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Fusion of strengths: T-style thinkers are the soul savers for organizational innovative drives and the allied change processes.

*"When all think alike, then no one is thinking." Walter Lippman*Syeda Asiya Zenab Kazmi^a, Marja Naaranoja^b, a*^{a,b} Faculty of Technology, University of Vaasa, Finland

Abstract

Though almost all the organizations of the current era espouse innovation and creativity, but still there is strong practical presence of management models supporting the concepts like maximization, equilibrium and rationality, the highlights of Anglo-Saxon capitalism in management thinking practices. This paper discusses the reasons for validating change in the management thinking approaches to harness organizational transformation for innovation and sustainability.

The paper illustrates key stand points to explain why few organizations still support their obsolete management practices even in the current intelligently vibrant and technologically competitive times. In order to create space for innovation and creativity to grow within the organizations, this paper justifies the benefits of having T- style thinkers on-board for greater corporate effectiveness. Communication and close networking among the separate departmental units as well as among the core competencies are found to be fundamental to achieve innovative solutions for effective organizational change through the support of T- style thinking.

Keywords: Innovation, creativity, T- style thinking, organizational transformation

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1. Introduction

Modern day's challenging corporate realities demand for smart and timely moves from the management experts and organizational leaders to absorb the external pressures. External pressures denotes here the changes in the global trends, customers' tastes and needs, competitors' expertise, technological breakthroughs or the demands from the policy formulators etc. Social, economic, competitive and technical pressures are the sources that encourage the organizational leaders to continuously rethink, redesign and to innovate their service styles for sustainability (Collerette et. al, 2002). However, the organizational workforce fear and resist organizational transformational process for a number of reasons namely, fear of redundancy, fear of additional work load, pressures of learning new skills and

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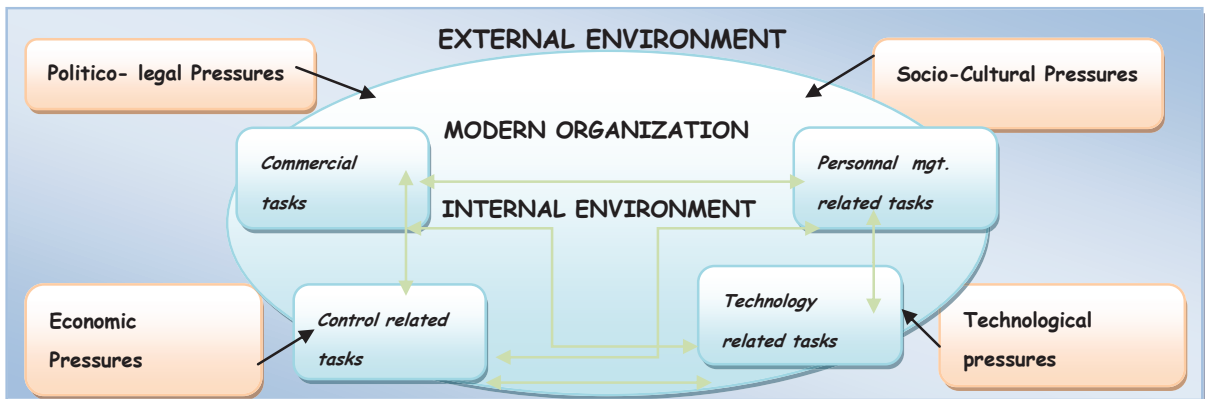
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techniques to accomplish tasks etc.(Trader-Leigh, 2002). Henceforth, in few instances, the organizational management encourage status quo in their practices to enforce organizational calm. However, such a trend is extremely unhealthy for the organizational survival and sustainability in the current highly competitive global scene. The latest approach to accelerate the organizational success is to form diversified teams having the right mix of the broader as well as deeper skill balance. In the modern management terminology, the deeper and broader skill balance also refers to 'Agile' teams having the team members capable of 'T' Shaped thinking. To explain the concept more, it can be said that the classically trained workforce are specialists in a specific discipline and can offer no output outside their core skill domain. Here the knowledge base restricts an accountant to look at the issues according to their subjective approach, while the industrial Engineers or the IT specialists according to their realm of understanding. However, agile team members, having the T shaped thinking approach, due to having multi-disciplinary knowledge base offer more than one way to look at the issue. In other words, they can analyze the world through others' eyes and offer diversified solutions to the problems. According to Kelley and Littman (2005), the T-shaped people are great cross-pollinators on a team, and offer novel ideas from far and wide to support the process of innovation. This article offers insight to the OSUVA projects' policy formulators, implementers as well as the managers who are involved in the process of organizational transformational through collaborative innovation, on the worth of having T shaped thinking approach among the team members, for the project success. The very aim of the paper is to offer support and guidance on theoretical frameworks and models related to T shaped thinking approach to effectively assist the organizational transformational process. For the above, the authors of the paper have used the OSUVA project case, and health care transformational initiative. The said project is an initiative taken up through the public sector support (i.e, Ministry of Health, Finland, and the Group of researchers from the public sector research institutes, support by Tekes, Finland) for health care reforms through working process improvements covering the geographical locations of Vaasa, Laihia and Vähäkylä, north of Finland. In the current paper, the authors will highlight the justified need behind the implementation of T shaped thinking in the process of OSUVA to support the process of collaborative innovative initiatives with in the sample localities.

Henceforth, the article follows the sequence starting from the introduction in the first chapter, thereafter a brief account on the research setting followed by the methodology introduction. Thereafter, the chapter on literature review comes explaining the significant topics. Then there appears a chapter on case results followed by a collection of provoking thoughts establishing a comprehensive discussion on the results. The paper ends with managerial implications, future avenues shooting out from the current research activity and the list of references, mentioning the worthy resources, which were used by the authors to support and finalize their case study.

2. Literature Review

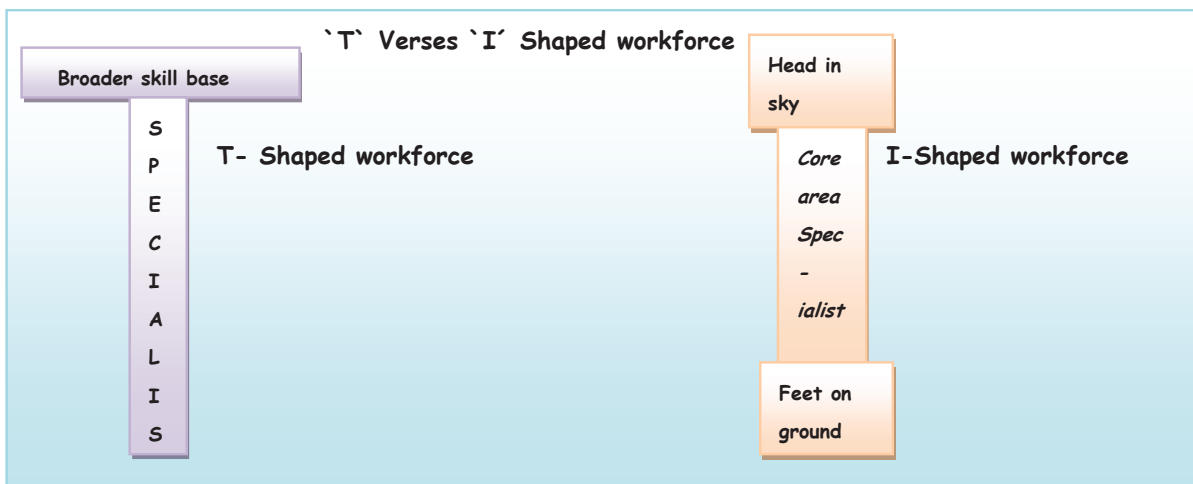
To confront the modern days' challenging environmental forces, organizational transformation is considered a vital solution for any company for its survival, productivity as well as its sustainability (Kazmi; Naaranoja, 2013). According to Prosci (2002) organizational transformation is not only to maximize the collective benefits for the people involved in the change process but for the overall change process's sustainability (Kazmi; Kinnunen 2012). According to Black (2000) an organization can also be understood as a biological system which, in a continuously vibrant environment, requires continuous focus on improvement, through transformation in order to sustain and develop.



(Fig 1. Showing the organizations' external and internal system structure)

Organizations are considered as environments with ultimate mixtures of disciplines interconnected to each other and combining the internal processes into a united whole. According to Figure.1 above, an organization can be viewed as an entity, internally driven to multidisciplinary and interconnected to tasks broadly divided into four operational areas i.e., commercial, control, personal and technology. At the same time, the very existence of the organizational is challenged by the external pressures, again broadly divided into four types i.e., politico-legal, socio-cultural, economic and technological. However, it has been revealed through management studies (Katz & Allen 1981) that the departmental teams having specialized skills in their core discipline or domain and disconnect from the other disciplines hamper the internal harmony and efficiency within one organization (Kazmi ; Naaranoja,; Takala 2013). Several studies have tried to distinguish the scientists and engineers based on individual characteristics and technical communication and knowledge base with outside their working domains (Katz ; Allen, 1981).

Henceforth, modern organizations require the working teams having the capabilities of multidisciplinary knowledge base, referred as persons having T shaped skills (Iansiti 1993) unlike the classical approach of having specialists for each organizational task. Engineers and scientists are known to express their work knowledge differently. The reasons behind these differences are their close connection with entirely different subcultures to which they belong and socialize in addition to the differences in their educational knowledge base (Wu ; Haar. 2013). Gilsing et al. (2011) looked at such differences in the field of technology.



(Fig.2 Reflection of critical differences between the T- Shaped and I shaped workforce, at a glance)

The above figure .2 shows what David (1991) has expressed about the T- shaped people. According to him, the T-shaped people or the team members have variety of cross disciplinary skills while having in-depth command over their core specialty area. He identified the T- shaped professional as a new breed or "hybrid" managers who would combine their diversified business skills capability with their IT skills. The hybrid manager, according to him, would have the capability to stand out from the rest of the ordinary lot of the core specialty area specialists by his or her ability to relate to "the broad picture" as well as to people, comprehending their motivation and desires; he or she would additionally be enthusiastic, intuitive, great listener, and would have "an unusual set of interests". Such well-rounded personality is known as T-shaped people or the Renaissance man, equally comfortable with information systems, modern management techniques and the 12-tone scale (David 1991). However, I shaped are known as the ones having detailed knowledge base on their specialty discipline, capable of communicate clear expectations without hovering around upon other fields by extensively exploring what is unknown to others in their domain (Angus 2003).

Iansiti (1993) defined T shaped team as having the members capable of multi-disciplinary knowledge base. He extensively stressed the t shaped as experts in a definite skill field (T’s vertical stroke) but additionally having the command over the disciplines (Horizontal stroke). According to the T shaped approach, vertical skills in an individual are the most essential capabilities for new knowledge creation among the team members while the horizontal skills are

the ability to combine more than one skill sets in the team members to offer and support creativity and novation (Madhavan ; Grover 1998).

A similar point of view was shared by Angus Bannerman (2003) when he suggested that 'the training scientists having diversified know how are required for the growth of the field. According to him, Jelinski, the vice chancellor for research and graduate studies at Louisiana State University, shared the insight by mentioning a new 'T-shaped' person with disciplinary depth, in biology for example, but with arms, to reach out to other disciplines. 'We ought to encourage this new breed of scientist' (Dave 2000). The concept of T-shaped skills or T-shaped persons is a metaphor used in job recruitment to describe the abilities of persons in the workforce. The vertical bar on the 'T' represents the depth of related skills and expertise in a single field, whereas the horizontal bar is the ability to collaborate across disciplines with experts in other areas and to apply knowledge in areas of expertise other than one's own. The initial utilization of the t- shaped person is by David Guest in 1991 later on Tim Brown, CEO of the IDEO design consultancy stressed upon this approach for employee selection criteria to establish interdisciplinary work teams for innovative and creative work processes. T shaped teams also known as 'Agile' teams are said to be cross-functionally diverse and sufficient.

The process of communication among people belonging to various disciplines is considered to be a hardest challenge being encountered by the specialist teams in the field of industrial design business management (IDBM) industry projects, usually resulting poor coordination in language, tools, practices and thinking models among the collaborating experts (Leiviska. 2001). Tom Kelley explained in depth about the strengths of T shaped people in his book titled as ' The Ten Faces of Innovation'. According to him "T-shaped" have deep expertise in one area, but much wider in addition to having superficial knowledge about variety of related subject areas or disciplines. The idea can be summarized as saying that 'the t shaped people are the ones having limited knowledge about a lot while having a lot of knowledge for a little. According to Kelley and Littman (2005) such T-shaped people can be regarded as excellent cross-pollinators on a team, and great sources of unusual ideas to support innovation.

In the field healthcare, quality healthcare treatment depends upon effective and continuous coordination between multiple treatments teams and treatment providers, the exchanges of technical information supported by continuous communication between all providers and physicians' disciplines involved in treatment process. (Fennell at el. 2010).

3. Research setting

The case study is a collaborative effort between the public sector policy formulators (i.e., Ministry of Health, Finland, Industrial Management, Production Department, University of Vaasa) focusing on to suggest healthcare reforms highlighting collaborative innovation and its continuous improvement thereafter for change process maturity.

4. Methodology

4.1 Research Goal

This survey aims to highlight the reasons for validating change in the management thinking approaches, especially focusing T- shaped thinking, to harness organizational transformation for innovation and sustainability. To verify the propositions, a survey using questionnaires was conducted.

4.2 Sample and Data Collection

The survey of this study is conducted on 35 middle and senior level practitioners from the The localities, for which the change process is targeted, are the Vaasa, Laihia and Vähäkylä, situated in the north of Finland. The proposed collaborative innovative change process was injected in to the work scenarios constituting upon Physiotherapy, Dental Units, Child and mother care, general physician services at the targeted localities. Here, it may be noted that the services like, administration, physiotherapy, psychologist and supporting service are jointly managed in the two relatively distant targeted localities. The questionnaires were analyzed through percentages to view the comparative behavioral trends through the selected traits.

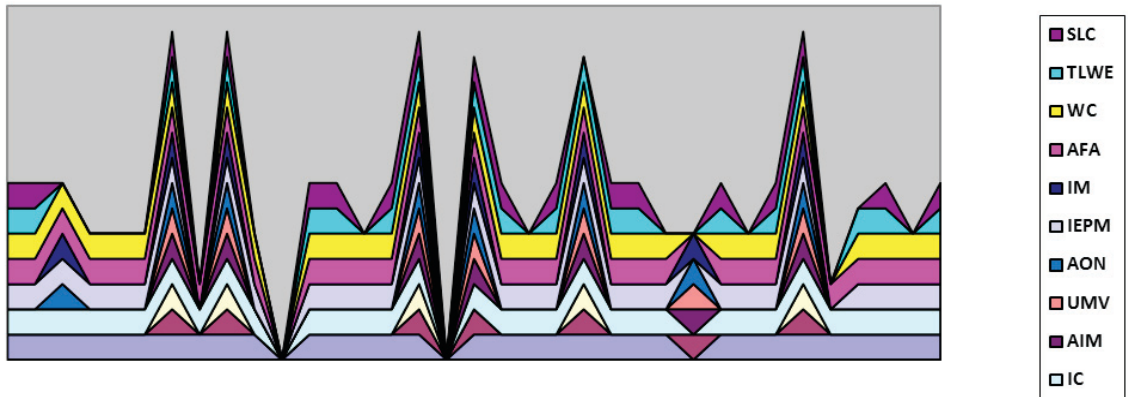
4.3 Analyses and Results

The case study explored thirteen selected traits linked to T shaped team members, on the basis of four service dimensions namely care, commitment, and confidence and creativity levels. Results were obtained through the feedback gathered while the interviews, questionnaire and open discussion sessions with the target sample representing Laihia and Vähäkylä localities that are placed below.

Table 1:
Reflecting the team score on thirteen selected traits linked to 'T- shaped team members' potential.

Sr. No.	Set of traits associated with T- Shaped thinkers for innovative work potential.	Team scores on individual trait.
1	Deep problem solver	91%
2	Interdisciplinary knowledge base	20%
3	Sharp communicator	14%
4	Intention to collaborate	91%
5	Ability to interconnect multidisciplines	20%
6	User of multidisciplinary vocabulary / terminology	20%
7	Ability to offer novelty	23%
8	Intentional eagerness to please many	88%
9	Initiator of multi-tasking	23%
10	Aggressiveness in focused approach	91%
11	Work commitment	86%
12	Trust level toward work environment	57%
13	Strategic leadership capabilities	51%

Table-1 above reveals the team’s scores on thirteen selected traits linked to T shaped individuals potential points. According to the above table, deep problem solver, intention to collaborate, aggressiveness in focused approach are the highlighted traits with 91% score for each category while, intentional eagerness to please many and work commitment are placed at second and third position with the scores of 88% and 86% respectively. However, the key traits of the T shaped teams e.g., interdisciplinary knowledge base, sharp communicator, ability to interconnect multidiscipline, user of multidisciplinary vocabulary / terminology, ability to offer novelty, initiator of multi-tasking are extremely 20%, 14%, 20%, 20%, 23% and 23% respectively. The trend reveals that the current teams working at the target localities i.e., (i.e., Laihia and Vähäkylä) are having classical I shaped skill potential, suitable for strict classical controlled and lacking the T shaped team potential known as a rich source of innovation and creativity within the work environments.



(Figure 3. Graphic representation reflecting each team member’s potential at selected traits)

The figure .3 above is a graphic representation reflecting each team member’s potential area on the selected traits at the backdrop of four key dimensions (i.e., Care, Commitment, Confidence and creativity). In the above graph, each trait is represented through the relevant abbreviations e.g, deep problem solver (DPS), interdisciplinary knowledge base (IDKB), sharp communicator (SC), intention to collaborate (IC), ability to interconnect multidiscipline (AIM), user of multidisciplinary vocabulary / terminology (UMV), ability to offer novelty (AON), intentional eagerness to please many (IEPM), initiator of multitasking (IM), aggressiveness in focused approach (AFA), work commitment(WC), trust level toward work environment (TLWE), strategic leadership capabilities (SLC).

Comparative analysis was done to investigate the current work situation and the gaps between the desired levels of highlighted personality traits. Results were obtained through the feedback obtained in the form of interviews, questionnaire and open discussion sessions with the target sample representing Laihia and Vähäkylä localities. The element of care was analyzed through organizational collaborative activities, as well as the reflection of employee behavior patterns classified on 13 selected traits selection. Figure.3 reflects seven employees out of the total number of thirty-five, showing the signs of t shaped thinking personality types due to scoring high on the most critical traits associated with the t shaped thinkers i.e., sharp communicator, ability to interconnect multidiscipline, user of multidisciplinary vocabulary / terminology, ability to offer novelty, initiator of multi-tasking with scores 20%, 14%, 20%, 20%, 23% and 23% respectively.

General discussion on the results reflected the following:

1. Current organizational situation on care dimension and observed gaps:

Employees’ casual attitude towards collaboration aspect- Response examples; ‘I contribute to the innovation process where possible but the resources limitations are restricting the efforts. Noticed limitation within the scope of service area - Healthcare, as part of social service sector instead of being purely commercial enterprise. Response example;

Innovation can be managed only if more workforces be provided. Monthly routine meetings are the only formal source of exchanging work related ideas.

Response Example:

'It takes weeks and months if to arrange a meeting for some out of routine exchanges of views'.

Noticed no special effort to establish collaborative forums to generate innovative ideas as to support the process of innovation and creativity.

Response Example:

'Usual evidences for discussions on new idea are during the coffee breaks or lunches'.

The situation points toward too casual attitude since the process of innovation can require some professional seriousness in the form of careful brainstorming and formal recording of facts and suggestions.

Mostly, nature of work develops the social connection patterns within and among departments but highly superficial (i.e., Mother care Units staff, Physiotherapy or dental care units etc.). In addition, a respondent remarked about the work environment as being female dominant and gossip prone setup. Such comment reflects shaky level of trust among the co-workers. The work environment was also remarked as being secrecy supported.

2. Current organizational situation on team's confidence dimension and observed gaps:

The level of employee confidence was assessed through the individual's collective activities and teams' behavior patterns. The results gathered are as follows:

The employees thought process reflected trust level limited to his/her immediate circle of work discipline but clearly lacks the confidence level across other departments.

Response Examples:

'When new idea arises-I think if worthy enough to share only then share with my immediate supervisors or colleagues'.

Trust level is visible for supervisors and colleagues within the same departments but weaker level of Trust outside the departments, even within one geographical location (i.e., Laihia and Vähäkylä). The senior healthcare professional share intense feelings of being left out while designing the transformational plans for the target localities as compared to the young staff members. A limited sense of faith is generally present at different levels among the colleagues but mostly secrecy is preferred which is considered as a hurdle for the processes of creativity and innovation. Ample margin of innovative and creative work practices improvements was noticed to enhance the level of quality in services to the customers through the introduction of techniques namely, ehealth, telemedicine, ehealth promotions etc.

3. Current organizational situation on teams' commitment was judged through organizational tasks, assigned to the departmental staff:

An in-depth feedback analysis of the study respondents highlighted following grey areas hindering employee commitment:

Shortage of staff, time and resources, were remarked as being the chronic constraint. Long and extensive time requirement to arrange inter-disciplinary communicational exchanges if so required. However, usual departmental meetings take place once in a couple of week. In addition, it was noticed that customer orientation is highly required for dissemination purposes.

Example of one suggestion by a respondent-

- 'Information regarding health care services can also be provided in the form of publicity campaign during the social gatherings organized at the annual events for better understanding and customer ease etc'.
- Hard to create positive linkage among different departments within one location so it's obvious that the combined services flow through different work locations that can hamper the services quality manifold (i.e., connecting service operations within Laihia, Vähäkylä and Vaasa).
- The transformational procedure introduced few practices that has extended the length of the reporting channels and created a reason to slow down the work processes (Negative effects of-Red-tap). A respondent remarked that now an approval has to route through Vaasa which has made the process a month longer which earlier required three to four days. So the said new transformational process cannot be regarded as collaboratively innovative at certain points by being counterproductive.
- Staff capacity to handle the current work load is suffering heavily. (i.e., Combined Physiotherapy operations at different locations)
- External relations (Customers, partners and Regulators) are quite weak and have adequate room for improvements as compared with the national and international bench marks.

General feeling of disconnect is prevalent among the local staff towards the policy makers supporting the notion of being left out and ignored during major crafting policy involving their work life.

4. Current organizational situation on teams' creativity was judged through general issues in operations:

The in-depth feedback analysis of the study respondents highlighted following weak points hindering employee's efforts for creativity:

- No adequate time margin was available to the staff members for introducing creativity initiatives due to hectic work routine and limited resources (i.e., Outsourced or eternally provided resources at some locations.)
- Respondents' clear hint towards the Red-Tap within the work processes as the result of collaborative initiatives among different locations (Lahia, Vähäkylä and Vaasa) by referring to the time duration of ` six months to one year. Some respondents highlighted the delayed processing for three months etc. for the same function that earlier took less than 10 days etc.
- More rush of customers is expected due to the aging population as compared to the ratio of service providers at different locations, especially in the changed policy scenario.
- The extended length in performing the functions due to extended hierarchical loops created 'Red Tap's negative effects, resulting in slowing down operational pace and lowering down the service quality for the customer.
- The collaborative experience for providing quality services to patients is available among the workforces within few disciplines (i.e., -Physiotherapy, Mother and child care, dental care) but hampered at some locations due to time, resources as well as work control crossovers (i.e., Physiotherapy Services).
- The resource allocation and provision is one of the major issues but cannot be controlled locally.
- The ratio between the services staff and the number of customers/ patients is incompatible.

- Work process delays due to the lengthy hierarchical controls etc.

Henceforth, a thorough analysis of the feedback received from the target sample reflected obvious amount of employee dissatisfaction over the management's change initiatives. Since vibrant and thriving work environments supported through open communications among the cross disciplinary working teams are considered the playing healthy playing grounds for collaborative innovations. In addition, the feedback obtained from the target sample depicted sense of mistrust and clear feelings of being not taken on board while forming organizational transformational plans. Henceforth, the authors feels that the current situation is not very supportive for clearly identifying the t shaped thinkers among the lot as well as suggesting the ways to use the t thinkers in the current scenario for collaborative innovative initiatives since the responses of the target sample seemed consciously made up on the key questions during the interview sessions. The above was the reality that made the authors to arrive at the point to suggest the policy formulators and the responsible change leaders to take some support of employee supportive transformational process within the target localities. This will help resolving the barrier points within the process of collaborative transformation and further help in identifying and utilize the t- shaped thinkers among the multidisciplinary teams. Since the sensitive nature of healthcare functions demand mentally healthy and emotionally relaxed workforce to provide safe and steady service output the above suggestions will support the organizational transformational cause at the targeted localities.

The above mentioned factors call for highly specialized healthcare teams formations capable of providing competitive services quality for clients (i.e., Patients, their families, suppliers, policy makers its implementers, regulatory authorities as well as the working staff etc.). The very aim of the article was to support and justify that aiming to identify and effectively utilize the T- Shaped thinkers among the work groups will strength quality communication and connections among the cross disciplines within the targeted localities to support the collaborative innovation process. The widely acknowledged strong points of the t- thinkers are that they can see the world through others' eyes and appreciate their approaches to problems. And when people like this they get on a team with trust and confidence, they spend much less time arguing about which approach to take, what method is superior, whose ideas are the best. They realize that there is more than one way to solve a problem, and they seem to be able to synthesize across disciplines easier, coming up with more numerous and more creative ideas. So this approach will support the idea that when the change leaders look for the next functional team within the targeted localities, they may form cross-functional teams. Doctors who can do management operations, management staff that can support and understand the physicians or the nursing staff's work too or anyone whose background shows that they know there's more than one way to look at a problem.

5. Conclusion

In the paper, the authors propose an approach for the assessment of team members on the basis of their skill based capabilities. This has numerous implications, most notably the need for constant supervision by the change leaders to provide options for creating supportive and collaborative environment between the management and working teams. The approach requires the use of many qualitative indicators by the management to judge the capabilities of the workers and make strategies to establish optimal teams for special tasks to support interdisciplinary collaboration. Management's skills enhancement is also required for the working teams' capability assessment so that the I-shaped thinkers within the teams can be placed where their specialized skills can be best utilized and T-shaped thinkers be utilized at the strategic locations to enhance interdisciplinary collaboration to support creativity and innovation. This is also true since many theorist believe that the disaster occurs where the managements try to take the use of their I shaped workers to perform t shaped tasks or vice versa (Bannerman. 2003).

To conclude, the authors end the paper with the research results along with a wise man's words for the readers, to ponder upon the worth of a 'T' shaped person against an 'I' shaped specialists' potential and decide –

"A human being should be able to change a diaper, plan an invasion, butcher a hog, conn a ship, design a building, write a sonnet, balance accounts, build a wall, set a bone, comfort the dying, take orders, give orders, cooperate, act alone, solve equations, analyze a new problem, pitch manure, program a computer, cook a tasty meal, fight efficiently, die gallantly-Specialization is for insects." Robert Heinlein.

5.1 Managerial Implications

The research paper offers an idea for the change leaders to appreciate the worth of multidisciplinary teams and the value of having t- thinkers among their teams for better collaboration and healthy communication process across disciplines. The benefit of the approach is that t- thinkers help the collaborative innovation process among the various disciplines due to their ability of having cross disciplinary knowledge base. The old approach of having all 'I' thinkers with in one departments for having specialist knowledge base on the core area restricts or slows down effective cross functional communication flow which is considered vital for the modern organizations looking for collaborative innovative initiatives.

Henceforth, the study is an effort to provide a general framework for the management experts as the employees' trust building initiative in addition to a source of the effective resource involvement and skills utilization process.

5.2 Future Research Avenues

Our research effort can open following avenues for further research and testing:

- What are the domains of change management and the innovation management in the process of organizational transformation?
- How the role of transformational leadership supports the processes of effective organizational change management?
- What is the significance of the process of sense making in the process of organizational transformation while initiating collaborative innovative drives?

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