

# Leadership Practices in Open Innovation Initiatives

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## ABSTRACT

*Innovation is important in sustaining and advancing organisations and like many business functions innovation requires specific rules, disciplines and management. Innovation is usually pursued internally in the organisation and as such is considered 'Closed Innovation'.*

*The Closed Innovation underpinnings are being eroded by several factors. Hence a new approach to innovation emerged which is widely known as Open Innovation. The term Open Innovation (often abbreviated as 'OI') was first coined by Henry Chesbrough.*

*In OI a leader is confronted with many new challenges that are associated with the nature of OI such as the collaboration of inter-organisation teams in innovation initiatives, the different organisational structures and hierarchies, the different business processes and business project specifics.*

*The question is that, what precisely are the skills and practices required from the leaders to support OI teams within organisational boundaries as well as across boundaries? And also how can the established leadership theories specifically transformational theory be extended to provide sound guidance for OI initiatives?*

*The paper presents a concept for OI leadership which is composed of recommendations for best practices and extensions to the Transformational leadership theory that allows this established theory to be used in leading beyond and across the organisational boundaries.*

**Keywords:** *Innovation, Closed Innovation, Open Innovation, transformational theory, Leadership*

## INTRODUCTION

OI is a new concept where ideas and competencies flow across organisational boundaries to increase revenues. Chesbrough stated that OI “ is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology” Chesbrough (2003).

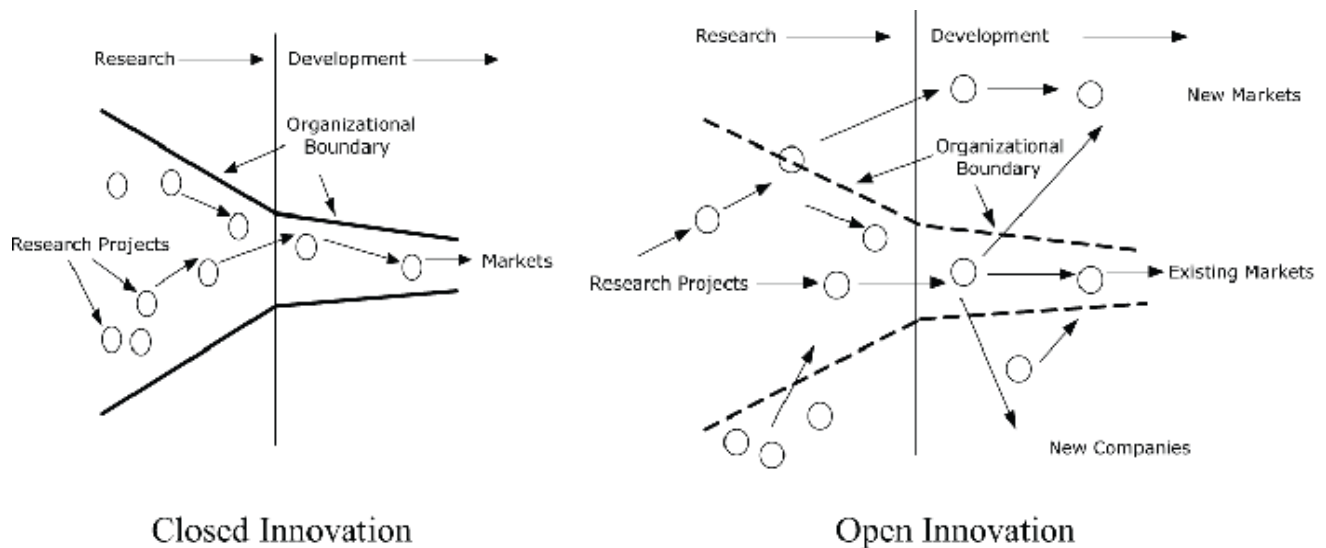


Figure 1 Closed and Open Innovation. Source Chesbrough (2003)

OI is dynamic and involves multiple actors with heterogeneous interests and skills. Technology acquisition and technology exploitation are the key elements of OI thinking Lichtenthaler (2008). Technology exploitation includes purposive outflows of knowledge. Purposive inflows refer to technology exploration. Technology exploration refers to these activities which enable an organisation to acquire new knowledge and technologies from outside.

OI is gaining momentum because of the dynamicity of changes in social organisation and markets. Economic uncertainty necessitates the leveraging of limited innovation resources by collaboration and cooperation with outsiders. Other trends that are advancing the adoption of OI and that were reported by Huff et al (2013) are:

- Increase of interactions among individuals and groups around the world generating new and more demands for products and services

- Technological changes facilitating the interactions of innovators across the organisational boundaries
- Fierce competition requiring organisations to look for more ideas outside the organisation and sometimes from other industry sectors
- Accessibility of an international labour pool

Companies adopting OI must be able to challenge their traditional innovation-management as well as innovation-leadership processes. They should also be able to change the mindset of their employees and help them to break out of their functional ‘silos’ and collaborate with teams outside the organisation boundaries.

The paper will address the following question: What is the appropriate leadership concept for OI initiatives? And will provide the following: -

- Identify what leaders need to do to facilitate OI and what qualities they will require to support OI teams within the organisation and across organisational boundaries
- Recommend ‘best practice’ tactics for the OI leaders to follow to improve OI initiatives
- Determine additional leader’s attributes to extend the transformational leadership theory so that it can transcend organisational boundaries. Such a theory, like most of leadership of the theories, was developed under the assumption that the organisation has firm boundaries. In OI, the boundaries are permeable, and the activities take place inside as well as outside.

## LITERATURE REVIEW

### WHAT IS OI AND HOW IS IT IMPORTANT TO AN ORGANISATION?

OI facilitates the internal and external flows of knowledge as well as resources while closed innovation focuses on the idea creation, development and commercialisation all within the confines of the organisation.

*“Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. Open innovation is a paradigm that assumes firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology.”* Chesbrough (2006)

OI as a concept was initially adopted when firms recognised the difficulty of commercialising their research R&D outcomes. Firms started licensing their research technology outcome to other entities instead of having these outcomes wait for internal development or in the worse scenario become outdate and obsolete. This was then followed by involving external knowledge and technology in collaborative networks culminating in the OI models that we now have. OI is a tool not a goal where the goal is to grow the organisation and make profit as suggested by Lindegaard (2010).

OI sometimes is referred to as networked innovation in Lindegaard (2010) and Innovation networks, connected networks, alliances in Tidd and Bessant ((2013) and collaborative networks in YstrÖm (2013).

OI when adopted by an organisation can increase the efficiency of products/services of the organisation as well as reducing the total spend on research and development. It is therefore not surprising that the topic of OI has attracted a great deal of managerial interest and a distinctive stream of academic literature and studies.

Torkkeli et al (2009) advises that organisations should attempt OI only when there are innovation activities that the organisation cannot manage on its own and which should be opened to attain complementary resources to fill resource gaps. Innovation activities that are crucial in implementing the organisation's ability to create competitive advantage should be kept closed to be able to protect the sources.

### **HOW DO ORGANISATIONS ATTEMPT OI?**

Rufat-Latre et al. (2010) perspective of organisations taking up OI is that the initial task in pursuing OI is an 'inward' one where the emphasis is to 'break down the walls and barriers between internal silos' and that 'the mindset change towards more receptivity and cross-silo collaboration will extend to the outside.' This suggests that OI starts at home and that in order for it to succeed it is imperative that the organisation opens up the company internally before bringing in external sources of ideas and technologies.

The more the openness and the more pursue of external ideas, the more of systems, processes, values and culture also needs to be modified. Witzeman et al (2006) state that, "harnessing external technology for innovation requires a fundamental change in employee thinking. "The Not Invented Here" syndrome is replaced with the "Invented Anywhere" approach".

Dodgson et al (2006) recognise that the cultural changes as well as new skills are necessary in innovation projects and that the technology does not replace existing practices and it does not overcome the uncertainty of innovation. Hence, the change of attitudes and values of every employee in the company might be necessary for opening up the company boundaries.

#### *A. Models for OI*

There are a number of models that are emerging around enabling OI and the main four models have been identified by Nambisan & Sawhney (2007):

- 1- Orchestra model: In this model one firm create an active network of a number of partners where the partners retain considerable autonomy around their specialist tasks and the creator of the network retains the decision making and the final integration of the product or service. This is analogous to professional musicians in an orchestra working under a conductor.
- 2- Creative Bazaar model: Here a major firm goes shopping for innovation inputs and then integrates and develops them further. This can be viewed as a ‘crowd-sourcing’ approach and is analogous of a shopping in a bazaar full of exotic and unfamiliar items.
- 3- Jam Central model: This model involves creating a central vision and then mobilising a wide variety of players to contribute towards reaching it. Such a model is found in pre-competitive alliances and consortia where difficult technological or market challenges are used such as with the 5<sup>th</sup> generation mobile communication (5G) projects.
- 4- Mod Station Model: This model encourages multitude of users to make changes especially to software open-source projects such as the Google Android developer platform.

#### **LEADERSHIP AND OI**

Leading in OI may prove complex and difficult when a leader has to guide interactions and activities of his team with the outside world as well as when a leader has no direct authority on team members outside his domain. Leadership theories do not address leadership practices outside organisational boundaries as these theories do not reflect and reconcile the implications of OI models.

OI is still rather new and is not yet a streamlined concept but there is a sustained growth in the OI research as reported by van de Vrande et al (2010) and Huizingh (2011). The research body on OI is rather fragmented and covers a number of aspects such as the notion of OI, business models, tools and leadership. The research on OI leadership and management (but especially leadership) is scarce and is one aspect that

has not been properly researched by OI scholars. The recent research on OI leadership covers the themes of collaboration, external innovation evaluation, culture change, social capital, leadership communities and negotiations, and human behaviour.

OI introduces a type of “post managerial environment’ Karp and Henglö (2008) where conventional governance and managerial and leadership tools no longer apply as the jurisdiction of managers and leaders is limited. The main issues to be solved by the leadership is how to lead without any employees (i.e employees now are outside of organisational borders), how to direct the work of those employed elsewhere? How do you set a clear direction when all collaborating partners have different aims and perceptions and how to reach the intended results? And how to create an environment where people from different organisations (of which could include competitors) trust each other and share information. Before answering these questions a review of what is leadership and the role of leadership in OI becomes necessary.

What is Leadership and what is Transformational leadership?

Leadership is the act of rallying, guiding and influencing others to achieve an objective or a set goal. Yukl (2010) defines leadership as the “process of influencing others to understand and agree what needs to be done and how it can be done efficiently, and the process of facilitating individual and collective efforts to accomplish the shared objectives”.

Kotter (1990) reported that the leadership has three key activities:

- 1- Establishing direction: Developing the vision and the strategies needed to achieve the vision
- 2- Aligning people: Communicating direction in words and deeds
- 3- Motivating and inspiring: energising people to overcome barriers and hurdles for change

Elrod and Tippet (2002) stated ‘leadership is the art of guiding others through change.’ Adair (1973) suggested that the effectiveness of a leader is dependent on his ability to balance the needs of achieving the task with maintaining the harmony of the team and supporting the needs of individuals.

One leadership theory that will be considered in this paper is Transformational leadership which is an established theory for guiding an organisation to success. Transformational leadership is a polar opposite

to Transactional leadership and both are needed in OI because the OI environment is both unconventional and chaotic requiring different and opposing set of skills.

Transformational leadership is a process that changes and transforms individuals and therefore is concerned with performance of the followers and developing them to their fullest potential Avolio (1999). Transformational leadership achieves rapid success through the vision and team-building skills of the leader.

Burns (1978) reported four characters that a transformational leader must have or must provide:

1. Idealised influence or charisma
2. Intellectual stimulation
3. Inspirational motivation and
4. Individualised consideration and attention

On the other hand Transactional leadership as defined by Burns (1978) 'is the bulk of leadership models, which focuses on the exchanges that occur between leader and follower'. Transactional leaders and managers use disciplinary power and an array of incentives to motivate employees to perform at their best e.g. a manager offering promotion to employees who surpass their goals. Transactional leadership is effective in areas where it is clear what goals and objectives need to be accomplished and there is little room for alternative methods for goal accomplishment.

Lindegaard (2010) reported that the key to managing open innovation initiatives successfully is to be flexible enough to deal with issues as they arise. This necessitates the consideration of contingency theories especially situational leadership. Hersey and Blanchard's (1993) situational leadership theory is a well-known model (shown in figure 2), which asserts that leaders can adjust their style to the situation.

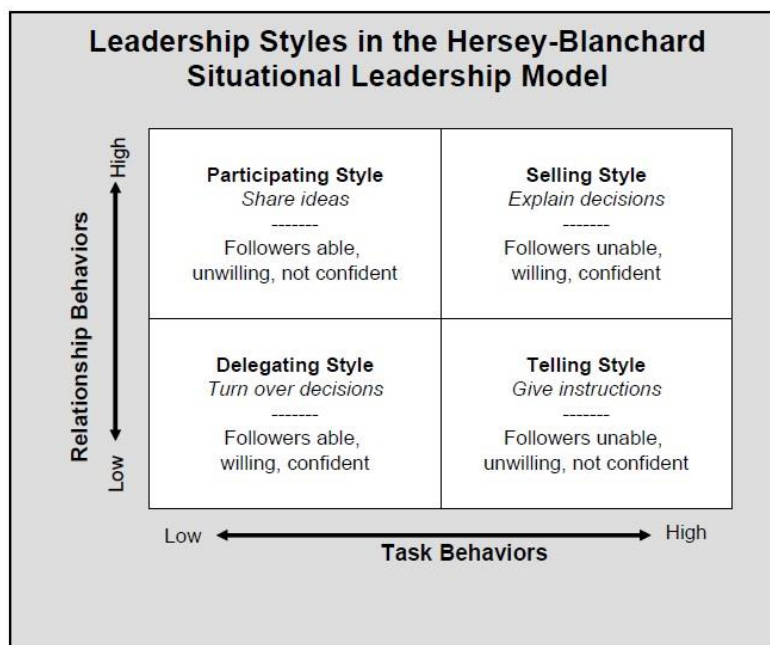


Figure 2 Hersey-Blanchard model. Source Hersey and Blanchard's (1993)

Leaders in OI will need to vary their leadership style if they have to be flexible and therefore may have to coach, communicate a vision and rally team members around it or instruct and delegate.

Distributed or 'diffused leadership' theories will also be a focus of this paper when exploring the extension of transformational leadership to OI since in an OI initiative there will be more than one leader, each from a different organisation. Distributed leadership 'recognise that leadership can be found at all organisational levels and can be shared among multiple players at each level' Bryman (1999).

### OI models and Leadership

Leadership and management practices for OI is not very well understood as has been suggested by Ojasalo (2004) who reported that 'the knowledge of management methods in inter-organizational networks is still scarce'.

Nambisan & Sawhney (2007) tried to model leadership in OI model as being either centralised or diffused as shown in Figure 3. For example in the Mod Model the governance mechanisms are defined by all the parties so the leadership is diffused while in the Orchestra model the governance is tightly controlled by the network creator.



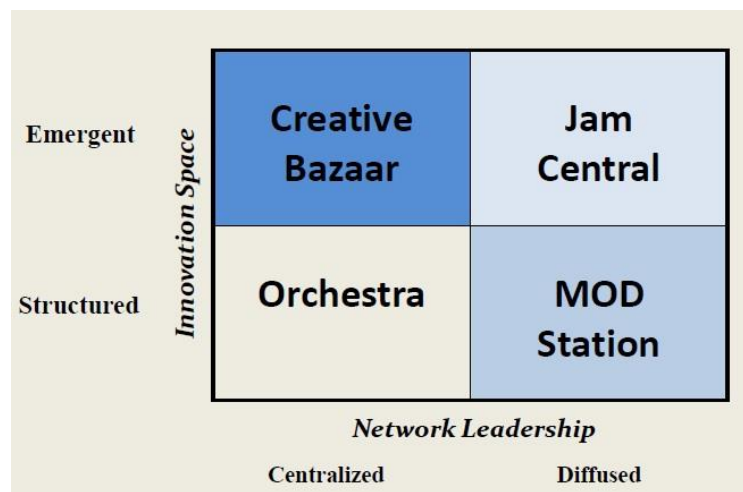


Figure 3: The four models of OI and leadership. Adapted from Nambisan & Sawhney (2007)

Sawhney (2007) defined a number of industry/market contingencies in choosing an OI model. Two of these contingencies are relevant to the network/OI members and their contextual factors with their implications on the leadership are:

- 1- How '*technologically distant*' are the network members? More distant membership implies the need for more formal value appropriation & governance mechanisms.
- 2- How '*demographically distant*' (size, power, culture, etc.) are the network members? More 'distant' membership will imply the need for less diffused leadership structure to minimize 'opportunistic' behaviour.

Team leaders from the different companies comprising the innovation network should have different knowledge and expertise and should all be involved in the set up of the OI initiative from the initial strategy crafting phase. Tidd and Bessant reported that 'team leaders, who have the expertise, should engage closely in the evolution of innovative activities'. They further identified that leadership heterogeneity is key to promote innovation and without it tension may arise. According to Tidd and Bessant directive leadership is important when heterogeneity is too low. Directive leadership in such a scenario will promote team reflection, for example by encouraging discussion and disagreement.

A similar perspective is that of Newell and Swan (2000) who recognised that the potential for OI advantage is the partners' differences in perspectives, competences and resources. However, Newell and Swan also view these differences as a possible reason as to why so many collaborations fail. Likewise, Yström (2013)

acknowledges the difficulties that heterogeneity in OI can unravel and that it should be harnessed by the leadership. The leadership team ‘must be able to handle the differences and turn them into something constructive’ Yström (2013).

### **The Promise and Reality of OI and the Role of Leadership**

Rufat-Latre et al. (2010) reported that there is often a gap between the promise and reality of OI and that ‘OI is unlikely to achieve its potential in most companies’ because of four chronic conditions namely:

- 1- An unwillingness to change comfortable habits and practices, especially when it comes to sharing ideas and intellectual property with anyone outside the organisation.
- 2- A managerial mindset that thinks of competition primarily in terms of a battle for market share in a zero-sum-game –rather than a battle for new markets using competence-based advantage to produce customer value.
- 3- Organisational and incentive structures that promote and reward the exclusive use of internal resources for high-value added activities.
- 4- A mindset that views OI only as a new product development and commercialisation process- rather than an integral part of ongoing strategy.

To establish an organisational environment (bearing in mind the above four conditions) in which OI becomes a key enabler for growth and competitive advantage, the leadership according to Rufat-Latre et al. (2010) must make the change from a market share mindset to a competence-based mindset.

### **Leadership and OI strategy**

OI should be approached at a policy making level and be a piece of the overall innovation strategy of the organisation.

The leadership must undertake three initial activities for any change to innovation and these are according to Davila et al (2006):

- 1 – Define the innovation strategy and the linkage to the business strategy
- 2 – Align the innovation with the business strategy

3 – Define who (internally and externally) will benefit from improved innovations

The leadership in all of the participating organisations in the OI initiatives must then collectively develop an overarching OI strategy that can be clearly articulated to all employees and participants.

In crafting the open innovation strategy companies should examine the organisational culture as well as evaluate top management support, staff willingness to embrace OI initiatives and the leadership capabilities for both inter and intra organisation OI collaborations.

On the other hand Jüttner and Schlange (1996) focused on the network parties and their roles. They reported five key activities that need to be determined to develop an OI or networked strategy:

- 1- The strategic situation to be analysed,
- 2- Upon which actors to focus?
- 3- Who determines the nature of the relationships?
- 4- What part in the network does each actor play?, and
- 5- What leverage and what steering potential does each actor have?

Lindegaard (2010) reported that there are a number of elements that creates an OI culture, the key of which are the people who can manage the relationships with customers and partners and the understanding that OI requires open communication and an environment built on trust.

Networking, making an effective pitch and managing stakeholders are new skills that Lindegaard suggests are required for OI leadership. The ability to build a networking culture according to Lindegaard is an essential role of an innovation leader as companies embrace OI as well as the ability to craft compelling messages to the people that the leader is trying to influence.

The networking culture in OI according to Lindegaard ‘requires a top-down approach in which the executives and innovation leaders craft a strategy, set the goals, and provide the means for networking initiatives’.

## **CHALLENGES IN MANAGING AND LEADING OI INITIATIVES**

OI can include an extended cast of entities that include collaborators, competitors, regulators, suppliers and other players.

Tidd and Bessant (2013) reported that there are three stages in the life cycle of OI initiatives (or innovation networks as they refer to OI), these being: The set-up, the operating and the sustaining stages. In the set-up stage, Tidd and Bessant argue that the issues encountered 'are around providing the momentum for bringing the network together and clearly defining its purpose' while in the operating stage the key issues are in 'establishing core operating processes about which there is support and agreement'. Tidd and Bessant define what these issues in the operation stage need to deal with and they provide the following:

- How is network membership defined and maintained?
- How (where, when and who) decisions get taken at the network level?
- How are conflicts resolved?
- How information flows between members is managed?
- How is knowledge managed (created, captured and shared) across the network?
- How members are motivated?
- How risks and rewards are shared across the network?
- How the operations integrated and coordinated?

For the sustaining or closure stage, Tidd and Bessant identify two scenarios one where the networks are for the short term such as the developing of a new product after which the network is disbanded and the other scenario is the long term one when there is a need to sustain the network. The challenge with the long term scenario is keeping the motivation high. The authors recommend that this should be done through periodic review and 'retargeting'.

Likewise Biemans (1990) and Biemans (1992) agree that the coordination of activities and communication between the members of the network are challenges but also view creativity and the level of chaos as additional challenges.

Tidd and Bessant identified other issues for leaders and management to be aware of such as the conditions and context of OI (e.g. environmental uncertainty and project complexity), the control and ownership of resources, the coordination of knowledge flows and the creation and capture of value.

In international alliances and OI initiatives that span different countries the challenge of communication between employees of the different organisations become even more complex. Kelly et al (2002) have noted that over 55 percent of the first year problems in international alliances are related to people and relationships. Out of these relationship problems, 50 percent are related to communications and 29.7 percent are related to culture.

Physical distance and language differences were found to lead to numerous difficulties in communication. On the other hand Kelly et al (2002) and Simon and Lane (2004) both reported that cultural differences, such as national cultures, organisational, professional and differences in industry cultures were found to be sources of problems.

An attempt follows in the next subsections to identify leader's best practices and skills in different OI themes.

### **Absorptive Capacity**

Cohen and Levinthal (1990) argued that for organisations to benefit from OI and specifically the external knowledge factor, the organisation must have adequate level of absorptive capacity. According to Cohen and Levinthal the absorptive capacity is associated with the 'level of prior and the related knowledge of the firm and which can be increased by investment in research and development'.

Absorptive capacity is not totally confined to the intra organisation domain but can also be applicable to inter organisation relationships. For instance, it has been argued that in alliances the partners may develop an ability to absorb knowledge from a particular partner Lane and Lubatkin (1998). Tidd and Bessant (2013) suggest that organisational structure and culture will determine absorptive capacity in inter-organisational learning.

Absorptive capacity can be limited by insight inertia and action inertia Godkin (2010) and the capability to integrate different types of knowledge, competences, and experiences becomes important Parjanen et al (2010).

Zahra and George (2002) view absorptive capacity of being comprised of two components: potential absorptive capacity and realised absorptive capacity. Potential absorptive capacity is a product of two abilities namely the 'acquiring and assimilating external knowledge'. Zahra and George (2002) define the former as a capability "to identify and acquire externally generated knowledge that is critical to its

operations” whereas the latter “refers to the firm’s routines and processes that allow it to analyze, process, interpret, and understand the information obtained from external sources”.

The realised absorptive capacity according to Zahra and George (2002) is made up of two abilities namely transformation and exploitation. “Transformation denotes a firm’s capability to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge” Zahra and George (2002) which includes adding new and deleting old pieces of knowledge as well as the interpretation of this knowledge. The exploitation capability is the ability of a firm to “harvest and incorporate knowledge into its operations” Zahra and George (2002).

It is apparent that a leader must then be able to help his team to first identify external knowledge, make sense out of it and exploit it.

### **Social intelligence and social capital**

Leading teams spanning the inter and intra organisational boundaries requires leaders with different skills than those leading teams within the organisation (intra organisational teams). OI leaders need to use their social intelligence to build the OI platform required to develop and sustain the innovation capabilities. Baldaia (2013) mentioned five key social skills that will enable OI leaders to break through the boundaries between the inside and the outside of the organisation and are shown below in the diagram:

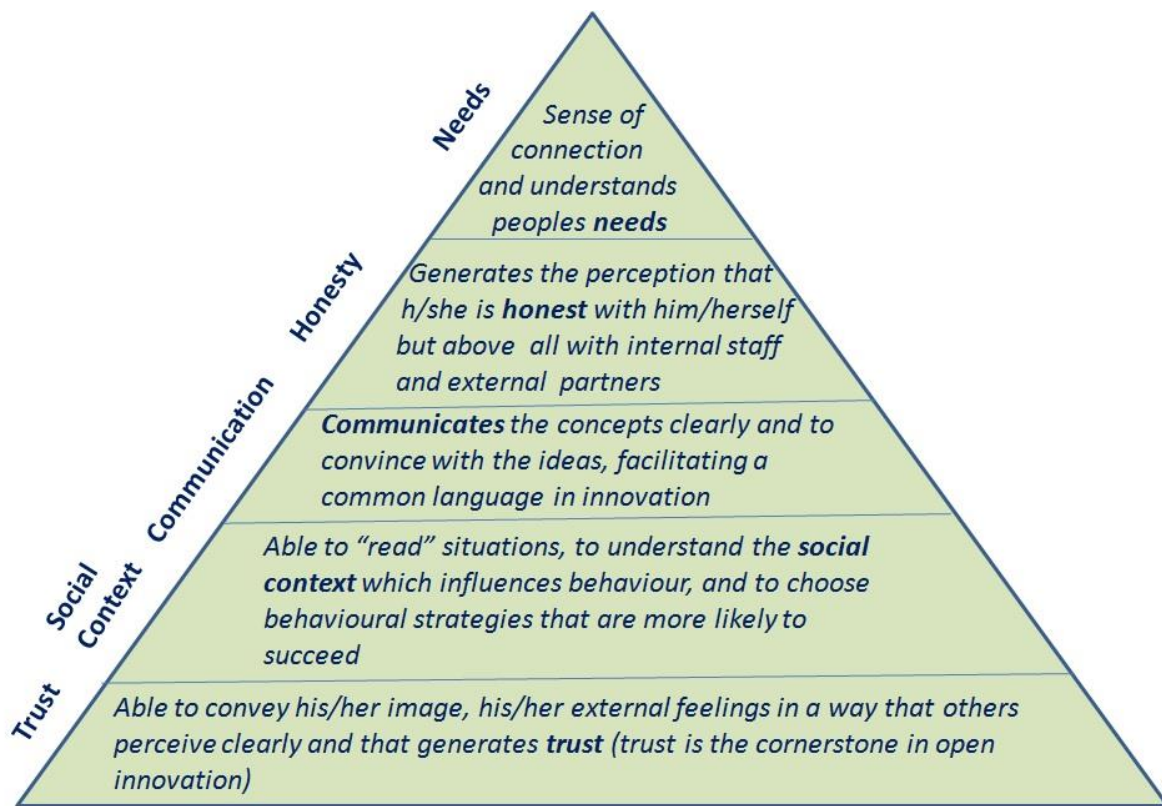


Figure 4 Key leader's social skills necessary for OI. Adapted from Baldaia (2013)

The above five social skills resonate well with Lindegaard (2010) suggestion that '*Innovation leaders need to be able to manoeuvre within corporate politics*' and that they '*must attend to issues of many stakeholders of all types who are involved in open innovation*'. Lindegaard sees the ability to communicate oneself as one of the pathways to success for the OI leader that also include understanding and respecting stakeholders.

Fleming and Waguespack (2007) addressed how leaders engage in virtual OI communities and have stressed on the importance of effective leadership in resisting splintering and forking of the OI community. Fleming and Waguespack (2007) argued that a leader should have technical expertise as well as social capital (defined as brokerage and boundary-spanning of collaborative relationships).

Coleman (1990) reported that social capital is '*the value within social-structural relationships that an actor, such as an individual, an organisation, or a network of organisations can mobilize to make possible the achievement of certain ends that would not be attainable in its absence*'. Adler and Kwon (2002) agree with this definition as they view social capital '*as the goodwill that is engendered by social relations that can be mobilised to facilitate action*'.



The ways in which firms work with and relate to the associated social capital around them can create opportunities for innovation within and between organisations. *‘Only by utilising such capital can leaders unite an open innovation community’* Fleming and Waguespack (2007). Lesser (2000) argues that leaders must not only encourage social interactions and foster social capital within their organisations but also nurture motivation and provide resources.

OI Leaders must strive to ensure that there is trust between all organisations as according to Mu et al (2008) trust is an integral function of social capital and is the enabling mechanism to facilitate knowledge flows between organisations. Dovey (2009) agrees that trust is a social capital resource and views it as being embedded in relationships as it *‘plays a key role in the willingness of network actors to share knowledge’*. In inter-organisational relationships trust is based on behaviour, meaning that the partner needs to *‘signify its trustworthiness through its behaviour in alliance’* Inkpen and Tsang (2005).

According to Dodgson and Gann (2008) trust is particularly important when there is an imbalance in contribution to the collaboration. Lerner and Tirole (2001) attest to the fundamental importance of trust within open innovation communities (here they are concentrating on software open source communities). The key to a successful leadership, they observe, *“is the programmers’ trust in the leadership: that is, they must believe that the leader’s objectives are sufficiently congruent with theirs and not polluted by ego-driven commercial or political biases”*

Trust is often seen as a facilitator for effective communication between partners. Dodgson and Gann (2008) view communications as being dependent ‘on individuals and are enhanced by the ability of individuals to be trusted’.

### **Collaboration**

No single company is large enough or inventive enough to be an innovation leader without collaborating with an array of partners. Collaboration between companies in the pursuit of new ideas and skills is becoming more popular but it’s not an easy task to get collaboration to fully succeed. Yström (2013) has reported that there are many tensions that arise in collaboration where many different organisations must agree – for example between stability, structure, chaos and uncertainty.

Yström argues that in many aspects, uncertainty creates conditions for creativity and innovation, and does not necessarily need to be negative. Yström has identified five examples of managerial practices. In other



contexts these practices tend to be taken for granted or not to be seen as especially important, but they are in an OI environment. It's an issue of identity-building, nurturing the spirit of collaboration, constantly working on the relationships with the various organisations, understanding and making use of political manoeuvres and creating meaning for oneself and others in the environment that one find oneself in.

For an alliance or collaboration to take place between a number of organisations, all interacting members of this alliance must have a motive on an institutional level and perceive that they have something to gain by being a member of the collaborative network or alliance Dodgson (1993).

Collaboration between people from different backgrounds can be difficult to achieve '*due to various forms of cognitive, organisational, social, and distances reasons*' Salminen et al (2007). The leadership must be aware of these reasons to be able to address them to ensure a successful collaborative relationship between all members.

The leadership must also be aware of the fact that there are substantial differences in the capacity of firms to collaborate effectively. Moreover there will be changes during the course of collaboration that were reported by Dodgson and Gann (2008) and that could pose a challenge to the leadership as they can be a source of conflict between the partners:

- 1- Changing aims of collaboration
- 2- Changing bargaining power of partners
- 3- Obsolescence of the original reasons for forming the collaboration
- 4- Initial focus on the wrong sets of issues
- 5- Changing strategies of the partners
- 6- Changing expectations

Leaders must not avoid or ignore conflict as conflict will likely fester only to grow into resentment and cause factional infighting within the collaborative network.

Vangen and Huxham (2003) view the activities in collaboration as being of two parts:

- 1- The spirit of collaboration (embracing, empowering, involving and mobilising) and
- 2- Collaborative thuggery (manipulating the collaborative agenda and playing the politics)

Collaborative thuggery according to Vangen and Huxham is vital for the success of the collaboration as well as for the leadership survival.

Mandell and Steelman (2003) have a similar perspective in that they view collaboration governance to be focused on:

- 1- *Influencing members to participate*
- 2- *Secure commitment from members and*
- 3- *Create favourable environment for productive interaction*

It should be noted that it is often difficult to get the right members in the collaboration network as has been reported by du Chatenier et al (2009) and Wallin and Von Krogh (2010). How to include new types of partners in the innovation process, which partners to invite, how much information to share, who gets the credits for the outcomes and more importantly how to manage and lead such a collaboration are all questions that need to be addressed by any organisation considering OI. Yström (2013) warns of the perils of trusting the wrong partner, sharing too much or too little information and hesitancy in compromising for the common purpose all of which according to Yström will cause the organisation ‘*to become more closed than they were before*’.

Lindegaard (2010) focuses on looking inside the organisation first and recruiting the right people with the right mindset to strengthen OI and collaboration with external partners. Lindegaard argument is that getting the mindset right ensures that dealing with the collaboration process becomes much easier.

A number of scholars such as Mumford et al (2002) and Cagliano et al (2000) looked at collaboration in the context of the collaborators backgrounds where they suggested that creative and ground-breaking solutions require collaboration to connect people with different experiences and knowledge. Other scholars who also acknowledged the importance of collaboration such as Gassmann and von Zedtwitz (1998) and Buckley and Carter (2002) focused on the leadership and management aspects of collaboration and noted that for collaboration to happen effective coordination and management must also happen. It is worth mentioning that up to 70% of innovation alliances fail and according to Sivadas and Dwyer (2000) this could be due to contradictory recommendations for effective innovation management but also for lack of successful collaboration management and leadership.

Expectations are also a key factor in whether the collaboration is seen to be successful or not as reported by Ring and Van de Ven (1994). According to Håkansson and Snehota (1995), the more people are interacting, the more complex the aims and expectations become. Sivadas and Dwyer (2000) stress on the importance of clarifying aims, terms and expectations of the collaborating partners and view this act of clarification by the managers and leaders as a key issue. Therefore the leaders must align their expectations and provide a unified message on goals and outcomes to their teams.

Kelly et al (2002) perspective on the success of collaborations and alliances is that it is a product of good communication and trust between the partners. Kelly et al (2002) reported a number of factors which contribute to the success of collaborations as shown below:

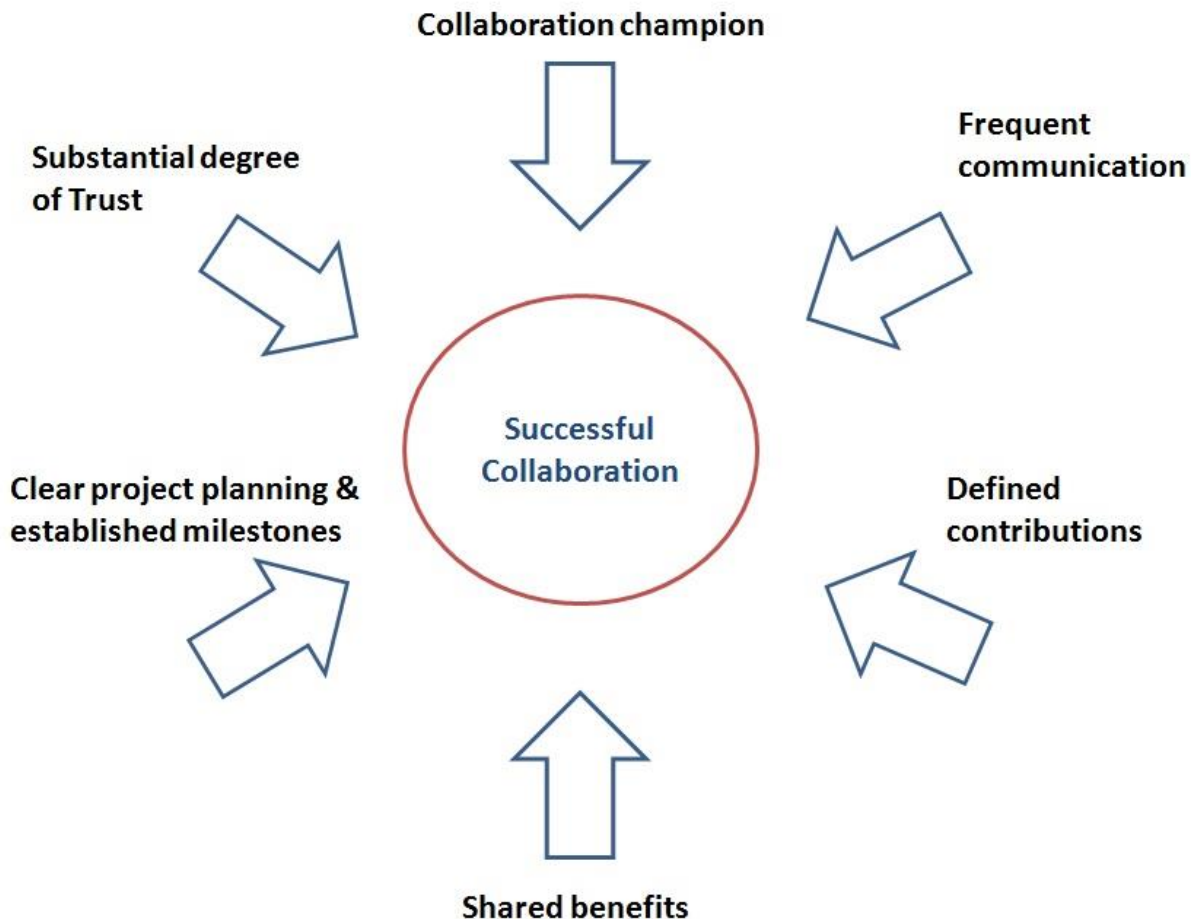


Figure 5 Factors contributing to successful collaboration. Adapted from Kelly et al (2002)

*a) Forms of collaboration*

Collaboration between organisations can take a variety of forms. According to Dodgson and Gann (2008) it may be a joint venture formed by two or more partners as a separate company with shared equity investment. It could be a partnership linking firms on the basis of continuing commitment to shared business or technological objectives without equity sharing, often known as ‘strategic alliances’. It may take the form of R&D contracts or technology exchange agreements, whereby partners shared objectives involve the interchange of research findings or technology know-how. Such relationships are sometimes known as ‘innovation networks’ Freeman (1991).

Doz and Hamel (1998) identified an emerging form of collaboration which they refer to as ‘co-option’ alliance. *‘Through co-option a company seeks to group together other relatively weak companies to challenge a dominant competitor’* Tidd and Bessant (2013).

Another form of collaboration that was identified by Doz and Hamel (1998) is ‘co-specialisation’. *‘In co-specialisation partners are usually from different sectors where each partners together bring unique competencies to create the opportunity to enter new markets, develop new products or build new businesses’* Tidd and Bessant (2013).

Mauri and McMilan (1999) perspectives on collaboration is that they should be flexible taking the forms of alliances at the early stages of an emerging market where the dominant technologies are still uncertain, and at later stages when market needs are clearer and the relevant technological configuration better defined, more formal joint ventures become appropriate.

*b) Collaboration risks*

In a study by Liverick and Littler (1993) a number of potential risks associated with collaboration were identified:

- Leakage of information
- Loss of control or ownership
- Divergent aims and objectives, resulting in conflicts

These risks have also been identified by Tidd and Bessant (2013) as being part of managing and leading innovation networks especially the information leakage and ‘spillovers’.

When firms outsource or collaborate with external partners there is always a risk that valuable organisation-specific knowledge can be leaked outside of the organisation. This of course, could be critical when it comes to sustaining the competitive advantage of the organisation.

Other risks reported by Tidd and Bessant are tying the process of trusted shared risk taking in contractual red tape, seeing narrow self-interest instead of system level effects and the difficulties in trying to manage something that one does not own.

Spillovers can happen voluntary or involuntary are part of the knowledge flows between the network members. According to Järvi et al (2010) that from a strategic perspective organisations will always try to maximize the incoming spillovers from research partners and other parties, while at the same time minimising spillovers to competitors.

### **Knowledge sharing**

A leader must make use of collaborative networks and alliances for the benefit of his organisation. Tidd and Bessant (2013) reported that *‘alliances can be used as an opportunity to learn new market and technological competencies, in other words to internalise a partner’s know-how’*.

Both Cohen and Levinthal (1990) and Dyer and Singh (1998) suggest that knowledge sharing is one of the most essential processes to enable value creation in collaboration and that it is of value that the collaborating partners possess both overlapping knowledge and absorptive capacity.

Similarly Khamseh and Jolly (2008) agree that having collaborative parties with similar set of skills, resources and capabilities enables best chance for learning and the using of the learnt knowledge. Similarly Norman (2002) suggests that the more the degree of similarity between parties the more it is easier for them to recognise the value of the knowledge and to transfer and use the knowledge in question. It can be concluded that knowledge overlap or homogeneity enhances knowledge sharing and learning. Moreover, a leader must ensure there is a balance in heterogeneity of team members which enhances innovation and homogeneity which enhances knowledge sharing.

c) *Knowledge sharing risks*

Knowledge Sharing in OI does come with risks as reported by Sakkab (2002). Sakkab argues that ‘*external knowledge sharing has the potential to expose organisation’s core competencies to its rival organisations*’ and that ‘*knowledge exposure could provide the rival organisations with added advantages if the competitor adapts this knowledge and gain significant market share*’.

Sakkab defined a set of risk reduction techniques which were then conceptualised in a framework by Islam (2012). The conceptual framework suggested by Islam (2012) shows three key environments that are important to an organisation’s innovation process:

- 1) The organization’s internal environment
- 2) Its external environment and
- 3) Its collaborative or OI/knowledge sharing environment. Additionally, the framework shows both the inflows and the outflows of knowledge and technology from and to both the internal and external environments. Moreover, this framework shows the innovation knowledge sharing input factors (such as the collaboration agreement and the patent strategy) that are critical to the open innovation knowledge sharing risk reduction process.

The conceptual framework as depicted by Islam (2012) is shown below where collaboration agreement and patents (at the top of the diagram) are used as tools to counter information leakage.

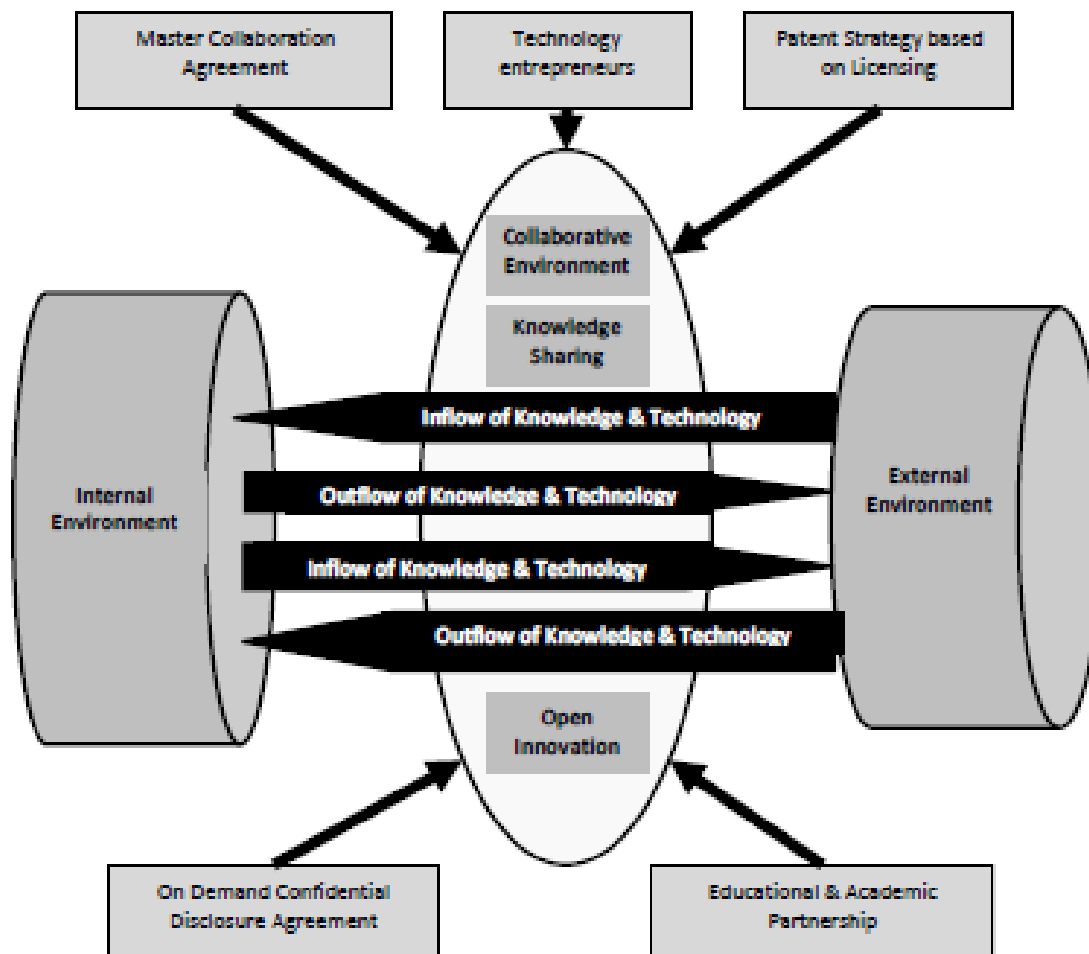


Figure 6 Conceptual Framework: Open Innovation Knowledge Sharing Risk Reduction. Source Islam (2012)

### Innovation Evaluation

A leader must also be able to measure the OI effectiveness to guide and drive successful innovation. Davila et al (2006) defined five critical requirements in designing and implementing innovation measurement systems. These requirements are for closed innovation but they are also applicable to OI:

- 1- Innovation measures should be linked to the innovation strategy and business model

- 2- KPIs should not be rigid as different innovation processes and organisational levels need different measurement systems. In OI different measures will be required to gauge the collaboration of each partner especially if the partners were heterogeneous in terms of skills and knowledge
- 3- Innovation measures should address the right mix of planning, monitoring and learning. Learning and knowledge sharing are particularly important in OI initiatives as discussed earlier
- 4- Innovation measures should be simple as too many measures can be more of a distraction than a help
- 5- Innovation measures do not replace good leadership. Leadership must stay in charge at all time

One problem with OI is that the KPIs and project performance metrics that an organisation are accustomed to may not possibly work with innovations that the firm is participating in and that also involve many other players. This causes a problem for leaders and managers in the management and monitoring of OI projects. Fetterhoff and Voelkel (2006) argue that issues involved in the management of external innovation are a result of firms not being used to evaluate external innovations.

Thus evaluation measures are to be devised and agreed by the collective leadership in the collaborative network.

### **Culture Change**

Organisations are usually familiar with Closed Innovation business models that focus on internal resources for ideas generation. An effective leader should be able to change behaviour and culture within his organisation to accept OI business models. Huston and Sakkab (2006) argued that such structures and business models need to be aligned to all aspects of the organisation such as roles and responsibilities, processes and including leadership and that the involvement of a senior executive is crucial for the success of OI.

### **Leadership Community and control**

Leadership and management in an OI community must not be controlled by one or more parties but must be applied by all parties in the OI community i.e. a community of leaders within the OI community. Jarvenpaa and Lang (2011) argued that management is not about control but is an issue under constant negotiation among all parties involved. It can be thus concluded that a distributed or diffused leadership model is the best model for OI.



### **Human Behaviour and emotional capital**

In an organisation there may be instances when people may act irrationally and this is very true in large-scale collaboration such as OI networks where a leader has little knowledge or no knowledge of innovation team members outside of his organisational boundaries. Rampersad et al (2010) studied the management of innovation networks and proposed managerial implications for innovation networks that they based on a high degree of coordination and also rationality in human behaviour but they have not considered the pressure on a leader achieving his goals in the presence of unpredictable irrationality.

Negative human behaviour is viewed by Thomson (1998) as ‘deadly emotions’ that will adversely impact the OI initiative. Deadly emotions are anger, fear, hostility, irrationality amongst a number emotions reported by Thomson. Thomson also refers to positive human behaviour as ‘dynamic behaviour’ such as challenge, pride, self-efficacy and passion. The dynamic and deadly emotions affect the emotional capital within the collaborative network. Emotional capital is made up of two core elements as reported by Thomson (1998):

- 1- External emotional capital: held in the hearts of stakeholders (partner organisations in the case of OI)
- 2- Internal emotional capital: held in the hearts of people within the organisation

Leaders must harness both elements (interior and external emotional capital) to realise a successful and sustainable collaborative network.

One of the positives of human behaviour is the tendency to form bonds as a consequence of interaction. Dodgson and Gann (2008) reported that bonds of various kinds are formed by the parties such as technological bonds related to the technologies employed by the firms, knowledge bonds related to the parties knowledge about their business, social bonds in the form of personal confidence, administrative bonds related to administrative routines and procedures of the firms and legal bonds in the form of contracts between the firms. These bonds according to Dodgson and Gann (2008) create lasting relationships between the firms. The leadership should strive to encourage these bonds for the benefit of the collaboration.

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## Leadership and conflict

Conflict is a natural and inherent part of workplace and requires a leader with Idealised influence which is one of the characteristics of a transformational leader as reported by Burns (1978). The leader must work with other leaders to resolve conflicts which can only happen if the leadership is diffused and distributed.

### *B. Leadership and strategy*

Best practices are needed at the strategy planning phase as well as in the management of the OI initiatives.

## Strategy and Collaboration Agenda

- 1- Leaders to be involved in crafting the OI strategy of their organisation
- 2- Leaders to include their team members in the planning of the collaboration agenda
- 3- Leaders of all partner organisations to collectively craft an overarching OI strategy for the collaborative network

## Management of the OI initiative

- 1- Flexible leadership style that follows the Hersey and Blanchard's (1993) situational leadership model
- 2- Leaders to inhibit monopolisation of leadership and strive for diffused inter organisational leadership
- 3- Leaders to build a networking culture and encourage inter organisational social interactions and bonds
- 4- Leaders to develop absorptive capacity skills of their teams
- 5- Leaders to generate trust
- 6- Leaders to be visible and sustain open communication channels within the collaborative network
- 7- Leaders to avoid rigid organisational structures that impede OI
- 8- Leaders to address and manage conflict jointly with other leaders in the collaborative network
- 9- Leaders to align expectations within the collaborative network and communicate a unified message

- 10- Leaders to encourage knowledge sharing but protect IP and minimise confidential data spillovers
- 11- Leaders to manipulate emotional
- 12- capital within the collaborative network to strengthen collaboration
- 13- Leaders to manipulate the collaboration agenda (collaboration thuggery) for the benefit of their organisation and the collaborative network

The diagram below shows the interlinked OI themes with collaboration taking a centre position in recognition of its importance as the power house for OI and the different leadership activities for each OI theme

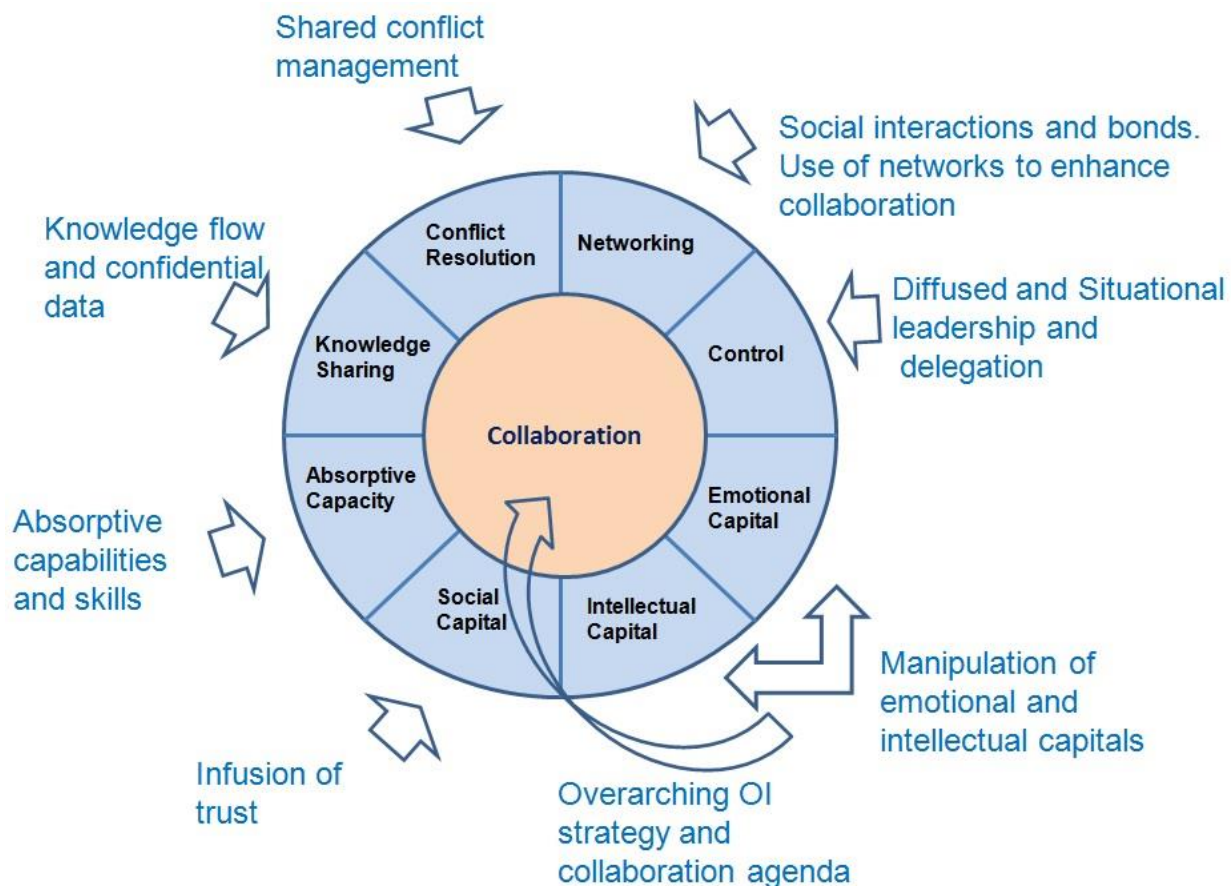


Figure 6 OI leadership concept and activities

Leaders do need to adopt both transactional and transformational leadership styles and for transformational leadership the following attributes are needed for OI.

*C. Transformational Leadership Extension to OI*

Transformational leadership theory like other established leadership theories has been developed with fixed organisational boundaries in mind. To utilise Transformational leadership in a permeable boundary (i.e. inter organisational setting) the following suggested attributes that a leader should provide are to be added to Burns (1978) four 'i' characters

- 1- Instrumental networking and manipulation of networks
- 2- Intelligent manipulation of emotional capital
- 3- Inclusive and diffused leadership
- 4- Inherent situational leadership

**CONCLUSION**

The envisioned concept for leadership for OI is an incorporation of the leaders' best practices and skills and Transformational leadership. This paper highlighted a number of best practices that a leader should follow in OI initiatives and the attributes to be added to the Transformational leadership theory to extend it to OI. Flexible leadership and diffused inter-organisational leadership are two qualities that an OI leader must have amongst other qualities such as visibility, trust generation abilities, knowledge sharing and IP protection skills, manipulation of emotional capacity and collaboration thuggery skills. Similarly, for transformational leadership four attributed must be considered when leading OI initiatives. These are manipulation of networks, manipulation of emotional capacity, diffusion of leadership across the organisational boundaries and situational leadership.

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