

Joel Barker's The New Business of Paradigms: Classic Edition

Boardroom Meeting

(1st Woman-Presenter) And while we understand that this will require some fundamental changes in the way we do things, we do believe it can have a huge positive effect on the bottom line. We hope you will be open our new idea.

(1st Man's Thoughts) Well, thank you for a very challenging proposal. I can assure you we'll give it our full attention.

(2nd Man's Thoughts) Full attention. Yah, I'll give it the attention it deserves and put it in the trashcan!

(2nd Woman's Thoughts) She hasn't been on board for more than 2 months and already she's trying to change everything!

(3rd Man's Thoughts) So things have been a little tough lately. We'll get back to normal and then we'll be fine.

(1st Man's Thoughts) They don't know how we do things here. They're way out of line.

It's so easy to say no to a new idea.

After all, new ideas cause change. They create uncertainty. And it's a lot less bother to do it the way we've always done it before.

Museum

New ideas are resisted from boardrooms to shop floors all across the globe. I could fill this museum with examples.

I'm Joel Barker and I'm a futurist. For the past two decades, I've been working with corporations, institutions and governments all over the world, helping them to anticipate revolutionary change.

I've been studying why people resist new ideas. And I have found a common pattern of resistance that has existed, not just for decades, but for centuries.

Galileo's Problem

In Venice, between 1610 and 1633, the great scientist and inventor, Galileo, had to deal with that same pattern of resistance.

He was trying to convince the leaders of the day that Copernicus was right when he claimed that the Earth revolved around the sun and not the other way around.

On clear evenings, Galileo invited those leaders to climb to the top of the Tower of San Marco to use his new invention, the telescope. He wanted them to examine the discoveries he had made in the night sky that confirmed the claims of Copernicus.

They were not convinced.

In fact, Galileo so antagonized the voices of authority, that he was threatened with torture and forced to publicly recant his revolutionary concepts. Even after recanting, they placed him under house arrest for the remainder of his life.

And you thought it was tough selling your ideas.

In the end, history vindicated Galileo. But the question here is: What kept those men from appreciating his revolutionary new idea? And why does it keep happening, even today?

Revolutions

When you think about it, the last two decades of the 20th century were amazing. A series of revolutionary changes occurred that have affected almost everyone on planet Earth.

- ◆ The Space Shuttle making regular flights to the International Space Station.
- ◆ The wide spread application of Total Quality and Six Sigma Management.
- ◆ The birth of the Internet, the World Wide Web and e-commerce.
- ◆ The dissolution of the second mightiest nation on earth, the Soviet Union, without having a war.
- ◆ The global commercialization of cellular phones and pagers giving people around the

world access to communications that had once only been a dream.

- ◆ The adoption of the Euro-dollar by countries who used to fight over the sanctity of their own national money.
- ◆ The radical new design of buildings and spaces.

And yet these changes, as important as they have been to the global economy, were met with substantial resistance by thoughtful people around the world.

Why? Why do people everywhere, in every culture, resist new ideas?

That's the question I've been studying for more than 20 years. And I believe a powerful part of the answer lies within the pages of a book written by scientific historian Thomas Kuhn.

It contains a concept that can enhance your ability to innovate, increase your capacity to lead, and help you to discover the future.

You see it all has to do with paradigms.

Paradigm Definition

I first ran into the word PARADIGM in Thomas Kuhn's book, *The Structure of Scientific Revolutions*.

When you look up "paradigm" in the dictionary, you find it means "pattern" or "model."

Let me offer you an extended definition:

A paradigm is a system of rules and regulations that does two things:

First, some of the rules set limits or establish boundaries—just like a pattern sets the edges.

Then, the rest of the rules offer you guidance on how to be successful by solving problems that exist inside those boundaries—in a sense, they offer you a model for problem solving.

So a paradigm is a problem-solving system. And a paradigm shift is when you change from one set of rules to another.

In his book, Thomas Kuhn explored how paradigms affected scientists.

He discovered that scientific paradigms act like filters that screen data coming into the scientists' minds. Data that agreed with the scientists' paradigms passed through those filters easily. In fact, scientists saw “agreeable” data amazingly well. That's positive and valuable.

But Kuhn also discovered a startling negative effect. Some kinds of data were very difficult for the scientists to perceive.

What kind? Data that didn't match the scientists' expectations. In fact, the more exceptional the data was, the more trouble scientists had dealing with it.

It was as if their paradigms interfered with their ability to clearly see the data.

In fact, Kuhn discovered that in some cases, scientists literally – physiologically – were

incapable of perceiving the exceptional data.

For all intents and purposes, that data was invisible.

Now, let me put Kuhn's findings in more general terms: all human beings, not just scientists, have paradigms that influence the way we see the world. We all constantly select that data that best fits our rules and try to ignore the rest.

As a result, what may be perfectly obvious to a person with one paradigm may be totally imperceptible to someone with a different paradigm. Because each paradigm filters the world in a different way.

I call this filtering phenomenon, the Paradigm Effect.

And it is the Paradigm Effect that makes dealing with change and anticipating the future so difficult.

The Paradigm Effect can prevent any one of us, no matter how smart we are, no matter what line of work we are in, from finding breakthrough solutions to the problems in our lives. No one is immune.

Now up to this point, we've only been talking in abstractions. So let's take a look at some concrete examples that demonstrate just how powerfully our paradigms influence the way we see and understand the world.

Card Deck Paradigm

I'd like to start with an experiment similar to one that Thomas Kuhn cites in his book.

I'm going to use elements that most of you know quite well: cards from a card deck. I'm going to show you eight cards very rapidly. I want you to identify each of these cards silently to yourself as I go through them. I'll give you two seconds between each card. Ok? Ready? Here we go.

(First run through:

Two of Clubs
Queen of Spades (Red)
Five of Diamonds
Eight of Clubs
Four of Hearts (Black)
Jack of Diamonds
King of Clubs
Six of Spades (Red))

Good. Now, just in case you missed some, let's go through the cards again. To make it easier, I'm going to double the time. (Second run through, same sequence).

Okay, that's it. How many of you noticed something strange about these cards? For instance, the second card was a red spade. Or that the fifth card was a black heart. Or that the last card was another red spade.

I know most of you missed these exceptions on the first run through. And many of you missed them on the second run through, as well. Yet I'm also willing to bet almost all of you identified the legitimate cards the first time they came up. Why?

Remember what I said about paradigms and how they filter data? Well, you were trying to see the cards the “right” way. And so you saw the legitimate cards very easily, very quickly.

But your card deck paradigm also made it difficult to see the cards that didn't fit the rules.

So instead of seeing them as they were, you distorted the black heart and the red spades to try to make them fit your paradigm. That's the Paradigm Effect in action.

Now, it's easy to write off this experiment as a funny deck of cards and irrelevant to real life. So, let's talk about paradigms and real life.

Seventy Mile Runs

Millions of adults around the world have adopted running as part of their fitness paradigm.

Yet how many of them, how many of you, would be willing to go for a seventy mile run? Yes, I said run. Now in western culture, the words "seventy miles" and "run" just don't go together. "Seventy miles" and "drive," yes - "run," no.

But in northern Mexico, seventy mile runs are common among the Tarajumaran Indians. They do it as part of a religious festival. Now, why is it so easy for them, yet so impossible for us?

Because it's one of the Tarajumaran

paradigms. They run everywhere. For fun. Would you believe, our ultimate race, the 26-mile marathon, is child's play for the Tarajumarans.

Of course, you might want to argue that it's some kind of genetic difference, but I'm willing to bet if any one of you had been raised in one of their villages, you'd run just like they do. Because you would have learned their running paradigm.

Hydraulic Car

I've brought you to Hennepin Technical College, in Eden Prairie, Minnesota, to show you another paradigm. This one has to do with automobiles. In 1976, during America's energy crisis, a group of students taught by Ernie Parker, decided to build an energy efficient car.

Let me give you the numbers: the car weighed 2000 pounds. It went 0 to 60 in less than ten seconds. It got 77 miles per gallon. It had a 16 horsepower engine.

Today, 77 miles per gallon would be considered wonderful. You can imagine what that meant in 1976! But there's a catch: Anyone who knows anything about cars knows that those numbers don't add up. A 16 horsepower engine simply cannot accelerate a 2000 pound car that quickly.

Yet, these students did exactly that.

How? By utilizing a different paradigm. You see the students weren't in an auto mechanics

class. They were right here in the advanced hydraulics class. And they knew, using their paradigm, that they could capture and reuse energy ordinary cars waste.

Let me show you how with this simple prototype. When this vehicle slows down, it doesn't use standard brakes. Instead, the front wheel turns a hydraulic motor pump, and it pumps hydraulic fluid into this storage cylinder, capturing otherwise wasted energy, while slowing down the vehicle.

When this vehicle is stopped, its gas engine turns a pump that puts even more fluid into the cylinder. All that pressure is stored energy waiting to be used.

Watch, I can accelerate without even starting the engine.

So the acceleration comes not from the little gas engine, but all that pressure that's been stored in the cylinder.

The job of the little engine is to hold the vehicle at speed, and it can do that getting more than 70 miles per gallon.

So, here's a question for you: If the students who designed that car had been in auto mechanics, do you think they could have even conceived it?

I think the answer is no. Because the piston engine paradigm does not provide for waste energy capture and storage.

Now, I'm not suggesting this car is the next

automotive paradigm. But it does demonstrate a powerful principle: What may be impossible to do with the old paradigm may be easy to do with the new paradigm.

Electrostatic Photography

In the late 1930's, an inventor was trying to interest corporations in his new idea. He brought it to the research department of a major photographic company.

This is a model of the actual kit he used to demonstrate the process to one of their senior scientists.

With little more than a box, a bright light, a specially coated metal plate and some fine black powder, he created, almost instantly and with no wet chemicals, a very faint picture of a set of numbers.

Now, we don't know exactly what the scientist said about all this. But we do know one thing for sure. He wasn't interested in that silly idea, so he showed the inventor to the door.

But the inventor, Chester Carlson, had the last laugh. You see, what he invented was electrostatic photography. The "Xerox Process."

Pity that poor scientist. He was unable to see beyond his paradigm. And as a result, Kodak missed one of the biggest business opportunities of the 20th century.

Quality Management

In the early 1960's, Japanese manufacturers were known for things very different than today:

- Cheap toys
- Poor quality steel
- Imitations of American products
- Simple electronics

And that was our expectation for Japan. To always produce inferior products.

But, unknown to most business executives in America, a paradigm shift was transforming Japan. W. Edwards Deming and Joe Juran, both Americans, were teaching the Japanese about Total Quality, or Six Sigma, as we call it today.

While the Japanese were learning to perfect things, American companies, in fact most companies around the world, ignored the whole quality idea because they saw no need to change.

And so it was the Japanese who gained the high ground in quality. It was the Japanese who started an epidemic of quality that swept around the world.

And it has cost American and European companies 100's of billions of dollars to regain parity. That's how expensive it can be to miss a paradigm shift.

Back to Zero Rule

There is a crucial and profound truth hiding behind the paradigm examples I've shown you.

No matter how tall your skyscrapers, or how big your market share, or how global your organization,

When a paradigm shifts, everyone goes back to zero.

Your past success guarantees nothing in your future.

Toyota put General Motors back to zero.

Dell did it to IBM.

Wal★Mart did it to Sears.

The Japanese did it to the Swiss.

Swiss Watch Story

Now, here's a paradigm question for you: What nation used to dominate the world of watch making?

Switzerland, of course. For more than a hundred years they were renowned for their watch making excellence. In 1968, they had 65% of the world market share and according to expert estimations, more than 80% of the profits.

Yet, just ten years later, their market share

had fallen below 10% and in the ensuing three years, they had to release 50,000 of their 65,000 watch workers.

Today, what nation dominates world of watch making? Japan. In 1968, they had virtually no market share.

So, how could the Swiss watch industry be so rapidly destroyed?

The answer is painfully simple. They were put back to zero by a paradigm shift. Many of you are wearing that paradigm shift on your wrists right now. The Quartz Movement watch: Totally electronic. A thousand times more accurate than the mechanical watches it replaced. Battery powered. All new rules.

So, who invented this revolutionary design? The Swiss themselves. Right here in Neu-Chatel at their research laboratories.

Yet, when their own researchers presented this idea to the Swiss watch manufacturers in 1968, they rejected it. After all, it didn't have any bearings. It didn't require a lot of gears. It didn't even have a mainspring. It had none of the marvelous mechanical complexity the Swiss were so good at. Therefore, it couldn't possibly be the future of watches.

So confident were the Swiss manufacturers in that conclusion, that they didn't even protect the idea. Later that year, the researchers displayed that watch for all to see at the World Watch Congress. Seiko of Japan walked past, took one look, and the rest is history.

The Impossibility Question

You know, if I had been in Switzerland in 1967, I would have loved to have asked them a question I ask all my clients.

"What is impossible to do today in your business, but, if it could be done, would fundamentally change it for the better?"

Maybe the Swiss would have realized that the Quartz Movement watch was the answer to that question and the answer to their future. Who knows?

At any rate, it's an important question for you to ask at every level of your organization.

Remember, what's impossible to do today may be easy to do tomorrow. Just like the Quartz watch.

Please keep in mind that this is a not story just about the Swiss. It's about you. It's about me. It's about any organization, any culture, any nation that assumes that what has been successful in the past must continue to be successful in the future.

Let me remind you once again. When a paradigm shifts, everyone goes back to zero.

Not even the best watchmakers in the world could stop time.

Key Paradigm Observations

What I want you to remember here is that paradigms dramatically affect our judgments and our decision making by influencing our perceptions.

We must never forget: We see best what we're supposed to see. And poorly, or not at all, that data that doesn't fit our paradigm.

So if we want to make good judgments about change, if we want to lead successfully to the future, we must become aware of our present paradigms, and then be unafraid to replace them.

Now, let me share with you some key observations about paradigms.

Observation Number 1. Paradigms are common. We have paradigms in almost all aspects of our life, whether it's personal or professional, spiritual or social.

Observation Number 2. Paradigms are useful. They help us identify what's important and what's not. They focus our attention. They give us invaluable guidance for problem solving. That's good.

But, and this is Number 3, and it's a warning. Sometimes your paradigm can become the paradigm – the only way to do something. And when you're confronted with an alternative idea, you reject it out of hand. This can lead to a nasty disorder I call "Paradigm Paralysis."

Paradigm paralysis is a terminal disease of certainty. It is easy to get and it has destroyed more than a few institutions.

This reminds me of a maxim: "Those who say it cannot be done should get out of the way of those who are doing it."

Observation Number 4. The people who create new paradigms are usually outsiders. They are not part of the established paradigm community, so they have nothing to lose by creating the new.

This means something very special for you. If you want to find the new paradigms that are developing in your field, you must look beyond the center, way out to the fringes.

Because almost always, the new rules are written at the edge.

That's where Apple started. That's where the Green Party began. That's where micro-loans were invented. That's where the Women's Movement was born. All of them at the edge.

Number 5. Those practitioners of the old paradigm, who choose to change to the new paradigm early in its development, like Galileo, have to be very courageous.

Let me quote from Thomas Kuhn on this:

"A person who embraces a new paradigm at an early stage must often do so in defiance of the evidence provided by the problem solving. A decision of that kind can only be made on

faith."

The mark of these paradigm pioneers is great courage... and trust in their intuitive judgment.

And now, for the last point, and the most important. You can choose to change your paradigm. Perhaps the greatest strength human beings have is that we are not genetically encoded for seeing the world only one way. You can choose to shrug off your old paradigm and adopt a new one.

That's why I'm such an optimist about the future.

The Pig Story

There's a story I'd like to tell you. Once upon a time, there was a young man with a very fast sports car who loved to drive on curvy country roads.

One day, he was out driving his favorite road when around a curve came a car out of control. Just as they were about to collide, the car pulled back into its lane. As it passed, the driver yelled out, "PIG!"

Well, the young man was shocked at her insult, so before she disappeared down the road, he yelled after her, "Cow!"

He thought to himself, how dare she call me a pig? I was in my lane. She was the one who was hogging the road. But he wasn't too upset, because he had gotten her before she got away.

And so, he put the accelerator to the floor, whipped his car around that curve...and ran into the pig.

That was a paradigm story. The young man was responding with old rules. You call me a name; I'll call you a name. But, when you think about it, the woman was really trying to warn him.

I believe the next ten years are going to be filled with people coming around curves yelling things at you.

If you have paradigm paralysis, you're going to hear nothing but threats. On the other hand, if you have paradigm pliancy, you're going to hear some wonderful opportunities! The choice is entirely yours.

Conclusion

Sometimes people get overwhelmed by the future. They look forward and think, "How can we cope with all this change?"

The answer to that question can be found by looking back to our great grandparents. In many ways, they dealt with changes at least as profound as what we're involved in right now.

You must remember, that in 1900, radio would still have been considered magic. Think about it... inaudible voices traveling through the air.

In the space of 20 years,

Henry Ford built his first automobile.

Thomas Edison invented the movie camera.

Madam Curie discovered X-Rays.

The Wright brothers proved the experts wrong and created heavier than air flight.

The electron was discovered.

The cause of malaria was identified, and

A man named Albert Einstein proved that $E = MC^2$, and the atomic age was conceived.

The paradigms of our ancestors were forever altered during this time. And you know what? In spite of all that change, they did just fine. We wouldn't be here if they hadn't.

You see, no matter how big or difficult the problem, there will always be some way to solve it. Even if one door closes, there will be another door to go through to get to the future.

And just like it was for our grandparents, I am positive, on the other side of that door awaits more than enough opportunity to keep us happy and busy for a lifetime.