Group Genius

The Creative Power of Collaboration

KEITH SAWYER

KEITH SAWYER is associate professor of education and psychology at Washington University in St. Louis. He is the author of ten books on creativity including *Explaining Creativity* and *Creative Conversations*. In addition to his research, Dr. Sawyer has experience as a management consultant, as a video game designer and as a successful public speaker.

The Web site for this book is at www.groupgenius.net.

MAIN IDEA

Collaboration is the real secret to breakthrough creativity – not a lone genius having an "Aha!" flash of inspiration.

Genuinely new ideas are never the brainchild of a single person. Instead, they emerge bottom up from the creative efforts of a large number of people, each of whom nudge the idea forward or add a little twist here or there. What finally comes out the other end of the creative process is an idea which cannot truthfully be said to be the exclusive result of any one person's thinking. Instead, all kinds of different people have added a little bit here and deleted what doesn't work over there.

From an organizational perspective, if you want to generate more earth-shattering innovations, make it easier for people to work together on new ideas. Install collaboration as the central framework of your innovation projects, and don't forget to invite your customers and your peers to be part of the overall process. Find new and better ways to help people collaborate using emerging communication technology and you will be well positioned to see some highly creative ideas come forward.

Above all, don't delegate the responsibility for being innovative to some research and development unit or other designated part of your organization. Instead, make it possible and feasible for everyone to collaborate on developing new ideas. That's the only way you can fully utilize the combined brain power of your people to best effect.

"Innovation is what drives today's economy, and our hopes for the future – as individuals and organizations – lie in finding creative solutions to pressing problems. My goal is to reveal the unique power of collaboration to generate innovation. And it's my hope that you'll use these new insights about group genius to create more effective collaborations in your own life – at work, at home and in your community. We can all tap into the creative power of collaboration to make our own insights more frequent and more successful. Forget the myths about historical inventors: the truth is always a story of group genius. And today's innovations emerge from ever more complex organizations and many interacting teams. Group genius creates today's cutting-edge products."

– Keith Sawyer

Group Genius

Part 1
The Highly Impressive Creative Power of Group Collaboration

- 7 key characteristics of effective creative teams
- 10 essential conditions for creativity to naturally flow

Although crediting an individual for an innovation is a tidy and simple way to do things, the reality is most significant innovations which come about are actually an amalgamation of the thoughts and ideas of lots of different people.

When people pool their talents and ideas in a group setting, some highly creative ideas can be generated. If the group is allowed to improvise by having the goal specified but the means left entirely open, it's not at all unusual for some exceptionally creative approaches to get suggested and ultimately implemented.

Group collaboration has loads of untapped potential. You just have to develop some workable ways to channel this creative force in the right direction.

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Part 2
How Group Collaboration Works in Real-World Situations

5 basic stages:
1. Preparation
2. Time Off
3. The Spark
4. Selection
5. Elaboration

The most recent research on the collaborative nature of the mind suggests although an innovative insight may feel like an "Aha!" style flash of inspiration, the chances are the true roots of your new idea lie in collaboration rather than a solitary creative leap.

If you're honest, you'll admit your flash of inspiration is an amalgamation of your previous analysis, hard work and discussion with other people who have each added little tweaks and inputs.

This is good to know. It means creativity isn't magic or mystery but is a process which can be followed and used by anyone, regardless of their innate personal creative capacities. Using collaboration, everyone can generate more frequent insights.

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Part 3
How to Build a Genuinely Collaborative World-Class Organization

- 10 secrets
- 5 key features
- Application to society at large

Most of what is usually written about innovation is based on the myth of the lone genius working in splendid isolation. With this in mind, the real key to making any organization more innovative is to make it easier for effective group collaboration to occur.

The more teams you can get interacting together, the more robust and worthwhile will be the innovations which flow. Design your organization to maximize group interactions and you create the ideal conditions for breakthrough new ideas to bubble up and get noticed.

This same principle of working together can also be scaled up to society as a whole. If new and better ways of working together can emerge, we can literally solve every problem we face.

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Group Genius

Part 1

The Highly Impressive Creative Power of Group Collaboration

Although crediting an individual for an innovation is a tidy and simple way to do things, the reality is most significant innovations which come about are actually an amalgamation of the thoughts and ideas of lots of different people. When people pool their talents and ideas in a group setting, some highly creative ideas can be generated. If the group is allowed to improvise by having the goal specified but the means left entirely open, it's not at all unusual for some exceptionally creative approaches to get suggested and ultimately implemented.

Group collaboration has loads of untapped potential. You just have to develop some workable ways to channel this creative force in the right direction.

On December 17, 1903, Orville Wright flew an airplane in a 12-second flight which landed him around 100 feet from where he took off from a beach in North Carolina. In doing so, Orville and his brother Wilbur beat leading scientists who had invested fortunes in funding and trying to win an international race to build the first airplane. Their achievement is typically cast as a breakthrough the two brothers came up with alone but in reality the Wrights achieved their feat by drawing on the power of collaboration rather than being limited by their own thinking.

To be more specific:

- The Wrights started their project by spending four years reading everything which had ever been published on bird flight and glider design.
- Their 1903 trip to Kitty Hawk, North Carolina was actually their fourth. On their first trip in 1900, they took their glider and kept modifying it to extend its range. On their second trip in 1901, they realized the glider didn't have enough lift to carry an engine as well. They built a home wind tunnel and tested 200 wing designs before they came up with a better idea. This high-lift wing was then tested on their third trip in 1902. It was on this third trip they also came up with the idea of a movable tail linked to the pilot's wheel to retain control of the airplane. Then on their fourth trip in 1903, all they had to do was scale up their glider and add their own engine which they had built at home.

Since they were brothers who shared the same passion, Orville and Wilbur Wright literally ate, slept and discussed their project every day. It was their obsession. By working together and documenting all of their thoughts in their diaries, they had a string of successive ideas, each of which allowed them to move a small step closer to powered flight. They didn't necessarily have any single moments of insight where a lightbulb went off over their heads but gradually they came up with a string of ideas, each of which sparked the next idea in succession. In this way, they systematically worked through all the problems which prevented their airplane from flying.

This is a perfect illustration of the fact although we're drawn to the idea of a lone genius, in the real world it's actually group thinking or a collective group genius which ends up generating all of the real breakthroughs. Great new ideas always emerge from such a series of small sparks that it's usually impossible to state definitively what was the source of the new idea. When humans collaborate, synergy is created which is greater than the sum of all the inputs originally provided. True innovation is more of a group exercise than we give it credit for.

7 key characteristics of effective creative teams

In fact, real world innovation as generated by teams of people working together has seven key characteristics:

1. *The innovation emerges over time* – so that it becomes impossible to say it was generated by one individual because there are so many little tweaks involved.
2. *People spend as much time listening to others as they do contributing themselves* – allowing everyone in the group to pick and choose the best ideas rather than defend their own.
3. *Team members feel free to build on each other's ideas* – and come up with natural extensions and embellishments. There is no feeling only the first person who suggests an idea is entitled to think about it more.
4. *Judgement is suspended to some degree* – because it's often only in hindsight that the value and meaning of each idea becomes clearer. People need to contribute without having a full picture of what that idea will ultimately end up as.
5. *Unexpected questions arise* – as the group thinks of new ways to frame problems or even identifies an entirely new problem to solve.
6. *The innovation process itself is highly inefficient* – it meanders down dead ends that turn out to be pointless and loads of time gets chewed up considering ideas which never amount to much.
7. *Good innovations tend to emerge from the bottom-up rather than top-down* – as the team restructures itself to deal with the most pressing problems. Effective innovation teams aren't told what to do by a leader. Instead, like-minded people find each other and put together a team to solve some problem which has a daily impact of one kind or another.

There are actually close links between improvisation and innovation. When people within an organization are forced to improvise, they often come up with some very creative and original approaches. Often the very best ideas come from ad-hoc teams which have formed themselves rather than being dictated to act by the management. The more skilled a company becomes at improvising, the better the innovations it will also tend to generate elsewhere.

Professional athletes often talk about getting into a heightened state of conscience during a game. When they're in this state – which has been termed the "flow" – everything seems to happen in slow speed and there is enhanced ability to perform. Athletes try to get into this state as often as possible because while there, they can play their sport exceptionally well. A similar kind of phenomena also occurs with group innovation. When the people within a workgroup experience what can be termed "group flow", some highly creative ideas can be generated by the group as a whole . This usually happens when people are engaged in tightly focused conversations or in other forums where people get together. Great conversations leads to flow, and flow leads to the kind of creativity which ultimately underpins group genius. When everything comes together to create a state of group flow, some impressive innovations can result.

10 essential conditions for creativity to naturally flow

To foster more innovation, try and work on creating the conditions which generate group flow at your workplace. The ten preconditions for group flow of this kind to come about are:

1. *A common group goal* – everyone must know the specific goal the group is trying to achieve, or the specific problem everyone is focused on solving. A good goal should be explicit enough for everyone to understand but also open-ended so some creative solution options can emerge.
2. *A willingness for group members to listen to each other* – so everyone can take the ideas others are suggesting and help refine them. This won't happen where people are busy thinking about what they're going to say next rather than listening carefully to the ideas of others.
3. *Complete concentration* – the absence of external distractions or even strict high-pressure deadlines. Creativity flourishes in a low-pressure work environment where a group concentrates on the task at hand and forgets everything else.
4. *The feeling of being in control* – having the autonomy to take any ideas which come out and run with them based on their merits rather than on being granted permission.
5. *A true blending of egos* – meaning everyone is willing to build on the ideas of others in the group regardless of who made the original suggestion. Everyone needs to be willing to listen and react to all the ideas suggested by others.
6. *Equal participation* – help everyone feel comfortable about participating rather than having a few superstars who are expected to do everything. For this to happen, everyone in the group must have roughly comparable skills, otherwise those with more skills will get bored and those with less will get frustrated. When one person dominates, group flow generally dissipates.
7. *Familiarity* – everyone must have mastered the basic knowledge required and add to that a feel for how others in the group will perform. Group flow increases substantially and is enhanced when everyone acknowledges and appreciates what others bring to the party.
8. *Communication* – because constant communication is the lifeblood of workplace flow. Everyone needs to be able to engage in spontaneous and freewheeling conversations about new ideas for flow to increase.
9. *A desire to keep moving the conversation forward* – to make progress towards meeting the objective rather than rehashing the same issues over and over. Sometimes this will involve accepting an interim solution which works reasonably well rather than staying at development until a perfect solution is forthcoming.
10. *An acknowledgment of the potential for failure* – using the potential for failure to push the group towards the flow state rather than being intimidated by it. Many companies minimized risks and actively punish failures which actually tends to reduce the likelihood of workplace flow. Instead, there needs to be a healthy appetite for the early failures which always accompany breakthrough creativity. There can be no genuine creativity without failure which means in turn there can be no group flow without the risk of failure. As long as everyone is learning from their failures and integrating what has been learnt into whatever they do next, everything will work out fine.

"Group flow happens when many tensions are in perfect balance: the tension between convention and novelty; between structure and improvisation; between the critical, analytic mind and the freewheeling out-of-the-box mind; between listening to the rest of the group and speaking out in individual voices. The paradox of improvisation is that it can happen only when there are rules and the players share tacit understandings, but with too many rules or too much cohesion, the potential for innovation is lost. The key question facing groups that have to innovate is finding just the right amount of structure to support improvisation, but not so much structure that it smothers creativity."

– Keith Sawyer

"It's hard to find group flow experiences in a large corporation, which tends to reward closing up communication, narrowing the channels, and minimizing risk. That's why people who seek out group flow often avoid big companies and join small start-ups or work for themselves. Serial entrepreneurs keep starting new businesses as much for the flow experience as for additional success. In the global war for talent, organizations that need to innovate cannot afford to let good improvisers go; they need to cerate the conditions for group flow and allow group genius to thrive."

– Keith Sawyer

"As society changes more rapidly, and the business environment becomes more competitive and unpredictable, companies will increasingly have to rely on improvised innovation. In today's innovation economy, work is often done in small temporary teams, where the stakes are high, the meaning of the situation is uncertain, and the competitive and technological environment is rapidly changing. The organization of the future will run on group genius."

– Keith Sawyer

"Group genius can't be bottled; it has to be spread throughout the organization and practiced every day."

– Keith Sawyer

"Collaboration makes the mind more creative because working with others gives you new and unexpected concepts and makes it more likely that your mind will engage in the most creative types of conceptual creativity – combining distant concepts, elaborating concepts by modifying their core features, and creating new concepts. Many new ideas are bad ones; collaboration over time is the best way to select the good ones."

– Keith Sawyer

"Putting people into groups isn't a magical dust that makes everyone creative. It has to be the right kind of group, and the group has to match the nature of the task. It's true that the individual mind plays a special role at the center of the creative process. But your own mind is more social than you realize."

– Keith Sawyer

"Only certain kinds of collaboration work in the real world – improvisations that are guided and planned, but in a way that doesn't kill the power of improvisation to generate unexpected insights. Brainstorming is a good example: Numerous studies have shown that this popular technique is usually a waste of time. The truth is that despite the proliferation of advice in the business press, many companies don't know how to foster creative collaboration. Fortunately, today's research tells us how."

– Keith Sawyer

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Part 2

How Group Collaboration Works in Real-World Situations

The most recent research on the collaborative nature of the mind suggests although an innovative insight may feel like an "Aha!" style flash of inspiration, the chances are the true roots of your new idea lie in collaboration rather than a solitary creative leap.

If you're honest, you'll admit your flash of inspiration is an amalgamation of your previous analysis, hard work and discussion with other people who have each added little tweaks and inputs.

This is good to know. It means creativity isn't magic or mystery but is a process which can be followed and used by anyone, regardless of their innate personal creative capacities. Using collaboration, everyone can generate more frequent insights.

Psychologists who have studied the discovery of new ideas in depth have found there are five basic stages embedded within the collaborative process:

1 Preparation	An intense period of working hard to study the problem and learn in detail what others have done in the past to try and solve it.
2 Time Away	Engaging in some entirely different kind of activity or even having a conversation with other people who are working on different problems.
3 The Spark	A potential solution appears but that solution is embedded in the ideas, know-how and interactions other people are using.
4 Selection	This is where there is a distinct "Aha!" feeling which doesn't necessarily mean the idea is good, only that it is new and somewhat novel.
5 Elaboration	This is where the idea is fleshed out more thoroughly and all ancillary and integration issues are considered and collaborated on.

The preparation, selection and elaboration stages are already quite widely understood but it may come as a surprise to learn taking some time off in order to generate the spark of insight is also required. The reason for that lies in the fact the human mind actually uses group genius and collaboration to generate what might appear to be individual sparks of brilliance. To be creative doesn't mean rejecting convention and forgetting what is known. Instead, it combines past experience and existing concepts in new ways. Time away from the more pressing demands of the present is most often required for genuinely creative thoughts to come to the surface and get picked up on.

To take a few examples of these five stages in action:

Example #1 – *Cash Machines*

In January 1976, John Reed, senior vice-president of Citibank with responsibility for the consumer banking division, was resting on a beach in the Caribbean. He took out his notepad and started jotting down a few ideas on how to grow Citibank's business using a brand new technology no other bank had taken a gamble on yet – automated teller machines. Reed came up with the idea of setting up a national network of street-level cash machines which consumers could then be educated to use with benefits to both customers and the bank. Hand in hand with this concept, Reed also envisaged the idea of marketing credit cards nationally rather than regionally as was the norm at that time. When Reed got back to his office, he wrote up the ideas which occurred to him on the beach and circulated it to his senior management team. As a result, when Citibank's ATM network became available in 1977, they were years ahead of every other New York bank. Citibank was able to double its market share and generate a lead in the marketplace which it took a number of years for its competitors to catch up.

While Reed's creative spark came when he was at the beach rather than at the office, it actually was the amalgamation of four different collaborative developments:

- The cash machine had already been invented years before.
- Citibank wasn't the first to install an ATM – other banks had already dipped their toes in the water.
- By the early 1970s, Citibank had already installed a network of early generation machines in all its branches, but these were used by the tellers only. Reed's idea was to take these machines from behind the counter and put them on the street.
- The concept of a nationwide credit card network had already been under discussion but the time had not been right for it to be implemented yet.

In total, Reed's real creative spark was to bring these different ideas together to change the way Citibank was structured and operated.

Example #2 – *The Telegraph*

Almost everyone knows the telegraph was invented by Samuel Morse after whom the Morse Code was named. What's interesting, however, is that the idea of the telegraph didn't come in one blinding flash of inspiration. Instead, the telegraph came about as a collaboration over an extended period of time between a number of different people. Here's how it unfolded:

- In 1832, Samuel Morse was on a ship sailing to New York after a three-year tour of Italy, Switzerland and France. He met Dr. Charles Jackson who was active in the emerging science of electromagnetism. Morse quickly realized electricity could be used to send message over large distances.
- Morse was unaware around 60 experimental telegraphs had already been built before he started on his own. He soon reached the same dead-end everyone else had found: electrical signals weaken rapidly when sent over long wires.
- While teaching to pay the bills, he bumped into a personal friend of a physicist who had discovered the key to sending electrical signals long distances was to have a series of small batteries rather than a large one at either end. Morse redesigned his telegraph to incorporate this concept. He also found an investor who would fund constructing a working telegraph line between Washington D.C. and Baltimore. This was finally ready to go by 1844.

- Even in spite of the successful demonstration of the telegraph in 1844, it took some time for the new technology to catch on. By 1846, there was 2,000 miles of wire. This increased to 12,000 miles in 1850 but it wasn't until 1861 that there would be a transcontinental telegraph system.
- Morse collaborated with so many people over the development of the telegraph that it becomes difficult to ascertain the true originator of any of the ideas involved. Morse drew on the expertise of a number of people, each of whom contributed a small piece of the puzzle. Some ideas were put forward and then dropped while other ideas became the spark for better ideas that ended up being used.

The way the development of the cash machine and the telegraph unfolded over an extended period of time is normal for most business innovations. There is always so much stuff that needs to be factored in that the idea of a single flash of inspiration is next to impossible. Instead, small breakthroughs and interesting concepts feed off each other until a workable idea finally comes to the surface.

There are actually a number of different mental processes which lie at the very core of creative thinking:

1. *Conceptual transfer* – taking an idea that works in one application and applying it to a completely different setting. This is what happened when Thomas Edison's lab team were trying to figure out how to secure light bulbs in sockets. One of Edison's assistants saw Thomas Edison cleaning his hands with turpentine and suggested a similar arrangement to the top of the metal can might be used for securing light bulbs. This subsequently became the screw-in lamp base.
2. *Conceptual combination* – taking an idea from one field and combining it with a second idea from a completely different field altogether. This may have been what happened when Reese's candies were developed – peanut butter and chocolate. These candies combined two snack foods in a different way to come up with something quite unique.
3. *Conceptual elaboration* – taking an existing concept and modifying it in such a way something entirely new results. John Dwight, Austin Church and James Church built a very successful business in the late 1800s supplying baking soda. By 1970, however, most people were buying box mix and didn't need baking soda anymore. As people started putting their unused boxes of baking soda in their refrigerators, it was found baking soda actually absorbed odors. Church & Dwight therefore launched a new marketing campaign which stressed the use of their product to "keep food tasting fresh". They also found ways to incorporate baking soda into deodorants, deodorizers and laundry detergents.
4. *Concept creation* – a conscious attempt to come up with something entirely new. More often that not, concept creation occurs of necessity when unusual circumstances arise. For example if your home is hit by a hurricane, you will probably create a list you've never really though about before: "Things to take when forced to evacuate my home". These ad-hoc concepts are created on the fly in response to external conditions and circumstances.

The more familiar you are with a topic, the easier it becomes to think creatively. Many times, filling your mind with information and then turning your attention to something entirely different will generate a spark of insight. If you then collaborate with others to refine and expand your insights, some very interesting and worthwhile ideas can result.

Collaboration with others in a group enhances your own levels of creativity because:

- Interacting with others introduces different perspectives and background competencies into the mix.
- You can take advantage of the creative abilities and thinking of others.
- Other people can help you select your best ideas and kill off your weakest ideas readily.
- The conversations you engage in while collaborating can spark moments of collective insight.
- You get a high degree of cross-fertilization – where ideas and concepts from one field get applied in entirely different situations.
- Unexpected connections and unplanned combinations can be suggested and fine-tuned.
- Multiple connections can be made which cross organizational boundaries and areas of professional training or competence.
- New ideas can be left open to multiple interpretations which allows a number of new and potentially unique combinations to come about.
- Conversational insights can arise which take existing ideas and apply them in completely different ways.

"Collaboration brings distant concepts together; it makes each individual more creative; and, most important of all, the emergent results of group genius are greater than those any one individual could think of alone."

– Keith Sawyer

"Hard work, collaboration, and deep familiarity with an area make you more creative. When you have more information about the creative domain, taking time off from a problem helps you to have a spark of insight because it frees your mind to play around in other conceptual spaces and to notice more potential analogies. When you're working hard on a problem, your mind is fully absorbed with one associative cluster; the others are forced into the background. Sometimes, you need to take a break and free your mind for the right analogy to emerge. But it won't happen if you haven't worked with those analogies and solved those problems yourself. One of the most solid findings in creativity research is the ten-year rule: It takes a minimum of ten years of hard work and practice before attaining the high level of performance that results in great creativity."

– Keith Sawyer

"In the collaborative organization, sparks that fail at their original purposes are often picked up and used elsewhere."

– Keith Sawyer

"Most new ideas will never pan out. That's why failure is a fact of life in the collaborative organization. But it's a law of innovation that successes can't go up unless failures go up, too."

– Keith Sawyer

"Creative professionals in Hollywood know that the best way to great success is to generate lots of ideas and then select the best one. Successful Nobel Prize winning scientists tell us they do the same thing: They keep multiple projects on the back burner. In collaborative organizations, many projects are active at once. When the business environment changes, the best-selling product might become obsolete, but one of the back-burner ideas may suddenly emerge as the next new thing."

– *Keith Sawyer*

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Part 3

How to Build a Genuinely Collaborative World-Class Organization

Most of what is usually written about innovation is based on the myth of the lone genius working in splendid isolation. With this in mind, the real key to making any organization more innovative is to make it easier for effective group collaboration to occur.

The more teams you can get interacting together, the more robust and worthwhile will be the innovations which flow. Design your organization to maximize group interactions and you create the ideal conditions for breakthrough new ideas to bubble up and get noticed.

This same principle of working together can also be scaled up to society as a whole. If new and better ways of working together can emerge, we can literally solve every problem we face.

"Innovation today isn't a sudden break with the past, a brilliant insight that one lone outsider pushes through to save the company. Just the opposite: Innovation today is a continuous process of small and constant change, and it's built into the culture of successful companies. When I ask creators where their ideas come from, they always tell stories about collaboration and connection, about innovations that emerge from a creative space that spreads out across the entire company – and sometimes beyond its boundaries."

– Keith Sawyer

In an effort to foster group genius style innovation, many corporations are now creating and maintaining innovation labs – groups made up of people from different corporate functions who have know-how and skills in all phases of the product development cycles. Some examples:

- Motorola's best-selling Razr phone was created by a team based in downtown Chicago.
- Procter & Gamble has its Clay Street Project in Cincinnati where teams have created new brands in ten weeks.
- Sony creates collaborations among designers, engineers and marketers to develop new product lines.
- Mattel's Project Platypus takes teams of between twelve and twenty employees and puts them into a temporary workspace for three months where they are expected to conceive and develop a new brand, complete with product, business plan and packaging.
- Fisher-Price has The Cave where cross-functional teams develop new product ideas.

Notably, these innovation labs are different from the more traditional skunkworks approach to innovation. In a skunkworks, a small group of selected people are isolated and expected to come up with a big flash of insight. Innovation labs take rank-and-file employees on temporary assignment and allow them to come up with small insights, each one hopefully sparking another, in the quest for something big. Since the people in the innovation labs are going back to their normal job assignments very shortly, they can take these new insights with them and keep on collaborating in the future. Innovation labs typically infuse the entire organization with innovative thinking rather than concentrating these activities in one place.

10 secrets

Innovation labs are a good start, but the real payoff comes when you manage to scale up and then distribute the creative power of collaboration the entire length and breadth of your organization. Highly innovative companies do ten things which help foster collaboration:

1. *Keep many irons in the fire* – in the same way venture capital companies make a large number of investments. Some break even, others fail without a trace and then some are blockbuster success stories. You can't tell how the future will ultimately unfold so if you can keep multiple projects on the back burner and active at all times, you'll be well placed no matter what happens. With a bit of luck, one of these projects just might end up becoming the next big thing.
2. *Create a "department of surprises"* – a group of people who are devoted to finding unanticipated applications for the technologies currently under development. A number of successful products actually came about as by-products of other development programs. If you don't have someone watching out for this, it's easy for promising technologies to get lost in the shuffle. Accordingly, collaborative organizations are always looking for radical innovations that can and should be commercialized. At the very least, this department should boost the morale of the people who work on projects that don't quite pan out as planned.
3. *Build physical spaces where creative conversations can occur* – open floors where people can walk by, see what is being worked on and add their feedback. Many high tech companies are designing their workspaces in such a way that these spontaneous conversations are encouraged to happen because they provide a rich vein of new ideas. This also has the effect of strengthening the informal information-sharing network within the organization which is not a bad thing either.
4. *Allow time for new ideas to emerge* – which essentially means don't forever make people work to tight deadlines. Admittedly some people work better under pressure but this is not usually the case for highly creative jobs. In most cases, the less hectic the workday is, the more creative thinking which gets done. Working in a low-pressure environment allows collaborative conversations to occur, sparks of insight to get noticed and for ideas to incubate and form properly. Perhaps a good example of this was AT &T's Bell Labs, the inventor of the transistor and the laser, which had an official corporate philosophy: "Big ideas take time".
5. *Manage the risks of improvisation* – which usually fall into three categories:
   - When people are spending time innovating, they are using time and resources that could be devoted to other production activities.
   - Improvisation can take the organization into new areas unrelated to its current long-term vision and strategy.
   - Too many new ideas might bubble up and the organization may spread its resources too thin and lose focus on its core business.

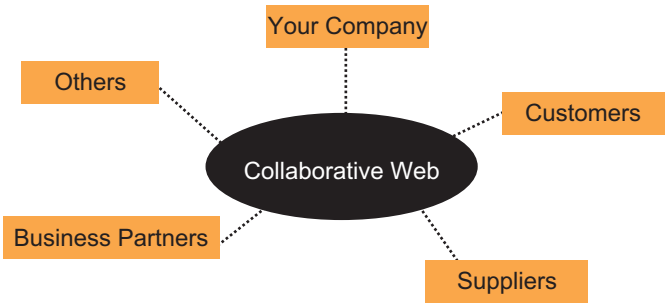
   To be successful, collaborative organizations need to deftly and intelligently manage those risks. How this is actually achieved will vary from one organization to the next but the general principle is there must be effective management of all the risks if collaboration is to flourish.

6. *Learn how to improvise at the "edge of chaos"* – meaning provide enough structure so that total chaos doesn't result but not so much formal structure that new ideas get stifled. Some companies find the best way to do this is to have well-defined managerial roles and highly explicit project priorities. Others encourage team members from different projects to socialize together and kick around ideas. What's needed is a general consensus and plan on how to proceed with sufficient flexibility so changes can be made to respond to unexpected developments.
7. *Manage knowledge for innovation* – have procedures in place which recognize good improvisations and then spread them throughout the organization as a whole. This may be as simple as having headquarters explain new solutions to all the operating branches of the organization. Or alternatively this may happen more if jobs within the organization are defined as broadly as possible so people are encouraged to develop a wider set of skills and connections. Frequent job reassignments may also allow know-how to spread more effectively.
8. *Build your internal networks* – so you can use sophisticated information systems that encourage collaboration. With e-mail so pervasive nowadays, it's obvious this can be a great tool for helping people connect and continue their conversations. Work with this by developing an electronic directory which details what skills your people have. If your culture says anyone with a good idea should feel free to speak with anybody else who can help them take that idea further, then it's more likely collaboration will occur. Share information and decentralize decision making as far as possible using every tool that is available.
9. *Make your organizational chart obsolete* – and encourage everyone to collaborate with whomever they feel most comfortable working with. Don't insist people stay exclusively within their own units because this will stifle collaboration. Be flexible and allow some strange combinations to occur because these are often a petri dish for the breeding of innovative new ideas.
10. *Measure the right things* – how much collaboration is occurring organization-wide rather than how much money is spent on R&D or how many patents are being won. If you really want to know whether collaboration is happening in your organization:
    - Count the proportion of time people are spending on small exploratory projects. More is better up to around 20-percent of total staff time.
    - Measure the average length of your development projects before they are either scaled up or terminated. Shorter is better in this area.
    - Examine how effectively your organization celebrates and rewards failure. If people feel penalized for trying something new, they won't bother.

    In all, a corporate mantra for the collaborative era might be: "Fail often, fail early, fail gloriously". Remember your goal is not to have a separate R&D division who are charged with responsibility to do everyone's creative thinking. Instead, you want to harness the mind power of everyone: engineering, marketing, sales, service, manufacturing and more. Collaboration needs to happen the length and breadth of your organization.

5 key features

Collaboration shouldn't stop at the company's walls. Instead, a collaborative web should be built which would bring customers, suppliers and other key business partners into the loop.



These webs can be extremely powerful at generating innovation because of their five key features:

1. *New innovations can be built incrementally on a long track record of prior innovations* – which allows a number of small sparks to build momentum. No truly creative products launch fully-grown but are almost always improvements and enhancements on what went before. Collaborative webs are very good at allowing that to happen.
2. *Successful innovations are always a combination of many good ideas* – with aspects emerging at different times and put forward by different people. Synergy often results when many ideas come together.
3. *In collaborative webs, there is frequent interaction between the various parties* – which is good because it casts the net wider. Companies do something comparable by rotating staff between projects every few years to encourage cross pollination of ideas. With collaborative webs, diversity of opinion and backgrounds are automatically built in.
4. *Collaborative webs allow multiple discovery to happen* – in fact if different teams are utilizing different approaches, that is highly desirable. It means what eventually emerges will be robust and practical rather than theoretical or highly dependant on specific variables. Nicholas Negroponte, the cofounder of LIT Media Lab once famously remarked: "Innovation is inefficient". Collaborative webs allow multiple efforts and frequent failure to happen, which is good from the perspective of coming up with breakthrough ideas.
5. *No single company owns the web* – and therefore everyone can share in the value of the ideas being generated. The fact everyone owns the ideas and can get in on the action is good because it encourages more parties to get involved. The strongest webs will be made up of companies which value their independence and autonomy.

Generally speaking, most new innovations don't stand alone. They usually become commercially successful only if a collaborative web also emerges around them of suppliers, partners and marketers. Thus it is smart business to build as strong a collaborative web as early as possible and to make multiple connections to that web.

Of all the parties in a collaborative web, probably the most important from a collaboration and innovation perspective are your customers. There are hundreds of examples of successful products which have emerged from customer feedback or from customers using products in ways which were never even envisaged by the original product developers.

To take just a few examples:

- Kleenex were originally marketed by Kimberley-Clark as disposable cloths for the removal of makeup. It wasn't until the company received mail noting men were using the tissues to blow their noses that the thought emerged this might be a viable use for the product. The company changed its marketing to selling Kleenex as a disposable handkerchief in the 1930s and has never looked back.
- Google bases its page rankings on group genius. No one in the company decides which pages should rank higher than others. Page rankings are based on the collective wisdom of everyone who uses the Web, ensuring better and more reliable results.
- In the 1970s, health and exercise became a fad. People started to mix their wine with soda water to lower the drink's calorie count. Soft-drink makers took note of this and started introducing ready-to-drink wine coolers.
- Also in the 1970s, sailboarders found they were falling off their boards when they sailed over the tops of waves at high speed. Their response was to equip their boards with foot straps, something which had not even occurred to the board manufacturers of that era. Today, it's almost impossible to buy a sailboard which doesn't also include manufacturer-designed foot straps.
- Research in Motion, the company that makes the BlackBerry personal digital assistant, decided to share its proprietary software in 2002. Once Nokia, Siemens, Motorola and others licensed the software, the RIM system became the defacto market standard. Ultimately, sales of BlackBerry's increased from 50- to 100-percent each subsequent year because everyone was confident all of their customers would be able to connect to it as well.
- Many of the current generation of video games allow players to modify the rules to suit their own tastes. This is called "modding" and some modders do such a good job that the company who developed the game in the first place hire them to help with future versions. Other companies have used these modifications as the basis for new versions of the game which often sell more than the original versions did in the first place.

The whole point is customers have always driven collaboration and many companies have taken advantage of customer feedback to enhance their product offerings. Some very high-profile companies like Wikipedia and YouTube have even built their entire businesses around material contributed solely by their customers. The best way to encourage this kind of collaboration to happen is to foster links between the organization and the collaborative web. If customers feel comfortable interacting with anyone in your organization and not just your sales or customer service people, great things can happen. With e-mail and Web sites dedicated to customer feedback, this is actually easier than ever to make happen.

"The key to innovation is to find just the right way to guide and shape the collaborative web. Companies can nourish the web by giving public credit for the ideas that emerge – even the ones they don't use – and by creating idea marketplaces that allow them to identify the good ideas that emerge. Group genius happens when you relinquish control and defer to the web."

– Keith Sawyer

Application to society at large

The same benefits of collaboration could also be gained by society at large if changes were made in the legal system to actively encourage more collaboration to happen. Specifically, seven aspects of the legal system need to be modified:

1. *Copyright terms need to be reduced* – so more people can take the work of others as a natural starting point. Copyright owners have used their influence in recent times to extend copyright terms whereas shorter terms will foster collaboration.
2. *A fair way to reward small sparks needs to become available* – because patents are a case of overkill for very small sparks of innovation.
3. *Making modifications to existing products should be legally allowed and encouraged* – because this is how innovations bubble to the surface. If it is illegal to modify an existing product, many people will be reluctant to do so.
4. *Encourage the free flow of employees* – by making noncompete contacts unenforceable. If individuals can move from company to company at will, a much more vibrant and open marketplace for ideas will emerge.
5. *Make licensing of patents and copyrights mandatory* – at a fixed default rate if no other commercial arrangements are negotiated. This will allow for information to circulate more readily which is what you want.
6. *Pool patents* – so every company can share in the collective benefits of commercializing new technologies rather than waste resources in pointless legal wars.
7. *Encourage the establishment of industry-wide standards* – because this has had the effect of enhancing innovation whenever it has happened in the past. Make it easy for people to add new innovations.

"Innovation is the key to a better future for our planet. Without a good understanding of how innovation works for all of us, government policies have often responded to the interests of the corporations that hold existing patents or copyrights. Unfortunately, established corporations often have the most to lose from the onset of radical new innovations, and the temptation is great to use their power to block the emergence of collaborative webs. Now that we know the true story of how innovation works, we can respond as a society by changing the rules to foster group genius."

– Keith Sawyer

"The myth of the lone genius has amazing power and persistence. This myth isn't only wrong: it's also dangerous because it ultimately has the effect of reducing creativity. If you believe that creativity is reserved for special geniuses, you're more likely to think that you can't be creative. If you believe that creativity is an unexplainable gift that happens in a magical flash of insight, you won't invest the hard and sustained work that it takes to generate a long string of small sparks. This is why understanding the science of group genius is so important. To build the kinds of organizations that generate innovation, we have to move beyond these myths and tap into the creative power of collaboration. To attain our true creative potential as a society, we need to embrace the real truth about creativity."

– Keith Sawyer