

CASE STUDY



Watson- Glaser™

*Creative and Critical Thinking:
The Recipe for Innovation*

Judy Chartrand, PhD, Chad Fife, MBA, and Scott Flander

A large, abstract graphic in the bottom right corner consisting of several overlapping circles. Each circle is filled with a dense pattern of fine, parallel lines in shades of orange and red, creating a textured, mesh-like appearance.

**MORE INSIGHT
MORE IMPACT™**

It is hard to cook a dish properly if you're missing a key ingredient, yet businesses often wonder why they have trouble getting innovation right. They know they need creative thinking—and lots of it. But they often lack the ability to transform their creative ideas into polished products for the real world.

Who can forget the Segway®? Its inventor predicted that it would “be to the car what the car was to the horse and buggy.” His unbridled optimism blinded him to the fact that no one really wanted or needed a motorized scooter to get around on city streets and sidewalks—and that \$3,000 was far too high a price point for most people to even give it a try.

Or how about New Coke? Coca-Cola® was certainly being innovative when it came up with a new formulation that beat Pepsi in taste tests. But company executives failed to recognize that the public would angrily resent any change to what it considered a national institution.

The tech world in particular is littered with once-promising innovations that withered in the harsh sunlight of the marketplace, such as the LaserDisc, the mini-disc, Palm devices, and Groupon®. What all these examples demonstrate is that great ideas are not enough. Innovation—successful innovation—requires the application of critical thinking as well. This is the ingredient that so many companies miss.

What is required is a robust integration of both creative and critical thinking, a back-and-forth, iterative process that fosters maximum creativity, while at the same time bringing a clear-eyed understanding of how an idea will play out.

Faced with today's increased demand for innovation, many companies are searching for new ways to encourage creative thinking. At the level of the organizational culture, they are reinforcing the notion that it is OK if an idea fails—employees will not be penalized for thinking outside the box and striking out. Businesses are also adopting new techniques for brainstorming and synthesizing ideas. What many companies are less successful at, however, is bringing critical thinking into the picture at the right point in time.

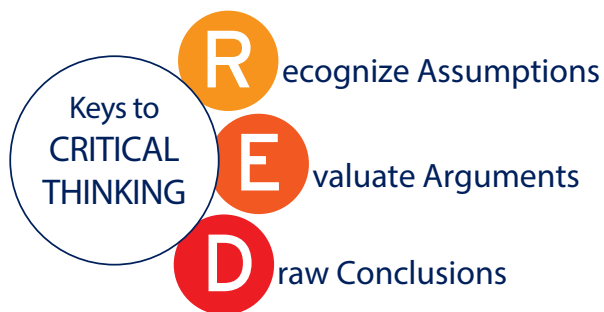
How Critical Thinking Works

What is critical thinking? How can it be applied to the creative process without killing ideas before they are fully formed? How can teams of people—some better at creative thinking, some better at critical thinking—work together in a true collaboration?

Watson-Glaser™ is one of the leading and most prestigious measures of an individual's ability to think critically. It measures three essential elements of critical thinking:

- Recognizing assumptions. This involves separating fact from opinion. Too often, we accept unsupported information as accurate because it reinforces our own beliefs, or because the speaker is particularly credible. Many innovations fail because companies assume that their ideas will instantly be embraced by the public—ignoring warning signs that might suggest otherwise.
- Evaluating information. This involves stepping back and objectively sorting through different positions. Another reason innovations fail is that people often let emotions—their own or others'—color their decisions. Or, people may go along with someone else's position to avoid conflict. It is essential to systematically review and evaluate information in an unbiased manner.
- Drawing conclusions. This involves bringing diverse information together to arrive at conclusions that logically follow the evidence. Innovations will have a greater chance of success when people do not generalize beyond the evidence at hand, and are willing to change their positions as the evidence changes.

All three elements of critical thinking call for the ability to step back and take a hard look at the problems an innovation may face. One of the common features in the post-mortems of innovation failures is that executives were told of potential problems, but for one reason or another went ahead, despite the concerns.



“ When critical thinking is applied to innovation, warning signs and red flags are thoroughly and carefully considered—and in fact are used to make the innovation better. Critical thinking is actually made part of the creative process. ”

Bringing Creative Thinking and Critical Thinking Together

There is a common misperception that creative thinking and critical thinking are incompatible—that creativity cannot flourish if it is subjected to a practical, hard-nosed approach. But many people in a variety of professions are able to seamlessly bring the two modes of thinking together.

An experienced product manager might spend a few weeks looking for next generation product ideas by searching for material outside of her domain, attending a new conference, scanning online and print materials, talking to people—all in the vein of stimulating new ideas and connections. At this this stage, the goal is to spark

as many new new ideas as possible, unencumbered by a critical filter. The critical analysis comes later, as she checks these new insights against the realities of the product market and corporate capabilities. The product manager doesn't apply creative and critical thinking at the same moment, but rather switches between the two, generating and refining ideas with the goal of arriving at an innovative new product that can be successfully launched and sold.

This process can be effectively replicated by innovation teams. While some people will excel equally at both creative and critical thinking, most tend to be stronger in one mode than another. Companies need both types of people, as well as the ability to bring them together in a collaborative effort.

Creative and Critical Thinking at Play in a Marketing Department		
Creativity in action:	Critical thinking in action:	Requires equal doses:
Copywriters personalizing email subject lines that grab your attention	Product managers interviewing customers to validate interest	Product creators spotting an unfilled need that customers will also pay for
Bloggers connecting their product to a hot news item in an unexpected way	SEO specialists ranking the top search terms buyers use in their industry	Leaders creating a strategic plan that inspires a team
Web designers trying new “Buy Now” buttons to improve conversion	Salespeople using Twitter and LinkedIn etc. to learn more about a prospect before a meeting	Managers matching the right message and channel to generate 3x leads than in previous quarters

Fostering Innovation & Team Collaboration

Good ideas rely on equal doses of creative and critical thinking. The order doesn't matter as much as how each mode of thinking plays a part to stretch or refine an idea. In some cases, members of an innovation team might decide on the need for a particular type of innovation, and then brainstorm how to fulfill that need. In other cases, team members might come up with ideas for innovation using an open canvas.

Once an idea is formed, it must be given free rein to develop. Team members who are more inclined to critical thinking must be willing to suspend judgment. No doubt they will see serious flaws in ideas that come forth, but they must—at least for the time being—be careful about pointing them out. The first version of an idea is rarely brought to fruition. Ideas beget other ideas, and perhaps the 10th creative flash in a brainstorming session—or the 30th—will be the one that leads to a successful innovation. If an early idea is stopped in its tracks, the later, better ones may never see daylight.

It is at this point, however, that innovation frequently falters. Although innovation teams often believe they are thoroughly vetting their ideas, too often they are so caught up in the possibilities that they are not aware of how emotion or assumptions are getting in the way.

They may operate on blind faith regarding certain suppositions—about how the public will receive the idea, for example—without a rigorous examination of the evidence.



How Sony Missed Developing the iPod®

Sometimes a lack of critical thinking can cause even an innovation leader to fall behind. As a pioneer in portable music players with its Walkman® line, Sony® was well positioned to continue its industry leadership into the digital age. Instead, it ceded the game to Apple®. A new book suggests that the problem at Sony wasn't too little creativity, but rather that the engineers let an emotion—arrogance—cloud their judgment.

"Instead of listening to the market with humility, Sony's engineers crammed their best technology into an MP3 player that was too cumbersome to use," writes Jake Breeden, in *Tipping Sacred Cows: Kick the Bad Work Habits that Masquerade as Virtues*. "Instead of taking care of their customers' need for simplicity," he says, "they took care of their own engineers' need for complexity. Engineers inside Sony viewed the hard disk technology used in Apple's iPod as beneath them, so they went their own way. These innovators had brains full of ideas. Their problem wasn't too few ideas. Their problem was too much narcissism."

The goal of critical thinking in innovation is not to kill flawed ideas—though sometimes that's necessary—but to carefully evaluate an idea to see whether its flaws can be overcome, so that the idea can become stronger. If the critical thinking process is successful, good ideas will be kept alive and passed back to the creative thinkers for more work.

During this phase, those who created the ideas must be willing to let go and allow the process to run its course. This is not always easy. Unlike critical thinking, creativity is more often bound up with one's sense of self, and the associations made are more intuitive and personal. It is difficult to see one's ideas changed or evaluated without taking it personally. But the idea-creators must have faith in the process.

Just as the product manager switches between creative and critical thinking, innovation teams switch back and forth between the two modes, gradually refining their ideas. In some cases they might reach the cold conclusion that the idea—though perhaps brilliant—is unlikely to become a commercially successful innovation. But if they do decide to move forward, they can be confident they have paid attention to the red flags, and objectively thought through the potential problems.

Developing a Creative and Critical Thinking Workforce

It has long been debated whether creativity can be taught, but there is no doubt that it can be fostered within an organization, as noted above. By contrast, critical thinking is less abstract, and many companies have added classes and workshops that teach

employees how to better question their own and others' assumptions, evaluate arguments, and draw sound conclusions.

In fact, critical-thinking training—for all members of an innovation team—is essential to understanding how the process of bringing creative and critical thinking together works. Before the first brainstorming session even begins, both the more creative and the more critical thinkers need to be fully aware of the iterative nature of the process. With this understanding, the critical thinkers can hold back their judgments during the creative phases of the process, and join in the idea generation. At the same time, if creative thinkers have faith in the process, they will be more likely to embrace an objective evaluation of their ideas, one that puts emotion and ego aside. What emerges is a genuine collaboration that uses creative and critical thinking as twin engines to power innovation.

Another step companies can take is to ensure that the innovation teams are not confined to organizational silos. Both creative and critical thinking flourish best when there is maximum diversity. A broad knowledge pool and wide-ranging perspectives provide rich soil for innovation. Nothing stifles innovation like the sameness of thought.

“ Innovation isn't magic. It is simply the outcome of two of the most basic human characteristics—the ability to dream, and the ability to reason. Successful innovation occurs when those two work side by side. ”

A Checklist for Creating an Innovation Funnel



5 Ways to Enhance Creativity (When Creating Something New)

- ✓✓ Actively support creativity (e.g., form innovation teams) and reward creativity so that employees are positively motivated to try.
- ✓✓ Bring together staff who have different backgrounds and different areas of expertise; encourage socialization (e.g., have lunch together) and opportunities for cross-fertilizing ideas.
- ✓✓ Create opportunities for incubation—quiet time or down time when ideas can percolate.
- ✓✓ Stimulate thinking by exposing staff to new ideas (schedule expert presentations and discussions, watch Ted talks, create walls of inspiration or innovation).
- ✓✓ Suspend judgment during idea generation—focus more on quantity than quality at this stage.



5 Ways to Enhance Critical Thinking (When Evaluating for Quality)

- ✓✓ Stop and think to determine what's going on and what you are trying to accomplish; set direction and clear goals.
- ✓✓ Recognize assumptions and distinguish fact from opinion to make sure you're solving the right problem (or focusing on the right issue).
- ✓✓ Objectively evaluate information and arguments (e.g., ask yourself if it's needed, relevant, and accurate?).
- ✓✓ Draw conclusions that fit the evidence at hand (does your decision logically follow the information and achieve your goals?).
- ✓✓ Plan the steps and resources needed to implement any decisions.



= Great Results

About Us

TalentLens, a Pearson business, publishes scientific assessments that are used globally to hire and develop the 21st century workforce. Our instruments measure critical thinking, problem solving, and a range of job skills to deliver data-driven insights that inform and clarify an organization's human capital decisions. Learn more at **TalentLens.com**.

Learn more and create your
online testing account at **TalentLens.com**

TalentLens.com