

## Collaboration Effectiveness: A must for Program Management Execution Excellence

By Chandan Lal Patary

In today's world, how well a company succeeds in developing products and services is closely related to the quality of its market and customer development efforts; pure research and development spend does not drive market growth without attention to distribution, channel, customer service, marketing, and other issues. By collaborating with many different customers, an enterprise can acquire specialized knowledge about aspects of its customers' business that even they do not possess.

To get people pulling together for collaboration, it is necessary to speak to many people. The target population can involve many different stakeholders. Among them are managers and team leaders, higher-ups, peers, and workers in other parts of the organization, as well as suppliers, government officials, and customers.

I have been working for a technology development department in my current organization where we do software platform development work. We develop technology which is use by the other business units. Most of our work once we are done, next step is to collaborate with the other team members in such a way that they consume our technology efficiently and do the market release on time. We have deployed DevOps practices in latest assignment where we supposed to do intense collaboration to achieve the result.

I have list down few of my observation regarding effective collaboration. What I have observed and learned is not something new or first time, every team members also knows all these points. My attempt is to collect all these points in collaboration umbrella and create awareness and reuse the knowledge in collaborative atmosphere.

- a) Challenges in effective collaboration.
- b) Collaboration? Different opinion and theory
- c) What are the different factors to be consider for collaborative environment?
- d) Collaboration effectiveness improvement dos and don'ts.
- e) Deploying DevOps practices in high complex cultural environment?

## 1. Introduction

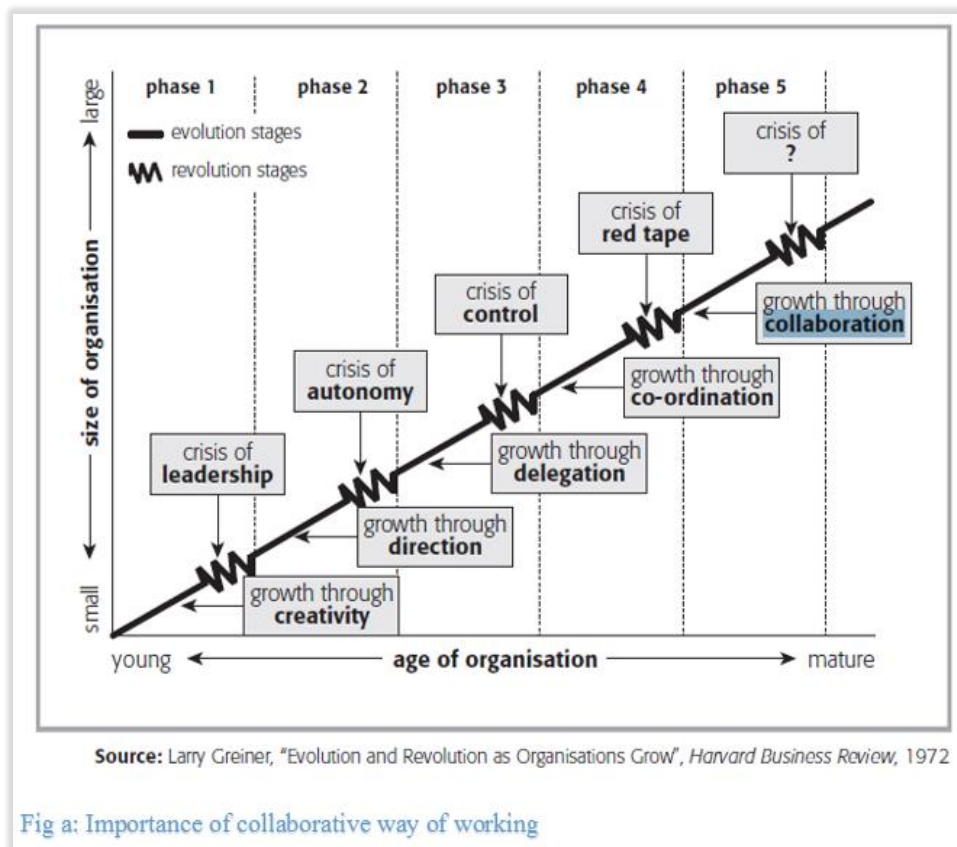


Fig a: Demonstrates the focus shifts from process to problem solving, and from headquarters to interdisciplinary teams. There is a shift from individuals and systems to the collective.

Every organization wants to produce and sell the product faster than their competitor. To achieve this target every organization need a complete process flow which operate smoothly and flawlessly. The synchronization among all the parts has to be free flowing without any delay or roadblock. As a leader we need to provide grease in all the parts so that those parts operate seamlessly. Software development requires dealing with human minds which is highly complicate system and not so predictable which cause most of the challenges to get the work done from collaboration.

To achieve excellent output we need all the minds to work together for a greater and bigger vision. Everybody needs to connect and understand the big picture. No ambiguity, no conflict, just support each other for a bigger mission. But Knowledge worker are very complex to work with due to varieties in personality, thinking, culture and may other IQ-EQ-SQ factors.

In my current assignment as technology development organization, most of the time we do not know all of the customer user cases in advance.

We need to interact with various stakeholders to sell our solutions, some time they do not know and some time they do not want to share the same information. Initially they may not trust us. Some time they do not want to share their weak points. We get into inquiry mode by asking what the core problem they were facing and if we can help anyway. We are always in

friendly mode, and be open. We always try to build trust so that we know about the requirement.

Most of the time if there are any previous historical bad experience they had experienced from our team, those causes issue in smooth operation. We have to accept our mistake and proceed.

Sometime our stakeholders try to take advantage of this type of collaboration, they would expect us to do their job so that they can take up our technology without much investment. We need to understand and make the other team understand our support boundaries. We need to help and explain limitation of our resources and wherever possible we discuss several rounds and extend our help for whatever application we own mutually.

Collaboration Challenges we faced at starting...

Collaboration Issues
a) Team members are not supporting each other
b) Every team members have their own self-agenda
c) Leader/Manager has tough time to drive the team to achieve a goal
d) Always there is a resistance to do anything new
e) Teams are sitting at the same place but unaware what is happening in nearby cube
f) Geo political issues among teams/team members
g) Team members/Teams will not help or share fearing that they will lose their importance / existence
h) Every team members wants to become "Super Man" else they will not support
i) "Self-interest" is ahead of Organizational benefit
j) "I am the Great" , "You do not know anything " , "Consult me only, always " etc. mindset
k) Very difficult to get the output from the team
l) If Senior manager involves things starts moving easily as team members are getting visibility

Fig a.1 New initiatives were not able to get the momentum due to above listed few reasons

The more we know about their need and value, our chance of collaboration effectiveness increases. We build a lasting relationship.

*Collaboration is a mutually beneficial and well-defined relationship entered into by two or more department or team to achieve common goals. The relationship includes a commitment to mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing of resources and rewards.*

*“If you have an apple and I have an apple and we exchange these apples then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas.” — George Bernard Shaw*

Collaboration has to be with the same mind-set where we are helping each other for a bigger vision and same has to understand by both the party.

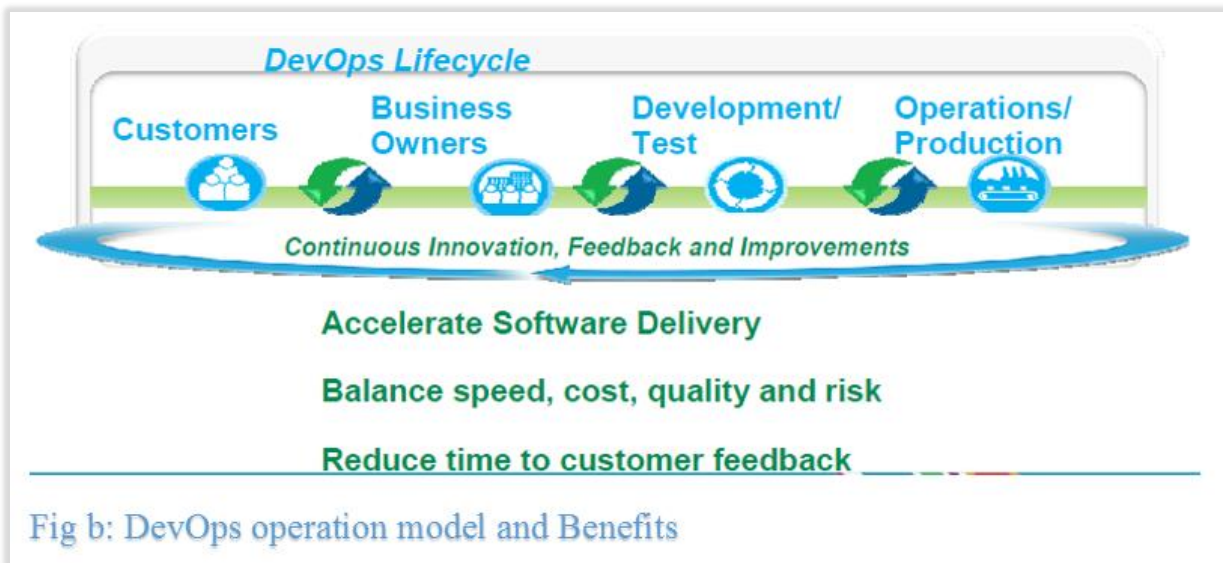


Fig b: Demonstrates the DevOps model where collaboration is of the key elements to achieve the result.

When we have to deploy DevOps to get various benefits, we have to collaborate with several stakeholders in cycle. One of the essential elements in DevOps success is collaboration and cultural changes require to effectively get the output from the DevOps process.

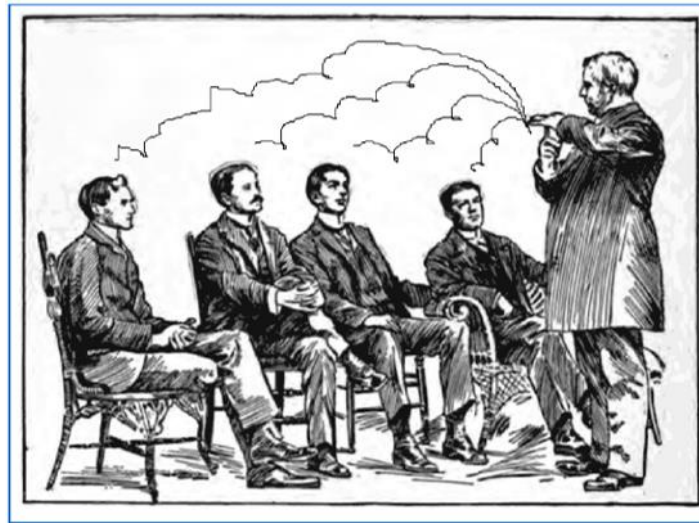
We frequently get these questions from the people who involves in collaboration.

Why will people collaborate? What are the benefits they will get? If they are forced to collaborate, how to handle conflict which they will jeopardize the assignment? Should we escalate? If not, what are the work arounds?

Vision & Purpose	
	Why are we entering the collaboration?
	What do we expect to contribute to this effort?
	In what ways do we expect to benefit from this effort?
Commitment	
	Is there a desire to commit to the collaborative effort at each and every level of our organization?
Schedule	
	Is our staff already pressed for time to complete projects?
	How will workloads and time be managed to facilitate involvement in this long-term commitment?
Culture	
	Is every level of our organization open to new ideas?
	Would changes in the way projects that are completed and issues are addressed be welcomed or resisted?
Cost	
	How much money we are talking about ?

Fig c: Effective Collaboration Model

Fig c: Demonstrates collaboration steps and consideration before start collaborating with other team members.



**Fig d: Influence Teams for Collaboration**

Fig d: demonstrates leadership skill required to get the buy-in from the others for a common vision and mission. Charismatic leadership helps most of the time where he/she influences by doing not by only talking.

*There is only one way . . . to get anybody to do anything. And that is by making the other person want to do it.*

—DALE CARNEGIE

Leon Festinger formulated the cognitive dissonance theory in 1957 at Stanford University. He asserted, “When attitudes conflict with actions, attitudes or beliefs, we are uncomfortable and motivated to try to change.”

Festinger’s theory which says that people will naturally act in a manner that is consistent with their cognitions (beliefs, attitudes, and values). Therefore, when people behave in a manner that is inconsistent with these cognitions, they find themselves in a state of discomfort. In such an uncomfortable state, they will naturally be inclined to adjust their behaviors or attitudes to regain mental and emotional consistency. When our beliefs, attitudes, and actions mesh, we live harmoniously.

When they don’t, we feel dissonance at some level—that is, we feel awkward, uncomfortable, unsettled, disturbed, upset, nervous, or confused. In order to eliminate or reduce such tension, we will do everything possible to change our attitudes and behavior, even if it means doing something we don’t want to do.

Commit to a shared goal listen and respond to others in an objective and productive way take on different roles in the group in order to accomplish shared ends be open and honest with their ideas, concerns and values avoid carrying hidden agendas into team meetings.

First, they should explain to team members that this hostility across team boundaries is a natural human tendency and that it can be overcome.

Second, they should encourage team members to recognize that they have to learn to cooperate with and support other teams – that is in their best interests, the organization’s, and their customers. If there are legitimate grievances between the teams, these must be dealt with in a way that both sides see as just.

## 2. Increasing Participation

The more we take an active role and get involved, the more open to persuasion we become. When we take an active part in something, we feel more connected to and have stronger feelings for the issue at hand. We have a personal stake in what we are doing.

One of the keys to successful participation is “making your problem their problem”. This technique creates ownership and a willingness to help on the part of your prospects. Obviously, asking for help is much milder than telling someone what to do or think. You will have more success involving your prospects in the solution if you give them the option of participating. Feeling that it was their choice and their solution, your prospects will take ownership—they have persuaded themselves. It becomes their own problem and their own solution. By nature, people will support what they help create

## 3. Aligning people

*When dealing with people, remember you are not dealing with creatures of logic, but with creatures of emotion, creatures bristling with prejudice and motivated by pride and vanity.*

—DALE CARNEGIE

People react based on emotions, then justify their actions with logic and fact. To align people with our path we have to connect emotionally.

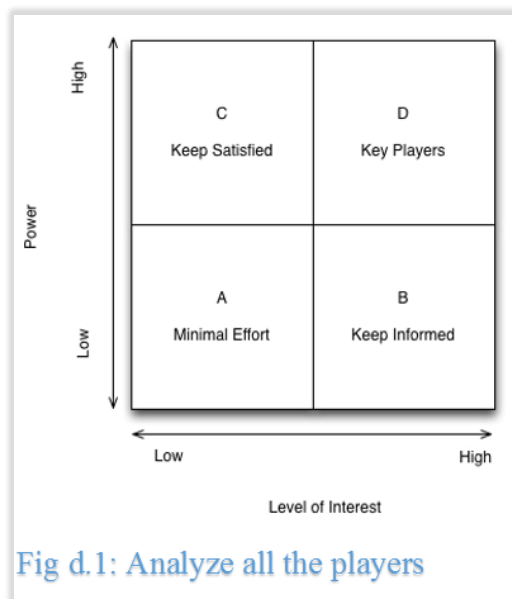


Fig d.1 demonstrates the Power/Interest Grid (Matrix) to understand all the interested team members in the collaboration and how they will influence the whole work. It helps when we are prepared and know the influential players to collaborate effectively.

Especially anyone who can implement the vision and strategies or who can block implementation must be aligned and for that we have prepare Power/ Interest matrix. Alignment is easier when the group has an agreed-upon mission or purpose. Conflict will be less when teams have an agreement and each of the team members know the overall goal.

#### 4. Treating everybody as a longtime customer

Once all the team members work in this “give and take “model there will be harmony. We treat each other respectfully and help each other and understand each other’s need and requirements. There is a tendency to solve the problem together.

Dale Carnegie told us that by becoming interested in other people, you will get them to like you faster than if you spent all day trying to get them interested in you.

Having goodwill entails appearing friendly or concerned with the other person’s best interest. Aristotle said, “we consider as friends those who wish good things for us and who are pained when bad things happen to us.”

#### 5. Place service before self-interest

A servant leader is more concerned with helping others than with acquiring power, prestige, financial reward, and status. The servant leader seeks to do what is morally right, even if it is not financially rewarding. He or she is conscious of the needs of others and is driven by a desire to satisfy them. Every team members when collaborating with other team act as a leader and with the servant leader mindset, he/she has to proceed to collaborate with other team. When each team members act as a selfless service to others automatically others will also follow.

#### 6. Listen first to express confidence in others

The servant leader makes a deep commitment to listening in order to get to know the concerns, requirements, and problems of group members. Instead of attempting to impose his or her will on others, the servant leader listens carefully to understand what course of action will help others accomplish their goals. After understanding others, the best course of action can be chosen. Through listening, for example, a servant leader might learn that the group is more concerned about team spirit and

#### **A friendly, collaborative culture calls for more of a consensus style of leadership.**

A command-and-control leadership style may not be effective in a company with a collaborative, friendly organizational culture. If the culture seems at odds with what a highly placed leader wants to accomplish, he or she may attempt to change the culture

## 7. Do not burn the Bridge

When we are dealing with different team members to solve various problems there may be different opinion, it has been observed in the organization we will come across again in some other context with the same person. It is very essential that we always build relationship and never take everything personally.

As a human being all people and team will have their own agenda, it is our capacity and capability we come to an agreement and keep going, do not burn the path, we may have to come back again someday.

## 8. Appreciate Often

William James once said, “the deepest principle of human nature is the craving to be appreciated.”

People will gladly help when they know their contribution will be appreciated. In collaboration every team members are expecting that if they help what they will get in return. Is it a free service or there will be some benefit they will get? All these questions has to solve to get effective output.

Never criticize people we want to persuade or influence. It damages our relationship and destroys the connection we have with them. Instead, use praise and appreciation to increase acceptance and self-confidence.

## 9. Build a Climate of Trust

If team members do not trust each other or the leader, it is unlikely that they will work cooperatively together. And they will not support each other. Before we jump into collaboration work, we have to ensure we trust each other, from heart. It is not a checklist item where we check if we are trusting each other (yes/no) type of question.

***As Kouzes and Posner note, trust is at the heart of collaboration***

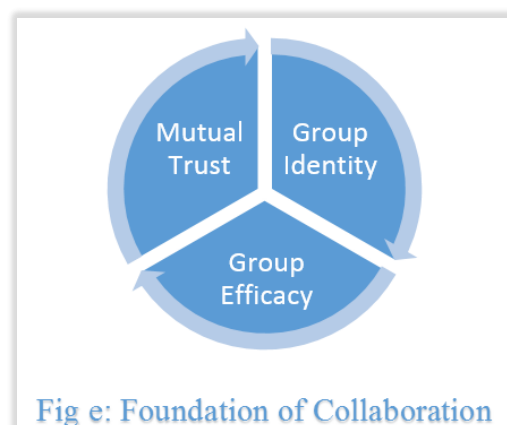


Fig e: Demonstrates three conditions—mutual trust, group identity, and group efficacy—are the foundation of cooperation and collaboration.



## 10. Demand whenever business is asked for

What other people interest is rather our interest that is the trick.

Persistent is essential, Rome is not built in a day!

It needs long persuasion to get the help from others and build a solid relationship.

Individuals tend to make decisions based on how others expect them to perform. As a result, people fulfill those expectations whether positive or negative. Expectations have a powerful impact on those, we trust and respect, but, interestingly, an even greater impact on perfect strangers. When we know someone expects something from us, we will try to satisfy him or her in order to gain respect and likability.

We have to set the high reasonable expectation to get the work done. And if require those expectation can be demanded for bigger purpose.

*If I accept you as you are, I will make you worse; however if I treat you as though you are what you are capable of becoming, I help you become that.*

—JOHANN WOLFGANG VON GOETHE

## 11. Using Technology That Enhances Teamwork

Team members can collaborate better when they use information technology that fosters collaboration, often referred to as groupware. For example, the straightforward act of exchanging frequent email messages and instant messages can facilitate cooperation. Electronic brainstorming is another example of groupware. Virtual teams by their nature rely on information technology to enhance teamwork. Several collaboration tools we have where we can share, exchange thought private or public in various way, some of these are free, some are charged. All these tools help teams to come closer and break communication barriers.

## 12. Collaborative Style

It reflects a desire to fully satisfy the desires of both parties. It is based on the underlying philosophy of the win-win approach to conflict resolution, the belief that after conflict has been resolved, both sides should gain something of value. The user of win-win approaches is genuinely concerned about arriving at a settlement that meets the needs of both parties, or at least does not badly damage the welfare of the other side. When collaborative approaches to resolving conflict are used, the relationships among the parties are built on and improved.

These points reinforce the need for us as a remarkable leader to evaluate the components of trust so that we can better understand it and do all we can to build trust in all of our relationship.

Knowing how to collaborate is a vital part of leadership, especially very much applicable for Program manager like me who are often in situations of influence where I do not have any control about the resources. By giving participants experiences where they have to be constantly collaborating — with other team members, with potential partners, with the champions and sponsors — participants who are used to being individual contributors get a full – support in teamwork

### 13. Create Dialogue:

The best mentoring relationships are successful in our project because the two parties work together in collaboration and we have created an environment for dialogue.

Relationship Management
Social skills
Inspiration
Influence
Developing others
Fostering teamwork
Managing conflict
Being persuasive
Clear in communication
Listening
Aiming for mutual understanding
Leading by example
Initiating and championing change
Negotiating disagreements
Building bonds and networks
Sharing information and resources in a collaborative way
Creating synergies between people

**Fig f: Factors influences in one to one collaboration**

The distinctiveness of critical collaboration is that it provides a vehicle for self-government, shared decision making and problem solving which encourages people to own and be responsible for their actions.

"I believe that you understand my point of view."

"I believe that I understand your point of view."

"Whether or not I prefer this decision, I will support it because it was reached openly and fairly."

Fig g: One to One Collaboration skill

Collaborating is *mindfully communicating with a broad network within and outside the organization, the leader needs to ensure the approval and support of allies for the project by building relationships. The leader also needs to connect the vision of the project to the team members and the work.*

One of the best descriptions of collaboration can be found in the Beyerlein & Harris book guiding the Journey to Collaborative Work Systems. They describe collaboration as:

*The collective work of two or more individuals where the work is undertaken with a sense of shared purpose and direction that is attentive, responsive and adaptive to the environment.*

Beyerlein & Harris' definition of collaboration highlighted the importance of companies being **"attentive, responsive and adaptive to the environment"**.



Fig h: Perfect Collaboration

Fig h: demonstrated snake boat race in Kerala, famous in India called "Vallam Kali", where it require high collaboration to achieve end results. There is complete synchronization among team members to achieve one common goal. Collaboration commitment is very high.

## 14. WHAT TO AVOID – WHY COLLABORATIONS FAIL

Collaboration Fails ?
No roadmap or focus or proper goal
Leadership issue or poor leadership
Legacy team members influencing much
Too much bureaucracy
Biasing among team members
Planning is not effective
Too much work pressure on team members from all sides
Competition among team members
Communication problem and misunderstanding

Fig i: Factors need to care for effective collaboration

The debate, the social collaboration, the give-and-take, the openness to new ideas, the involvement of all the required minds—this is what gradually imparts knowledge, insight, and enlightenment so the composers fully absorb and connect all the dots of the product definition. What ultimately exists in each of the composers’ minds is what matters, as it is in the gray matter, not the paper, through which the rest of the project will be realized.

*“Collaboration is a process through which people who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible.”*

Teams are small groups of tightly knit individuals connected by their daily responsibilities, while collaboration is the means by which the entire company/organization works together, extending even to partners. Collaboration connects teams, social units, social systems, and ultimately the social complex.

Leaders play critical role at initial stage to make all these happen. Initially result will not be so prominent. It needs a lot of mentoring and coaching to reach at highly collaborative stage. To be successful this type work culture every individual reiterate the working style of collaborative environment.

All the communication has to be direct. When we make a statement, say what we mean. Do not make pacifying proclamations just to get beyond the immediate situation. Untrue statements are quickly identified, breed distrust, and break down social collaboration. Say what we mean and mean what we say.

Their desire to produce is determined by their perception of whether who they are and what they do is appreciated.

Building collaborative productivity is all about maximizing output across the group and creating a warm and inviting milieu where appreciation is fundamental to successfully releasing the group’s potential.

Team members who excel at collaborating with others and engaging them by asking questions are perceived to have high character and be very likable, which may be true because influences are projecting these qualities on the influencers because of the positive feelings they experience at being asked for advice.

Collaboration tactics with other team
Logical persuading
Socializing
Stating
Consulting
Appealing to relationship
Legitimizing
Appealing to values
Modeling
Alliance building
Exchanging

Fig j: Skill requirement for team collaboration

If there are two Teams who are in collaboration in a common purpose they should behave like below

- *The Team A members and the team B members work to become interdependent. They share responsibility for action planning, implementation, and results.*
- *The Team A members and the team B members Decision making is bilateral. It is characterized by mutual exchange and respect for the responsibilities and expertise of both parties.*
- *The Team A members and the team B members Data collection and analysis are joint efforts.*
- *The Team A members and the team B members Control issues become matters for discussion and negotiation. Disagreement is expected and seen as a source of new ideas.*
- *The Team A members and the team B members Collaboration is considered essential. The teams make a special point to reach understanding and agreement on the nature and scope of mutual expectations prior to initiating problem-solving efforts.*



Fig k demonstrates that conflicts will be part of collaboration, team members are correct from their own point of view but systematic thinking will help to resolve such collaboration and conflict. But all conflicts have to discuss on face to face and work for a solution.

*It's not the situation. It's your reaction to the situation. Every team member with limited knowledge is always right from his/her point of view. We have to go beyond and think systemically to solve the common riddles.*

—BOB CONKLIN

- The Team A members and the team B members Communication is two-way. Both the team members take the initiative, depending on the issues. Information exchange is carried on in a problem-solving mode.



Fig 1 demonstrates that on Janmashtami, in India, Dahi Handi celebrate Lord Krishna's playful and mischievous side, where teams of young men form human towers to reach a high-hanging pot of butter and break it. They form a human pyramid to reach the height where people will throw water towards them to increase the level of difficulty. Demonstrating the collaborative thinking, effort to achieve the end result. To become successful in such situation it is an absolute self-less dedication, team work is require, without everyone collaboration, it cannot be achieved.

### **Why collaboration fails?**

When we force or threat, when a threat is perceived, the limbic system releases adrenaline into the bloodstream, which tenses muscles, raises the heartbeat, increases blood flow, cuts off higher-order thinking, and focuses the mind fully on the threat at hand. In any type of knowledge work, thinking effectively stops. It's the same as slowing down or even fully shutting down a network; as most cell phone owners have experienced, the network is there but not responding.

Mantra for Collaboration success:

“Do not threat anybody's existence, coexist with others else they will flight or fight”

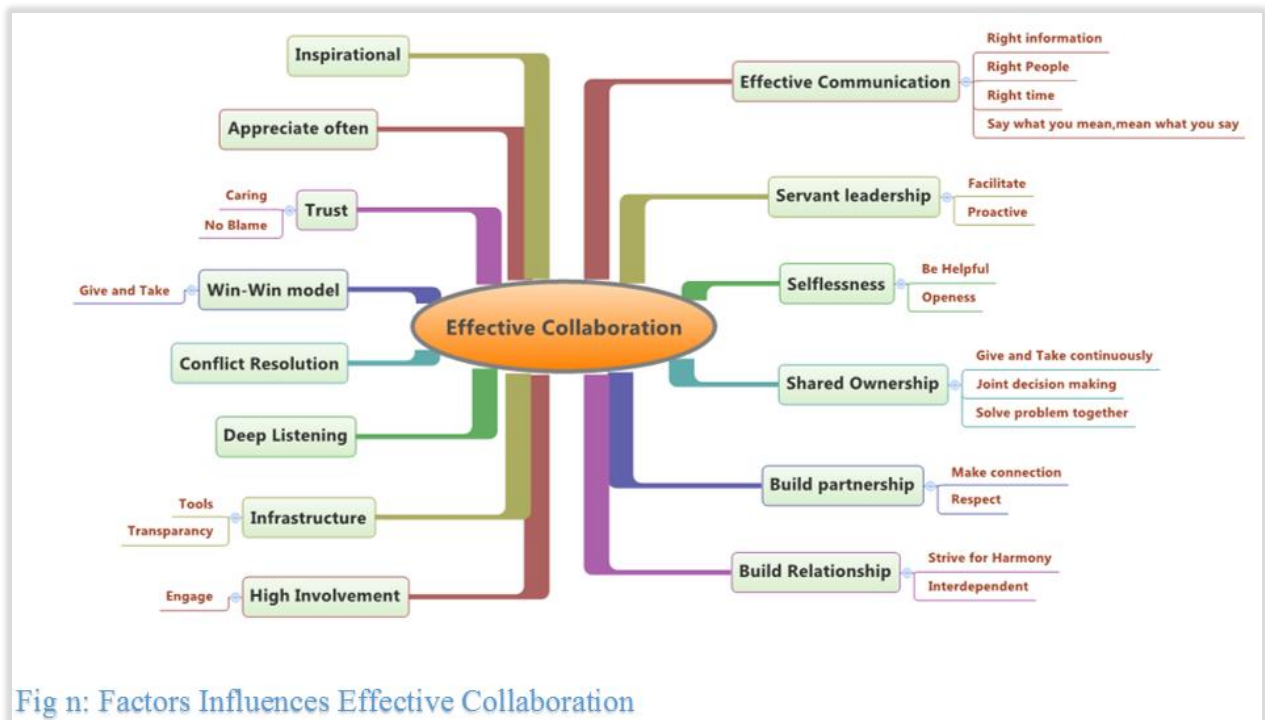
Strong attitude is also a killer in collaboration work, “I know everything, and do not try to team me”!!

Can we change the statement to “Let us explore and learn”?



**Fig m: Extreme Collaboration!**

Fig m demonstrates that there is no end of imagination for collaboration, sky is the limit if we want to achieve something which helps both the party we can go any end.



**Fig n: Factors Influences Effective Collaboration**

Fig n mind maps the factors which significantly influence effective collaboration, in our Case all the team members have been trained to understand all these parameters which play a critical role when we deal across team members.



## 15. Collaboration Meeting

Most of the formal meeting if did not set the right context and information, that meeting will be the set for battle ground. Host has to conduct the time boxed meeting timing, steering the meeting with right mindset and output. A good preparation with end in mind can help. Meeting approach should be a Win-Win approach and end with concrete actionable items.

Ask yourself the following questions when making this determination:

1. **Knowledge:** What does my team members know about the topic I want to talk about?
2. **Interest:** How interested is the team members in my subject?
3. **Background:** What are the common demographics of my team members?
4. **Support:** How much support already exists for my views?
5. **Beliefs:** What are my team member's common beliefs?



Fig 0 demonstrates that together we live, alone we fall. Every team for their existence needs to find out capability of the others which they can share and jointly come up with better proposal.



Fig p demonstrates that a good leader who acts as a servant leader or a coach can help teams to resolve conflicts and improves team collaboration.

The biggest obstacles to change are lack of motivation, lack of knowledge, and fear. People will not change if they don't know where that change is taking them. Take help from other who can help us both the teams by understanding effective change impact. That is the best way to resolve some type of issue which we cannot solve as a one to one. He or she can play an intermediate role temporarily.

## 16. Build Partnership

What is the currency to be used in partnership so that transactions can happen among themselves? We need to find and apply. In this paper most of the time I have mentioned about the partnership model. As a team or team members or leader we have to figure out how we should execute our every step where the end result is to build a solid partnership with another team with whom we are collaborating.

Each of the team members should have gotten some benefits in terms of knowledge, recognition and monetary benefits in transaction. Let us care for each other and support.

## 17. Build Relationships

Relationships really matter in collaboration assignments. We have to build currency like bank account with relationships with whom we are dealing. We have to check if we are constantly helping others not only just taking help, or else according to bank account we will be in debt. Through relationships we can get many things done; it is not always necessary to go through official channels.

Healthy Team Collaboration Checklist
Do we see experience rushes of excitement as team creatively solve complex technical challenges?
Do we Feel happy and content once team recognize how cohesive and talented their team is?
Do we see form deep personal relationships with co-creators who selflessly share their knowledge and insight?
Do we see team develop a feeling of personal security because their leader unselfishly watches their back instead of his or her own?
Do we see team Overcome complex creative challenges by drawing on the confidence of a supportive group and their prior achievements?
Do we see team Overcome complex creative challenges by drawing on the confidence of a supportive group and their prior achievements.
Do we see team form lifetime friendships by overcoming adversity with the help of others?
Do we see team become resilient as they master unfamiliar and complex tools?
Do we see team share admiration for one another?
Do we see team feel great satisfaction as they unravel a complex technical puzzle?
Do we see team Struggle to understand their role within the overarching plot?
Do we see team develop great appreciation for coworkers who selflessly share their knowledge, insight, and time in spite of personal deadlines that are very challenging?
Do we see team appreciate brilliance as almost incomprehensible technical challenges are adeptly mastered by a team member?
Do we see team laugh as humor erupts to counterbalance the stress and failures?

**Fig q: Check the parameters regularly for healthy collaboration like Doctor**

Fig q: demonstrates that every team should build a checklist which is based on their experience and guide them for smooth collaboration.

## 18. Conclusion

We have achieved significant success in our DevOps initiative from cultural front as well as efficiency front. We have successfully reduced many level 4 or field issues which resolved at entry level itself through effective collaboration. We have built long lasting relationship with our business units as they have become our better partners. Only action we are taking is consciously we are taking care about these soft skill part and monitoring for improvement.

I have shared various points of view about collaboration which help us to collaborate more effectively. Every time I have mentioned various standard, known definition of collaboration so that we emphasize to all about the process and underlying soft skill. These are mostly soft side of the skill which helps in execution and play crucial role for initiative like DevOps where team will be engaged across teams and have to go beyond boundaries.

Effective collaboration is a delicate soft skill which is required for efficiently executing projects. One team is not fully knowledgeable to accomplish complete delivery cycle. Team need to interact with various other teams to get the complete work done. To do the work at excellent level transaction output from other team has to be excellent. All the team members have to be molded, trained and aware about collaboration soft skills, and dos and don'ts.

Leaders have to help, coach team to get the result. Leaders have to interact every quarter on these soft factors, specially to improve the skillsets. Organizations have to do training programs in this area which is the essence of team interaction, to improve efficiency of team collaboration.

As organizations become flat, with fewer layers of management and more projects carried out by teams, collaboration has become more important. Effective team members are those who collaborate actively with their leaders and other members of the team.

## 19. Reference

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### About the Author



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Mr. Chandan Lal Patary currently works as an agile coach and Global Program manager at ABB. He has deep experience in developing Software products across various domains and has successfully executed many Projects. Chandan has worked on domain like Healthcare, Aerospace, Building automation, Power automation, Industrial Automaton under real time mission critical product development to large scale application development. Chandan has 16+ years of industry experience. He is certified PMP from 2008, Green Belt certified holder from 2005. Chandan is an agile practitioner and Certified Scrum Master from 2011. Chandan holds a Bachelor's degree from the National Institute of Technology (National Institute of Technology – Agartala, Tripura) in Electrical Engineering -1998. He completed one year of an Executive General Management program from the Indian Institute of Management - Bangalore, Karnataka in 2007. Chandan has authored several management papers in international journals. He can be contacted at [patarychandan@gmail.com](mailto:patarychandan@gmail.com)