

# **COLLABORATIVE INNOVATION**



**Bart Barthelemy**  
**Wright Brothers Institute**

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# COLLABORATIVE INNOVATION APPLICATIONS

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*“An idea that is put into action is much more important than the idea itself”, Buddha*

## THE ART AND SCIENCE OF COLLABORATION INNOVATION

It would be convenient if Collaborative Innovation were simply a process that could be applied to a challenge or problem in order to generate solutions or possibilities. Unfortunately, it's not that simple. As we have seen at WBI, Collaborative Innovation depends on a strong collaboration between the individuals involved and there is an art to achieving that. Like any significant collaborative endeavor, human interaction and synergism are involved in Collaborative Innovation and managing that is both an art and a science.

A symphony orchestra is an assemblage of dozens of professional musicians playing the notes of the selected musical piece in harmony. Without a conductor, the orchestra will produce good music, but the work of the conductor, both before and during the performance, is to stimulate and motivate the orchestra to play not just good but great music. Great conductors have mastered the art of symphonic collaboration and integrated that with the process of producing the sounds that are required to deliver the piece. Similarly, sport coaches are expected to do the same, that is, foster intense collaboration between the players as they execute the plays in the game. In both cases, a great amount of effort is required before as well as when the orchestra or team performs. While knowing the principles and practices of collaboration will help the conductor or coach, the mastery of collaboration is an art which comes from expertise

and experience. Similarly, Collaborative Innovation requires the same mastery if it is to deliver great results.

Usually, leaders are taught to encourage and motivate their teams to be collaborative. Much time and effort is spent in most organizations to achieve collaboration. Unfortunately, it is often seen as a separate activity or element from the business of the organization, which is usually governed by processes and practices. This separation minimizes the power of Collaborative Innovation because collaboration and innovation are not treated holistically. Even the most connected team can stray from a collaborative effort when people disagree or the process requires some give and take. That breakdown, while sometimes subtle, can be extremely detrimental to achieving great results. If Collaborative Innovation is to be achieved, that breakdown must be managed immediately and aggressively. And that requires help from someone who is trained and focused on doing just that. While the leader might be able to do that, often that person can't and almost always, that person shouldn't. A special talent is required and that's where the art comes in. In sports, that person is the coach. In business, we call them facilitators.

## **| FACILITATING COLLABORATIVE INNOVATION**

We have found that the facilitation of Collaborative Innovation is probably the most essential element of the process. With all good intentions, teams congregate every day to develop solutions to critical challenges or change the way that the organization is doing business. The leader usually sets the objectives for the meeting and the participants are urged to work together to develop potential ideas or solutions to deal with the challenges. Even with the most collaborative teams, it doesn't take long before differences of opinions or perspectives rear their heads and the meeting turns into a competition of ideas, often personalities. The best leaders keep pushing back on this competitive element, urging the participants to collaborate. But the leader is in a very awkward position to do this. Pushing back on any idea or interchange looks like the leader is against this, encouraging any idea or interchange looks like the opposite. Yet the leader can't be

neutral and remain a leader, nor can the leader let the discussion degrade to a competition or standoff. The only solution is to get help from a third party, a facilitator whose main job is to encourage and maximize collaboration while the team tries to generate the ideas and possibilities that are required for the challenge.

Leaders are often reluctant to do this. Whether it's ego, loss of control, lack of trust or simply the resources required to train and utilize a facilitator skilled in the art of collaboration, leaders generally don't utilize facilitators in most of their meetings. So it is important for leaders to understand that facilitators can be partners to them, just as their administrative assistants, seconds-in-commands, trusted aides and number two's support and assist them in their mission. Most leaders would never hesitate to bring a lawyer to a negotiation meeting, a financial expert to an audit or a personnel specialist to a human resources meeting. Yet they enter into a meeting with their peers and subordinates with no specialized helper in this area. Facilitators are the key to successful group meetings and Collaborative Innovation facilitators are critical to the success of Collaborative Innovation endeavors.

While there are a variety of programs and trainings that focus on developing the facilitation skills of individuals, Collaborative Innovations facilitators are a special set of this practice. While most facilitators focus on helping with the mechanics, agenda and actual content of a meeting or workshop, Collaborative Innovation facilitation requires an additional talent; they must manage the context of the meeting. To do that, they must understand the intended context of the meeting and do everything they can to get everyone to support that. For all Collaborative Innovation efforts, the context is collaboration and not innovation. If the group can achieve and stay in collaboration, innovation will follow. The primary job of a Collaborative Innovation facilitator is to make this happen. Our research and experience has shown that there are six principles that assist in this endeavor and we have trained our Collaborative Innovation facilitators to be particularly sensitive to these principles.

The first principle is energy awareness, being intentionally attuned to the energy of the group and to its effect on collaboration. While high energy may be appropriate for some aspects of the effort, there are

times when reflection, introspection and individual self-awareness are required. The facilitator must be aware and help manage the energy of the group. This requires almost-constant attentiveness to the individual and collective energy in the activity and the deliberate, and sometimes courageous, actions that must be taken to keep collaboration on track.

The second principle is human mutuality. In general, the individuals in a meeting or workshop will behave well, show respect for each other and may even know, like and count on each other. But human mutuality is beyond just getting along, working with each other and civil behavior. Human mutuality is the acknowledgement that we are all in this together and that the outcome depends on the collaboration, synergism and mutual dependence of everyone on the team to achieve the agreed-to goal. The facilitator must periodically, sometimes constantly, remind the team of this and make this a part of the context of the meeting. Again, this requires attentiveness to the team behaving as a team as well as dealing with disruptions to team behavior by individuals who are more interested in their own agendas than that of the team.

The third principle is curiosity. Many individuals are curious and that very attitude helps the team search for new approaches and solutions. But collaboration is difficult and collaborative innovation is even more challenging. It's easy for a team to get bogged down and then begin to spiral towards complacency or even dysfunctionality. The facilitator must anticipate this and watch for any sign that the team believes that there are no new ideas or approaches or prospects for achieving their goals. When that happens, the simplest technique is to begin asking questions in order to open up the conversation to new ideas and suggestions. There are times in a meeting where convergence is absolutely appropriate. But if convergence is too premature or simply a reaction to time pressures, exhaustion or a reasonably good solution, it must be challenged. Divergence might be difficult to introduce at times when the group seems intent on moving on, but it likely will yield a better solution or even a completely new approach to the challenge. The facilitator's job is to catalyze and stimulate curiosity in the group and to do whatever it takes to achieve it.

The fourth principle is committed speaking. In our experience,



committed speaking is the most important principle necessary to achieve Collaborative Innovation. Most people speak the truth and believe that they are intentional about what they say. However, it's easy for all of us to consider a conversation as simply a communication of words and sentences and not as a solid commitment to follow through on what we are saying. This is particularly true for those "extroverts" who talk before thinking, less so for the "introverts" who think through a thought before speaking. Committed speaking certainly allows for the interchange of ideas, possibilities and opportunities in a casual way. However, once a path, plan or follow-on activity is sincerely proposed, the reaction of every member of the group to that idea requires committed speaking if collaboration is to follow. When things get serious, the individuals in the group must speak from the heart and be committed to their contribution to the dialog. The Collaborative Innovation facilitator's role is not to question anyone's contribution to the discussion but to watch to see if people are truly speaking with commitment. At first, everyone is likely to believe they are committed to what they say. But by closely examining the dialog, the facilitator must be able to determine what really is going on and must challenge those individuals who do not seem to be committed to what they are saying. This is a difficult job and a hard call to make when something seems amiss. But it is crucial for the facilitator to be attentive to this. Otherwise, the meeting ends with a belief that the objective has been met while some participants are only tentatively committed to the results. By having committed speaking as a tenet of the conversation, much deeper discussions and much stronger commitments will result. True collaboration occurs when the collaborators are committed to what they say and are willing to stand by their words. That type of collaboration then opens up the possibility of surprising dialogs, deep discussions and true innovation.

The fifth principle is generous listening. We have all been taught to be open-minded and active about listening to others. Generous listening goes beyond that and is a way of creating trust in the group which then supports curiosity, intention and humanity. It is beyond hearing what someone is saying. It is a way of being when interacting with others. Generous listening starts from a place of fully valuing people and a

commitment to understanding what is important to them. By practicing generous listening at all times and insisting that everyone else in the group follows suit, Collaborative Innovation facilitators can transform meetings and workshops and the team can achieve breakthrough innovations. At the appropriate time, facilitators should surface thoughts and feelings that are getting in the way of generous listening and encourage the group or individuals in the group to let that go. Collaborative Innovation facilitators must listen and engage with the group from that context and perspective and do whatever is needed to transform the meeting to a collaborative innovation opportunity.

The sixth principle is coach-ability. This principle is really a two way street. The ability to be coached certainly applies to the facilitator and a Collaborative Innovation facilitator must seek and create opportunities to be coached. Even in the midst of a workshop or meeting, it is important for the facilitator to solicit and be welcome to opportunities to be coached to do a better job. Sometimes this comes in the form of suggestions from a participant or leader but more often from a keen awareness of what is really going on and reacting appropriately to that. Primarily however, the ability of the group or any of the participants to be coached, particularly by the facilitator, can make or break a meeting. If the group is not open to this, then the facilitator's job to achieve collaborative innovation is an uphill battle. At the outset, the facilitator should position his/herself as a coach to the group. The analogy of a sports coach can be used to convince the group to see the facilitator as a coach. In sports, as well as many other individual or group programs, the coach helps the group achieve maximum performance. Nobody would argue with the need for a coach in sports, theatre or education, but a business team generally doesn't see the need for a coach to enhance their performance. The facilitator is ideal to play this role and acknowledgement of the facilitator and the participant's roles in this is a great way to start the meeting or workshop. Certainly there may be other coaches needed during the activity, for example, a person to coach the team towards innovation. But again, powerful collaboration is difficult to attain and maintain and it is the primary role of the Collaborative Innovation facilitator.

By utilizing these six principles, a Collaborative Innovation facilitator

can help a team and workshop achieve what is needed to turn breakdowns into breakthroughs.

## **I INVENTING POSSIBILITIES**

One of the most rewarding applications of Collaborative Innovation is Inventing Possibilities. We have conducted a number of Inventing Possibilities workshops at WBI and they are very exciting. They start with a focus on a broad opportunity or capability area, such as, training, human performance or covert operations. The central theme could also be even broader, like climate control or bio-terrorism. We then carefully develop a potential group of participants from both the problem space and the potential solution spaces. For the former, individuals who have been working in the focus area or who have a great amount of experience in that field are identified and invited to the workshop. The potential solution space participants are more challenging since a very large number of possible solution areas might be applicable to the focus area challenge. The most general Inventing Possibilities workshop that we have conducted started with identifying the fifty most exciting new technologies or capabilities of the next decade. There are a number of global organizations who carefully assemble such lists and they can be used as a starting point. While it would be impossible to assemble fifty global experts for a workshop, we have used techniques to narrow down the list, such as clustering, pairing technologies to the focus area and even random selection from the lists. Our experience has shown that you don't need (and can't accommodate) everyone that might be of interest to have a successful event. Having several participants to represent the focus challenge and 10-20 experts representing technologies of the future is usually sufficient to have a great workshop.

The secret is to spend a great amount of effort in preparing for the workshop and using Collaborative Innovation facilitation and processes during the workshop. While we refer to these events as workshops, they may require several workshop of multiple days to accomplish. A significant amount of time, perhaps even several preparatory meetings or

workshops, is spent on the collaborative element of the process. Ideally, the participants are fully engaged, committed, trusting and bonded with each other before any attempt to innovate in the focus area begins. Amazingly, it doesn't take much time or effort for the participants to reach a very high level of intensity and energy. Most people are not only willing to entertain possibilities but often really enjoy discussing, creating and collaborating with each other to generate possibilities. Often the energy is so high and the conversations so engaging and exciting that the facilitator's main job is to harness the energy in order to capture the ideas and possibilities.

The Inventing Possibilities workshops almost always generate too many possibilities or opportunities to even consider implementing. This is very similar to the divergent phase of a creative problem solving activity and various methods of converging, prioritizing or narrowing the results must be used. We have used many approaches to converge and the participants are usually very receptive and engaged in that part of the workshop. The objective is to create a few breakthrough possibilities for further consideration and these generally come in the form of unique capabilities that integrate very advanced multi-disciplinary technologies or systems. For example, combining advanced multispectral sensors with flexible nano-material clothing, machine learning Artificial Intelligence, 5G information management and micro quantum computers could produce uniforms that essentially make warfighters invisible, certainly an interesting possibility.

While Inventing Possibilities workshops can be used to generate capabilities and opportunities that could greatly change the future, they can also be used to examine and generate possible futures. Assembling experts from a wide variety of fields and professions, such as finance, medicine, governance, business, education, information technology, transportation, etc. and using Collaborative Innovation facilitation and techniques to examine future scenarios, such as urban development, international collaboration, space law, trade agreements, etc. But the key to Inventing Possibilities is to facilitate the activity such that collaboration is maximized and managed in order to stimulate and generate breakthrough ideas and possibilities.

## **| HARNESSING OPPORTUNITIES**

When you consider all the advances being made in science, technology, medicine, human performance, business, finance and so many other fields, it's a bit overwhelming to see how these might apply to the future of your organization and people, your products and services or your capabilities and operations. Harnessing Opportunities is a process that we have used to narrow down the possibility and opportunity space to a more manageable situation. As we learned in our workshops on Capturing Opportunities, starting with a “hunch” or possible vision and then examining potential new innovations that might really change the way that vision could play out can yield amazing opportunities. There are untold opportunities out there but which ones might be useful to an important challenge or possibility. Start with a hunch, a gut feeling or a brainstorm that you feel has merit. The starting point will likely point to some innovations or trends that might allow the capability to grow in a powerful way. The process is then to look at these innovations with respect to how they might impact the capability if they are applied in creative ways.

Several years ago, we examined the possibility of applying Artificial Intelligence, Augmented Reality and Virtual Reality to high-performance aircraft pilot training. By carefully researching these areas, we found that there were companies and organizations that had applied these three technologies to enhance training for a variety of operations, such as first responders, fire fighters, truckers, FBI agents and private airplane pilots. We invited representatives from these companies to a multi-day workshop which also included high-performance aircraft pilot training experts as well as scientists and engineers who were carrying out research and development on state of the art Artificial Intelligence, Augmented Reality and Virtual Reality. By following the practices of Collaborative Innovation, we developed a number of approaches to pilot training that significantly reduced the time necessary to train a pilot and also enhanced the performance potential of that pilot. Within six months after that workshop, several prototype training programs were developed and then tested in actual Air Force pilot training programs. The results were

outstanding and more work is underway to enhance high-performance aircraft pilot training using these three advanced technologies.

By examining the potential of advanced technologies, breakthrough innovations and novel trends on current capabilities, new opportunities can be captured and then harnessed to develop breakthrough possibilities and powerful capabilities. The key is to manage the process to achieve the maximum collaboration, first from the technology, innovation and trend participants, then with the entire group. By focusing on the potential multi-disciplinary possibilities and presenting these to the capability owners, new possibilities and opportunities will present themselves. This interaction can be iterated many times until new possibilities are generated. Throughout these cycles, incorporating comments from current practitioners can be solicited. The current practitioners may be reticent or even against new possibilities for a number of reasons but that shouldn't negate their involvement. Again, by constantly assessing and energizing the collaborative nature and commitment of the group to true collaboration, surprising innovations will result. Harnessing opportunities like this will not only provide an organization with new and improved products and services but will also develop very strong collaborations within the organization which might yield further breakthrough innovations.

## **| FLIPPING BREAKDOWNS**

A breakdown is usually not a desired goal, but it might provide just the right opportunity to create a breakthrough. When things go really bad, a project is in serious danger of being cancelled or a team becomes seriously dysfunctional, the normal reaction is to give up and move on to something else. But it is the perfect time to see if you can flip it to a breakthrough. Two of the key principles of Collaborative Innovation are energy awareness and speaking the truth. If the project or team has hit its lowest point, the energy of the group will be low. On the other hand, what have you got to lose by examining how you arrived at this situation? The breakdown provides a great opportunity to look at what went wrong, how

the team moved to this point and what caused the breakdown. If the team just moves on, there are no lessons to be learned and the same situation might occur again. Conversely, by examining the energy flow of the group that ended in the breakdown and trying to really understand with open, caring dialog and generous listening what led to the breakdown, the key decisions and behaviors that need to be flipped can be identified. During some of our most successful Collaborative Innovation projects, breakdowns have occurred. But we didn't give up, we tried to understand what had caused that result. By examining the behavior of the group with respect to the six principles, we began to understand what had happened. Was there a point or period when the energy of the group was seriously compromised by other demands or were there some individual behaviors that sucked the energy out of the team? Did mutual respect and support change dramatically? Did the team get bogged down in the details such that curiosity was lost? Was truth-telling put aside or was the team reluctant to deal with the truth? Did some or most of the team stop listening to each other or become so vocal with their ideas as to silence others. And were constructive criticisms and new ideas seen as attacks? These are all breakdowns in collaboration and need to be reversed or corrected if the team is going to be successful. Usually a trained facilitator can pick these up before the breakdown occurs and take measures to reverse it before the team collaboration collapses. But if it does happen, it's a perfect time to identify the issues, have the team acknowledge them and work on getting back to collaboration. While it's not easy, it can completely reverse the direction of the team because now they know what to look for that is getting in their way.

Fortunately, we've had quite a few projects and workshops that have flipped breakdowns into breakthroughs. Often a group or team asked for our help when they had a breakdown and wanted or needed to reverse this situation. We start by looking at any deviation from the six principles of Collaborative Innovation and try to get the team back on track. Sometimes they are not even aligned in what they really want to achieve and we apply organizational alignment facilitation as well. But when we can flip a team from a breakdown, the results are usually quite amazing. Just like in our personal lives, coming out of a low point with support and

assistance can lead to breakthroughs. The same can happen with teams and projects and using the principles of Collaborative Innovation can be extremely useful to accomplish that change.

## **| TRANSFORMING ORGANIZATIONS**

There's a famous organizational development tenet that says, "Culture Trumps Everything". It's true, but that doesn't mean that change can't happen. Maybe the culture needs changing.

Since Wright Brothers Institute is an Innovation and Collaboration Institute, literally hundreds of teams and organizations have come to us for help because their teams or organization were not innovative or collaborative. When they do, we usually examine the processes, structures and strategies of the organization to see if there is good alignment or if there are barriers or bottlenecks getting in the way. We call this process Organizational Alignment. If we can see where there is non-alignment, such as divergent strategies, dysfunctional structures, conflicting processes or meaningless reward systems, we can quickly focus on the problem and recommend some fixes or changes that will help. But if culture is the culprit that is getting in the way of collaboration or innovation, that's more challenging. Unfortunately, often it is and some change in the culture will be necessary before desired results can be achieved.

Culture change is very difficult and often takes great effort and a long time to achieve. Just wishing or demanding that the organization's culture can become more collaborative or innovative doesn't work. And yet, leaders don't want to spend the time or energy to implement an organizational culture change program. They want it to happen fast, sometimes right away. While we never promise that we can achieve a fast and easy culture change, we have used Collaborative Innovation to achieve some rapid results and "quick wins" in innovation and collaboration. Again, we employ the six principles with a good measure of tough love and hard questions. Can you feel positive energy or is the group resigned to defeat? Is there mutual respect for everyone in the



organization or is it an “us/them” culture? Are people really curious or do they think they know it all and aren’t open to new ideas? Do people really tell the truth to each other or are they afraid that they would suffer if they did? Do members really listen to each other or just pretend to do so? If we can get the team members to truthfully answer these questions, change can happen fast. It takes courage for everyone to be involved in such a discussion, particularly the leader. But it can be an incredible effective way to change the direction of a team and even a large organization towards collaboration and innovation. We certainly agree that a team should not “try this at home”, particularly without a trained facilitator who understands Collaborative Innovation principles. But it can and has worked with dozens of teams and organizations that we have helped. While an instant change to living by the six principles never happens, it is a start and with continued attention to moving in that direction, collaboration will be improved and innovation will follow. Trying to improve innovation in an organization by campaigns, innovation training, innovation processes and innovation awards usually doesn’t get the job done. We found that innovation requires collaboration and working on getting the organization to be more collaborative through the six principles gives you better and quicker results.

## **■ CULTURAL COLLABORATION**

Because the primary mission of Wright Brothers Institute is to be a “partnership intermediary” between very large government, academic and business organizations, we try to stimulate, catalyze and facilitate collaboration and innovation between particular elements of these organizations. That’s even trickier than getting a single team or organization to move their culture towards innovation and collaboration. From the very first project that we took on, trying to form a collaboration between the country’s three major aerospace prime contractors and the government, we faced this challenge. Each of the three companies had different cultures. For example, Boeing has a major commercial aircraft business as well as a military aircraft systems business while Lockheed

Martin and Northrop Grumman have broader military aerospace systems capabilities. While they are all huge companies with some common and competitive goals, their cultures are not the same. When the leaders of these companies met at WBI to discuss forming a collaboration on pre-competitive simulation testing, it was clear that we were talking to three different cultures. When we later integrated the Air Force mission simulation community into conversation, another very different culture was at the table. At the time, we hadn't researched and developed all the principles of Collaborative Innovation but we did know some of them. At several meetings, a talking stick was passed around and the rules of the talking stick, generous open listening and speaking from the heart, were observed. This led to some innovative possibilities for collaboration and we used these to continue the discussion for collaboration opportunities. There were other instances when the energy of the group for those possibilities waned and we actually paused the meetings to engage in more social activities in order to regain the momentum. We did brainstorming around possible opportunities and the curiosity of the group was piqued. As facilitator, I kept reminding the group that we were all on the same side and committed to doing the best for the country and that helped renew the mutuality of the various players. So even without knowing what we know now, we used the Collaborative Innovation principles and formed a successful collaboration around pre-competitive testing and simulation that saved all of the companies and the government millions if not billions of dollars.

That old example just reinforces the power of Collaborative Innovation when different cultures have to collaborate and innovate. The same six principles can be used to open the gates of different cultures to allow meaningful discussions and innovative possibilities. Like all of our previously cited examples, once possibilities emerge, opportunities will present themselves. If real collaboration can be maintained, those possibilities will turn into opportunities and great agreements can occur between very different cultures.

## **| CHANGING THE WORLD**

While not in the specific mission of the Wright Brothers Institute, everyone at WBI would love to contribute to changing the world for the better. There are so many challenges that are outside of our scope and focus, but there is no reason why the principles and practices that have worked for us couldn't be applied to the world's biggest problems. Most of these challenges involve dilemmas and conflicts between groups with very different perspectives. Climate change pits environmentalists against big businesses. World hunger hits at the core of who is responsible for the survival and development of much of the world's population. Many military conflicts can be traced to widely different interpretations of the same beliefs by different religious groups. These are clashes between different cultures and points of view and these differences are very difficult to resolve. Nevertheless, every attempt needs to be made to achieve some progress and the only hope is to get the parties to collaborate and innovate. Using Collaborative Innovation, new possibilities and opportunities can be generated and hopefully some of these can be acted upon to change the world for the better.

