ended up fruitlessly spending hundreds of millions of dollars and missing key growth opportunities.

3. Allowing existing capabilities to get in the way of success – By restricting resource allocation, allocating in the wrong way, or depending on current strengths, the U.S. car industry paved the way for disruptive fuel-efficient foreign cars. The processes that were designed to build large cars became liabilities in the new business of building small cars. Early U.S. small cars – GM's Vega, Ford's Falcon and Chrysler's Valiant – were just miniaturized versions of their large cars: smaller, but not better.

Retailers have also faced several waves of disruption. In nearly every case, the existing capabilities (warehousing, shelving, staffing) got in the way of innovation. Downtown department

stores were built around a slow 3X/year turnover of stock. Even though their margins were high, they were not competitive with catalog retailers who could turn their stock 4X /year with smaller margins. When discount department stores (Target, for instance) came along, the turn was 6X/year. Online retailers now count on 18X/year stock turnover. To the extent that traditional retailers could extricate themselves from the old processes, they were successful. But most – Woolworths, for instance, when it established Woolco – were unable to separate the spin-off from their core business practices and infrastructures, and thereby forfeited the cost savings that might have enabled them to successfully compete with discounters.

Lessons learned would include (1) the need to create situations where disruptive innovation is seen as an opportunity, not a threat; and (2), the need to put constraints such as well-defined time frames and budgets on R&D so that their mantra becomes "make it work."

So How Do We Get The Transformation Right?

"Organizations that successfully integrate disruptive innovation tend to look down and sideways (not up) to spot signals of change; to watch for customers that can't get a job done or are overshot. They watch for opportunities to democratize a historically limited market, and remember that the path to complicated destinations often starts simple. They are prepared to adapt as they learn how their strategy is incorrect, and they put in place the pillars of an innovation dynasty."

1. Quality is a relative term, defined as good or bad only in terms of the job that needs to be done. Is a tool company selling a quarter-inch drill or is it selling the capacity to make a quarter-inch hole? Think of the job to be done and find new ways to do it.

- Kodak regained impressive market share with its disposable FunSaver camera. Although its picture quality wouldn't impress a professional photographer, its ease of use and spontaneity make FunSaver ideal for the vacationer or partygoer who forgot to bring a camera along.
- Unlike increasingly sophisticated PDAs, Blackberry's began by only doing email, but its simple and elegant portability permitted owners to use small snippets of their time effectively.
- Fast food companies have increased their milkshake sales by using two viscosities: thick in the mornings for one-handed on-the-go adult breakfasts, and thinner in the afternoons when parents want an easily-slurped accompaniment to kid-meals.
- The percent of adults who read newspapers daily sank from 77% in 1970 to 52% in 2004. The Internet and wireless communications have become "the new way to get the job done." Financially, however, newspapers are doing well because of advertising revenues. What do you predict for their future?

2. You can in fact be too good. People won't pay premium prices when what they already have is more than adequate. For example, landline telephone quality is pin-drop clear, 99.9% reliable and survives even when the power goes out. Cell phones have not yet achieved these levels of quality, but they do offer "anywhere" convenience, a disruptive innovation advantage.

3. Non-consumers can be great customers.

- *Is consumption of a product or service limited to the wealthy?*

Ford became an industry giant by building the Model T, a car priced to be available "for anyone who earns a Ford Motor Company wage."

Southwest Airlines, the only consistently profitable U.S. airline for the past 25 years, pitches itself as an alternative not to other airlines, but to bus lines and trains.

- *Do you have to have special training or expertise in order to use the product?*
Balloon angioplasty provides a simple, local and relatively inexpensive alternative to open-heart surgery, formerly the only treatment for clogged arteries.
Home computers are used by people at all age levels who are not otherwise technically proficient.
- *Is consumption limited by a need to go to an inconvenient location?*
Crest's WhiteStrips (which earn P&G \$250M/year) are as available as the closest drug store, and at only a fraction of the cost of conventional dentist-chair teeth whitening treatments.
The mobile phone industry has made telephone access ubiquitous.

4. The path to complicated destinations often starts simple. Don't wait until all the i's are dotted and the t's crossed before innovating. Consider eBay, which started out as an online means to sell beanie-babies. eBay didn't wait until all the bugs were worked out before venturing into other sales applications. "It's better to put something out there and see the reaction and fix it on the fly. We're better off spending six days in the lab, putting it out there, getting feedback, and then evolving it. It's another way of saying 'perfect' is the enemy of 'good enough'." *Meg Whitman, CEO, eBay*

5. Winning approaches often start simple. If you want to compete via transformational innovation, consider making calculated adjustments to the way you serve your existing market. If you want to compete via disruptive innovation, consider true open-space markets. eBay created a new way of making markets; SMS (short message service) created a new way to connect with other people; Ringtones created a way to easily customize cell phone rings; PalmPilot created a complement to lap tops; and DaveTV is creating an on-demand way to watch brief video clips of your choice.

6. Tomorrow's disruptive competitors are likely to be different from today's competitors. In fact, you might easily overlook them since they often start in the fringes, doing things that fit the elements of the pattern. If you ignore that part of the pattern, you lose. We sometimes pay so much attention to what we think matters that we miss what really matters. The New York Times sees Wall Street Journal and The Daily News as threats, but the real threat is Google and Gawker. Harvard sees Stanford as a threat, but the real threat is University of Phoenix and other non-traditional, flexible learning institutions. In the 1990s, Microsoft perceived the Department of Justice to be its leading threat while ignoring the open source movement that has become one of its biggest threats.

7. When we don't know, we are likely to be wrong. This plays out several ways. Organizations often embark on a transformation with a single eye and a flawed strategy. (More than 90% of successful new ventures start off following the wrong strategy.) If there are not points of learning and adjustment (re-vectoring) built into the transformation, they are likely to get to the wrong answer. Prodigy was designed for commerce, but found its system overwhelmed by idle email chats between its customers. Assuming they had the right answer in the beginning, Prodigy raised the service access fee to weed out chatting. This provided a window of opportunity to AOL to swoop in and take over the global chat market.

To keep your organization from finding out too late that its strategy is wrong, consider limiting the fixed investment. Don't set the strategy and forget it. Be willing to adjust as needed with a clear understanding of what success looks like. And be patient for growth, but impatient for profits. If payback does not happen quickly, your strategy is very likely wrong.

To keep a successful innovation going, keep the approach simple and functional:

"You can be doing everything right, and still get it wrong."

- *Develop assumptions and risks. Look beyond the obvious to identify "unconscious incompetence."*
- *Identify priority areas. Maintain humility and objectivity in evaluating levels of uncertainty.*
- *Test and learn. Find creative ways to learn without risking the entire initiative.*
- *Absorb and redirect. Have the fortitude to change course when new information arrives.*

The Wright brothers built and flew many miniature models to test their assumption that dynamically warping the wings of gliders would provide directional control. The lessons they learned from this simple, cheap and safe process were incorporated into their first successful powered flight.

Seven Pillars Of An Innovation Dynasty

Remove	Insert
Using one process for all innovations	Different resources and processes
Talking about the importance of innovation	Live and breath innovation
Assuming business as usual works	Block corporate antibodies
Expecting projects to get big fast	Be patient for growth, yet impatient for profits
Looking for "right-stuff" managers	Find "Schools of Experience" staff
Assuming you have all the answers	Take an external perspective looking for "know-how," not "know-who"
Keeping a tight handle on doing things right	Embrace failure that allows for learning and adapting

Summary: Ten Implications and Key Principles

1. Quality is a relative term. Understand the fundamental jobs people are trying to get done.
2. Consider using "and" in place of "or." Keep doing things successfully, "and" add when it makes sense.
3. Pay close attention to the job to be done. What is the problem that needs to be solved?
4. There is such a thing as "too good." Don't invest to improve beyond "good enough" as seen by the consumer.

5. Non-consumers can be great customers. Who are they? What is their influence? Make it easier and simpler for people to do what they are trying to get done.
6. Look asymmetrically at your competitors. What don't they do, or don't want to do?
7. To get to a complicated destination, start simple. Avoid overshooting and making things too grand. Identify a high-potential foothold that can serve as a stepping-stone.
8. When you don't know, you are likely to be wrong. Start small and focus on addressing key assumptions. Invest a little and learn a lot. Start, adapt, change.
9. Look at the market first; i.e., keep your focus on what is going on outside your organization.
10. Innovation can be made systematic. Put in place the pillars of an innovation dynasty.

Application: A 90-Day Plan For Putting Principles Into Action

- 1. Conduct a disruptive diagnostic to spot signs pointing to the need to change strategies.**

- 2. Look at the past. Analyze 10-20 historical successes and failures in your industry to create your own growth playbook. What is going on? What do your competitors do poorly, unwillingly, or not at all? What would it take for your organization to capitalize on this situation?**

- 3. Give a small team 90 days to create a portfolio of disruptive opportunities. Operating from a scarcity model, constrain the team to get a few quick but small wins.**

- 4. Begin training a select group of senior managers to break mindset barriers. Who are the powerful people who can make this happen? How can you get them involved?**

- 5. Start looking for process weak links and organizational antibodies. Think of ways to make sure teams avoid those traps. What are the key internal barriers (processes, values and people) that stand in the way of disruptive innovation for your organization? What do you need to do to remove the barriers?**

Executive Forum heartily recommends that you buy, read and discuss *"Seeing What's Next."* Note the Disruptive Innovation Theory model on page XVI (Introduction) and the Conclusion, pp. 267-273.