CHAPTER 10
NATURE INSPIRED MODEL FOR EFFECTIVE TEAM WORK

10.1 Introduction

Team effectiveness in an organization plays an important role and any business that ignores the importance of teamwork makes itself vulnerable to poor coordination, leading to low performance. Therefore, managers are looking around for models which can be benchmarked for emulating design and practices on team work. Furthermore, since benchmarking is all about following the best or perfect, and there is no model which can outlive Nature’s creation; thus in this part of research two fruits in Nature i.e. muskmelon and orange, have been visualized as representing two types of teamwork due to their structure or arrangement. The study conceptualizes a muskmelon to be the Nature’s perfect example of a high performance team (HPT), while an orange as an example of a pseudo team (PT). It is expected that a detailed analysis of these two fruits as two types of team would illustrate useful insights on effective teamwork.

10.2 Pseudo teams and high performance teams

A team is a group of people who work together to achieve beyond their individual self-interests. However, not all groups are teams. A simple yet effective description of team is given by Jon R. Katzenbach and Douglas K. Smith’s book, The Wisdom of Teams: Creating the High-Performance Organization: “A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable”[180, 289]. The team work is essential in all types of organizations throughout the world. However, despite individual employees possessing a number of strengths which are important drivers of competitiveness, the collective performance of a team is not always equal to the sum of their individual performances. The reason for this is probably their focus on individual interests, performances, achievements and success, and relatively lower focus on alignment of
efforts towards common goal [248]. To solve this problem, compensation and incentives are usually tied to the achievement of team and individual goals; with high emphasis on collective team performance. As a result, the members though have no interest in shaping a common purpose or set of performance goals, call itself a team, which makes them representing a ‘Pseudo Team’.

Furthermore, according to Katzenbach and Smith [180] to truly cohere and to work well, organizations need to make sure “the team basics”: how large the team is, what skills its members have, to whom it reports and what goals it pursues. Other important team parameters are the structures that best support team work; the leaders who need to set clear standards and create dependable, supportive processes. So sheer filling of this gap of uniting all team players by aligning their focus towards a common purpose or goal can lead them to a ‘Real Team’ that eventually can become a ‘High Performance Team’.

![Figure 10.1 (a): Team Performance Curve](image1)
![Figure 10.1(b): Team Performance Curve representing Melon, Lemon and Orange Organization](image2)

In order to analyse the various aspects of Team work, Katzenbach and Smith [180] came out with a ‘Team Performance Curve’ (Figure 10.1a) which is a plot between Team maturity and Team performance impact. It’s a J shaped curve which attempts to define and understand the way in which different group of people work together, maintaining a level of team harmony and consecutive team results. On the X axis of ‘Team performance curve’, the five levels of team work are marked, which result in five different types of teams: ‘working groups’, ‘pseudo teams’, ‘potential teams’, ‘real teams’ and ‘high performing teams’ [80]. Members of a pseudo teams maintain harmonious relations with each other but their low concern for common goal results in a low performing team and positions it low on ‘team performance curve’. 
On the other hand a ‘high performance team’ due to their deep commitment in managing team harmony and focus on the common goal results in good performance, placing it on the top of team performance curve. The collective output of a high performance team is more than what is expected from team members making ‘TEAM’ (Together Everyone Achieves More).

Working of team of many business organizations can be an example of a pseudo team. Though one may be competent enough to perform but the high concern for individual performance and low concern for other team members and the common goal results in poor team performance. They maintain good relations with team members as they are worried to avoid conflict. By maintaining team harmony and concentrating on individual performance the team may feel that they are contributing to team need by creating a friendly atmosphere whereas what they actually need is a common purpose and a proper team approach towards achieving the organizational goal. If we really want to come out of this trough which is becoming important from global point of view, it is important to work on team working rather than just team building. Therefore, in order to understand the concepts in teamwork and prerequisites for creating high performance team, we have evolved a biological analogy of muskmelon and orange fruit with high performing and pseudo teams respectively.

A muskmelon has an outermost tough layer or skin with dark green stripes which apparently seems to be segmenting the fruit in several parts but actually the stripes are only superficial and the inner whole pulp is so integrated that we cannot make out as to which, specific portion of pulp belongs to which segment. Although whole fruit organization seems to be segmented into departments thus retaining their external identity but if we actually try to find out individual department’s contribution in the achievement of goal, we will not find anything other than integrated efforts. It shows that no department of the melon organization is bothered about individual department specific identity rather they are more focused on achievement of common goal. A high performance team will be analogous to this structure, where individuals have visible identity but team is totally integrated. In the core we can say that a is the true representation of a high performance team.

On the other hand, an orange, on the outside, has a soft and uniform skin giving an impression of single integrated unit but on inside, the fruit has clearly divided and distinct segments each separately containing the juice filled small sacs. An orange
fruit organisation therefore reflects a structure where from outside the whole organization seems to be one, but if we look at the inner part; we will be surprised to see that everything that seems united is actually divided and just bounded by a soft and weak skin peel only. Therefore, orange organization may be called as pseudo teams, where the team members have created a polite and friendly atmosphere with a sense of team-working; however, they lack a proper business focus. The integration in the core is missing with each element being a self contained organization in itself.

In order to see the application of these two models on organisation structure, let’s try to closely analyse the structure or anatomy and various elements of both of these fruits in greater details and then extend this analogy to an organisation structure. Based on this analogue model we term the corresponding organisation here as Melon organisation and orange organisation as the case may be.

10.2.1 Muskmelon Model (Melon Organization)

Figure 10.2(a): A muskmelon fruit

![Muskmelon Fruit]

Figure 10.2(b): Sectional view of the muskmelon fruit showing its internal anatomy

![Sectional View of Muskmelon]

Figure 10.2 (b) shows the anatomy of muskmelon fruit, also commonly known as ‘Cantaloupe fruit’. It is more or less rounded in shape and usually has a hard and rough netted skin. ‘Exocarp’ is the outermost layer or skin of the fruit which is yellow-cream in colour, with dark green stripes that superficially segments the fruit in several parts. ‘Mesocarp’ is the next layer which constitutes the pulp of the fruit. The pulp is very fleshy and is pale orange-pink in colour. ‘Endocarp’ is the innermost layer, composed of interconnected fibrous material rich in water and sticky in nature which contains many small seeds embedded inside” [371].
This structure of a muskmelon can conveniently be used to relate and study the structure of an organisation. The outer cover or skin of the melon can be considered analogous to the boundary of each department in an organization. Boundaries of Melon organization are rigid in nature. It is not easy for an outsider (like a worm in case of fruit and competitive influences in case of organisation) to easily penetrate through these boundaries. This cover provides tough protection from external influences on the system. The segmentation of the skin represents various departments. It seems from outside as if the whole Melon organization has a well defined departmentalization with precise division of work. But if we look at the inner side of the fruit, the whole pulp is absolutely integrated and homogenous and we cannot make out as to which specific portion of pulp belongs to which segment. Melon can be considered as nature’s example of good team work. Although whole fruit organization is segmented into departments but if we actually try to make out individual department contribution in achievement of goal we will not find anything other than integrated efforts. It shows that in a Melon organisation, departments are not bothered about department specific identity. Rather they are more focused on achievement of common goal through team efforts. Of course they do have their identity but it does not run deeper into the core of the fruit.

If we further analyze structure inside the melon, it contains small seeds embedded in thick, sticky and interconnected fibrous material. The fibrous material can be considered to be representing employees of the melon organization and the seeds representing specifically the culture of the organization. Just like the seeds are responsible for the replication of the original fruit, culture of any organization is important for sustaining the organization’s image to internal and external customers. Further analysis of employees of Melon organization will reveal other interesting insights about the nature of employees of Melon organization. The interwoven network of fibrous material shows that the employees are interactive, collaborative and work in a very cohesive atmosphere. Connections between two or more fibres (employees) show that team members are maintaining harmonious relations with each other along with a focus on common purpose. It also indicates that all employees are following a common working approach. Even growth of the pulp reflects that team members possess mutual accountability that means the members of the team share failure and encourage other team members to perform resulting in even growth of individual members as a part of team. It also reflects that the members of Melon
organization keep a high concern for others. The water and sticky fluid between fibrous materials (or the employees) is the organizational information that is available to all. The information in the form of this fluid is accessible to each and every fibre or the employee. This free availability of information in the form of fluid reflects transparency in melon organization. Therefore, the structure of Melon organization justifies itself to be considered as a high performance team.

In this way a Melon organization is perhaps one of best examples of teamwork, collaboration, common purpose, interaction, transparency and replication of organization’s best culture. Therefore organisation should endeavour to benchmark melon model while designing their organization structure and developing the culture of teamwork.

10.2.2 Orange Model (Orange Organisation)

Figure 10.3 (a): An orange fruit

Figure 10.3 (b): Sectional view of the orange fruit showing its internal anatomy

Figure 10.3 (b) shows the anatomy of an orange typically contains three distinct layers: the ‘Exocarp’, which is the most-outside layer or peel, the ‘Mesocarp’, which is the middle layer or pith, it is the part of the fruit which is commonly removed before eating and the ‘Endocarp’, the inner layer which is separated into sections, which are most commonly called segments. It contains juice filled sacs surrounding the seeds [372]. Figure 10.3 (b) shows sectional view of the endocarp of an orange showing several segments that are filled with numerous fluid-filled ‘juice sacs’. Each segment contains one or more seed which is surrounded by the fleshy sacs. These sacs are actually swollen (plump), specialized hairs. The juice sacs constitute the fleshy, edible pulp of an orange and are the source of the sweet juice” [46, 372].

Moreover similar to muskmelon, orange fruit can also be visualised as an organization. The anatomy of orange fruit reflects one of the structural aspects of an
organization where from outside it looks as a single entity without any segmentation or division. But if we look at inner part of the orange organization, we will be surprised to see that, everything that seems united from outside is actually segmented with well-defined divisions and boundaries inside.

The outer layer of orange gives a wrong impression of collaboration and homogeneity. In internal segments of the orange organization, there is a fine and transparent layer that surrounds each segment of orange organization. This clearly defined boundary reflects that there is no interaction and flow of resources and information between the various segments or divisions of the orange organization and in fact, it is a barrier that prevents interaction. Moreover, when we go further in depth, each juice filled sac or plump represents an individual employee. The juice contained by a plump can be analogous to information carried by an employee. It makes clear that the flow of information is restricted in the orange organization. Each employee itself is a rich source of information but, he is not making this information available to everyone. This situation clearly depicts the presence of self centred, autonomous divisions within orange organization and similarly self centred individuals within each department or a division. The individuals have a high concern of themselves but low concern for others, as they are focused on individual goal rather than focusing on common business focus. They are just superficially united by a cover which shows that they maintain harmonious relations just to avoid conflict; otherwise they are working as an individual. Uneven size of each segment of orange organization shows that there is no mutual accountability. The absence of sharing of failure by its members may make them perform worse which results in uneven growth. Such a culture in an organization reflects absence of any cohesiveness, lack of interaction and collaboration between the employees. If we remove the outer transparent layer of endocarp all juicy plumps will be scattered, this reflects that there is no binding force or cohesion among the various employees. These features of orange organization justify calling it a pseudo team.

Therefore, the anatomy of orange fruit is an example of an organization where there is no unity of purpose. Such organizations in long run are unable to sustain environmental pressures. The impact of such self organizations is not as powerful as that of the hard Melon organizations.
10.3 Melon and orange organization as high performing and pseudo team

If we compare the two models of the organizations discussed, we will find that melon organization is superior to orange organization in every aspect, whether it is team work, cohesion, unity of purpose and internal transparency. Furthermore, the structural design of every organization involves departmentalization, the purpose of which is to divide the work on the basis of specialization rather than creating a separate goal for each division. Essentially each division of an organization should represent a team member focusing on common team goal or an organizational goal. The segmentation of functions may be only for administrative convenience, but it should not lead to formation of segmented mindset and insulated silo’s which, an orange organization indicates.

Katzenbach and Smith [180] suggested six basic elements of a team as listed in Table 10.1. A melon organisation scores high on all these elements in comparison to an orange organisation.

<table>
<thead>
<tr>
<th>Elements of a Team</th>
<th>Melon Model (A High performance Team)</th>
<th>Orange Model (A Pseudo Team)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Large enough to manage all activities, still maintaining communication level of a small size organization.</td>
<td>Very small to manage various jobs. Though small in size but not maintaining communication level accordingly.</td>
</tr>
<tr>
<td>Skill</td>
<td>Teamwork compliments skills of each other.</td>
<td>Do possess necessary skills but no effective utilization because of isolation.</td>
</tr>
<tr>
<td>Purpose and Goal</td>
<td>Internal structure shows that their members focus on a common goal.</td>
<td>Internal segmentation shows that the members are more concerned about departmental goal.</td>
</tr>
<tr>
<td>Working Approach</td>
<td>Fair working approach, which is shared by all.</td>
<td>No shared approach, members maintains harmony to avoid conflicts.</td>
</tr>
<tr>
<td>Mutual Accountability</td>
<td>Evenness of the pulp (even growth below each segment) shows sharing of failure encourages them to perform so that they grow.</td>
<td>No mutual accountability, unequal size (growth) of each segment represents no sharing of failure.</td>
</tr>
</tbody>
</table>
Table 10.1: Comparison of muskmelon and orange organization w.r.t to basic elements of a team

<table>
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<tbody>
<tr>
<td>Binding Force</td>
<td>Completely integrated without any external binding force.</td>
<td>Network of threads acts as external binding force that binds various segments together to give it the shape of unity.</td>
</tr>
</tbody>
</table>

Thus, it is clear from the comparison that the anatomy of orange fruit resembles the characteristics of a pseudo team, where various groups of the employees’ work closely together, but real business issues are superficially glossed over. The team is neither concerned about other team members nor on a common goal. The members do not want to take the risks necessary to become a potential team. They are not interested in creating a common purpose or setting performance goals. What especially is worrisome about the pseudo team is that the members believe that they are a real team, yet they produce inferior results. On the other hand a muskmelon fruit validates most of the characteristics of a high performance team, where group of individuals are working closely together with a high level of business impact and highly effective team interaction. They achieve more than real teams due to their deep commitment to both, team members and the common goal. The collective output of a high-performance team is well, above what could reasonably be expected from the members as individuals.

It will be interesting here to analyse the structure of lemon which has got anatomy similar to orange [310]. However Lemon structure has a more integral and strong outer covering or peel which provides more strength and gives an impression of unity. Lemon organization is therefore more firm and stable than orange organization. Perhaps there is some binding force in lemon organization because of which its segments are less distinct and which makes it more integrated than orange. Fused walls of adjacent segments of a lemon show unity and people’s concern for each other is more than that of an orange organization. This results in more deliverables or better performance impact from the lemon than orange of the same size (juice). Therefore, we can call a lemon organization as a Potential Team, and place it somewhere between melon organization (HPT) and orange organization (PT).
10.4 Meaningful managerial insights from melon and orange model

It is clear from the above discussion that a melon and an orange organization can be considered analogous to a high performance team and a pseudo team respectively. Moreover, using this Nature inspired analogy; we can gain meaningful insights for managing teamwork in an organization. In an orange organization as a pseudo team individuals are more committed towards improving individual performance or achieving personal goal. They do all the required team building things but the real business issues are actually not addressed due to lack of team focus on common purpose resulting is low business impact. In contrast, a melon organization as a high performance team develops and maintains complimentary skills, rather than competing with each other and thus results in increased business impact. Also debate is likely to be more honest and meaningful when people feel strongly about the common goal, thus a shared purpose will definitely lead to greater commitment and hence result in bigger success.

Melon and orange fruits as high performance and pseudo teams respectively, reveal another interesting analogy. They are Nature’s magical creation that an orange grows higher on a grandeur tree and develops as a soft and small fruit whereas a muskmelon grows lying on grounded creeper plant and develops as a firm and splendid fruit. On ground, a muskmelon fruit faces much more challenging and hostile conditions than those faced by an orange supported on a tree. To survive in such hardships it is necessary for the constituent parts of a muskmelon to remain united and tough to be able to fight and survive against all confronted difficulties. On the Contrary, an orange fruit, growing higher on the tree, remains in naturally safer conditions with constituents not having any urge of keeping united therefore developing as soft and delicate fruit. This analogy helps in understanding the basic fact that the organisations which evolve and grow through tough conditions emerge as more stable and integrated organisations in comparison to those which lives in more conducive atmosphere.

In order to better understand the drawbacks of an orange organization, let us analyze the performance of a Cricket team as an illustrative example. Obviously cricket is a team game and hence a good example for testing this analogy even if it appears perception based. Considering the performances of the players of cricket team, it can be observed that as individual performers in the skill sets they possess
they are usually good but when it comes to team performance they may not always achieve the best performance. One of the reasons for this is perhaps due to the tendency of the players to give priority to their individual performances against team requirements as they are more benefited by it. So a cricket team, may sometimes appear to be following the orange model, like each segment of an orange organization, team players are acting as individuals who perhaps are focused mainly in making their own profiles more attractive, so as to take long term advantage from it. They are offered endorsements and a high price in IPL depending upon their individual profile. In such case players may distract from their prime goal to the team as a whole, because doing endorsements and playing for IPL is more lucrative. Therefore, cricket players may at times appear distracted from the organizational goal (i.e. to play for the nation). The governing policies also support such practices by not considering team performances while deciding salaries and other rewards to the players. In order to discourage such practices we may revisit our policies towards IPL and endorsement. A control measure needs to be taken to adopt such practices in which the first criteria of evaluation should be their contribution in team success along with their individual performance. However, in current performance evaluation, the only criterion is their individual performance. If team based rewards model is implemented then the players perhaps will focus more on team outcome rather than on themselves. Thus, it can be concluded that by implementing this, a transition from orange to melon organization and from a pseudo team to a high performance team will take place. It can perhaps be remembered that whenever our players have demonstrated coordinated teamwork, it has emerged as a world class team.

Moreover, orange and melon models not just represent organization structure but also the thought, mindset, attitude and culture of team members. It is not just a structure but a philosophy which needs to be penetrated and understood up to the lowest level in an organization. Further intensive research and verification can give more useful insights to managers that can be adopted by an organization. This chapter marks a beginning of developing this bio-inspired analogy further.

10.5 Conclusions

This chapter has presented bio-inspired analogies of team work, employee’s mutual concern and information flow in organizations with the anatomy of two fruits viz. muskmelon and orange. In this analogy muskmelon has been visualized as
Nature’s perfectly designed and managed organization primarily in terms of team work and has been called a muskmelon organization. This analogy has also conceptualized a muskmelon to be the Nature’s perfect example of a High Performance Team (HPT) while an orange as an example of a Pseudo Team (PT). As a high performance team, members of melon organization focus on a common team goal, agree on the same working approach and share successes and failures of each other. It has also developed analogy of free flow of juice with the information in melon organization that can become an inspiration for every organization to create a transparent culture. Moreover, it also shows that in the orange organization, the members are actually individuals who are contained within a cover that gives an impression of belonging to the same team. Furthermore, employing this analogy, an attempt has also been made to examine the performance of a cricket team by comparing it with the orange model. It is expected that these analogies would be used as models for demonstrating effective team work and may also help managers to better understand a Real Team that can be developed into a High Performing Team.