Divergent Collaboration℠

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"If I had an hour to solve a problem, I'd spend 55 minutes thinking about the problem and five minutes thinking about solutions."

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"You cannot solve a problem from the same consciousness that created it; you must learn to see the world anew."

Albert Einstein

When we combined these two Einstein quotes and applied them to very tough challenges, something interesting occurred. We called it, Divergent Collaboration℠. The main idea behind Divergent Collaboration℠ is that attacking a problem with diversity and collaboration yields more powerful results than focusing only on generating solutions. By connecting individuals from a wide spectrum of backgrounds, fresh thinking is infused into a problem as it is explored in novel ways.

While typical collaborations try to harness diversity from traditional places – different departments of an institution, different fields in the same industry, or different stakeholder groups along the value chain (such as customers, suppliers, or even competitors) - Divergent Collaboration℠ takes a more radical approach. It brings together people who have a range of relevant expertise on a problem, in the form of hobbies, work, education, or experiences, but in a different or tangential application, environment, or industry. New insights and ideas emerge from unrelated areas that would be missed using classical approaches to solving complex technology and business challenges. By innovating around the problem before jumping to solutions, there is a greater potential for coming up with truly innovative outcomes.

Many teams, groups and organizations approach innovation in relatively traditional ways: brainstorming for new ideas and approaches, setting up internal innovation teams, organizing Integrated Product Teams (IPTs), looking to their R&D laboratories for solutions, formally and informally soliciting inputs from outside solution providers, and using the developing networking technologies to scan for solutions and expertise throughout the world. All of these methods work quite well, particularly when the challenge or opportunity is reasonably well-defined and the potential solution space is generally predictable. But solutions are usually solicited from a relatively limited and traditional set of potential solvers and, not surprisingly, from experts or domains that are well known to the problem owner. This limits the possibility for really new and novel ideas and often leads to incremental improvements rather than breakthrough innovations. With Divergent Collaboration℠, organizations can open up the problem as much as possible and as early as possible, by looking at it from a variety of different and atypical perspectives so as to increase the potential for creative solutions.

The challenges where we applied Divergent Collaboration℠ were long-standing programs, but there are certainly benefits to using Divergent Collaboration℠ on brand new problems. While it

can be applied at any time during the life of a project, challenge, or opportunity, employing the process as early as possible is a particularly effective and efficient use of this technique. Not only is there more freedom to pursue new directions, but the problem definition phase of a new problem is often much less expensive in terms of dollars, hours, timeliness and opportunity costs than the solution phase.

In any case, the process definitely shakes up a project and the potential negative consequences of this need to be acknowledged. The negative side arises from the fact that this technique will open up some new thinking that may be uncomfortable for the problem owner and the existing project team. The divergent aspect of this process will stimulate, on purpose, a change in thinking, some possible new paradigms, a potential need to change direction and at a minimum, a new look at the challenge. All of these elements require the acceptance of change as a possible outcome, and the project team needs to be open to dealing with these changes.

For the problems that we put through the process – Information Visualization, Resiliency, Human Performance Augmentation, and Man-Machine Teaming – Divergent Collaboration℠ yielded very significant and innovative results and stimulated creative new approaches and strategies. Some results include: new ways to deliver critical information to decision makers using artistic, multi-media, music and choreography for information visualization; holistic and neuropathic approaches to provide care for service personnel before, during and after high-intensity situations for better resiliency; augmentation of operator performance by integrating traditional neuroscience techniques with alternative approaches such as acupuncture, electromagnetic stimulation and tonal changes to maintain alertness; and consideration of generational differences as a guide to the development of advanced automated systems by Baby Boomer and Gen-X engineers for use by Gen-Y users.

Additionally, the Divergent Collaboration℠ project on Man-Machine teaming resulted in the investigation of innovative approaches to situation awareness and minimally invasive procedures being used in robotic surgery for application to Unmanned Air Vehicles in high-intensity, high impact warfighting situations requiring precision strike. These non-traditional approaches were developed by participants from a variety of professions; the Divergent Collaboration℠ teams included an astronaut, an orchestra conductor, a Catholic Brother, a US Navy Seal, a spy trainer, a special education teacher, a university softball coach, a robotics surgeon, and a Peace Corps worker who had just served in a remote African village, to name a few. These individuals were able to make connections that might otherwise be missed by people that have preconceived biases or are not able to look at their problem objectively because they work too closely to it.

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The Divergent Collaboration℠ process was created, developed and applied by the IDEA Lab of the Wright Brothers Institute (WBI) and the Air Force Research Laboratory. The Wright Brothers Institute is a non-profit organization dedicated to the exploration, development and application of collaborative and innovative processes, techniques and tools to increase the effectiveness of its client organizations.
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