



Peter's Perspective: What Businesses Can Learn from Nuclear Physics

WHITE PAPER

Set aside your usual business perspective for a moment and come with me on a short ride of science. Everything in life is either matter or energy. All matter is composed of atoms that house protons, neutrons, and electrons. At the center of the atom is the nucleus, where the protons and neutrons are tightly bound. The electrons? They're orbiting and are the agents, if you will, that interact with other atoms. But that's a mission in its own right that we won't explore here.

A large amount of energy is stored in the nucleus. The discovery of that fact eventually evolved the science that produced the atomic bomb. Thank you, J. Robert Oppenheimer. Kidding. He may have led the development of the bomb, but he wasn't alone. There were 130,000 fellow scientists involved in the effort, and an underachiever named Albert Einstein developed the basic science many years before. Anyone remember $E = mc^2$?

Why the lesson in nuclear physics 101?

Because it's possible that it's easiest to think about understanding the behavior of companies by applying the logic of nuclear physics.

Hmmm...okay, I realize that what you just read will probably be the only time in your entire life where the terms "easiest" and "nuclear physics" are found in the same sentence. At this point, you should pity my wife for having to listen to me natter on during long drives.

So, let's begin this metaphor with Sales acting as an atom, Customer Success as another atom, and the Product and Support organizations as additional atoms of their own. Each is independent. Each has protons and neutrons, tightly bound to form a nucleus. Think of that combination in the business context as strategy. As I mentioned, each atom has electrons doing their orbiting thing, and you should think of them as execution. So, we have what every business function needs, right? Strategy and execution.

In our metaphor, we should imagine the energy stored in the nucleus as information that is proprietary to each organization. It's the result of the processes they run. But it's locked up. Marketing has its information about the market, the digital landscape, and prospects' online behavior. Sales has its own

It's information about the market, about prospects, and about what customers are interested in. Support has its information about what works with the products and the technical issues customers are facing. Product has its information about the company strategy, products, the market, and about technologies. And Customer Success has its information about customers and what value means for them.

Digging deeper, we can imagine that each atom's, or organization's, capability to do any value creation in alignment with its respective mission is limited by the amount of the information or energy available to them. For example, the value that Sales can create is limited to what it knows about the products and to the organization's capabilities to marry that knowledge with the expressed need of customers to solve their business problems. Customer Success is limited to what it learns about customers once it engages with them and to our organization's capabilities for developing a plan that guides customers forward and delivers on what it anticipates the customer will need. In this example, both [Sales and Customer Success](#) are limited to their own organization's knowledge because they're not sharing those learnings cross-functionally.

Each organization has its own processes that produce some form of output, but it largely does this in isolation of all the work of the other organizations. Conventional business models aren't architected to easily accommodate or promote the [easy sharing of information](#). Each organization documents these processes and any generated insights, and it can effectively argue that by performing its role in this way, it is operating efficiently and meeting the expectations of c-level executives and shareholders.

That sounds good and logical, and there's plenty of precedence to suggest that value was indeed created through such models over the last century. But things have changed, and old methods are showing their age. The absence of fluid processes that cross business functions and that should more efficiently leverage and share data collected and created by the various organizations means that valuable information gets stuck. This is because as each organization pushes its own output forward, it doesn't expose how it was produced. The reason it doesn't is because that's how the organization was designed to behave. Because that's what convention called for. Get where I'm going yet?

In this metaphor, matter (a company) – in the way it's described above – which contains atoms (organizations) would be seen as stable. Nothing much changes because each atom, or organization, is doing its own thing, keeping all its energy, or information, contained in the nucleus, the strategy it controls. No sharing, no caring. Sounds like many companies, right? All the atoms are stable (eight electrons) and because they are, they are not interacting with other atoms. Is this good? It depends if stability is a desirable goal.

What's wrong with stable?

Well, ordinarily, stability is a highly desirable state in many contexts of life, and usually too in the context of atoms. It's actually the state they are always striving to achieve. And we've all read and been schooled – and rightly so – on the earth-ending potential of atomic weapons. So, keeping that stuff stable is good.

But what if that stability was shattered with the intention of creating peaceful outcomes? That's how we should think about the role that atoms play in the production of nuclear energy to generate electricity. Do you know what happens when uranium or plutonium atoms are split? Tremendous energy is created. The process is called fission. In the peaceful application of it, the atoms are split to produce energy. The heat released by fission is used to create steam that spins a turbine to generate electricity. Maybe releasing energy by forcing a split is how we should think about how this logic could be applied to the organizations of a company. Maybe, if we could figure out how to release the pent-up energies of the various organizations, we could trigger an expansion of energy that would be far greater and create far more value for the company and its customers than the amount of energy and value generated by each organization on its own.

Stasis isn't working

This is touched on in the book, [Lead and Disrupt](#), by Stanford University's Charles O'Reilly and Harvard's Mike Tushman. The authors spell out the "eight deadly sins of stasis" that can doom a company's efforts to change. They are:

- Unwillingness to Listen
- Lack of Patience
- Lack of Distance
- Lack of Resources
- Wrong People and Wrong Role
- Lack of Accountability
- Inappropriate Culture
- Lack of Political Support

My view is that those are all detrimental to innovation and that so much of the collective problem we see in business is due to organizational barriers. This was identified decades ago as a problem and it's been discussed endlessly, and yet it still persists.

- Contained information contributes to corporate sclerosis because it stays within the walls of each organization. It can become stale. Walls make its leverage by other organizations difficult. This is how companies die slow deaths. Innovation is stulted; unnecessary friction between organizations is perpetuated.
- Energy – and money – is wasted when organizations behave this way, because each performs operations that are also performed by the others.
- Unless there is a higher power (who else but the CEO?) that forces cooperation and collaboration, companies can find themselves falling behind the market because their organizations are not optimized to deliver results in an efficient way.

What happens when walls between organizations are dropped?

Tremendous energy is created. We don't call it fission, but it should have the same effect. Unleashing the potential of each organization to tap into and leverage the information generated by others should produce an expansive effect on a company.

How can we make this happen?

Like in nuclear physics, inject a neutron into the nucleus (remember what I said about the nucleus being akin to strategy). This forces instability and causes the split. It doesn't have to be seen as being so violent, but if we introduced new ideas (strategy) into the core of each organization, we might cause the change that's necessary. Primarily, that neutron should be a new leadership mindset, fresh thinking that may or not involve bringing in external hires to maintain a nice mix of organic growth and new people with varied viewpoints.

Like any other significant change in a company, it needs to be owned by a c-level executive who is accountable and responsible for ensuring the desired results.

We talk so regularly about collaboration out of one side of our mouths (how it generates smarter outcomes) while using language out of the other (how internal competition is good for the company and creates stronger leaders) that – maybe unconsciously – protects and maintains unnecessary barriers. It is illogical and it results in stasis.

I see corporate stasis as a tremendous drag on the economy, one that is largely invisible. The invisibility makes it especially pernicious. I'm joined in that opinion by Jeff Bezos, who articulated the threat of stasis to Amazon in his [2016 Letter to Shareholders](#). But like dark matter, stasis can't be seen and yet everyone feels its effects. And also like dark matter, the challenge of understanding and addressing it seems so immense it creates its own inertia.

Customer data as the catalyst for change

The discovery of the energy released by the splitting of atoms happened in 1932. Maybe the time we're in at this moment in business is similar to the years leading up to that year. It was in 1919 that scientists first confirmed the theory that energy could be released from the nucleus of an atom. As in the years between 1919 and 1932, perhaps we are, in this moment, at the early stages of appreciation for how the constrained energy of a company might eventually be released if the right type of catalyst were injected into the various organizations (atoms).

Perhaps we will finally see the day dawn when customer behavioral and sentiment data will be recognized as that right type of catalyst. It should be, because there really is nothing comparable in terms of potential. [Customer data contains the missing pieces](#) that every company needs in order to

complete the puzzle: How well are customers adopting products? Are they properly equipped and enabled to make progress? What is their perception of the products, services, and vendor's brand? What are their thoughts on how the products could support their longer-term business growth plans? What do their corporate results portend for future investment and how can the vendor glean advantageous clues?

Closing – science, history, and human nature

Science gives me understanding. History gives me context. Human nature gives me hope. These three things are why I believe we'll soon see a breakthrough in this topic. We'll see our own version of atom splitting, just in the context of business. The secret though, lies in the future of leadership, not in the past. The past has had its day and it's time to make way.

I believe in the next generation of leaders. I believe with each generation we are increasing our overall capabilities for accelerated thought. I believe if the next generation of leaders can evolve with a true sense of collaboration – bringing into reality the words we repeat almost mindlessly today – if they can maintain an expansive outlook, if they can mix it all with a strong appreciation of history and the lessons learned from our predecessors, and if they can then smartly apply principles of science and leverage the assistance of modern technologies like artificial intelligence, they will decode the string that contains the secret for getting us out of this wasteful state of corporate stasis.

Standing still can't be an option. This volatile time in our world today should be teaching us that.