Hit and miss

With the dramatic changes that communications technology has enabled over the last decade, most communications operators likely would describe themselves as innovative. However, to continue to bring new products and services to market, to compete against new entrants from outside the industry, and to maintain a sustainable business for the future, communications companies will need to do more.

Research shows that over two-thirds of all business-related innovation initiatives fail. Some companies, clearly, are more successful at innovation than others. Why? Does innovation just happen, or is there more to it than that?

True innovation requires discipline and an organizational structure and approach that can foster creative tension between the communications business of today and of tomorrow. Failure, too, is a key ingredient. A business' ability to learn from and respond to its failures is a key factor in how effectively it can harness innovation for success.

by Christopher Wasden

Few industries are more closely associated with the idea of innovation than communications is. Over the last decade, developments in technology have completely changed the industry and the world around it. Despite this, the nature of innovation, and what drives and sustains it, is more often than not overlooked.

True innovation is widely misunderstood. To some, innovation is creativity. Others confuse novelty with innovation. Neither view is correct. In fact, both are wrong because they ignore an essential ingredient: value.

The recent history of the communications industry is littered with examples of new technology failing to deliver value, and with companies too often relying on novelty or perceived creativity without understanding what appeals to customers and their subsequent willingness to pay for it. For example, seven years ago Sony launched a phone that had many of the features found in today's runaway success—the iPhone—but was met with utter indifference from consumers. Even Apple's first attempt at developing a music-playing cell phone, the ROKR, with partner Motorola, similarly failed to tap into consumer demand for the "next big thing".

Simply put, that which is creative and new becomes innovative in a business context only when it creates value—that is, when people are willing to pay for it. Or to put it another way, innovation that is never commercialized is worthless.

Defining innovation, however, is just the first step. Harnessing innovation and making it work requires an understanding of what drives it and what sustains it. In general, people do not wake up in the morning and say, "Today, I'm going to be innovative." Rather, the innovator needs something to react against, something that might usefully be thought of as a tension. Tensions are meaningful structural gaps—resulting from changes in rules, resources, roles, relationships, or goals—that are important but difficult to close. In other words, innovators react to what they perceive as a meaningful difference between things as they are and things as they ought to or could be. So, for example, as little as a few years ago, mobile phones could do just one thing—make calls. Innovators saw the possibility of such devices providing much more—such as Internet connectivity, music and photo storage, and numerous applications that simply make life easier—from locating a good restaurant to navigating the best route to your destination. The result? An innovation: smartphones that do all of that and more.

Whether responding to external problems or to those embedded within the organization, innovation cannot occur without tension. Neither can it emerge in the absence of failure and the pain that failure engenders. In fact, the pain of failure leads to the tensions that encourage innovation and growth, so failure is the first step. Innovative organizations transform frequent failures into successes. The trick is to think differently as a result of the tensions within or outside a business, to fail fast and frequently so that sustainable solutions come quickly to the fore.

As significant as they are to the process, value, failure, pain, and tension in and of themselves cannot produce innovation. The binder in this dish is discipline—and, more specifically, market discipline.

A tale of two disciplines

The central tension in all organizations is that between exploration and exploitation. Exploration—the search for the new—drives innovation. Exploitation, which seeks to use past innovation, suppresses it. This explains why most organizations, particularly large ones, struggle with innovation. For example, operators seeking to protect their fixed line service in the face of competition from wireless can lose sight of the promise of the new model. They need instead to manage the tension between creating the communications company of tomorrow and running the communications company of today.

Creating additional services and value from new technology requires them to remove the organizational barriers between platforms and silos in order to allow collaboration. Some large operators struggle to find the right way to achieve that convergence between wired and wireless, or retail and business. They fail at crossing the silos and getting convergent solutions. That failure risks relegating them to providing dumb pipes rather than intelligent solutions for which their customers will pay. Such an approach requires market discipline and an ability to operate outside the hierarchy.

The struggle is rooted in two opposing forms of discipline that must achieve a dynamic balance if innovation is to occur. The first of these, market discipline, governs exploration; the second, hierarchical discipline, is aligned with exploitation. All organizations are, in fact, tension systems that operate between these two: the edge of equilibrium (hierarchical discipline that exploits previous innovations) and the edge of chaos (market discipline that creates the next generation of innovation). Dynamic balance is achieved when a company resists the impulse to allow hierarchical discipline to triumph in order to eliminate the tensions enabled by market discipline.

In any organization, innovation emerges from a process that is driven by people's passions. Given the organic, chaotic nature of this process, some sort of filtering and development processes—or market discipline—are necessary in order to promote good ideas and separate them from bad. This filter generally takes the form of an innovation committee or group that enables the emergence of activities that occur outside the mainstream of the standard operating procedures that define day-to-day business. The purpose of this innovation committee is to enable disruption that moves activity toward the edge of chaos.

The innovation committee backs the best ideas that emerge from these activities and gambles on their viability. In addition, this innovation committee protects employees from their bosses, enabling them to use some of their time and the resources they provide to follow their innovative passions. By transferring from the hierarchy (the boss) the decision regarding advancing the innovation and by allocating innovation resources to a group focused on empowering innovative visions, market discipline supplants hierarchical discipline.

Market discipline is essential to the discovery of what might be termed radical, next generation innovation. In essence, it enables such innovation to emerge and become the foundation for future growth. (See Figure 1.)

But this is not to say that market discipline is better than hierarchical discipline. In fact, market discipline generally operates within the broader structure of the hierarchy. The point is that the discipline required within an organization is a function of where one resides on the exploration/exploitation continuum. Successful innovations emerge when the right discipline is applied to the right opportunity, and they are hindered when the opposite occurs.

At first glance, hierarchical discipline may seem to stifle innovation. Unlike market discipline, hierarchical discipline focuses on efficiency rather than variety. In hierarchical structures, individuals are aligned by silos and report to bosses who limit what they can and cannot do. While such an approach does in fact stifle radical innovation, it is essential to incremental innovation, which must occur to extend the life cycles of stable products that need a "next version"—one that is slightly better or different but not radically so—to stay alive.

This is perhaps where many communications businesses find themselves. They have proven themselves masters at operating within silos (e.g., wired and wireless) but arguably less adept at working between them.

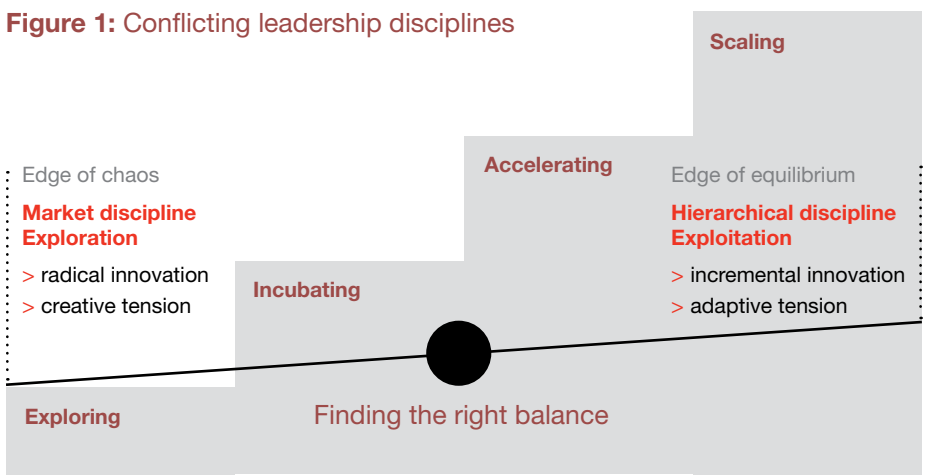
While hierarchical discipline dominates most large organizations, many companies have found ways —innovative in themselves—to install market discipline processes around their innovation efforts. While financial support is important, innovation also requires time, and the freedom to use that time. That means providing innovative employees with some protection from their bosses and their bosses' focus on the here and now. Both Google and 3M have embraced approaches that allow innovative employees to spend some of their time harnessing their passions rather than performing their job-specific duties.

A platform is the most valuable type of innovation because it creates a sustainable competitive advantage. Apple's App Store started in response to users jailbreaking the original devices in order to add applications and functionality that were not available from within Apple's walled garden. Having opened the garden to developers, Apple has seen its smartphone rapidly outsell other manufacturers' products, even when those competitors, such as RIM or Nokia, had a considerable head start.

By creating an open-innovation ecosystem that provided developers the tools to innovate, simple and compelling economic terms to distribute, and a simple review and approval process, Apple has created an entirely new open innovation paradigm that none of the other mobile software or device providers has yet been able to replicate. However, Google, another non-telco company, is coming close.

While much of open innovation is inner directed, it is possible to view the model as flowing two ways. Often, conscious efforts at creativity result in innovations that a company cannot use. In fact, some estimates suggest that 90% of all information

Figure 1: Conflicting leadership disciplines



technology innovations never achieve commercial viability and that more than 90% of all patents expire without creating any economic value. Innovative companies that apply the open innovation model could license innovations that they cannot use to others. Instead of being a wasted asset, the innovation produces value.

Take Pfizer, for example. The company recently directed that any innovation developed in-house that Pfizer cannot use should be sold to another company. When people vote with dollars—whether inside or outside a company—market discipline is in play and innovation flourishes.

Sparking innovation: Harnessing tensions that drive innovation

While market and hierarchical discipline are necessary for radical and incremental innovation to thrive, it is important to understand what lights the fire of innovation in the first place. The energy force that causes innovation can be thought of as tensions that emerge from a number of sources. (See Figure 2.)

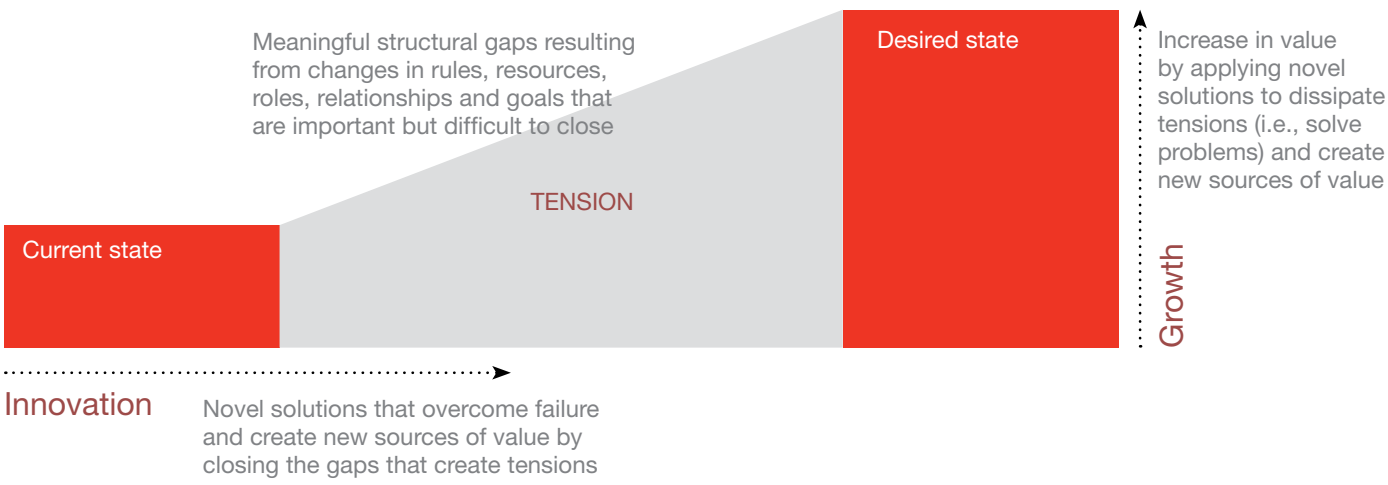
Resolving such tensions leads to unique points of view that cause innovators to see the world differently from the status quo and to envision unique ways in which to solve problems.

The smartphone story illustrates this well. In response to consumer dissatisfaction with the limited functionality of cell phones, smartphones that provide Internet access, store and play music, and host many different apps are eclipsing the cell phone market. This desire for more and better cell phone technology is a macro-level tension capable of spurring innovation. Innovators sense such tensions, believe that they can dissipate them, and develop innovations that take the tension out of the system. From another perspective, innovators take such tensions out of the marketplace and bring them into the organization, thereby driving innovation in the company. By so doing, the leading smartphone manufacturers are earning 35% of all the profits in the overall cell phone market on just 3% of all the sales[1], and smartphone customers are reported to be the happiest and most satisfied.[2]

The problem is that many organizations are not structured in a way that allows such innovation to occur, and they let their current structures blind them to alternatives that would create the tensions necessary for innovation and growth. Many communications businesses struggle to work well between different technology platforms (e.g., wireless and fixed line) and business silos (e.g., retail and business). Creating additional value and services rests precisely on the ability to collaborate and work across those organizational barriers.

In such cases, leadership has the opportunity to shake things up and literally create the environment that releases the creative energy necessary to innovate. It can, for example, shift resources, eliminate dead wood, move boundaries, reorganize departments, change expectations, and so on. Tensions are tensions, and whether they originate in the marketplace or within the organization, they drive innovation effectively. The key is to enable them to emerge and to harness them through disciplined practices that lead to innovation and growth.

Figure 2: Tensions that drive innovation



As the discussion on the previous page illustrates, not all tensions are alike. In fact, they come in three distinct flavors:

- **Creative tensions** generally emerge through market discipline in turbulent environments and result in radical innovation.
- **Adaptive tensions** are related to hierarchical discipline and result in incremental innovation.
- **Maladaptive tensions** occur when the wrong discipline is applied to the opportunity being pursued. Maladaptive tensions drive failure and pain, unless and until they are transformed into creative or adaptive tensions.

As we will see, with innovation, failure is not necessarily a bad thing.

Failure *is* an option

Where does failure fit in? Simply stated, failure implies a gap between what is and what could or should be. It occurs when something fails to live up to expectations or to satisfy needs. In other words, to fail is to fall short. It is the first step in a process that results in innovation and, ultimately, in growth. (See Figure 3.)

That failure drives innovation is not an intuitive concept. For example, people often think of all the innovations that came out of the United States space program and ask, where was the failure that caused these innovations to emerge? The initiating failure was World War II and the much more advanced German missile program. However, the failure that accelerated space-program innovation was Sputnik. This failure caused great pain in the US psyche and led to President Kennedy's famous challenge to do things "because they are hard."

Even in more modest and more recent innovation challenges, failure plays the same role. For instance, in the cell phone example discussed earlier, the innovator spots a *failure* (dissatisfaction with an increasingly limited technology tool and multiple devices doing many of the same things—MP3 players, phones, cameras, Internet, etc.). The failure results in *pain* (consumers are frustrated by the number of technology tools they require to meet their needs). This pain creates a *tension* (between the current state of multiple devices and a desired state of a multifunctional single device), which leads to *innovation* (the smartphone) and *growth* (the cell phone market is in decline, while the market for smartphones is growing at double-digit rates, even during a significant recession).

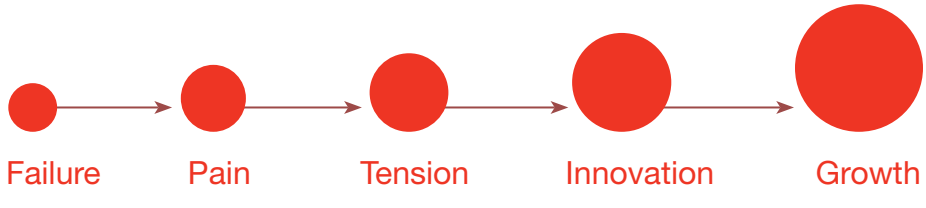
In the process just described, failure is the critical first step. However, to be effective, failure must be fast and frequent. Lingering in the failure mode only stifles innovation as the tension becomes increasingly maladaptive and limits long-term growth unless it can be transformed into creative tension. What separates good innovators from bad is how they approach failure and what they do with it. Apple provides a classic example of the latter, that is, of an innovator that views failure as a stepping-stone to success.

Apple's approach to failure resulted in two great innovations—the iPhone and the iPod. The failure from which the iPhone emerged was the ROKR, an early example of a cell phone by Motorola that could not only make calls, but play music as well using the iTunes software. When the ROKR failed to sell, Apple did not try to work with its partner to fix it, but, instead, reinvented it. Apple continued to innovate, and the result was the iPhone. They realized that it is better to dispense with 10 failing concepts quickly and move on than to hang on to one failing concept and try to fix it.

The Newton was the failed concept that eventually became the iPod. One of the first personal digital assistants (PDAs), the Newton was a huge failure in the marketplace and created an important tension that led Apple to bring back Steve Jobs. However, Apple did not tinker with the Newton in hopes of fixing it. Rather, from the failure, they quickly learned about what separates a good PDA from a bad one and about the convergent technologies that eventually would become the iPod.

In addition to its own failures, Apple seizes opportunities based on the failure of others. In the case of the ROKR, Apple was not alone in launching a failed concept. They kept a close eye on the failures of others and hired promising innovators from other organizations to develop and launch their ultimate product. In essence, they leveraged others' failures to harness creative tensions within Apple that led to their bringing an innovation to the market that has created the new paradigm in mobile media technology.

Figure 3: Innovation begins with failure and ends with growth



Today, Apple has institutionalized failure through its 10:3:1 approach to development. Under 10:3:1, Apple designers create 10 new concepts, whittle them down to three prototypes, and select the best to take to market. With this approach, they expect 90% of their initial ideas and two-thirds of their prototypes to fail. However, by fostering fast and frequent failures, they decrease their overall investment in failure, which leads to greater success.

The lesson with regard to innovation is this: Failure, particularly fast failure, can either liberate an organization or bog it down. Apple is an example of the former; big pharma characterizes the latter.

For many years, the pharmaceutical industry simply did not understand innovation. They thought that innovation lent itself to economies of scale and could be mass produced in the same way they manufacture pills. Over the past decade, hundreds of billions of dollars have been spent in an effort to create new drugs, yet most companies have almost nothing to show for that investment. Why? They have made the mistake of making fast failure virtually impossible by attempting to innovate through hierarchical rather than market discipline structures.

Whereas hierarchical discipline perpetuates and causes massive overinvestment in failure, market discipline actively seeks signals of value and eliminates those activities that fail to measure up.

Companies are also discovering that using market discipline to shake things up in their organizations is a good thing. For example, according to Mikko Kosonen, a former Nokia strategy chief, the company uses market discipline to create organizational tensions that intentionally lead to instability. He observes that a mix of tension and collaboration is designed to "keep the organization awake," because "the very things that make you great will kill you—unless you take medicine to stay agile."[3]

Avoiding the downside of innovation

Innovation is the lifeblood of any company's success. However, as with most benefits, innovation comes with a number of unintended consequences. In fact, there are two: One is organizational, and the other is societal.

From an organizational perspective, companies can suffer from innovation overload or, to put it another way, innovation fatigue. Many handset manufacturers, arguably, have succumbed to this condition. It flourishes among companies that have failed to distinguish between that which is merely novel and that which is genuinely innovative. It is possible to generate an endless stream of novel ideas, but only those that create value—economic, social, or personal—are innovations. When market discipline is applied to separate the wheat (value-producing creativity) from the chaff (mere novelties), organizations find that what remains is an extremely manageable set of genuine innovations.

From a societal perspective, two phenomena are worth noting. The first involves the inevitable abuse of innovation, and the second, once again, involves value.

Most innovations enable some type of abuse. The Internet has provided us virtually unlimited access to information, but it also has provided unprecedented business opportunities to criminals, a fertile stalking ground for predators, a spike in identity theft, and invasions of privacy. Advances in cell phone and PDA technologies have brought the world two devices that fit in our pockets, but these devices have led to increases in traffic accidents and are absorbing more and more of our (and our children's) time in not necessarily healthy or productive ways.

Fortunately, some (but not all) such abuses are mitigated by the impact of value on innovation. When it comes to an innovative product or service, an evolving value proposition filters out a lot of the abuse and misuse. This, however, can take time.

When a new technology enters the market, it could take a decade before users discover ways to change their workflow and do things differently to create new sources of value. For example, MP3 players that required users to "rip" songs from a CD did not harness the power of the Internet to change the workflow related to music consumption. Rather, they merely mimicked a process that reel-to-reel, cassette, and eight-track tape users had performed for decades. The iTunes Store radically reinvented this process by changing workflow and enabling purely technological innovations to find their practical application. For nearly all innovations, a gap of about 10 years exists between a technology innovation and its impact on workflow.

In another example, when personal computers first came on the market, people did little more with them than replicate paper-based systems. After 10 years or so, people began to realize how computers can help us do things differently—for instance, writing, editing, and designing; managing data; accessing information; creating new business models; networking socially and for business purposes, and so on—thereby creating value that was inconceivable when the technology was first applied to a problem. No doubt, as time passes, new technologies like Twitter that today appear to be mere novelties may evolve into productive tools as innovative practices catch up with innovative technologies and more and more people discover legitimate uses for them.

Assessing innovation in your organization

In today's volatile economic climate, two critical needs have risen to the fore: the need to control risk and the need to innovate. At first glance, these needs might seem to be at odds with each other. In fact, they share common ground in their concern with the unknown and the improbable. While controlling risk is all about preparing for the unknown and facing the improbable, innovation is all about enabling the unknown and the improbable to emerge within your organization and about allowing people to organize themselves to innovate and address these uncertainties. Communications businesses ignore either or both to their detriment. Clearly, here is an example where a dynamic balance between the two yields optimal benefits.

Communications businesses that embrace innovation will succeed today and in the future. Will yours be among them? How will you know? The following questions might help you assess the role of innovation in your organization:

- Do you think of innovation as occurring along a life-cycle continuum?
- Do you apply principles of market and hierarchical disciplines at the right time in the innovation life cycle?
- Do you know how to change your organizational structures to accelerate innovation?
- Do your growth and innovation strategies lead to innovation fatigue?
- Do your innovation disciplines enable fast and frequent failure to accelerate success?
- Do you know how to transform the maladaptive tensions in your organization into creative and adaptive ones?
- Do you understand and exploit the links among failure, pain, tension, innovation, and growth?

Many factors will determine competitive advantage for communications companies in the 21st century. Few are as powerful as innovation. The industry has already seen the power of innovation to transform businesses, and to disrupt them. In less than a decade we have seen the Internet change forever the way that business is conducted around the world. New mobile solutions are set to do the same—particularly in emerging markets where mobile financial services and telehealth are taking off rapidly, far exceeding provision in more developed markets.

How well communications companies respond, by innovating and by addressing the tensions in their markets and within their own organizations, will play a major part in determining their future success.

Endnotes

[1] Sara Silver, "Apple, RIM Outsmart Phone Market," *The Wall Street Journal*, July 20, 2009.

[2] Phil Goldstein, "Study: iPhoners are the happiest smartphone users," *Fierce Wireless Daily*, July 17, 2009.

[3] P. Dvorak, "Experts have a message for managers: Shake it up," *The Wall Street Journal*, June 16, 2008.

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