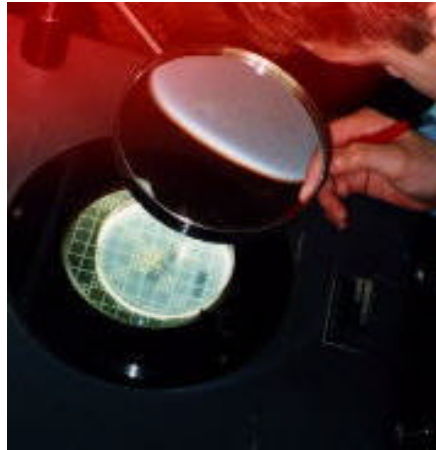


Creating a Self-Renewing Patient-Centered Medical Practice Using "Disruptive Technology" as a Catalyst

HADE 690

October 22, 2001



Agar Plate Theory of Organizational Change ©
David R. Salter

"To ultimately blossom, the seeds of creativity and innovation require continual, passionate and cloistered protection in a very special place until they reach that critical time when they have grown so much that others can appreciate their beauty."

David R. Salter (August 6, 2001)

Disruptive Technology as a Catalyst to Developing Patient-Centered Health Care

Critical analysis of failure is a prerequisite to understanding sustained success. The power of theories such as Clayton Christensen's exposition of "disruptive technology"¹ in *The Innovator's Dilemma* (1-4) lies in the critical analysis of failure using a model that, when continuously applied, is refined and honed to precision. A model based on research data (2,8,10,14,18,21,38,39) is an unquestionably accurate reflection of the past and becomes a powerful predictor of the future.² Very good organizations can eventually fail when they are no longer able to recognize (in time) the effect of an innovation on their well-established and comfortable world. Surprisingly, even fairly "enlightened organizations" that try to nurture "disruptive innovations" within the old structure and culture of the organization, fail.³ Powerful forces seem to wrench innovation back into the center of the organization where it becomes so perverted by the rigidity of the old ways of doing and thinking, that it no longer resembles an innovation (5). Business organizations create products (Polaroid cameras), provide services (People's Express Airlines) or share information (WebMD). Success or failure can be analyzed by using measurable endpoints such as market share, stock values or other validated parameters (each of these companies is in a phase of failure). Medical organizations on the other hand, profess to supply all three utilities, yet do so in an environment that is haphazardly constructed within a management system that frequently consists of loosely related fiefdoms with opposing missions, guided by power-driven and weary warriors, or wary wunderkinds. We have no talisman of measure. No wonder it is difficult to assess where we are in medicine today, to say nothing of where we might be heading! So ... where can innovation survive? What culture could possibly maintain the drive for *continuous innovation* without becoming a victim of new "disruptive innovations" themselves? How can rigid and traditional guilds of professionals - such as physicians - suddenly become flexible and creative? What kind of leadership is necessary to support this Shangri-La of medical care? It is possible that answers lie in the principles of a self-renewing patient-

¹ "Disruptive Innovations enable a population of less skilled ... to do things in a less convenient centralized setting ... cheaper ... almost always ignored by leading institutions." Clayton M. Christensen

² " Study history, study history - in history lie all the secrets of statecraft." Sir. Winston S. Churchill 1953

³ The failure rate in 350 companies that tried to embrace and develop recognized disruptive innovations within their old culture was 100%. Clayton M. Christensen, Richmond Colloquium, March 2000.

Disruptive Technology as a Catalyst to Developing Patient-Centered Health Care

centered medical practice that actually uses disruptive technology as a powerful positive catalyst to drive and sustain itself rather than being disrupted by it. Perhaps it is a naïve assumption that flexibility and rigidity can coexist within the medical profession. Several years ago over lunch, a non-physician Ph.D. colleague stimulated me to think about models of organizational and physician change in Academic Medical Centers and *The Agar*⁴ *Theory of Growth and Change*© evolved in my mind. It occurred to me that perhaps one of the reasons that 70% of new ventures fail is not because of poor ideas or even poor execution, but rather the intrusion of “negative” or “destructive” elements that undermine the initiative, in very subtle ways, at an early point in the creative process. People often work together in an organization, yet they may never ever interact. They work in complete isolation. Bright ideas are never shared, fertilized or refined and enthusiasm eventually dies. In the *Agar Theory of Growth and Change*©, individuals or cells in a healthy organization are recognized, nourished and supported in their environment. They are made to be aware of each other and work without fear (17). The agar plate cover protects them from other bacteria, toxins or cellular overgrowth. With time, they succeed, expand and spread their influence until there is a coalescence of cells as they join each other to establish an entirely new organizational culture. This is accomplished through sustained nurturing (positive influences), protection from contamination (negative influences) and a prolonged incubation time (slow phase of creativity). Implementation time is short as the innovation is rapidly launched and the cycle then starts all over again. This describes a “Horizontal Linkage Model”⁽²²⁾ similar to the organizational model of Toyota, Levi Strauss, Monsanto, GE, Texas Instruments, IBM and Xerox. Creative elements of the company are nurtured and manage to escape the gravitational pull of the company’s center of inertia. Maintaining creative independence while still part of the organization is wonderfully described in “Orbiting the Giant Hairball: A Corporate Fool’s Guide to Surviving with Grace.”⁽⁵⁾ A premise of the *Agar Theory of Change*© is that people generally want to do well and that given the right environment they will. Small

⁴ Agar - 1. a gelatinous product made from seaweed and used as a base for bacterial cultures, as a laxative, in jellied and preserved foods 2. a base containing agar-agar Webster's New World Dictionary 2nd Edition

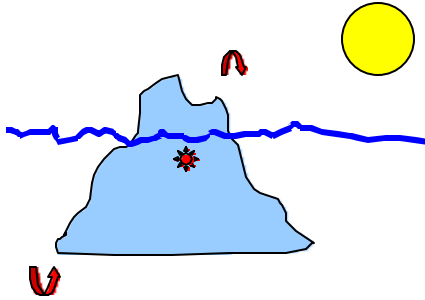
Disruptive Technology as a Catalyst to Developing Patient-Centered Health Care

modular (cellular) units react quickly and are flexible enough to become “transformer” units - like a child’s toy – to rapidly respond to company needs and market demands. This is the self-renewing element of the patient-centered medical practice. Daft (22) refers to an ambidextrous approach for maintaining “organic versus mechanistic structures with respect to innovation creation versus innovation utilization.” Creativity comes from “play” and freedom from anguish (Watson and Crick would frequently enjoy afternoons at the British cinema as they worked out the principles of the Double Helix. Their creative brains counterbalanced their reasoning brains and working together, solutions appeared)⁵. An example of a major negative force contaminating our ability to be innovative is our system of productivity evaluation⁶ - for one to "win" another has to lose (11,12). While an innovation thrives in a creative milieu, a solid foundational structure remains vital for implementation. This is the paradox, the duality of opposing worlds. A self-renewing organization dedicated to sharing disruptive technology with others in the community is always at the center of change and harnesses change as a guide. Change becomes the constant. The success and sustenance of innovation is impossible however, without people of passion (13). Each innovation at Texas Instruments that failed lacked a champion with sufficient personal passion about the innovation, to make it succeed (22). Change in medicine today is being driven hard by costs and by the increasing demands of our patients. This change is accelerating and rigid monolithic organizations, already weakened by the dual injury of a faltering economy with diminishing reimbursements and soaring costs predictably are starting to show deep crevices with financial and cultural (and morale) decline. They have very few options. The self-renewing organization has many.

⁵ “How to achieve community under the shelter of bigness may be the essence of this challenge because so much of caring depends upon knowing and interacting with persons in the intimacy of propinquity. The stimulus and support that some individuals need to be open to inspiration and imaginative insight often come from the nurture of groups. There may not be a "group mind" (inspiration and imaginative insight may be gifts only to individuals), but there is clearly a climate favorable to creativity by individuals that the group as a community, can provide. Achieving many small-scale communities, under the shelter that is best given by bigness, may be the secret of synergy in large institutions. " (Robert Greenleaf - The Power of Servant Leadership page 22 Reference # 6)

⁶ Deming has called the system by which merit is appraised and rewarded "the most powerful inhibitor to quality and productivity in the Western world." He further said " ... it nourishes short-term performance, annihilates long-term planning, builds fear, demolishes teamwork, nourishes rivalry and ... leaves people bitter." Kohn states - "To this we can add that it is simply unfair to the extent that employees are held responsible for what are in reality systemic factors that are beyond their control." (Reference # 11)

Disruptive Technology as a Catalyst to Developing Patient-Centered Health Care

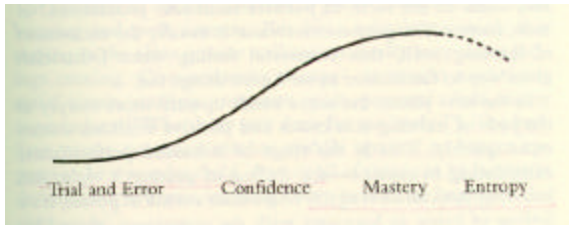


(c) Two thirds of an iceberg lies submerged and unseen. As the iceberg drifts south, the upper layers are warmed - exposed to the sun and higher ambient temperatures. They begin to melt. The center of gravity changes and the entire iceberg then flips, making the bottom or the side the new top. The mass effect of our patients' influence in the evolution of health care is about to be felt in a similar way. The center of gravity of the medical complex has radically changed and shifts are already occurring.

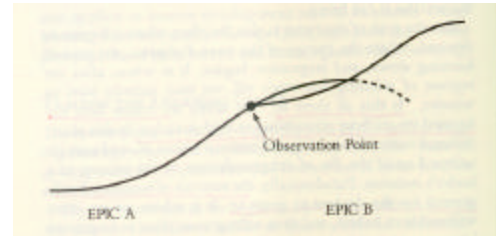
© 2001

The iceberg is turning (c). Patients are beginning to understand their diseases. They are beginning to understand treatment options that are available to them (through the "net", personal networks and other sources). Patients are beginning to understand outcomes, the natural history of their illness and the quality of individual institutions and individual physicians. They are starting to understand the costs of health care and the "new principles" and ethics such as the right to own their own information (38,39) (charts, X-rays, lab data, pathology images etc.). In many cases, patients are ordering and paying for their own laboratory data before even consulting with a physician thereby completely eliminating the influence of insurance companies and physicians altogether in a single stroke. Don't all of these actions and responsibilities sound very similar to the traditional role that physicians have played in days past? Many currently believe that physician extenders such as PA's and Nurse Practitioners are the next large "disruptive technology" force to affect medicine. While this may be true to a degree, the "x-axis" of time on the graph of Clayton Christensen's disruptive change model is moving very quickly and the real wave of patient-centered care is already here. It is our patients and their unique abilities to manage their health by weaving their way through the morass of modern medicine. They are a major new "disruptive technology" in medicine today. Patients are such a large and powerful force and so close at hand, their significance is totally obscured to most, and ignored - the forest for the trees. Costs spiral; yet we don't accept the notion that well-informed patients are also less expensive patients (25-37). For now, we stumble along the more expensive route until a crisis moment arrives to tip (16) the critical balance. The leverage of self-renewing organizations will then become evident.

Disruptive Technology as a Catalyst to Developing Patient-Centered Health Care



(a)



(b)

(15)

At the observation point – seen on the right (b) - before entropy sets in, the self-renewing organization capitalizes on the mastery phase (a) of learning and intentionally initiates a self-imposed new curve of trial and error (a) (in essence – new learning). The fresh stimulus comes through embracing the discomfort of "disruptive technology" and using it as a slingshot or a catalyst to reenergize the creative process. One could characterize this as a period of receptiveness. The self-renewing practice never relaxes in its strategic planning. The work is really in the journey and not the arrival. Disruptive innovations are welcomed, sought and embraced. This is their culture and like an organic culture, is constantly changing. Paradoxically, for this type of organization, to stop changing becomes a disruption or discomfort. An organization capitalizing on "disruptive technology" becomes a medium to share it with the community. The practice continually rises to the edge of innovation and becomes recognized as a catalyst of change while understanding the inherent limitations of early imperfect technology. A center of "disruptive technology" emerges – the orphan technology cloister – that lives in a flexible and protected organic environment, comfortable within a stream of internal and external disruptive forces. As a "learning organization"^(8,9) it continually evaluates itself and draws energy from change. New "disruptive technology" is a perpetual stimulus for growth at little cost to the practice since early technology tends to be inexpensive and thrilled to find a home. The practice is never threatened since it is applying and not creating the technology. It is the organization of the practice and its ability to deal with change that is its own innovation. Since there is always flux/change/evolution, it is hard to derail such a flexible organization. The self-renewing patient-centered medical practice is constructed around change and patients' ^(38,39) needs. It is strengthened by every curve in the road, weathering the buffets that threaten larger, more rigid organizations.

REFERENCES

1. Will Disruptive Innovations Cure Health Care? Clayton M. Christensen, Richard Bohmer and John Kenagy, Harvard Business Review Sept-Oct 2000
2. The Innovator's Dilemma - *when new technologies cause great firms to fail*. Clayton M. Christensen, Harvard Business School, 1997
3. The Man Who Would Save Health Care. By Daniel Fisher, Forbes, December 11, 2000
4. Meeting the Challenge of Disruptive Change. Clayton M. Christensen and Michael Overdorf, Harvard Business Review, March-April 2000
5. Orbiting the Giant Hairball: *A Corporate Fool's Guide to Surviving with Grace*. Gordon MacKenzie, Viking Penguin, 1998
6. The Power of Servant Leadership. Essays. Robert K. Greenleaf, Larry C. Spears and Peter B. Vaill, Berrett Koehler, 1998
7. Connective Leadership, Managing in a Changing World. Jean Lipman-Blumen, Oxford University Press 1996
8. The Fifth Discipline. *The Art and Practice of The Learning Organization*. Peter M. Senge Currency Doubleday 1990
9. The Dance of Change - *The Challenges to Sustaining Momentum in Learning Organizations*. Peter Senge, Art Kleiner, Charlotte Roberts, Richard Ross, Gregory Roth and Bryan Smith, 1999
10. Sustaining Innovation - Creating nonprofit and Government Organizations That Innovate Naturally Paul C. Light, Jossey-Bass, 1998
11. Punished by Rewards. *The trouble with gold stars, incentive plans, A's, praise and other bribes*. Alfie Kohn, Houghton Mifflin, 1993
12. No Contest. *The Case against competition, why we lose in our race to win*. Alfie Kohn, Houghton Mifflin, 1986
13. Managing One to One. *(Collecting information about individuals and transforming it into tailored offerings is the stuff of one-to-one marketing. Now companies are taking that concept and focusing it on their own employees.)* Leigh Buchanan, INC Magazine, October 2001

Disruptive Technology as a Catalyst to Developing Patient-Centered Health Care

14. Built to Last: Successful Habits of Visionary Companies. James C. Collins and Jerry I. Porras, Harperbusiness, 1997
15. When Winning at Work Means Losing at Life. The Paradox of Success - *A book of renewal for Leaders*. John R. O'Neil, Jeremy P. Tarcher/Putnam, 1993
16. The Tipping Point: How Little Things Can Make a Big Difference. Malcolm Gladwell, Little Brown and Co. 2000
17. A Sanctuary of Their Own. *Intellectual Refugees in the Academy*. Raphael Sassower, Rowman and Littlefield Publishers Inc., 2000
18. The Character of a Corporation. *How your Company's Culture can make or break your business*. Rob Goffee and Gareth Jones, Harper Collins Publishers, 1998
19. Organizational Culture and Leadership (second edition) Edgar H. Schein, Jossey-Bass Publishers, 1992
20. Institute of Medicine (IOM). Margarita P. Hurtado, Elaine K. Swift, and Janet M. Corrigan, (Eds). Committee on the National Quality Report on Health Care Delivery, Board on Health Care Services. *Envisioning the National Health Care Quality Report*. National Academy Press: Institute of Medicine. 2000.
21. Good to Great - *Why Some Companies Make the Leap ... and Others Don't*. Jim Collins Harper Business 2001
22. Organization Theory and Design, Richard Daft 7th edition, South-Western Thomsom Learning, 2001
23. Changing Health Care - *Creating Tomorrow's Winning Health Enterprise Today*, Ken Jennings, Kurt Miller and Sharyn Materna, Knowledge Exchange, 1997
24. Institute of Medicine (IOM). Committee on Health Care in America. *Crossing the quality chasm: A new health system for the 21st century*. National Academy Press: Institute of Medicine. 2001.
25. Holman H, Lorig K. Patients as partners in managing chronic disease. Partnership is a prerequisite for effective and efficient health care. *BMJ* 2000 Feb 26; 320(7234): 526-7.
26. Safran DG, Taira DA, Rogers WH, Kosinski M, Ware JE, Tarlov AR. Linking primary care performance to outcomes of care. *J Fam Pract* 1998 Sep; 47(3): 213-20.

27. Wagner EH, Grothaus LC, Sandhu N, Galvin MS, McGregor M, Artz K, Coleman EA. Chronic care clinics for diabetes in primary care: a system-wide randomized trial. *Diabetes Care* 2001 Apr; 24(4): 695-700.
28. Wagner EH, Glasgow RE, Davis C, Bonomi AE, Provost L, McCulloch D, Carver P, Sixta C. Quality improvement in chronic illness care: a collaborative approach. *Jt Comm J Qual Improv* 2001 Feb; 27(2): 63-80.
29. Greenfield S, Kaplan S, Ware JE Jr. Expanding patient involvement in care. Effects on patient outcomes. *Ann Intern Med* 1985 Apr; 102(4): 520-8.
30. Greenfield S, Kaplan SH, Ware JE Jr, Yano EM, Frank HJ. Patients' participation in medical care: effects on blood sugar control and quality of life in diabetes. *J Gen Intern Med* 1988 Sep-Oct; 3(5): 448-57.
31. Lorig KR, Sobel DS, Stewart AL, Brown BW Jr, Bandura A, Ritter P, Gonzalez VM, Laurent DD, Holman HR. Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization: a randomized trial. *Med Care* 1999 Jan; 37(1): 5-14.
32. Barry MJ, Fowler FJ Jr, Mulley AG Jr, Henderson JV Jr, Wennberg JE. Patient reactions to a program designed to facilitate patient participation in treatment decisions for benign prostatic hyperplasia. *Med Care* 1995 Aug; 33(8): 771-82.
33. Laine C, Davidoff F. Patient-centered medicine. A professional evolution. *JAMA* 1996 Jan 10; 275(2): 152-6.
34. Braddock CH 3rd, Edwards KA, Hasenberg NM, Laidley TL, Levinson W. Informed decision making in outpatient practice: time to get back to basics. *JAMA* 1999 Dec 22-29; 282(24): 2313-20.
35. Wagner EH. Chronic disease management: what will it take to improve care for chronic illness? *Eff Clin Pract* 1998 Aug-Sep; 1(1): 2-4.
36. Wagner EH, Davis C, Schaefer J, Von Korff M, Austin B. A survey of leading chronic disease management programs: are they consistent with the literature? *Manag Care Q* 1999 summer; 7(3): 56-66.
37. NIMH's references - Bridging Science and Service (<http://www.nimh.nih.gov/research/bridge.htm>); Translating Behav Science into Action (<http://www.nimh.nih.gov/tbsia/tbsiatoc.cfm>).
38. The Institute for Healthcare Improvement <http://www.ihl.org>
39. The Institute of Medicine <http://iom.org>