HUMAN INFORMATION PROCESSING SKILLS SET (HIPSS): A LEVERAGING COMPONENT FOR THE DEVELOPMENT OF HIGH PERFORMING TEAM IN THE SOFTWARE INDUSTRY

Perla Rizalina M. Tayko*

Abstract

The purpose of this paper is to provide an alternative perspective and a process—a frame and flow, as leveraging component for the development of high performing teams in many organizations and even in the software industry. The first part includes a statement with a reflection on the concept of team, a comparative review of the characteristics/qualities/benchmark of high performing teams (HPT) and the processes to build and develop them. It ends with an inference that these processes of developing HPT are drawn from behavioral and conventional mindsets of team development. The next part proceeds to identify the crucial need to reflect on the mindset underlying team development in the context of the software industry in the information age, one that calls for an alternative frame and flow to develop teams, the option that is brain-based and holistic. The last section offers a perspective—again, a frame and flow—called whole brain literacy (WBL) approach as one way to leverage team development enabling participants to become high-performing teams and citing projects and action researches where these have been used as part of the process interventions with positive results and outcomes.

Keywords Teams, High Performance Teams (HPT), Human Information Processing Skills Set (HIPSS), Organization Development (OD), Whole Brain Literacy (WBL), Quantum Power Springs (QPS), Transformative Learning and Change (TLC)

*Dr. Perla Rizalina M. Tayko obtains a Ph.D. in Organization Development from Southeast Asia Interdisciplinary Development Institute, Philippines. Currently, she is working as a Program Director of Organization Development (PhDOD and MMOD Programs) at Graduate School of Business, Assumption University, and the designer/developer of the Whole Brain Literacy Approach to Program and Project Development Initiatives. Recently she has received the Philippine “Bagong Bayani 2014 Award” for her work in the use of Whole Brain Literacy in Thailand and other countries in Asia.
INTRODUCTION

The changing landscape of any industry in the world today, and the organizational arrangements that support it, whether in agriculture, arts, banking, business, communication, education, engineering, medical/social sciences and most specially in the software industry, has generated new challenges and different requirements for leadership and management to function, mobilize, operate and sustain the business/service successfully. This dynamic, complex, multifaceted scenario calls for different and diverse ways to develop competencies for high performing teams to deliver results.

To create, build, develop and sustain “High Performing Teams” (HPTs) in organizations has been the subject of numerous studies as well as being an integral part of programs and projects designed for an organization wide-strategy in organization development (OD). The purpose of this discourse is to explore a deeper aspect and a leveraging component in the development of high performing teams other than what has been found to be effective, which could be applicable in the software industry. The presentation begins with a statement of the concept of team, what makes a “high performing team” based on the literature and proceeds to the context and rationale of the need for “information processing skills set” (HIPSS) that could be developed for individuals and teams to challenge them to perform differently, creatively and excellently.

Definitions of a Team and High Performance Team (HPT)

George Boulden (2014), a CEO and an executive coach, sharing his thoughts on teams and high performing team, defines a team as “two or more people, working together with a shared purpose”. His definition implies the inclusion of the common themes that emerged from researches on the essence of effective teams such as “having a clear goal or purpose or mission; possessing/learning necessary skills that enable them to do good work; taking responsibility; and accepting/trusting what others can do to achieve the goal”.

Katzenbach and Smith (2005) distinguished high performance of individuals and those of teams, by identifying “commitment” as an important quality of “mutual responsibility” of members with complementary skills to achieve common goals. The element of “discipline” that teams must share to be effective is inherent in the dynamics. They discussed four elements that make up a team such as “common commitment and purpose, performance goals, complementary skills, and mutual accountability”.

By and large, “high-performance team (HPT) is a concept within organization development (OD) referring to teams, organizations or virtual groups that are highly focused on their goals and achieve superior business results that usually outperform all other similar teams as well as exceed given expectations. In Boulden’s (2012, p.2) terms, HPT simply “describes teams that consistently show exceptional high levels of collaboration and innovation that produce superior results”. Usually, it also is regarded as a “tight-knit group” so focused on their goal that they can and will surmount any barrier to achieve the team’s goals.

The above definitive statements clearly indicate that HPT exceeds the ordinary expectations of performance/results; shares/
demonstrates a strong bond of relationship/commitment to common mission/goal achievement, and cohesively performing collaborative/innovative processes resulting to excellent/extraordinary/exceptional results. HPTs, by the aforementioned definition, are exemplars in performance which are distinctive that go beyond boundaries, exceeding even already excellent standards to engage in continuous learning and achieve results on purpose.

Characteristics/Qualities/Benchmarks of High Performance Teams (HPTs)

How does one recognize that high-performing teams (HPTs) are at work in organizations? The characteristics, discipline qualities and benchmarks are used by authors/writers to recognize the existence of HPTs in organizations.

In a range of qualities, Katzenbach and Smith (1993) based on their groundbreaking work, identified as essential team discipline qualities that are characterized by: “1] a meaningful common purpose that the team has helped shaped; 2] specific performance goals that flow from the common purpose; 3] a mix of complementary skills both technical and functional expertise in problem-solving/decision-making and interpersonal skills; 4] a strong commitment to know the work gets done; and 5] mutual accountability where trust and commitment are not coerced as agreement to goals serve as the crucible to forge accountability”.

David Thiel (2009) in his process to build high-performance teams in Design Intelligence, identified from his studies six almost similar characteristics which include: “a] common purpose, b] clear roles, c] accepted leadership, d] effective processes, e] solid relationships and f] excellent communication. To him, in the truest sense teams are “volunteer organizations with a high level of cooperation as a product of choice”.

From another perspective, the term benchmark is used by Jesse Lyn Stoner (2013) based on her research to identify HPT which includes: 1] “alignment around a shared vision; 2] team effectiveness on processes; 3] empowerment to do what is necessary; 4] passion as energy, enthusiasm and confidence; 5] deep commitment to team and each other, and 6] sustained outstanding results”.

Peter Treadwell (2014) reflecting on a positive team-working environment (organizational culture) is identified by “clarity of mission/vision, tangible performance goals/targets for people, successful task identification and clearly defined, efficient work process, offered seven essential characteristics of HPT such as: 1] ambitious performance goals, 2] heightened sense of mutual accountability, 3] exceptional clarity of purpose, 4] willingness to challenge others and risk to foster creativity/innovation, 5] independent/co-dependent range of knowledge, skills and understanding, 6] leadership and followership demonstrated in emergent/negotiated qualities/roles and 7] strong social cohesion which is purposely challenged to meet the tasks”.

The consensus and distinctiveness of features shared among these authors can be seen in the following table for better understanding and appreciation of the depth and breadth of requirements of elements to develop teams as HPTs.

From the table, three of the six criteria are covered by all four authors (Treadwell, Thiel, Stone and Katzenbach/Smith) as they recognize and identify the distinctive value of: a] common purpose, b] disposition of
<table>
<thead>
<tr>
<th>Distinctive Features (OD Perspectives of an HPT) Criteria</th>
<th>Treadwell (Essential Characteristics)</th>
<th>Thiel (Characteristics)</th>
<th>Stoner (benchmarks)</th>
<th>Katzenbach &amp; Smith (Team Discipline)</th>
<th>Distinctive dimensions qualifying the each focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Possession/ composition of competencies or skill mix</td>
<td>6. <em>Independent/co-dependent</em> range of knowledge, skills, understanding on task completion</td>
<td></td>
<td></td>
<td>5. <em>A mix of complementary skills</em></td>
<td>&gt; Independent/ co-dependent &gt; A mix of complementary</td>
</tr>
<tr>
<td>F. Perspectives of Roles</td>
<td>7. Leadership/ followership as <em>emergent/negotiated</em> roles/qualities</td>
<td>5. <em>Clear Roles</em> Accepted Leadership</td>
<td></td>
<td></td>
<td>&gt; Emergent/Negotiated leadership / followership roles &gt; clear, accepted</td>
</tr>
<tr>
<td><strong>Total Features Described by the Respective Authors</strong></td>
<td><strong>Six Features of OD Perspectives</strong></td>
<td><strong>Four Features of OD Perspectives</strong></td>
<td><strong>Four Features of OD Perspectives</strong></td>
<td><strong>Five Features of OD Perspectives</strong></td>
<td><strong>Wide range of related dimensions of qualities</strong></td>
</tr>
</tbody>
</table>
disposition to relationship/responsibility to others for HPT. Three of the authors (Treadwell, Stoner & Katzenbach/Smith) identified qualities on the “disposition beyond expectation/creativity/innovation. Two authors identified features on “Possession/composition of skill mix” (Treadwell and Katzenbach/Smith) and “perspective of roles” (Treadwell and Thiel). What is noteworthy and interesting is that from each of all four authors, one can appreciate a distinctive perspective in defining, differentiating and enhancing the dimensions of the qualities for each of the (distinctive) unique features of what makes a HPT. Only Treadwell had seven distinctive characteristics for each of the seven OD-Perspective-based characteristics. This provides anyone a broader, deeper and wider appreciation of qualities and dynamics that make the team HPT.

Using Figure 1, as an example framework as Benchmarks of Team Excellence by Jesse Lyn Stoner, the figure illustrates the development behavior qualities as inputs into the building of high performance teams. One can infer the underlying assumption that such qualities can be inculcated and developed and therefore can be demonstrated as qualities of team excellence. These are skills and attitudes to be honed, developed, and mastered in the members working as teams.

**How to Build/Create/Develop/Lead High Performance Teams: A Shift of Mindset**

To achieve business goals aligned with organization purpose-vision-mission, leaders/managers need to find, develop, create, build and sustain high performance teams at work in organizations. From the review of literature on the definition, characteristics/qualities/discipline of high performance teams, one finds expectedly and logically the discourse on the models, strategies, approaches and techniques for the development of such characteristics and qualities as it were to unleash the potentials of teams in terms of behavior change to become high performance teams. Most of the literature that report on studies done for the past five decades or so, offered solutions drawn from the behavioral and conventional frameworks and principles of group/team development.

For example, Phil Harkins (2006-2008) offered a list of top ten techniques for building higher performance teams which are all “to do” steps to follow through. David Thiel (2009) on the other hand, offers another ten tips as “key principles” to building high performing-teams. Katzenbach and Smith cautioned that there is no recipe that guarantees the building of HPT, yet offered also ten approaches used to build many successful teams. Taneja, Sewell and Pryor (2012) presented not in a list of tasks to pursue, but a design of a flow of pro-
cesses to engage in the development of HPTs. This methodical approach provides an OD perspective as well as process towards HP team development.

While these processes have shown effective results as early as the 1950 studies by the Tavistock Institute, National Training Laboratory (NTL) programs, as well as in various Centers like Center of TPS (Toyota Production System, “The Toyota Way”, the need to] identify/define leveraging competency set of skills and 2] find other alternative models to build/create/develop/lead High Performance Teams appropriate for teams working in fast changing landscape dealing with exponential technologies of the software industry, has become a major challenge. This need goes beyond the behavioral approach to develop high performance team.

The Needed Shift of Mindset for Change

The advancement of information, computer, and communication technologies as well as the software development is a phenomenon of the Toffler’s (1980) third wave of development called “information age”. This major change of context from the industrial to the information wave of global development has created the need to surface the underlying mindset that influence the behavior and performance of team members as well as the way management deals with teams in the organization.

In an Information Technology conference announcement, “in the software industry, the need to develop teams has been recognized as an important component of software development and due the popularity of agile software development and its reliance more heavily on ‘team and team members’ than formal processes and documents”. Thus questions as articulated in this conference need deeper reflection. These are the questions in blue (CQ) the conference organizers have formulated for consideration. Allow me to raise alternative questions in green (MQ) to the conference question as part of my own reflection without having to address them directly in this discourse. By changing the questions from a different perspective would enable one to discern the need for a different mindset for developing HPT:

- **CQ:** “How can we create a high-performance team for software development?”
- **MQ:** Are the conventional strategies and approaches sufficient to make this happen?
- **CQ:** “What kind of environment/policies is needed for creating such high-performance team?”
- **MQ:** What needs to shift in the way we view the environment and articulate the policies that would be consistent with, conducive to creating and sustaining HPTs for the industry?
- **CQ:** “What should we look for in a potential team member, if we want to ensure that he/she will really be a good player in the team?”
- **MQ:** How should we look at the potential of every team member to unleash the potentials/Possibilities of the team member to become HPT?

To reflect on and respond to the above questions and be “in sync” with the context of the software industry (information/digital age), two questions need to be further raised and addressed namely:

- **What has shifted in the context**
of the software industry that requires a new mindset for people in the software industry working in teams to function differently and excellently?-
- Response: For anyone to function “in sync” with the context of the software industry is to not just to learn the “what” (content, technical knowledge and skills) logically, creatively, comprehensively, and ethically on the task, but more importantly is the “how” – i.e. the process to think through how one is thinking whatever he is thinking. This is a “learning process” issue. This (also) is called “process as content”. Learning to think “how to think-learn-create-care-connect” is the game changer.

What other appropriate skills set would be most leveraging as much as it is appropriate for teams and team members in developing them as HPT under this new mindset?
- Response: The most leveraging component of the skills set for team members to develop (to) and function effectively, effortlessly, excellently elegantly, ethically is the “human information processing skill set” (HIPSS) (that) which is brain-based and holistic”. This is the skill set in the software industry to leverage the “learning process” (to) and develop differently on the needed competencies of HPT. (in the software industry.)

The subtlety of shifting the focus of the questions from “what/how to do” to “how to view (think through)” the ‘what/how’ to do in a changing context of the environment would call for the need to recognize the role and influence of mindsets as basis for development.

Human Information Processing Skills Set (HIPSS) for the development of HPT
-A WBL Approach

Alan Hedge (2013) of Cornell University outlined “human information processing as information acquisition, with information as the key to survival, information about the external world as acquired by exteroceptors as the five senses (vision, audition, olfaction, tactile, gustation), with the brain (sifting) this constant information stream for relevant cues (signals) rather than irrelevant cues (noise)”. This definition is viewed from the perspective of one observing the process flow from the “outside in” how information is being processed by the individual person. Given this definition, the role of the brain has been recognized as an active processor of information that could influence the behavior for change. This view assumes and reflects the mindset of learning information as “content”, i.e., processing “information” as “content” where the “brain is viewed as the active processor of information”.

With the implosion and explosion of information due to advanced exponential growth of technologies, the shift from processing information as “content” to one of “process” requires the understanding and appreciation of “whole brain intelligence and whole brain functioning” (Tayko &
Agloro, 2012). Tapping on the functioning potentials of the human beings and raising the question of how this brain can be rewired to function best in the information age, Dudley Lynch and colleagues (1984, 1986, 1987, 1988, 2003) developed a new four-brain model drawn from the researches of the split-brain surgeries with a set of assumptions from the inner workings of the brain in contrast to the patterns of characteristics and processes observed from the outside observer. The focus is on the inner human dynamics of the brain as the underpinning mindset for “human information processes” (HIP).

These human information processes are categorized based on the four-brain functioning out of the combination of left/anterior, right/anterior, left/posterior and right/posterior brains, thus generating the processes called: “I Control (IC -left/anterior brain-processing combination for certainty”); “I Explore(IE- right/anterior brain-processing combination for creativity”); “I Pursue (IPU - left/posterior brain-processing combination for activity/productivity”); and “I Preserve (IPR - right/posterior brain-processing combination for affinity/posterity”). Given Lynch’s four-brain functioning, Tayko extrapolated the value of each quadrant by connecting the information to the core purpose. She then added the center core and called it “I Live on Purpose” (ILP). This processing entails iteration and wending flow of information around a core purpose. When used as an approach for the development of HPTs the process is called “whole brain literacy” (WBL), the thinking-through tool that is holistic, interactive, connective and integrative”.

To apply the WBL for transformative learning and change (TLC) in individuals and teams, Tayko in collaboration with her colleagues constructed a design,— the WBL frame and flow both in instructive/facilitative sessions and in project design and implementation. In the training/learning sessions on HIPSS, participants learn to a] discover and affirm these thinking-through skills as their hidden strengths, b] apply consciously in iteration/wending processes the HIP skills set in dialogues and conversations exercises, and then c] apply the processes in project design and implementation. In these sessions, the participants learn the competencies as “human information processing skills set” (HIPSS). In operational terms, these are carried out as thinking process steps/tasks called “5Ds”. Each “D” is process step or task. It is color-coded to represent the four quadrants and the center core thus: decode (IControl), discover (IExplore), discern (IPreserve), determine (IPursue), and decide (ILive on Purpose for the center core). As thinking tasks, these are used by learners/leaders/members of teams engaging in TLC activities, projects and engagements. When HPTs are at work when trained on the use of these HIPSS, they would be able to leverage their performance for excellent outcomes.

The 5D model is brain-based in process and is illustrated in Figure 2 below. The color-coded design represents the four quadrants of the brain and the respective purposes and dynamics of each perspective. Each is linked to the core purpose at the center which serves as the integrative thread/theme to make sense of the information generated from the four quadrants. When this 5D model is used in process and project engagement by individuals in team development, participants are able to develop the “human information processing skills set” and perform as HPT. The frame and flow of thinking-through entail an iterative and wending flow of processing
from every quadrant and through the center core. The protocol of questioning and processing of information generated for the activity at hand (a project that the HPT will be engaged) can be done in any sequence or flow as long as all quadrants are covered/explored and connected with the core on the purpose of the activity. (Figure 2)

Where have these frame and flow been used in TLC sessions in OD programs and projects? The ABAC.GSB.ODI Projects with Singha under the Talent Development Program (TDP 2 in 2010-2011), the subsequent engagements for Singha Senior Executives, the KSLA Ladder for Leaders Project and Future Change Leaders Projects (4 Waves of Projects in 2012-2014) all have used these HIPPs as the leveraging approach to complement the other OD processes. These generated positive results and outcomes. The ABAC.GSB OD Programs have also engaged good number students in the MMOD doing action research thesis and PhD dissertations using the WBL frameworks and processes that yield positive results. The use of WBL as frame and flow of engagement processes and activities in the above examples have been with groups other than those in the software industry. It is then the contention of the writer to apply the WBL frame and flow with teams in the software industry.

These frameworks and HIPSS are used in ABAC.GSB OD Programs and ODI Projects It is brain-based in approach as an entry into the change of mindset to leverage for “transformative learning and change” (Tayko, 2013). It is brain-based by design to tap into the hidden capacity of member teams engaged in becoming HPTs. It is a conscious use of developing the HIPP as “learning process as content” and in doing so, it taps into the lived experiences and expertise of the participants drawing them from “inside out” – i.e. empowering them more to develop themselves from within. In as much as leaders/learners/members of teams from various organizations are confronted with the same challenges of the information age with exponential technologies, the same could be experienced by member teams of the software industry. It is argued in this presenta-

![Figure 2: WBL – 5Ds for Human Information Processing in Iterating/Viewing](image-url)
tion that the same HIPSS can be used for the development of HPT in the software industry.

CONCLUSION

In conclusion, this brief discourse comes with the proposition that to develop high performing teams it would need besides the time tested behavioral strategies and approaches, a new set of competencies such as this brain-based “human information processing skills set” as leveraging competencies to become high performing teams especially in the software industry in the context of the fast exponential landscape of the 21st century. This new set of competencies arises from the shift of mindset or perspective for human/team development in sync with the information age.

This means that for teams in the software industry to build and develop HPT competencies in exponential times, tapping/tipping the hidden potentials of the whole brain intelligences through the four brain functioning processes, intimately connected with the center core, could leverage for excellent performance. This means further that HPTs could develop the skills set of “decoding, discovering, discerning, determining and deciding” as basic foundational processes in thinking through and working together on any project. This skills set could become the integral and comprehensive modality in “processing information” for creative learning and productive teamwork to achieve a common goal, the results would exceptional. As the HIPSS has been used in the programs and projects of the ABAC.GSB/ODI, with a number of groups, it is the view of the proponent that the same HIPSS could be used with teams in the software industry.

The expertise and experience on the technical and content of formal disciplines are still kept and upheld, yet would need to be complemented with the new skills set of HIPSS as it were the “learning process as content” to engage in “transformative learning and change” in teams and organizations. Thomas Friedman (2006) asks the fundamental question of what is the “right stuff” for education in a “world that is flat”. His answer is simply stated: “learning how to learn to learn” and Tayko (2010) expanded this phrase – “to learn - think-learn-create-care-connect – to be, behave and become the best for one and the world”.

Endnotes

1ABAC.GSB.ODI - Assumption Business Administration College, Graduate School of Business, Organization Development Institute.
2KSLA - Krungsri Leadership Academy.
3ODI - Organization Development Intervention.
4MMOD - Master of Management in Organization Development - a Master’s degree program in OD.
5PhDOD - Doctor of Philosophy in Organization Development.

REFERENCES


Harkins, Phil. 10 Leadership Techniques


National Training Laboratory (NTL) http: //www.ntl.org/


Tavistock Institute http://www.tavinststitute.org/


Treadwell, Peter. *High Performance Teams, Center for Work-based Learning*. Cardiff Metropolitan University. cwbl@cardiffmet.ac.uk., www.cardiffmet.ac.uk/cwbl.