

THE 12 ATTRIBUTES OF SUCCESSFUL COLLABORATION BETWEEN HIGHLY-CREATIVE PEOPLE

Precisely what is collaboration? What does it mean? When does it occur? More importantly, by whom and to whom does it occur, involve, and affect? Business schools, books, magazines, journal articles, and scientific studies say we need to collaborate in order to be successful in today's global marketplace. Even our leaders and managers imply collaboration is a key to business competitiveness, increased market share, revenue, and profitability! Is that true? What's different about today than any other point in time in the history of the world? Is collaboration just another fad? Will it go away if we simply ignore it and hide our heads in the sand? Isn't that what humans do best anyway (i.e., *stonewall any new fad masquerading as just another failed change initiative*)?

Let's begin by examining some basic attributes, definitions, and highly simplified descriptions of **col·lab·o·rate** (kə-lăb'ə-rāt'):

1. To work together in a joint intellectual effort.
2. To work together in order to produce something.
3. To freely cooperate in order to help one another.
4. To help someone when they ask for or need help.
5. To work together on a common enterprise of a project.
6. To team up, join forces, cooperate, play ball, participate, etc.
7. To work together on task, activity, output, or other creative endeavor.

In its most basic sense, the term collaborate usually means at least two people voluntarily cooperating with one another in order to perform some task or create some output that would not be possible working alone. One of the assumptions of this definition is that neither party has the capability to complete the task working alone. At least one of the parties has the talent, skills, education, capacity, or data necessary for the task. The other party is charged with completing the task, but does not have the resources to do so. The party in-need asks another person with the resources to assist with the endeavor. However, in the end, both parties contribute something to the endeavor and add their own value so that the end-result would not have been possible working alone.

By implication, the output is something new, novel, or highly-unique. It did not exist prior to the collaboration. Someone needed to fill a gap in the world's knowledge base. Someone had a clear vision of the need or the scope of the problem, gap, or issue. Another person has the talent, skills, capabilities, and resources to fulfill the need, but does not know it needs filling or is not motivated to fill it alone. Perhaps it's a simple matter of being over-allocated or overwhelmed with all of the gaps, and the resourceful party needs someone to prioritize their time and focus their output on the needed gap. Musicians, artists, scientists, physicists, mathematicians, engineers, physicians, and other highly-talented people typically collaborate to create a new result.

That seems simple enough! What are the issues? Let's collaborate all of the time! Well, slow down there partner! There are some challenges that need to be addressed first! First of all, who exactly is it that collaborates? Is collaboration between buyers and suppliers? Is collaboration between customers and sellers? Is collaboration between executives, managers, and operational personnel? Is collaboration only between artists, musicians, and scientists? What's the difference between collaboration and teamwork? Aren't they exactly the same? Doesn't an organization, division, acquisition, program, project, or development team involve or need collaboration? Why do we need to call out individual collaboration in particular? Isn't that just a waste of time?

At the most basic level, collaboration is simultaneously the greatest activity two parties can do and the most difficult if not impossible thing to do! On one hand, when two parties collaborate, at least two major benefits immediately emerge (i.e., *speed or productivity boost and the creation of a new or novel invention that did not or could not exist before the collaboration*). Two parties collaborating can produce a solution in a small fraction of the time it would take to accomplish the same feat acting alone. Well, if it's that great, why doesn't everyone collaborate all of the time? Humans, in-particular are notoriously bad at collaborating. Have you ever heard of the concept of fierce Western individualism, American cowboy, superstar, or most valuable player?

Some cultures are allegedly better at collaborating. The U.S. and Britain are the most individualistic cultures. Asian cultures such as China, Japan, and India are considered more collaborative. In the West, people strive to work alone to achieve something great. Furthermore, individual behavior is rewarded and reinforced throughout our lifetimes. One child is told they have more talent. Teachers reward high performers. Top students get scholarships. Students are graded on individual effort and punished for collaborating. Organizational reward systems are based upon individual effort. Athletes, actors, doctors, lawyers, academics, and most other fields grant awards to individuals. Individual rewards are highly coveted, even when group awards accompany them.

When you look beyond the dogma and visit them in-person, you may rarely find true collaboration in Asian cultures. Eastern cultures are consensus and conformist oriented, not collaborative as the popular media reports. They're hierarchical; socially, politically, and economically stratified; and children are punished for individualism. Uniforms are worn in schools; and quietness, listening, contemplation, meditation, and reflection are highly valued. Body language plays an important role. Everyone dresses the same, acts the same, behaves the same, and does not enunciate or behave individually. Organizations reward group behavior and individuals are physically abused for non-conformances. Silent consensus is not exactly what we mean by collaboration.

There is more collaboration in the animal kingdom than in humans. Birds flock and fish school together. Homogenous species of animals on the Serengeti herd together. Wolves, lions, and hyenas hunt in packs. In spite of their individual capabilities, animals work together to achieve a common goal, which is to kill, eat, and survive. Paleolithic stone-age humans collaborated for survival. It's only during the information or knowledge age when higher cognitive functions are utilized, do we find fierce individualism in the human species. That is, food, water, warmth, shelter, and health services are available to all. Basic survival is no longer the major goal or need to be collaboratively fulfilled. Therefore, humans act alone, thus slowing the progress of innovation to a snail's pace.

Well, some thoughtful people, mostly social psychologists, anthropologists, naturalists, and complexity theorists, have been closely observing the animal kingdom under the microscope for quite some time. Furthermore, they've come to the conclusion that collaboration is the key to combining smaller numbers of weaker individuals to accomplish large feats in record time that cannot be accomplished alone. Think of a few bees constructing an entire hive in a few hours or days. How about ants finding scarce resources with limited abilities and then socializing it to the entire colony and transporting them to the queen all in record time? Did you know a colony of fire ants can fell and kill a 2,000-pound cow in record time? What a feat of collaboration for tiny insects!

However, we don't have to study animals to comprehend the collective benefits of collaboration for humans. We only need to recall physicists collaborating to create the first atomic bomb in record time during World War II. We think of musicians creating number-one hits or platinum records. We think of Silicon Valley whiz kids collaborating to create large enduring organizations for the 21st century. How about Steve Jobs and Steve Wozniak creating Apple? How about Larry Page and Sergey Brin creating Google? How about John Lennon and Paul McCartney of the Beatles? Even Albert Einstein collaborated on Relativity. Together, these duos did what entire nations couldn't do using the might of their GDP or the U.S. DoD with its trillion-dollar budget.

In 1900, Frederick Taylor said work should be reduced into simple autonomous measured routines that would be the key to industrial success. In the 1920s Elton Mayo and other behaviorists said humans mattered more than machines and collaboration between managers and workers was important to organizational success. By the mid-1900s, autonomous work groups took off in Scandinavia, and fast forward 60 years later, we now have a far better understanding of the theory and attributes of collaboration. Research is divided on some of the solutions to collaboration. Some focus on teams, project management models, process methodologies, governance, organizational design, personality, etc. Let's explore some of the key attributes of collaboration.

- **Urgent Need** – One party has an urgent need, opportunity, crisis, research problem, obstacle, or deadline. Ever heard of the phrase "*necessity is the mother of invention?*" Well, that has never been truer than it is today! Usually, someone is asked to solve a difficult problem or at least one beyond their own individual capability or that of the requester or organization. Chances are, the problem has already been solved. In rare cases, the problem has never been solved, or at least not articulated in the language of the problem space. In any case, "*crisis is a catalyst for change*" and serves as the impetus for seeking information, identifying capable parties, and initiating collaboration. Most people will suffer alone in a crisis and get stuck in a rut of "*analysis paralysis*." They usually "*can't see the forest for the trees*." Just one step before completely giving up, a humble requester may reach out to a more capable party to communicate the need. In the rare case, the party may agree to help solve the problem.
- **Courage, Boldness, Audacity** – Assertiveness to reach out to anyone for help at any time. Collaboration does not suddenly erupt out of ether. Someone has to reach out and make contact with another party. Of course, the other party has to respond. Oftentimes, it's the weaker, less capable party that has the urgent need. Conversely, the party that has the capacity to help is in a higher status category like scholar, scientist, researcher, etc. The weaker party is often shy about reaching out to a superstar, and the capable resource doesn't have the time to seek out paupers to help. Therefore, the party in-need has to first seek out people who may be able to help and then initiate contact. Not everyone will respond. It's pretty rare when a more capable resource is not available to help with part of, if not the entire problem. It takes persistence, courage, and strength to be rejected without giving up or losing hope. Sometimes one has to ask several times. Reaching out is an essential step in collaboration.
- **Common Interests, Like-Minded, Shared Values** – Shared hobby, research area, or field of interest. In the majority of the cases, the information is available somewhere. One just has to make the effort to find it. Some studies indicate that 95% of the world's codified information is now available online. A simple search will usually suffice. However, if it is a true problem that has not been solved before or few people have solved it, then the data may be harder to find. Tools like academic repositories have journal articles dating back to well over a century. Google now publishes most books online. Search engines are highly refined and the proper search terms will sort through billions of people and locate the one with the answer in fractions of a second. This narrows the search and allows you to find the exact person who has solved your problem or can help you solve yours. It doesn't mean they're willing to help or can solve a specific problem. However, they can usually help you solve an interrelated problem.
- **Usually a Duo or Pair** – The collaboration is composed of no more than two people to enable a complementary dominant-recessive conflict-minimizing consensus-oriented synergistic partnership. Beyond that, it becomes a small team with more communication paths, bureaucracy, frozen queues, politics, delays, and risks of failure. Two people are the ideal team size. This is true in firms like Microsoft, Apple, Google, Yahoo, Facebook, etc. This is especially true in highly technical disciplines like chemistry, biology, physics, math, computer science, engineering, etc. Eventually, the pair evolves through stages such as a team, small business, medium business, large organization, and global behemoth. However, the original pair continue as executives for visioning, strategizing, steering, etc. Even bands like the Beatles had duos or pairs at the heart of the team. Throughout history, people recognized as individuals had temporary collaborators who helped them reach their plateau.
- **Demographic Congruence** – The parties share a similar place or lot in society, business, academia, organizations, or world. They're similar in ethnicity, race, age, color, religion, gender, education, profession, financial status, language, personality, temperament, challenges, constraints, background, dilemma, and position in life. Oftentimes, they're alter egos and may also be male and female pairs. Pairs generally meet in an undergraduate class, academic program, shared project, or department. One or both of the parties usually have highly-unique gifts, qualifications, talents, or potential for success. In other words, there's an attraction factor, whether emotional, physical, or intellectual. At least one of the parties sees value in establishing a temporary relationship, and sometimes it is both of them. People are generally attracted to humans who are a mirror image of themselves and repelled by people who are vastly different, even if the chosen partner is weaker than the rejected subject matter expert.
- **Valuable Assets** – One party has a valuable asset, position, power, status, skill, talent, ability, information, or data the other needs or desires. If one party, presumably the weaker one, reaches out to the stronger, more capable party, one assumes the stronger party has something of value. Generally, the stronger party has made a public speech, published a magazine or journal article, authored a book, written a white paper, or developed a website or some other physical or conceptual asset,

product, or service. The weaker party wants to exploit the assets of the stronger party. Perhaps, this is the stimulus of productivity. The solution can simply be transferred from the stronger to the weaker party at the speed of light, obviating the need to conduct original research over many years. Of course, there's the old adage, "*if a tree falls in the forest, but no one is around to hear it, does it make a sound?*" The answer may be that the stronger party now has a captive audience.

- **Mutual Willingness** – Both parties have the willingness, agreement, and commitment to see the partnership through to the end, even when it's inconvenient. Only about 2% to 3% of requests for collaboration are answered. That is, only two or three potential collaborators may respond in the affirmative when asked. This requires a great amount of persistence, mental strength, and risk taking as entrepreneurs attest. Most people will give up after two or three requests. No wonder innovations happen at such a slow rate of speed. No one is willing to ask enough people for assistance. Once the weaker party finds a willing contributor, the stronger party still needs to agree. Some people will simply say, "*I'm too important or too busy, please don't email me again!*" "*Can't you see the size of my large ego from space?*" Those willing to help are usually very generous with their time and resources. They're usually flattered someone asked. However, seeing it through to the end is also essential.
- **Informal Agreement** – Two parties serendipitously agree to work together to exchange assets, information, data, talents, and efforts for the greater good, philanthropy, or intrinsic value (*without strict legally binding terms*). As Dan Pink illustrated in his best-selling book "*Drive*," intrinsic motivation is a powerful force. People will give 110% for something in which they truly believe (*for free on their own time*). Dan also illustrates that money and employment kills the motivational buzz dead. Force someone to sign a legal contract, pay them money, put them on a schedule, make them follow a process (*like Frederick Taylor*), measure them (*using statistical process control*), threaten legal action or threaten to fire them, or make them attend regular synchronous in-person meetings, and you might as well jump off of a cliff. Once again, hearkening back to Dan's theory of intrinsic motivation, using informal agreements are keys to collaboration. Open Source Software is a prime example. Sorry Kanban!
- **Freedom, Individuality, and Openness** – Both parties are individuals without close, binding relationships, loyalties, covenants, contracts, or other mutually-exclusive arrangements that would prevent serendipitous collaborative endeavors. For purer forms of collaboration, this principle of temporary relationships is especially true. This isn't to say temporary interactions don't evolve into longer relationships like projects, entrepreneurial startups producing innovations, or corporations with classical bureaucratic functions like business administration and manufacturing. They may even evolve into marriages. However, the majority of collaborations end very quickly, once the intellectual assets have been exchanged. Again, both parties generally benefit in-the-end. Even longer relationships like authors, musicians, and researchers eventually separate and go their own way. Again, humans are fiercely individualistic, which is why extremely temporary collaborations are the norm.
- **Short Time Horizon** – The output or result is generally a short-term product or service such as a book, white paper, briefing, journal article, thesis, dissertation, research study, website, and other simple items. If it's an urgent need, then the requesting party has a short suspense date or rapidly approaching deadline. You've heard the old adage, "*lack of planning on your behalf doesn't constitute an emergency on mine!*" it certainly applies in this case. Usually, the requesting party has been languishing for a long period of time and is now in rush to meet a deadline. It could be due to procrastination, pride, or analysis paralysis that the request is so late. Since it is only a small output, the needed information assets can be transferred relatively quickly and painlessly. The ideal timeframe is usually a couple of weeks, a month, or 90 days at the most. Beyond that, it becomes a project requiring a small team and rigid formalisms like charters, scope statements, and other demotivating governance instruments.
- **Virtual Electronic Often-Asynchronous Communications** – Use of cell phone, Internet, email, text, video chat, webcast, collaborative portal, social media, etc. Oftentimes, collaboration involves two parties on the opposite end of the city, state, nation, or globe. The only way to reach out, express a need, agree to collaborate, and do the work is through electronic means. This work is often asynchronous because the participants are in different time zones. Asynchronous activity is like Kanban, because one party can take as much time as they need to comprehend the last request and produce a high-quality output before proceeding. It gives both parties time to think and mediates for cognitive dissonance between individuals. One person may be a fast thinker and the other a little more thoughtful. Synchronous phone calls or video chats may be used when live, richer, and higher-context communications are necessary. Collaboration between all of the world's inhabitants is now possible.
- **Unique, Innovative, or Valuable Output** – The result of the interaction is a unique, new, novel, or complex product or service that did not previously exist. Oftentimes, the requesting party suggests an inferior solution rather than stating the need. This is due to decision-making errors like narrow framing, confirmation bias, short-term emotion, and overconfidence. Groupthink, inexperience, naiveté, or being too close to the problem is a common problem. The greatest contribution the stronger party can make is not necessarily handing over intellectual assets. The better contribution is to properly constrain the problem, suggest a superior solution path, and then devise a strategy or means of obtaining a new path the requester hadn't considered. This is called "*having a second set of eyes, objective viewpoint, thinking out-of-the-box, knowing where the low-hanging fruit resides, experience, and battle scars.*" The result may be a scientific study, provocative book, roadmap, or new career opportunity.

It takes about 40 years for an innovation to matriculate through the adoption lifecycle. Collaboration has finally made it through the gauntlet of time and reached its golden age. Even its detractors are throwing their hands up in defeat of fierce Western individualism. Organization executives have gotten the message and are once again are treating it as a fad. They're breaking down the office walls, and forcing everyone into bullpens in the name of collaboration, and smashing organizational silos, hierarchies, and functional departments. There has even been some short-term success and results associated with these artificially induced collaborative policies. Some case studies and experiments have exhibited 10x to 30x productivity boosts.

The backlash hasn't been kind to collaboration, spawning a furious tsunami of anti-collaborative rhetoric on the Internet, newspapers, magazines, books, and research. Westerners are fiercely individualistic and they're not going down without a fight. This is especially true of those who went to elitist academic institutions, which cater to extroverts, Type A personalities, and entrepreneurs. They're generally aiming for tenure-track positions, C-level executive positions, or the corner office on the 80th floor. Sharing a bullpen with a person who earned a GED from the local night school is not going to cut it, and they'll write a New York Times Bestseller bemoaning the societal evils of collaboration if they must. God forbid, they might even get the cuddies.

However, this doesn't mean that collaboration is a silver bullet, panacea, or is foolproof, contrary to the opinions of executives who are fad surfing in the boardroom. Any sort of modern 21st century organizational theory requires thoughtful consideration, careful planning, and surgeon-like precision to be successful. This is especially true of lean and agile paradigms. There are frameworks for structuring organizations, portfolios, contracts, programs, projects, teams, and even smaller collaborative efforts. Any arbitrary or gross violation of lean and agile values and principles risks the corresponding issues. One simply can't put a tee-shirt on a 500-pound behemoth that says I'm now lean, agile, and open to highly-collaborative endeavors. Even Deming said "*no more slogans!*"

However, this article is not about how to put lipstick on a pig and outfit a 500-pound behemoth with a tee-shirt three times too small that says, "*Let's Collaborate!*" Quite the contrary, this article labored to emphasize the true, pure forms of collaboration are between individuals; they're often arbitrary; they're temporary; parties do not belong to the same organization; they operate with verbal non-legally binding instruments; and they often cross organizational, international, and political boundaries. If we could summarize collaboration in one word, it would be "*Serendipity!*" or "*Opportunistic!*" Managers can't reap the benefits of collaboration by forcing two strangers together who haven't self-selected or elected to work with one another out of free will.

While arbitrarily or artificially smashing groups of people from disparate demographic backgrounds and wide variations in personal value systems may have some positive results in the long-run, they do not guarantee the benefits of self-selected collaboration. This was one of the major implications of Dan Pink's theory of intrinsic motivation. Collaboration is not a milestone on a Gantt chart; Kanban board; Daily Standup; Lean, Agile, or traditional project team; Pair Programming team; Code Inspection team; collaborative workspaces; bullpens, etc. The research is fairly clear on that matter and will not be repeated here. This isn't to say there aren't some economic spillovers or indirect benefits of artificially-induced collaborations, but this is not quite the same.

Mandating collaborative behaviors by organizational policies spawns a host of debilitating outcomes. These manifest themselves in the form of conflict, stress, attrition, resignation, transfers, quitting, reprimands, harassment, belittlement, poor morale, and other degenerative behaviors. An Alpha male or female emerges to suppress the voice of the weak, introverts, and other people from the fringes of society (i.e., *old, sick, young, foreign, unwanted, politically-incorrect, etc.*). Some true randomized scientific experiments from the 1990s called this "*suppression rate,*" meaning that the prima donnas in the group suppressed the creative inputs of the recessive members of the team. It's simply oppression used by 20th century organizations to maintain the status quo.

This isn't to say collaboration is merely a fad, it doesn't work, it's a pipe dream, and there are no scientifically-verifiable benefits. Furthermore, we are not implying highly-structured projects, groups, and teams with clear roles and responsibilities, visions, goals, objectives, timelines, and governance are necessary all of the time. Two people collaborating can achieve in one or two hours what would take an individual working alone years to reproduce. Even teams of highly qualified engineers, scientists, and strategists with elitist credentials cannot duplicate the speed and innovation of two people serendipitously collaborating. The point of this paper is to help decision makers understand the true underlying dynamics of collaboration and avoid some common pitfalls.

We've seen some of the success factors that organizations, teams, and individuals can employ to help overcome the common pitfalls of dysfunctional teams (<http://davidfrico.com/teamwork-attributes-2.pdf>):

- Urgent Need – Establish an urgent need for the collaboration.
- Clear Goals & Objectives – Ensure clear goals and objectives exist.
- Respected Leader – Appoint a well-respected leader with people skills.
- Small Team Size – Utilize the smallest team or group size possible.
- Highly-Motivated – Attract the most highly-motivated people you can.
- Hands-On Skills – Ensure each member has highly-relevant hands-on skills.
- Demographic Similarity – Try to aim for as much narrowly-focused demographic similarity as possible.
- Gets Along Well – Don't be afraid to strive for the smoothest climate possible even if talent has to be sacrificed.
- Compatible Personalities – Never ignore the debilitating effects personality incompatibility when forming or joining teams.
- Sense of Empowerment – Empower teams to strategize, identify its goals and requirements, and self-select solutions.

Frederick Brooks warned us 50 years ago that adding more people to a late project makes it later. This has multiple implications for decision-makers, managers, researchers, and technologists. For one, bigger does not mean better. This is common malady in the public sector. More people means more communication paths. In mathematical queuing theory, this increases delays, freezes the queues themselves, elongates lead and cycle times, dramatically lowers quality and team morale, and ingratiates customers. Structure, size, hierarchy, and rigid governance, policies, processes, and tools rarely scale. So stop trying to scale Frederick Taylor's Scientific Management Principles for 20th century knowledge intensive organizations, solutions, and applications.

In general, smaller, flatter organizations with fewer people, less governance, more freedom, organic behaviors, and highly-skilled and talented artisans are superior to hierarchical command and control structures. Sorry CMMI. We can never duplicate or artificially induce the behaviors of true and pure serendipitously creative collaborative teams. That, my friend, is a pipe dream! We can't even duplicate the effects of collaboration and Dan Pink "*Driven-style*" intrinsic motivation with Lean and Agile Methods. The future rests in a world and society of serendipitously interacting collaborative agents free from political, organizational, and formal project structures. Today, the closest form of collaboration has probably been achieved by the Open Source Software community.

- Schrage, M. (1995). *No more teams: Master the dynamics of creative collaboration*. New York, NY: Currency-Doubleday.
- Downes, L., & Mui, C. (1998). *Unleashing the killer app: Digital strategies for market dominance*. Boston, MA: HBS Press.
- Pink, D. H. (2009). *Drive: The surprising truth about what motivates us*. New York, NY: Riverhead Books.
- Cain, S. (2013). *Quiet: The power of introverts in a world that can't stop talking*. New York, NY: Crown Publishing.
- Shenk, J. W. (2014). *Powers of two: Finding the essence of innovation in creative pairs*. New York, NY: Houghton-Mifflin.

CASE STUDIES IN COLLABORATION

Each of the following three case studies exhibits the 12 attributes of successful collaboration between highly-creative people:

1. Urgent Need – One party has an urgent need, opportunity, crisis, research problem, obstacle, or deadline.
 2. Courage, Boldness, Audacity – Assertiveness to reach out to anyone for help at any time.
 3. Common Interests, Like-Minded, Shared Values – Shared hobby, research area, or field of interest.
 4. Usually a Duo or Pair – No more than two people to enable a complementary dominant-recessive synergistic partnership.
 5. Demographic Congruence – The parties share a similar place or lot in society, business, academia, organization, or world.
 6. Valuable Assets – One party has a valuable asset, position, power, status, skill, talent, ability, or data the other needs.
 7. Mutual Willingness – Willingness, agreement, and commitment to see the partnership through to the end.
 8. Informal Agreement – Agree to work together to exchange assets, information, data, talents, and efforts for greater good.
 9. Freedom, Individuality, and Openness – Individuals without close, binding relationships, loyalties, covenants, contracts.
 10. Short Time Horizon – The output or result is generally a short-term product or service.
 11. Asynchronous Communication – Use of cell phone, Internet, email, text, video chat, webcast, portal, social media, etc.
 12. Unique, Innovative, or Valuable Output – Result of the interaction is a unique, new, novel, or complex product or service.
- Book Chapter. *The Internet exploded on to the global scene in the mid-1990s and an American computer scientist decided it was time to create his own personal website after reading "Unleashing the Killer App" by Larry Downes and Chunka Mui. The goal, according to its authors, was to get your latest ideas directly out of your head and into the hands of the entire globe at the speed of light. It was an intriguing notion and his website was created that very day. His website met with some moderate success and the computer scientist was invited to be the keynote of a major Scandinavian conference in the Spring of 2001 as a direct result. It wasn't the existence of the Web and the website alone, but the fact that the computer scientist was doing some bleeding edge research and the Scandinavians were the perfect audience. The keynote met with marginal success due to major cultural differences and value systems between America and Northern Europe. However, one of Scandinavia's leading authors in the same field happened to be there that day (on stage). Three years later, the European author reached out to the American by email and suggested they make Reeses Peanut Butter Cups. That is, they'd smash some chocolate and peanut butter together into a synergistic whole. The American was somewhat perplexed, because the endeavor sounded complex. On the contrary, the European suggested, we'll simply merge one of my papers into one of yours whole-cloth. Mine will be the first half and yours will be the second half. Furthermore, we'll publish it in a scholarly textbook to which I've been invited to contribute, and the deadline is in two weeks. I'll take the lead, integrate our papers, and send you the first draft in the morning. That sounded simple enough for the overwhelmed American who just started a rather intensive terminal doctoral degree program. Just as promised, the American received the combined manuscript and read through it. It was a little awkward, because even though the papers were on the same subject, they advocated rather unique results. The first one promised incremental gains while the second half promised extraordinary results. So, the American offered to smooth over as many of the differences as possible by hammering down some of the rough points to make the combined manuscript seem a little more congruent. Of course, the two were in different time zones. The European was six hours ahead of the American, worked all night and fired off his inputs in the early morning of Europe. It was mid-afternoon by the time the American got started and midnight in Europe by the time the American sent his inputs. The American was very comfortable working asynchronously, because he was more thoughtful and needed more time to think, analyze, and create. The European was more comfortable using synchronous communications and couldn't understand why the American did not send him immediate replies to his inquires or submit his inputs quickly enough. The American patiently explained the reasons for the delays, the manuscript was finished, the book was published, and both received acclaim and financial gain for the new chapter. The American was grateful to be asked for his inputs and honored to be associated with the well-published European. The European took the combined results, simplified them, submitted his own manuscript to major journal, had it published, and later won best paper of the decade. The American was happy his work was at least cited in the foot note, all of which was the research from the 1990s originally posted on his website inspired by Larry Downes and Chunka Mui. It was actually the result of his master's thesis completed in 1999. Oh well, at least his results finally made it into the mainstream and were seen by all. Without the collaboration with the European, the results would never have been seen, because the American did not have the global clout to be publicly recognized working alone, just as Larry Downes and Chunka Mui suggested. The American's research direction was going in a slightly different direction anyway and would go on to publish his own book chapters, journal articles, etc. The European continued to monitor the research directions of the American, but had his fill of the earlier collaboration. He went on to continue publishing more books with some of the industry's top consultants with whom the American collaborated. The American published his own book the same year highlighting his approach to solving the problem.*
 - Textbook. *While meeting only limited success with his website and earlier publications, the American decided to get a doctoral degree to further his education and global reach. Not much had really taken place personally or professionally in the ensuing years following the creation of his website, completion of his master's degree, and limited collaborations with Northern Europeans. In fact, his career had been rather silent up until that point. But things were about to change. By 2007, the American's doctoral research was coming to a close. True to its form, the scope of the study was rather narrow and didn't have quite the far reaching implications of his master's thesis that spanned across the Atlantic Ocean nearly a decade before. However, even over the four silent years of his terminal graduate studies he faithfully posted the interim results, reports, and data he gathered over the years on his website, which Larry Downes and Chunka Mui said would be necessary to successful global collaboration. Nearing the end of his academic studies, a local area doctoral student spotted his research and invited him to speak at a regional professional society. He thought would be a good idea to present his preliminary findings to a local*

professional society in order to shape his final dissertation defense, get some last minute feedback, and gain the confidence necessary to secure the final signatures from his committee. Not only did he accomplish all of these interim goals and objectives, but he began to meet new people he'd never encountered before, begin to spread his ideas, and of course, successfully perform his final defense and graduate. Even his doctoral chair was a little surprised at his final surge of confidence in the closing rounds of his dissertation defense. But that was just the beginning, as the person who invited him to speak asked him to review her final dissertation, put the final touches on it, and serve on her doctoral committee as a result. She herself, a bright young enterprising project manager, was involved in the development of a new field of study called agile project management, of which return on investment or ROI was a central theme. Little did she know at the time, that designing IT business cases using ROI was the American's bailiwick or core competency. Following her successful defense, she asked him a simple research question, "What is the ROI of agile methods?" While not the central theme of his own dissertation, he'd forayed into that field and gathered more data on that topic than most people had done to-date. He agreed to explore that topic for her, but did not give her a final deadline for attempting to answer the research question. He spent the next 90 days immersed in that field of study and put more energy and quality into that topical area than he had in his own dissertation over the previous four years. It was the perfect synergy between his core competency and intrinsic motivation. Of course, he leveraged the context of the topic in which he'd invested during the prior four years. Nothing went to waste. He downloaded over 300 studies on the topic, reviewed and distilled them to about 70 essential ones, and then identified the 20 or 30 studies that had direct bearing on the topic. Much data analysis was required, because he had to normalize the results for direct comparison. In addition, he was able to use the data he had previously compiled from his master's thesis, collaboration with prior European consultants, and new data he'd synthesized with his own textbook on the ROI of traditional methods. Together, he devised one of the largest studies on the ROI of agile methods. Of course, Europeans immediately recognized the value of his results and published them as an article in one of their top journals. He also recognized he'd gathered enough data to write yet another textbook. He immediately presented the results to the individual who asked him to perform the study in the first place and several local forums, including his own employer and multi-billion dollar client. True to his promise, he authored yet another textbook in only 30 days and published it with the individual who'd asked him to undertake the study as well as his own doctoral chair. This activity pretty much set the stage for the next decade as he would go on to give over 135 public speeches to more than 12,000 people. It became his most popular talk and spawned nearly 30 articles. His results were pretty impressive, but not quite the order-of-magnitude improvements he'd noticed in prior phenomenon. However, this was just the beginning as it set the stage for the next generation of studies that would shatter all prior records.

- Journal Article. While successfully transitioning from anonymity to a local phenomenon, the American spawned several sideline studies. He still had a day job that was somewhat parallel to his true intrinsic motivations, but not completely related. Not only did he realize his job was not directly related, but so did his managers and co-workers. They often questioned his relevance to the project at-hand and wondered whether they should keep him on at all. In order to counter some of these unfounded criticisms and concerns, he decided to turn his attention to the problem at-hand. He conducted a cost and benefit study of the systems engineering principles his department was contracted to support. He'd stumbled into a couple of peripherally-related studies just as he was about to graduate and was able to develop the first ROI or business case in his field of research. He showed it to his managers and colleagues, which may have helped stave off some initial criticism, but pretty much met with yawns and disinterest. In fact, they were more interested in their own well-being than whether his professional background was directly related or not. He submitted his study to a top systems engineering journal, which met with instant rejection, so he relegated it to a simple posting on his website, as Larry Downes and Chunka Mui had suggested so many years before. He didn't mind the lack of attention in his findings, since his public speaking career was on the rise, and he survived the first wave of rejection from his immediate professional colleagues constituting his day job. About two years later, a doctoral student at a top 25 American school stumbled into his ROI study and reached out to him late one night for support. He agreed to meet with her to see how he could help. She'd chosen a new area of research, but was struggling to find the data or approach necessary to further the field. In an act of desperation, she hoped she could turn the American's ROI study into her final dissertation. He was a little skeptical, because it was only a concept study and he feared there wasn't enough hard data to support a rigorous defensible dissertation from her top 25 school. After a one-hour phone conversation, he decided to completely re-scope her study to something vastly simpler, for which they could easily find data, and fashion it into a more than acceptable result. She agreed, ran it by her dissertation committee, and the collaboration began. She'd been working on this for nearly three years alone, and in spite of her individual brilliance, was pretty much up a creek without a paddle. She had only six months to publish the results of her dissertation in a peer reviewed journal for something that didn't even exist. Together, they designed a new research framework in only a few days. Then, they devised a data collection strategy and immediately executed it. When that was done, they met to analyze the results and fashion a scientific journal article. Keep in mind, that neither of them had ever published a scientific peer reviewed article between them. She submitted the results to one journal, wrote a second related article, and submitted that one to yet another journal. All in all, they'd completed all of this within 90 days. Both articles were accepted by their respected journals, the final dissertation was written, and the young doctoral student passed her final defense, which was not a very easy feat. In fact, the final matriculation rate at her academic institution was infinitesimally small. The articles were some of the first quantitative studies on the systems engineering phenomenon in its 40-year history and the American's professional colleagues continued to be unimpressed with this line of research, even directly criticizing and attacking it. At least he still had a day job and they hadn't thrown him out yet. The young doctoral student went on to accept one of the highest ranking jobs in the federal government working for top-level government executives. In return, she was able to wrangle the American a part-time teaching job in her top 25 school, which paid extremely well and garnered him enough supplemental income to pay for his own children's college education. Their research directly spawned four more doctoral dissertations at that research institution along with the associated peer reviewed journal articles. One of the students even turned the American's original ROI study into a peer reviewed journal article as well.