

S C A N L O N L E A D E R S H I P
N E T W O R K

Where the Best Ideas Come Together

INNOVATION WHITE-PAPER

PAUL DAVIS



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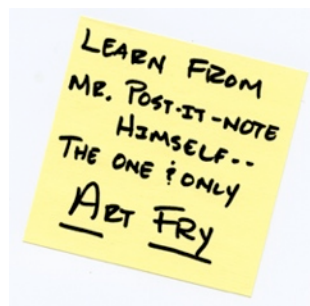
Executive Overview

You have to Kiss a lot of Frogs to find a Prince.... or a Scanlon Leader's Guide to Innovation

This white-paper attempts to take the mystery out of innovation. It also lays out concrete and practical steps any Leader can take to create a culture of innovation.

Sources

The ideas in this paper come from the Network's study of Donnelly, 3M, and Motorola, and extensive reading in the area of innovation. It is not an academic review of the entire field of innovation. It is a practical guide, based on the insights of inventors like Art Fry and organizations known for their innovative cultures.



We learned from master innovator Art Fry



3M is consistently ranked in the top ten most innovative organizations



Motorola is ranked in the top 40 most innovative organizations

Innovation is not an accident

It has become an urban legend that Post-It Notes™ were an accident. According to Art Fry, the inventor of Post-It Notes™ nothing could be further from the truth. Post-Its™ were the result of a planned culture at 3M designed to encourage, develop and market innovative products and services.

Innovation happens under certain conditions and does not happen under other cultural conditions. The conditions can be described and they can be replicated. Organizational leaders create the culture of innovation by their, systems, policies and actions. They are responsible for creating or destroying innovation in organizations.

Is Innovation hard to do?

Innovation is not hard to do. Innovation and adaptation occur at remarkable speed in human society. The ability to innovate is widely distributed in society and in business organizations. Yet in organizations, innovation can be extremely hard to develop into a replicable and stable system. Structures and systems designed to make the organization efficient and designed to serve customers can impede innovation. This paper will examine the barriers to innovation and offer suggestions for removing the barriers.

Innovation is made harder to replicate than it needs to be because there is no agreed on definition of what innovation is and is not. For example, innovation is often confused with creativity. They are related but different ideas. Innovation is often contrasted with continuous improvement when they are in reality very similar ideas. This white paper will offer simple and proven definitions that can be applied in organizations.

“You have to kiss a lot of Frogs to Find a Prince”

What is Innovation?

“Innovation is not another name for creativity.” “Innovation is not another name for Invention.” “Innovation is not an accident.” “Innovation is not the job of a few scientists or inventors.” “Innovation is not continuous improvement.” “We must innovate or die.”

Innovation must be clearly defined if it is to be managed. The following definitions are used by Art Fry at 3M.

Creativity is a new idea for a product or process or a new pattern for doing something.

Invention is an idea that has been reduced to a prototype or practice.



Innovation is where people switch to a new practice or use a new product

*“Research is the transformation
of money into knowledge”*

*“Innovation is the transformation
of knowledge into money”*

Innovation “where people switch to a new practice or use a new product”

The Art Fry definition of innovation is simple, easily understandable and easily taught. Unlike most definitions of innovation it recognizes the importance of the “diffusion of innovation.” In other words, innovation under this definition must be applied, it must be used, it must be adopted--in order for innovation to have occurred. A great idea that is in someone’s head, stays in a lab, or exists in a file drawer, is not an innovation. R&D alone is not innovation.

This definition recognizes that an innovation is not an innovation unless there is a customer or end-user willing to use the new product or practice.

Using the Fry definition of innovation production, advertising, marketing, and customer service are critical pieces of a chain of responsibilities that take a creative idea, turn it into an invention or process and then bring it to market--thus creating an innovation.

Questions to ask yourself:



How are innovation, creativity and invention defined in your organization?



Do production, advertising, marketing, customer service, etc. consider themselves part of the innovation process in your organization?

Types of Innovation

The Doblin Group studied innovation throughout the world. They identified ten main types of innovation. Sawhney, Wolcott and Arroniz (*MIT Sloan Management Review*, Spring 2006) identified 12 different ways companies innovate. Both lists are very similar. New products are not the only way to innovate! This section is from the Doblin research with a few comments of my own:

1. **Business Model:** *How do you make money?* Dell revolutionized the PC business by collecting money before the product was shipped resulting in net positive working capital of seven to eight days.
2. **Networks and Alliances:** *How do you join forces with other companies for mutual benefit?* Sara Lee realized its core competency was not manufacturing and divested its manufacturing operations, forming alliances to do its manufacturing. Scanlon Leaders formed the Scanlon Leadership Network so they could share best practices and accelerate their development.
3. **Enabling Process:** *How do you support your employees?* Starbucks, Southwest and Scanlon organizations seek competitive advantage by supporting those closest to the work. Every business has a human component. Companies that help employees understand business reality (Identity), involve employees in decision making (Participation), focus on multiple stakeholders (Equity) and relentlessly improve (Competence) are better at all the other types of innovation.
4. **Core Process:** *How do you create and add value?* Wal-Mart adds value through core process innovations such as real-time inventory, aggressive volume pricing, delivery contracts with merchandise providers, etc.
5. **Product Performance:** *How do you design your core offerings?* Apple provides MP3 Players (I-Pods) that are more expensive and have less features than their competitors. Yet consumers flock to the Apple products because of their elegant designs and ease of use.
6. **Product System:** *How do you link and/or provide a platform for multiple products?* Microsoft Office bundles a variety of specific products (Word, Excel, PowerPoint, etc) into a system designed to deliver productivity in the workplace.
7. **Service:** *How do you provide value to customers and consumers beyond and around your products?* An international flight on any airlines will get you to your intended designation. A flight on Singapore Airlines, however, nearly makes you forget that you are flying at all, with the most attentive, respectful, and pampering pre-flight, in-flight and post-services you can imagine.
8. **Channel:** *How do you get your offerings to market?* Legal problems aside, Martha Stewart has developed such a deep understanding of her customers that she knows just where to be (stores, TV shows, magazines, online, etc.) to drive huge sales volumes from a relatively small set of "home living" educational and product offerings.
9. **Brand:** *How do you communicate your offerings?* Absolute conquered the vodka category on the strength of a brilliant "theme and variations" advertising concept, strong bottle and packaging design, and a whiff of Nordic authenticity.
10. **Customer Experience:** *How do your customers feel when they interact with your company and its offerings?* Harley Davidson has created a worldwide community of millions of customers, many of whom would describe "being a Harley Davidson owner" as a part of how they fundamentally see, think, and feel about themselves.

Why Understanding Doblin's Ten Types of Innovation is Important

Most Innovation research is focused on Product Performance. We admire the latest technical gadget or beautiful design. As leaders we seek breakthrough new products to bring to market. Yet according to Doblin's research there are more opportunities to create competitive advantage in the other types of innovation. They often do not require as much seed money and they are usually much harder for competitors to replicate.

The Innovation Example of Southwest Airlines:

Southwest Airlines is in a very competitive industry. Most of the major players are in bankruptcy or have recently emerged from bankruptcy. Southwest has never failed to produce a profit for its investors, and it is consistently ranked in the top 100 "Best Places to Work." It does not offer Product Performance that is significantly different from any other airline. It competes by being innovative in the following areas:

Business Model: Low cost, low frills. Southwest can turn a profit on lower margins than its competitors. It works with the same unions as the other airlines and offers competitive salaries. It reduces costs in other areas of its operations.

Network and Affiliations: Southwest has adopted servant leadership and studies and learns from other great Dallas based servant led organizations. Southwest has developed affiliations with professional sports franchises to offer special packages for sporting events.

Enabling Process: Southwest has many innovative processes to support their employees. Their Corporate Culture Committees and caring-Servant Leadership provide engaging work for over 30,000 employees. (Please see the white paper on the Network's study tour of Southwest).

Core Process: Southwest does not have the added cost of major hubs. Southwest is able to turn around their planes at a gate faster than most other airlines. This allows their planes to spend more time in the air and less time sitting on the ground.

Service: Southwest is legendary for going the extra mile for its customers, even with a low cost, no frills business model. Employees are empowered to make decisions and to spend money as long as it makes a customer happy. Employees trust that they can make a decision and they will be supported. Southwest makes low cost travelers feel special and appreciated.

Channel: Southwest reaches its customers through the internet and through simple quirky advertisements.

Brand: Southwest sells "LOVE" and "Freedom" not just airline tickets. When you fly with Southwest you are part of a family, engaged in battle with the giant companies that would try to take away your freedom to fly.

Customer Experience: Southwest passengers enjoy humorous and entertaining flight attendants and flight crews. Customers feel the "LOVE" that Southwest markets.

Southwest Executives often marvel that their competitors have not been able to copy their innovative culture or practices. There have been books and many articles written about Southwest. They say it is so simple. Yet no competitor has been able to copy their innovations. Product Performance innovations are easy to copy.

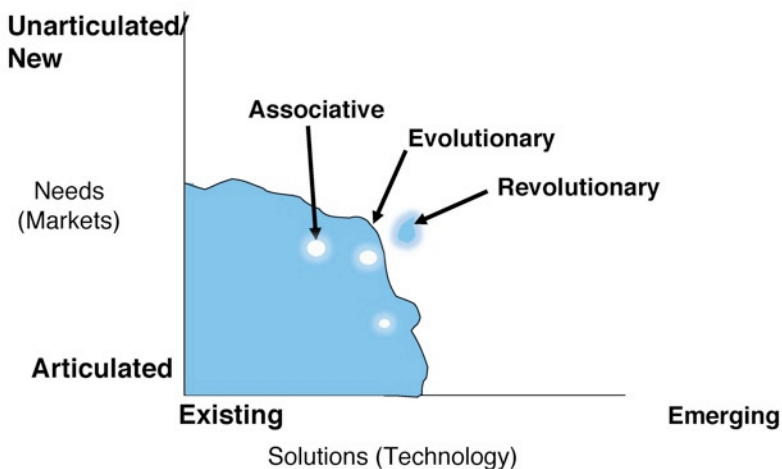


What Types of Innovation bring competitive advantage to your organization?

Forms of Innovation

Andrew Ouderkirk, 3M Corporate Scientist identified three Forms of Innovation. Each of the ten types of innovation will take one of the the following forms:

1. **Evolutionary-** There are known solutions, and markets and connections between the two. Speed to market is the issue and the winner is the first to the finish. A computer with a larger hard drive is an evolutionary development.
2. **Associative-** A new connection is made between existing solutions and markets. The new solution must be developed and diffused into the market. The ability for one computer to run two or more operating systems (as Apples now can) is an example of an associative innovation.
3. **Revolutionary or Radical-** A new insight or discovery. There is a substantial improvement in cost, performance, and function. The Radical innovation requires seed-money, protection while it is developed, and in many cases new organizational units or structures to diffuse it and bring it to market. The first laptop computer is an example of a radical innovation.



A graphical view of Andrew Ouderkirk's 3 Forms of Innovation

Most Innovation is Associative or Evolutionary. Revolutionary Innovation is much harder to do.

Questions to Ask Yourself



What Forms of innovation occur in your organization?



What are the best ways to encourage evolutionary innovation?



What are the best ways to encourage associative innovation?

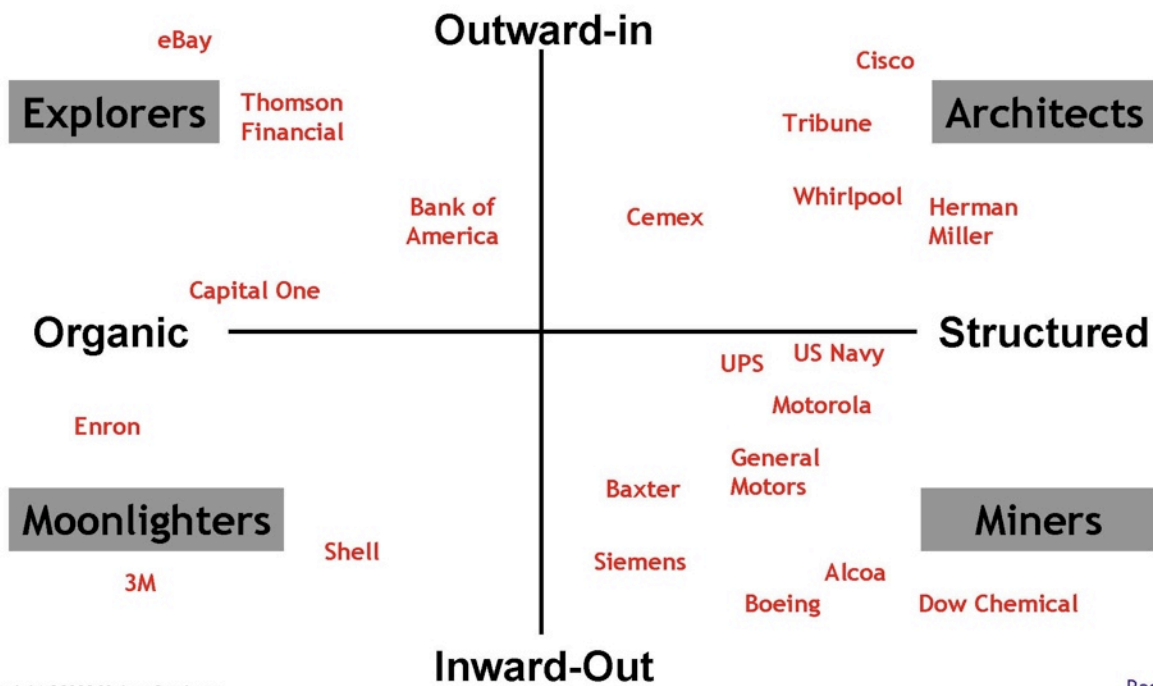


What are the best ways to encourage revolutionary or radical innovation?

Product Innovation Archetypes

Mohan Swahney has identified four archetypes or ways companies approach product innovation. He examined whether the innovation is developed from the outside or inside the organization and how structured versus organic the innovation process is. The Scanlon Network is very familiar with Herman Miller, Motorola and 3M which represent three or the four archetypes. An understanding of innovation archetypes can help Leaders develop an innovation approach that fits their organizations' markets and cultures.

We then labeled the archetypes, and positioned firms on the archetype map



Explorers

		Governance	
		ORGANIC	STRUCTURED
Orientation	OUTWARD-IN	Explorers	Architects
	INWARD-OUT	Moonlighters	Miners

Characteristics

- Explorers tend to be in emerging, rapidly expanding markets (e.g., eBay, Amazon), or they seek to redefine their markets (e.g., Thomson Financial, Capital One)
- They tend to be in markets where *speed and agility* are key factors for success
- Explorers believe that, in ill-defined and rapidly evolving markets, *the external environment* (customers and partners) is the key source of insights and opportunities.
- Their basic strategy is to search for *customer insights* through deep dialogue and collaboration with customers and partners.
- They rely on *rapid prototyping* and inexpensive testing of large numbers of small ideas, generated through customer insights
- The innovation process is diffuse and embedded in the customer-facing organization.

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Architects

		Governance	
		ORGANIC	STRUCTURED
Orientation	OUTWARD-IN	Explorers	Architects
	INWARD-OUT	Moonlighters	Miners

Characteristics

- Architects tend to be established firms in relatively mature markets, where capital and resource requirements for innovation are intensive.
- The capital intensity and maturity of their markets demands a more *structured approach* to organizing innovation, and a more *centralized approach* to funding innovation
- Architects also look externally at customers or other innovative firms for growth and innovation opportunities. However, prototyping and development tends to happen *outside the core businesses* in a separate innovation organization, or outside the firm through M&A activity.
- Architects tend to have a *formal* CBD or M&A function if they “buy and assimilate” innovation, or a formal *central innovation organization* if they prefer to “build and integrate” innovation.
- Driving innovations into the core businesses tends to be a *top-down* and formal process.

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Moonlighters

		Governance	
		ORGANIC	STRUCTURED
Orientation	OUTWARD-IN	Explorers	Architects
	INWARD-OUT	Moonlighters	Miners

Characteristics

- Moonlighters tend to be *large firms in diverse businesses* that demand deep technology and process expertise.
- They believe that the best place to look for business innovation is *inside the firm*, by tapping into tacit knowledge that exists within the firm.
- To be successful, moonlighters need to have a *strong innovation culture* in the core business, and relatively *autonomous* business units.
- Moonlighters create “*organizational slack*” for intrapreneurs to moonlight on innovation projects.
- They create a *free market for ideas and talent* within the firm, where employees can get funding and resources at the grassroots level to drive innovation.
- Innovation tends to be a *bottom-up* activity.
- When ineffective, these firms lack a coordinated, strategic view of innovation.

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Miners

		Governance	
		ORGANIC	STRUCTURED
Orientation	OUTWARD-IN	Explorers	Architects
	INWARD-OUT	Moonlighters	Miners

Characteristics

- Miners tend to be *large firms with deep technology and process expertise*, with relatively *large monolithic business units*.
- Miners tend to have business units with *deep silos*, and tend not to do well at *horizontal collaboration* between business units.
- Miners tend to *lack innovation DNA* within the core businesses, so they require a *separate innovation organization* to catalyze innovation.
- They believe that the best place to look for business innovation is *inside the firm* and *laterally across the firm*.
- Innovation tends to be a *top-down* activity.
- The innovation organization tends to be *centralized and formal*, with clearly defined processes and linkages to the core business.
- When effective, the innovation organization serves as an innovation clearinghouse, coach, and catalyst.
- When ineffective, the innovation organization fails to drive innovation back into the core businesses.

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Herman Miller as an example of the Architect Innovation Archetype

“The difference at Herman Miller is not the lengthed shadow of one man nor the talents of an elite group of managers. The difference is the energy beamed from thousands of unique contributions by people who understand, accept, and are committed to the idea that they can make a difference.”
Hugh DePree

Herman Miller under the leadership of DJ DePree used design to create competitive advantage. They embraced modern designs, created ergonomics and invented the first cubicles (Action Office).

Gilbert Rhodes approached DJ DePree in 1930 with radical and innovative ideas for furniture. Desperate to create a niche for Herman Miller, DJ agreed to manufacture and sell his designs. Part of the appeal of working with Rhodes was that he did not receive his commission into the furniture was sold.

From then on Herman Miller worked with the world’s best designers, people like George Nelson, and Charles Eames. These designers were not employees of Herman Miller. They controlled the design of Herman Miller products and they also greatly influenced the way the company was managed but they were not internal innovators.

Herman Miller established a very successful innovator company where the internal employees supported and worked with outside innovators.

“Others helped immeasurably. Call them intervenors, translators, explainers, and connectors. They all contributed to the process of conception, design, development, engineering, production and marketing of the exciting innovations that came from Herman Miller.” Hugh DePree in *Business as Unusual*

One of the core enabling processes at Herman Miller was their Scanlon Plan.

“The Rhode, Nelson-Eames and Propst eras were generally of a piece: They determined the design and direction of Herman Miller.” ...through the influence of Dr. Frost and the Scanlon Plan the principles of equity and justice for everyone in the company were introduced into the company.”

“The Scanlon Plan increases the opportunity for a business to make an impact on society. It teaches people to care, to be concerned with what goes on around them. One of the needs of society is to be involved in successful operations. Scanlon is an innovative way, a tool for fulfilling this need. It raises the level of understanding and commitment within the business and teaches people how to contribute to the community and society.”

Hugh DePree in *Business as Unusual*

Questions to Ask Yourself



What is the best Innovation Archetype for your organization?



How do you use your Scanlon Process to enable innovation?



Who are your intervenors, translators, explainers and connectors?

Continuous Improvement vs Innovation

*“Continuous Improvement is making what is better”
“Radical Innovation is making things better with what isn’t”*

Continuous improvement and innovation are often viewed in the business press as competing processes. While this makes interesting articles it does not help leaders manage continuous improvement and innovation. It also increases tension between those responsible for improving what is and for those responsible for creating what yet isn’t. The lean-six sigma experts and their practices are pitted against the creative designers and R&D experts and their practices. An understanding of the three forms of innovation can help leaders lead both innovation and continuous improvement.

When scientific management made continuous improvement a process that could be understood and replicated it was not considered to be everyone’s responsibility. Managers and Industrial Engineers were responsible for improvements, the average worker was expected to implement the improvements. One of Joe Scanlon’s major contributions was his observation that average workers could improve the way work was done. They could imagine associative and evolutionary innovations. Because they were involved they were more likely to support the diffusion on innovative processes within their organizations.

Today every enlightened manager encourages continuous improvement ideas from all employees. Suggestion systems, teams, cells, lean, and kaizan are based on the idea that continuous improvement is everyone’s responsibility. Innovation is at the same point in its development that continuous improvement was in the 1940’s. It is still viewed as the responsibility of experts. The average worker is not included in the process. Some organizations, like 3M, appear to have made innovation a responsibility of most of the organization.

Evolutionary and Associative Innovations can be viewed as where continuous improvement and innovation begin to merge. Markets and solutions are known. While they may be disruptive to ongoing processes or products, the benefits to customers and the company can be imagined. They are forms of innovation that can benefit from the disciplines of lean and continuous improvement. Continuous improvement teams can identify and remove obstacles and waste. Continuous improvement teams can determine how quickly the associative or evolutionary innovation can be brought to market.

Revolutionary or Radical Innovation is different. It is hard to imagine the benefits to existing customers or to the company. They may require new structures of processes to create and support them. They tend to be resisted. This is why one method for creating radical innovations is to develop a “skunk works.” In a skunk works key innovators and support people are removed from their organization and established in a small semi-independent protected unit where they can accomplish radical innovations. (Named for the Lockheed unit that produced radical designs and which happened to be downwind of a smelly neighboring plant).

Questions to Ask Yourself



How does continuous improvement differ from innovation?



What tools from continuous improvement can support innovation?



At what point do you establish a skunk works to support radical innovation?

Radical Innovation and Product Performance

Why Radical Innovation Scares and Fascinates Business Leaders

Radical Innovation is the force that can bring the best led company to its knees or provide great competitive advantage. A good leader, like a good general, must always be looking toward the future, and must imagine where threats and opportunities are hiding.

Yet a study of radical innovation will show that rarely does a radical innovation appear completely out of nowhere. They are usually known by the industry they will eventually displace. What usually happens is that a company develops an expertise in products and methods. Customers are treated well and like the service they are receiving. Employees work hard to continuously improve their product and to develop associative and evolutionary innovations and serve their customers. Investors are happy because the company is profitable. All the stakeholders watch as the new radical innovation develops.

They may even laugh at the new innovation. The new product may be crude, it may have quality problems. It may cost more than the existing technology. The radical innovation may seem silly, the business model unconventional, the branding ridiculous, etc.

Business history is full of examples of radical innovations that were discovered and then given away by their creators because the parent organization did not know what to do with them. Robert "Doc" Hall who helped to develop the Association for Manufacturing Excellence has this to say about radical product innovation:

The tough parts of radical product innovation are marketing and conversion of an old business model to support it. IBM and the PC are a case in point. The technology was a snap. But the thing promised to undermine existing sales in IBM (my bonus will take a hit). It sold through a different channel (not direct to business with a rep). The distribution logistics were different. And at the time, people could not see the PC sapping the need for mainframes, the core business.

Xerox missed out on the Lisa (forerunner of the Apple) for the same reason. They invented it. But... it did not fit their business. Different channel, etc. So Steve Jobs ran with it, creating a different kind of company around it. A guy in a garage has little to lose; a big company does.

Saturn was dead on arrival to the rest of GM. It threatened to cannibalize other division's sales, so of course, they would borrow no ideas from that.

Some innovations are before their time. The picture phone was technically possible at reasonable price in the 1970s. But people refused to buy something that they feared to answer when stepping out of the shower. Then cell phones and PCs added the capability as a matter of course; as a camera feature. Market psychology is a huge factor.

The same phenomenon is at work in capital equipment innovation. To be justified, a new machine, fully loaded with depreciation, has to better the old in cost and reliability -- or it has to do something totally different from the old.

Today radical innovation is "big-step." Continuous improvement is small-step. Most companies need both. One cannot bring out fuel-cell vehicle that is fault-ridden. (The original Motorola car radio set many cars on fire. Today that would be the kiss of death.) An innovation has to be pretty good "right out of the box, first time."

Moral of the stories: An innovative company has to be like the old H-P or 3M, consisting of many small divisions. An innovation gets its own new division. If it flops, it hasn't hurt the main company. Among Japanese companies, Kyocera and Mayakawa are much like this.

Block Ice--an Example of Failure to Respond to Radical Innovation:

For most of human history refrigeration has not existed. Food spoiled and people starved. Eventually an industry evolved where ice was harvested in blocks from northern lakes. As harvesting, transporting and storage of ice became more efficient (through continuous improvement) ice could be delivered reliably to northern customers not only in the winter but also in the summer. Further improvements allowed ice to be transported to southern customers year round. Relentless and continuous improvements, evolutionary and associative innovations made it possible for average people to afford ice refrigeration. Whole industries developed to create ice boxes and deliver ice. Ice was a major part of the US economy and a major source of trade. Ice was shipped from New England as far away as India.

Eventually our understanding of mechanics and thermodynamics allowed inventors to invent a radical innovation called mechanical refrigeration. Mechanical refrigeration was invented in the 1850's in Florida by Dr. John Gorrie to produce block ice to help cool hospital rooms for patients of malaria. Often radical innovations occur from outsiders. Dr. Gorrie was not a part of the block ice trade.

Mechanical refrigeration was expensive and was not able to compete with cheap reliable, practical ice. However mechanical refrigeration had obvious advantages. It did not require the cost of transportation and storage. Southerners did not like being dependent on a long northern supply chain for such a necessity of life. Ice supply was dependent on cold winters. Prices would skyrocket after a warm winter.

More and more mechanical ice makers began selling their ice. Block ice harvesters competed through the continuous improvements of their harvesting, storage and transportation methods. However by the 1900's they were out of business. Improvements in mechanical refrigeration trumped improvements in natural ice harvesting.

Mechanical refrigeration then moved from mechanical ice block factories to home refrigeration, removing ice as the cooling medium completely. The drip pans where melting ice collected were often breeding grounds for molds and were a health hazard. Ice required someone being home when the ice man delivered the ice.

Billy Durant (who founded General Motors) became interested in refrigeration and believed it could be a profitable business. He believed the mass production methods that he had been using in automobiles could be used to mass produce refrigerators. (Mass production was a radical core process innovation Billy had mastered). He also was a marketing genius and believed he could encourage people to replace their ice boxes with mechanical refrigerators. He could not get his Board of Directors interested in developing a business around the new technology of home mechanical refrigeration. Using his own money he created (and named) Frigidaire. Eventually when it was obvious how profitable Frigidaire and refrigeration had become he sold the division back to GM at his original cost. Like most radical innovators he was not motivated by money.

The story of refrigeration and Billy Durant illustrates why it is so hard for established organizations to support radical product innovation. Alfred Sloan was not a radical innovator. His skills were in organization, continuous improvement and evolutionary and associative innovation. There is a Sloan School of Management at MIT. There is no Durant School of Radical Innovation. Few today even know who Durant was.



William "Billy" Durant

Alfred Sloan

What type of Business Leader creates Radical Innovations?

Lessons from studies of Radical Innovation

The Ice Block experience has been repeated in many different industries. From the end of floppy discs to the arrival of digital cameras the same dynamics seem to apply in a wide variety of industries. Radical innovations displace established industries. It took over forty years for the radical innovation "aspirin" to be diffused into the market. Today diffusion happens faster, making a radical innovation more of a threat/opportunity.

The main lessons of radical innovation research:

- Outsiders or employees who think outside the box are most likely to develop the next Radical innovation in your industry.
- Radical innovation rarely occurs without some warning. Often the radical innovation and the traditional approach compete side by side before the radical innovation wins out.
- Continuous improvement of existing products or services can delay the diffusion of the radical innovation, but not forever
- There are few truly radical innovations in product performance that survive alone. Most radical innovations in product performance must be supported by innovations in the other nine types of innovation. (The Ipad relies on advances in small hard disk-drive storage, but is also supported by software design and branding.)
- Only 4.5% of innovation efforts met ROI goals by the companies that established them. This means 95% of the innovation efforts fail to meet their performance targets (*The Innovation Killer* by Cynthia Rabe).
- Of 5,000 ideas only 1 will survive to become a new product. (Industrial Research Institute). *You must kiss many frogs to find a prince!*
- Few new products are radical innovations. Most will be the result of evolutionary or associative processes
- Radical Innovations might best survive in an independent unit or division

Questions to Ask Yourself



What Radical Innovations has your organization brought to the market?



What Radical Innovations have disrupted or threatened your organization?



What Percent of your Radical innovations meet their ROI Targets?



In your organization how many ideas does it take to create a new product?

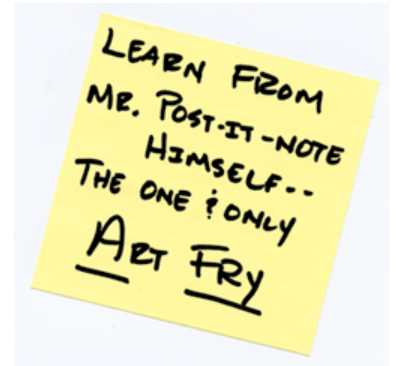
The Nature of Innovators

There is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage than the creation of a new order of things.... Whenever his enemies have the ability to attack the innovator, they do so with the passion of partisans, while the others defend him sluggishly, so that the innovator and his party alike are vulnerable.
Machiavelli, The Prince (1513)

What is the Nature of Innovators and What Motivates Them?

According to Art Fry Innovators are motivated by the following:

- 👤 Curiosity
- 👤 The chance for a large reward
- 👤 To gain self control
 - 👤 Tailor make their own jobs
 - 👤 Control the pace of their work
 - 👤 To be self directed
 - 👤 Control their own destinies
- 👤 A chance to build something new and leave behind something of themselves



According to Max DePree in *Leading for Innovation*, innovators are

“Creative persons who stand out from the rest of us. Somehow their contributions affect large groups and move organizations toward something better. Yet they function for the most part, outside or away from organizations. They work in all kinds of places--in cafes, in airports, at home---and they benefit from unusual relationships with the organizations they join. They often have odd reporting relationships, but somehow they instinctively insert themselves into organizations wherever they are needed.

The changes and innovations they bring are often more like leaps than the small steps most of us experience. They think of the world in large terms. They work for institutions or societies or cultures or ideas, not for individuals. Their creativity comes from the novel connections they make between their work and their experience or observations. They are curious and need a field in which to exercise that curiosity. Leaders can work to bring the special and creative gifts to these people to bear on the efforts of the group.”


Why must Innovators be prepared to lose their jobs?

The innovators, scientists, and entrepreneurs we met at 3M all talked about the risks they took to be innovative. Even in a culture as supportive as 3M they described being prepared to be fired at any moment. Most said that they had to “go to the mat” to defend and keep their innovation alive. Some directly disobeyed their superiors to continue work on a project. Dave Braun and the GRIT believe “Innovators should keep their ideas off the radar screen less the corporate immune system be triggered and try to kill it.” If innovation is critical for organizational success leaders must create cultures that are supportive of innovators.



What concrete specific actions do you take to support your innovators?

Twelve Ways to Create a Culture that Supports Innovation and Innovators

“An average person, when confronted with a problem, will find a better solution to the problem, given the time and resources, than a distant expert who is unaware of the problem” 

1) Make Innovation a Strategy to Build your Organization

According to Dwane Baumgardner and Russ Scaffede in the *Leadership Roadmap ...* “innovation systems are only as effective as the commitment to them.”

They identify seven steps needed to create an innovation culture

1. Educate Executives: (You can use this white-paper and the tapes of the 3M and Motorola Tours)
2. Identity an Executive Champion for Innovation
3. Design an organizationally unique innovation system
4. Establish goals and strategies for innovation
5. Implement the innovation system
6. Recognize and reinforce innovation formally
7. Conduct an innovation audit survey (The Network has the Leadership Roadmap Audit available on-line at <http://www.scanlonnet.org>)



Which of the seven steps have you taken?

2) Create Opportunities for Networking

Innovation often occurs when people are able to cross organizational boundaries. Boundaries of level and discipline must be easy to cross. Networking can occur informally and formally. (The solution to Post-It Note™s came to Art Fry during an informal golf outing that was supported by 3M.)

3M has over 30 active special interest forums that create formal networking opportunities. Forums in project management, nanotechnology, life sciences, product design etc. allow scientist and managers to interact and learn together.

One of the most unusual 3M networking opportunities is the GRIT (Grass Roots Innovation Team). The GRIT's vision is “To empower the creative potential of every individual at 3M.” This informal team includes members from within 3M but also from outside 3M. It sponsors innovation trips, movies, lectures etc.



What networking opportunities have you created in your organization?

3) Remove the Fear of Failure

The odds are against most innovations. Innovators need support from their organizational leaders to innovate. The easiest way to remove the fear of failure is to publicize your philosophy and policies on innovation and then live them. The best policy I have seen was written by William McKnight, the CEO who helped 3M develop their unique culture of innovation in the 1940's. He created "The McKnight Principles as the operating philosophy of 3M.



How do you remove the fear of failure to free your innovators?

McKnight Principles

"As our business grows, it becomes increasingly necessary to delegate responsibility and to encourage men and women to exercise their initiative. This requires considerable tolerance. Those men and women ...are going to want to do their jobs in their own way.

Mistakes will be made. But if a person is essentially right, the mistakes he or she makes aren't as serious in the long run as the mistakes management will make if it undertakes to tell those in authority exactly how they must do their jobs.

Management that is destructively critical when mistakes are made kills initiative. And it is essential that we have many people with initiative if we are to continue to grow."

4) Provide Time and a License to Innovate

A tradition that supports innovation at 3M is called "15% Time." While we could not determine if it is an official policy or simply a long standing tradition at 3M it was clear it had a major role in creating an innovative culture at 3M.

15 % Policy

Employees can use 15% of their time to work on innovative products of their own choosing.

Employees can help others on their 15% projects

3M equipment and resources can be used on 15% projects

Curt Larson, retired 3M innovator wrote the following about 15% time...

"15% Time is the way we assure ourselves that all employees can have passion for their job and contribution ability to 3M. If any employee does not find the basis for passionate involvement in their assigned work - whether that work is one concentrated project, or several smaller projects - they have the freedom and expectation within our culture to find a project, new or old, where they will find that passion. Some kind of traditional or nontraditional 3M business connection is expected from 15% projects that are self-selected outside of the mainstream projects of an employee's work unit. The passion is expected to pique their curiosity and energize them to increase job satisfaction and contribution to 3M being "The most innovation enterprise."

All the 3M speakers acknowledged the genius in this simple tradition/policy. It allows innovation to take root during the critical phase when ideas are starting to become a process or prototype. It allows innovation at multiple levels. It allows innovative networking as employees support each other's 15% projects. It allows innovation to flow where the passion and energy of the employee are. It creates an incubator for all forms of innovation (including radical innovation) without having to create new organizational structures or skunk works type organizations outside the main structure of 3M. All the speakers said that 15% time was not tracked and rarely did employees take 15 % of their time to innovate. They tended to innovate in addition to their normal work and frequently worked longer than a 40 hour week. The importance of 15% time is that one simple policy/tradition provides a license to innovate.



How do you create a license to innovate?



How much time do you allow for innovation?

5) Decentralize Decision Making and Innovation

"Whoever has something to show, runs the show"



3M has a decentralized structure. Innovation does not seem to occur in a command and control structure.

An Innovation culture is more likely to occur in organizations that follow the Scanlon EPIC Principles and push decision making and innovation down into the organization.



How centralized are you innovation processes?



What can you do to decentralize innovation?

6) Provide Seed Money for Innovations/Make a little-sell a little

Post-It Notes™ is a multimillion dollar business that started with less than \$20,000 in seed money. According to the Inventors and Scientists from 3M, it is often possible to get a working prototype or early innovation to customers with only limited seed money. They then "make a little and sell a little." This gives them a chance to test the market and to modify the innovation before a lot of money is invested. Often an early innovation will be "re-invented" or improved by the early adopting customers.



How much seed money have you set aside to support innovation?

7) Develop a Method for Screening Innovations

There are only so many innovative ideas that can be pursued at any one time. Ideas must be screened to determine which ideas have the best chances of becoming good innovations.

Dave Braun 3M Scientist and Bob Hershock, Division VP, developed the following checklist for evaluating innovations.

	Usually the weaker positions...		Usually the stronger positions...		
Company <i>"Evaluate the Strength of the Company"</i>	The company is struggling to stay in business and has no interest in new products.	Company is profitable but is interested only in keeping its product lines current.	New startup company with good financial backing entering an emerging field.	Profitable company with history of innovation having overly controlling top management.	Highly profitable entrepreneurial company with need/desire to obsolete its present businesses and start new ones.
People <i>"Consider Available Talent"</i>	Unskilled, underpaid, over-worked, low morale.	Dilbert style bosses, staff good at repeating tasks and detached top management.	The right people to do the job, probably stretched thin but with sufficient resources.	Experienced and professional staff but frustrated due to top down management.	Strong team based culture with product champion, sponsor, committed top executive and good staff level support.
Product <i>"Assess Product Uniqueness"</i> <i>"Determine Intellectual Property Position"</i>	"Me Too" product.	Evolutionary line extension or incremental advance.	Clear advance over the competition.	Leading edge product.	New to the world and revolutionary.
Laboratory <i>"Forecast the Ability of the Lab to Develop the Product for Manufacturing"</i>	Laboratory does only testing and Quality Assurance.	Quality Assurance and Technical Service predominate with little development.	Good record of developing products that were invented elsewhere.	Solid research and development capabilities, lacking the strong creative types.	Laboratory is known in the industry as a strong-hold of innovative product invention and development.
Manufacturing <i>"Define Manufacturing Scenario"</i>	No existing equipment. Start from scratch.	Non-traditional manufacture or special machine/process required.	Outsource available or straightforward duplication of equipment feasible.	Factory has existing capacity for first year roll out.....capital decision is delayed.	Factory has existing unused capacity to reach product maturity.
Marketing <i>"Imagine the Product in the Market"</i> <i>"Evaluate Ability to Reach the Market"</i>	Specialty product in a mature or dying market.	Market is unknown or undeveloped for the product.	Product would develop or reinvent the market.	Product clearly has a receptive market with pull-through.	Product has a universal fit in global markets plus it delights the customer.
Finance <i>"Calculate the Return vs the Investment"</i>	High lab., capitol, and marketing investment towards product that involves risk.	Product with lower profit margin, not overly risky but with large investment.	Typical replacement product in mainstream market having moderate capital investment.	Product with premium price/cost ratio, low marketing investment, high volume expected.	Product is unique with price/value set to market. Highly favorable price/cost ratio and substantial capital

8) Work with Customers to Develop Innovations

3M has a very close relationship with their customers, and they often develop innovations to meet the needs of existing customers. Customers often will bring innovative ideas to their preferred suppliers. They will then become early adopters of the innovation, helping to refine it for later customers. This means that an organization's sales force may have a critical role in developing new innovations. They may be the first approached by a customer with a new innovation or a need for a new innovation.



Howdo you work with customers to support innovation?

How does your sales force support innovation?

9) Create Opportunities for Innovators to grow with their Innovation

3M for many years allowed innovators to manage their innovations. They would grow with their innovation. Depending on how large the innovation grew, this could create an opportunity for the innovator to lead a new business unit. It provided a structure and leadership for innovation. It prevented the problem of missing a handoff from the innovator to the organization that manufactures and markets the innovation.

Jack Stack, the founder of Springfield Remanufacturing, Inc. and author of *"The Great Game of Business"*, created the open-book management movement, but one of his other innovations was to develop a way for Springfield to spin off new innovative units. This approach creates a conglomerate of related organizations, similar to the 3M divisions. It allows innovators to create whole new businesses that stand on their own, yet have early support from their parent organization.

3M also has a "dual ladder" system of advancement that rewards technical people with advancement opportunities while remaining in their technical areas--they don't have to give up their love for the lab to advance their career.



How do you create opportunities for your innovators to grow with their innovations?

10) Recognize Innovation and Innovators

3M has a number of awards that support their culture of innovation.

- The Carlton Society Award created in 1963 is the highest 3M award given by peers for life long contributions and pioneering work to research and development.
- The Golden Step Award is given to teams that create major new products that are significantly profitable.
- The Technical Circle of Excellence Award recognizes exceptional performance each year in individual technical achievement, service, support and product or process championing.



How do you recognize your innovators?

11) Develop Measures and Track Innovation

You can't manage what you don't measure. Most balanced scorecards do not track innovation. Praveen Gupta, author of *The Six Sigma Business Scorecard and Business Innovation* identifies three areas that can be tracked to support innovation:

1. Number of employee ideas for improvement and innovation
2. Sales of new products, services or solutions
3. CEO recognition of employees for exceptional innovation.



What measures do you use to track innovation?

12) Develop Trust and Lead with Integrity

Build trust in your people by extending trust. If people do not trust their leaders or their organization they will not take the risk to innovate and they will not support innovation.

The best way to create trust in the Scanlon tradition is to share information (practice the Identity Principle).



What do you do to continually earn the trust of your employees?