

A Knowledge Founded Model Embracing Leadership Change within Virtual Work Environments

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Abstract

This document posits an approach for leaders to gain advantage through knowledge facilitation within virtual work environments and presents a leadership model, the Knowledge Founded Virtual Self-Management Model (KFVSM). The model addresses the leadership of virtual teams as self-management founded, to operate within a soft systems structure, and oftentimes are project based. A proactive leadership structure incorporating environmental scanning founded on a dynamic fulcrum provides the superstructure of the model. The model was developed in reaction to increasing virtual work environments incorporating high levels of information technology within dynamic markets demanding quick change and the broad application of a project perspective to organizational endeavors.

The model operates from a knowledge facilitation platitude and incorporates some considerations such as crowdsourcing, Software-as-a-Service, etc. Multiple contextual factors from the organization and follower perspective are incorporated along with information on technology advances facilitating social networking. The model is meant to propagate organization paradigm shifts rather than just providing a method to react to them. Lastly, the KFVSM embraces leadership learning, change, and growth and views leadership as a skill to be developed over time and in reaction to change, knowledge, and need.

Index Terms— leadership, virtual, memetics, project management model

1. Introduction

The list of success stories for our specie, nations, individuals, business organizations, etc. who have advanced, found victory, and profit based on the application of newly discovered knowledge, innovative facilitations of archived knowledge, and the hybridization of new knowledge with old is extensive and goes back to the start of recorded history. In fact, the processes used to facilitate and manipulate knowledge for success is knowledge in, and of itself. It is possible to relate this knowledge concept directly to the establishment and successful application of leadership. Successful leadership and knowledge facilitation run parallel to one another within organizations. Leaders can gain advantage through knowledge facilitation within virtual work environments realized through openness to change and needed information technology and it is this perspective which provides rationale for the

development of the KFVSM. (Please see model diagram – p. 9)

2. Leadership / Memetic Foundation

From an historical view, a look to a possible scenario for knowledge succession of early man provides a glimpse into a perspective on knowledge discovery and application relative to the establishment of leadership within a group. This rudimentary example provides foundation to an understanding of modern day leadership, for the driving factors are equivalent. Early humans served as scavengers within their biomes and protein acquisition would have been greatly needed but limited in opportunity.

A member of the group may have noticed through trial and error in conjunction with low level critical thinking, that the edge of a rock might become sharp during concussion with other rocks. Creative thinking matriculates the thought that to concussion the sharp rock on a newly scavenged bone might reveal what is inside, for this bone marrow has been exposed through the action of the carnivores from time to time and consumed by the group. The group moves to a carcass as advised by their partner who had previously demonstrated to the food needing cohort the use of this possible bone opening tool.

All members gain advantage and nourishment through reproduction of their partner's actions and newly acquired knowledge. The critical and creative thinker's status rises within the group as the establishment of respect takes place and the member gains advantage through accepting the risk of sharing the information with the group, taking a leadership role. The knowledge fragment or meme disperses throughout the group and other groups while eliciting a foundation for the development of other applications involving stone tools, scavenging, etc. Change offers leadership opportunity.

New knowledge is combined with old and some knowledge processes used in the past may never return. According to Holtz: "...the human brain is a constantly changing constellation of relationships among billions of cells. Complex networks of neurons are linked by pathways forged, then continually revised, in response to experience" [2]. This is the natural process of cerebral knowledge succession.

An atmosphere of leader trust materializes which creates fertile ground for the advancement of this new knowledge and leadership. Leadership legacy germinates, as partners will now come to their colleague for advice and help on a problem, a need for change, and a chance to spread knowledge. The new leader, as well as the group looks to new methods to apply the newfound tool and exploitation of the new knowledge to aid in

their survival. Much as a spark to a dry forest, this birth of knowledge creates multiple pathways for its propagation, application, and growth. It was put forth by Locke "... that the mind, though possessing natural abilities and manners of operation, is initially like a tabula rasa, a blank tablet which not have yet been written" [3].

3. Memetics

The Memetics approach to epistemology and knowledge development, transition, and perpetuation provides a logical and observable process to study knowledge and Memetics is displayed in the previous example. Memetics was first referenced by Richard Dawkins in 1976 and treats knowledge as bits or fragments of information and processes advanced through our species much as a genotype or phenotype might be and is a foothold from which to observe knowledge creation and change. The fragments of knowledge are referred to as memes. According to Heylighen, a meme is a bit of knowledge or cognitive meaning which can be transmitted from one individual to another. This is actually a duplication of the meme within another individual who then also might go on and spread it to others [4].

The propagation of the meme throughout a populace emulates advancement of a genetic compliment through a population. Information technology driven virtuality puts the advancement into hyper-warp and allows for transmission of a meme from a single source to 1,000's in a matter of seconds. Memes though differ in that they are transferred between any two individuals, group to group, group to individual, through whatever media might be available, and are not bound to the parent-offspring genetic recombination process. Memes take fragments of time in many cases to transmit and not generations as in genetics.

When a meme is no longer applicable, when it is passed in ever decreasing numbers, it is experiencing a decrease in its level of fitness for application within the time period and will move from practical existence to the realm of archiving. The meme may become extinct in direct application and be replaced in a knowledge niche with other memes, but these replaced memes add to the foundation of knowledge much as an individual coral's body structure adds to the base upon which active coral survive. Practical application determines the current presence and validity of knowledge in the epistemological succession process.

4. Cloud Computing

The way computing is done worldwide is advancing through a change of direction and perspective. While the actual definitions may vary, this development is broadly called 'cloud computing'. Cloud computing is a method of computing where scalable and elastic IT-enabled capabilities are provided 'as a service' to external customers using Internet technologies. In the future, if you are exercising memory or applications which are housed on your PC, you will not be on the cloud. The cloud enables storage, application housing, memory, etc. at

remote server sites. This equates to your computing device basically being an access device to the cloud where all applications and memory will reside. This configuration will further facilitate virtual teaming and virtual project management teams through easy and quick data access, application, and communication on multiple levels.

Cloud computing is founded on the concept of the globe reaching a point where the network, Internet, intranets, massive hardware configurations, in tandem represent a giant supercomputer of their own. This amalgamated supercomputer allows a computational arena where users might center all of their computer software, connectivity, and hardware within the cloud and not on their individual PC's or systems. Various vendors will facilitate the cloud configuration. This results in the users being able to access there applications, memory, servers, etc. in the cloud and only use, or rent those computer services they need at anyone point in time (scalability), and ensure that whatever is applied is the most up to date version of the application. These configurations allow for SaaS (Software-as-a-Service), HaaS (Hardware-as-a-Service), IaaS (Infrastructure-as-a-Service), PaaS (Platform-as-a-Service), VIaaS (Virtual-infrastructure-as-a-Service), etc.

There are number of concerns for the clients of cloud computing suppliers and the cloud facilitators and these are offered from a Berkeley University study in February of 2009 and include:

1. Availability of service
2. Data lock-in
3. Data confidentiality and auditability
4. Data transfer bottlenecks
5. Performance unpredictability
6. Scalable storage
7. Bugs in large distributed systems
8. Scaling quickly
9. Reputation fate sharing
10. Software licensing [5]

The primary way to avoid these pitfalls is to understand the triggers, include them in your risk control plan, and be sure to use effective environmental scanning to check for issues and address them quickly and effectively as well as monitor the development and maturation of the cloud and adjust as needed. It is important for organizations to understand the possible deltas so they might follow strategies to mitigate them as much as possible as we facilitate, sell, and operate within the cloud to decrease cost and increase revenue through virtual work and virtual project application.

5. Crowdsourcing

Definitions may vary, but the basic concept of crowdsourcing is to leverage the collective intelligence of people at large to complete business tasks that a company would either perform itself or outsource to a provider. Crowdsourcing has been around since early man, but the

virtual world puts the concept into hyper-warp in application. Although it looks like a simple form of benefiting from collective intelligence, the term is more often used in the context of organizations making focused efforts to achieve a specific task by soliciting contributions from a large, loosely defined community using collaborative technologies as the facilitator and this applies well to virtual project teaming configurations since the endeavor is temporary and virtuality allows the members to function as a displaced, asynchronous, transitory team. Contributors are often prescreened for their knowledge and skill level and this would be the case with virtual project team members.

Crowdsourcing benefits include access to a large talent pool, reduced expenses and time spent for tasks, and utilizing the Internet for collecting data and feedback which offers time and cost benefits for research and development functions. It is a means for management to keep control over rising staffing costs and staffing risks associated with marketplace and demand fluctuation. When combined with the scalability of using the cloud for memory and application access, a very flexible business model emerges which can run on the fly. Crowdsourcing improves creativity access and provides the exciting prospect of leveraging new resources with experience and skills that may not already be apparent within the organization as well as enhanced flexibility. Crowdsourcing is another tool to apply to get the most out of virtual human resources options and bringing the best participants to the virtual project team.

6. Consumerization of Information Technology

Technology has become more embedded in peoples' lives, and is used virtually in all aspects of daily life – on and off the job. It is important that IT organizations understand how to harness the new paradigms that consumerization creates and that this be facilitated to advance the advantages of virtual working teams. Consumerization recognizes the overwhelming commonality of information technology application and attempts to exercise that fact to the organization's benefit.

The key to understanding is to look at consumerization as an attitude toward the use of technology. Members of organizations need to draw from the fact that they are consumers of technology and are thereby better equipped to apply it in virtual working arrangements since they use it in all facets of their lives on a daily basis. Social networking, blogging, etc. can provide an advantage to an organization and overcome some of the issues with virtual project teaming such as trust. Catering to the consumerization acknowledgement needs of employees will create new opportunities for organizations to gain economic advantage.

This consumerization trend presents a conundrum to the traditional corporate IT organization. Although there is general agreement that there may be gains in use of consumer technology, security remains the deal breaker. The challenge for enterprises is to manage the trend in such a way that does not limit the usefulness of technologies and not result in any loss of information, value and time in the virtual workspace. This security issue is major with distributed virtual teams and

must be dealt with as with any risk. IT and security organizations should assess value and security pressures in determining appropriate policies and controls to apply in the control and monitoring of virtual work teams.

7. Transition to a Business Foundation

This same succession image we find in naturally occurring memetic knowledge advancement might be applied to the business environment as organizations and products come and go on a plane of competition and survival. The spread of knowledge and application relative to IT consumerization, crowdsourcing, cloud computing, etc. in meeting organization needs can provide an advantage in the knowledge niche.

The customer has limited resources to trade for unlimited desires in the retail realm. This fact naturally creates competition between the businesses attempting to have those limited resources traded for their products. As is noted by Argyris, "The key activity in the universe called managing is creating and bringing about intended outcomes..." and those intended outcomes are survival, growth, and profit for a business organization [6]. An environment is realized in which succession of business processes and products naturally takes place in an effort to gain the trading of the customer. Those methods and products, which work the best, will perpetuate and go through succession along with the knowledge or memes, which might support them and this phenomenon, is observable in multiple industries.

Knowledge or meme creation, application, and succession within work environments entered a realm unlike any previously observed in recorded time with the birth of information technology driven virtual business environments. Information technology allows for meme communication and applicability rates never observed in the past enabling world markets to explode. These meme succession and development rates now facilitate high speed paradigm shifts bound in a virtual business environment and leadership must adjust to the needs of this knowledge and IT driven environment.

Ammeter and Dukerich's research concluded that leader behavior is the only predictor of team performance and suggested that the interaction between leader methodology and team member performance provides a fruitful opportunity for an organization to gain an advantage [7]. Leader application of an understanding of knowledge hybridization and use, advancement within the business niche, and a realization of the needed leadership methodologies within the dynamic virtual realm results in great opportunity and risk within ever expanding world markets. Proper hybridization of leadership and knowledge management reduce risk and perpetuate opportunity.

8. Project Management Proliferation

Project management has moved more to the hub of management processes than any other management design in the past quarter of a century [8]. Project management became a major organizational concern in the 1960's, although its foundation goes back to early history and it became

scientifically based in the 19th Century [9]. The real need for project management links to when business came to the realization that organizing work around projects provided benefits [10]. More work is oriented today with a beginning, a center, and an end. The perpetuation of project management has grown in business directly along with virtual teaming (Gray & Larson).

Project management encompasses an endeavor which is temporary, bringing together a group of individuals, many of whom might work for differing factions of the parent organization, to complete a change founded unit of work to advance the organization on some level. Projects are typically divided into two different types of endeavors which include "Greenfield" type projects that encompass some type of construction endeavor and IT (information technology) / business based projects which involve some type IT based application development or change. The IT / business type projects oftentimes do not result in a tangible product created somewhere geographically, but rather an IT founded creation which is housed in virtual space on IT devices and this type of project is the focus of this writing. Virtual project teams involve collections of individuals who function together while being physically separated [11].

IT / Business projects are very applicable to virtual project team configurations on account of the product itself tending to be virtual in composition and the majority of the participants on the project having access to a variety of virtual worker tools including e-mail, web conference, instant message, white boards, blogs, mash-ups, webinars, cloud bound applications and storage, Microsoft applications or type applications, etc. Virtual project teaming provides low cost, high quality, rapid resolutions through the collection, blending, and application of knowledge via collective networking [12]. This allows for the application of crowdsourcing where the project is able to access participants from the world via participation solicitation. Thus, the best individuals can be brought to the temporary endeavor, and other project endeavors simultaneously, and then members move onto other undertakings upon project completion. It is this fact which equates to the virtual project participants as being transitory in make-up.

When troubles occur within the project team, the organization oftentimes finds no comprehensible leadership, individuals working in silos, and the level of social unrest increases [13]. Hefner and Malcolm, in a survey of 175,000 IT projects, determined that 16% were completed within budget and time objectives. They also determined that close to one-third (32%), were cancelled before completion and that fewer than half (42%), ever met the initial requirements and objectives [14].

9. Virtual Work

Virtual work has transitioned from an occasional occurrence in the early 1990's to a norm in the present Century. Roebuck and Britt view the networking virtual process as replacing the pyramid hierarchy of the workplace [15]. As of 2004, there

were over 24 million people working at remote locations [16]. Talukder determined that 81% of business-based respondents indicated virtual environments would increase in the next three to five years [17]. According to Krantz 1990, and referenced by Humphreys, "Organizations must now contend with vastly different conditions in which former approaches no longer apply, and which require that they develop capacity to change, learn, and adapt quickly and decisively" [18]. This fact lies at the crux of change and growth for organizations wishing to apply the appropriate paradigms for success in this global environment.

The application of virtual technology requires managers and leaders change methods to meet the demands and opportunity of the environment [19]. Relationships, or lack there of between dependencies pertaining to virtual work groups has the potential of providing knowledge for virtual organization operations [20]. The importance of high levels of performance in virtual environments will continue to expand as organizations increase virtual operations and the use of teams that work partially or completely virtually [21].

The proliferation of virtual work equates to managers being required to provide leadership within the new environment and the fine-tuning of methods to rally the demands put on themselves and the team. Virtual team members have special concerns with trust, multitasking, current technology use, culture, member burnout, member development and education, and facilitating self-leadership and management, and may never meet face-to-face. It is incumbent upon the virtual leader to take into account these considerations and how to address them to ensure success. Virtual project team communication should be monitored based upon:

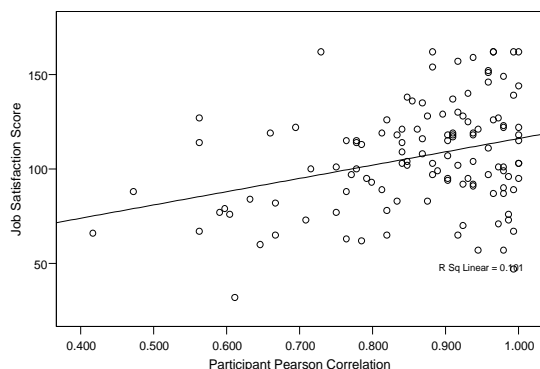
- Do we have agreement on our team ground rules?
- Turn around time on emails, phone calls, etc.
- How we share information
- Willingness (and method) to give & receive direct feedback
- How we make decisions
- How will we effectively use media?
- Conference Calls (Whole and/or part of team)
- Email
- A meeting/interaction platform (i.e., NetMeeting, others)
- Document/Information
- Sharing/Knowledge Management
- Face-to-face Opportunities (Whole and/or part of team)
- Other tools?
- How will this team handle disagreements and/or conflict?
- How will we remain connected to our stakeholders or customers? [22]

A quantitative, correlational study by Hitson, based on data collected from virtual workers in 23 nations indicated virtual workers find the greatest levels of job satisfaction when lead via a Self-Management style of leadership [23]. Comfort with a Self-Management style tends to increase as the virtual team

member increases their tenure in the virtual workplace. The Self-Management style is characterized by the actions of leaders who exhibit minor responsibility for team methodology or results. Leaders who display this style provide negligible structure, methodology leadership, transformational leadership, assistance toward objective acquisition, and team limit management [24]. With this style, the actual team members have little responsibility for the leadership of the team as well. The followers tend to lead and manage themselves individually and depend extensively on information technology to do so.

Self-managed teams tend to not need much in the form of leadership or receive much leadership [24]. With this style, the designated leader or the followers handle leadership behaviors on an as needed basis. An example of this type of team leadership scheme would include project teams and quality improvement teams and project use within organizations as increased in parallel with the advancement of IT.

According to Hackman, teams lacking rigid leadership structure within the virtual environment show better performance [25]. This realization lends credence to the result that virtual team workers would find a self-management leadership methodology desirable since they would tend to be acting on their own much of the time. Literature indicates that comfort with self-management leadership grows with exposure to the virtual work environment. Effective and continuous leader communication in combination with knowledge acquisition, distribution, and rapid application has become paramount. Please note the following scatter plot which displays the correlation between follower job satisfaction relative to the level of agreement between what the follower desires in their leader and what they are provided.



Virtual workers' level of job satisfaction is directly affected by the leadership style they are exposed to and certain leadership styles function better than others do within the virtual teaming environment [23]. This finding runs in tandem with studies completed on face-to-face teaming operations. The greater the agreement between what the follower desires from their leader and what they receive, the greater the level of job satisfaction [23]. The leadership needs may vary from follower to follower and team to team, but meeting those needs leads to higher levels of performance and follower job satisfaction.

10. Model Rationale

Project driven, rapidly expanding virtual work environments, the business advantage of knowledge development, application, and hybridization, the advantage of the Self-Management style in virtual work environments combine to precipitate a tripod of rationale for the development and facilitation of the KFVSM. The model works from the perspective that leadership ability and process is a diagnosable, teachable dynamic function of our specie. Consideration of the ever increasing dynamic nature of world business markets as driven by information technology is facilitated within the model allowing for reactive, expedient change. This empowerment, change, knowledge based leadership development and application serves as the fulcrum for the balanced advancement of the organization where the needs of the organization and the business environment are held in balance with the needs of the organization members / followers thus allowing market change to be quickly turned into an advantage for the whole organization.

Leadership is a group of activities carried out by organizational members that centers on accomplishing the tasks of setting direction, building commitment, and creating alignment [16]. Virtual work environments put great stress on the alignment factor as the target of success is constantly shifting. Evaluating leadership outcomes requires a multi-disciplinary approach in order to be successful and this can be achieved by referencing the meeting of organization environments relative to the fulfillment of contextual factors of all stakeholders.

While there are many different mechanisms to parse the various aspects of leadership, the virtual environment demands eight key aspects of leadership ability. Those aspects are advocacy and inquiry, re-definition of leadership, emerging environments, evaluations, strategy and tactics, organizational vision, innovation, and normative foundations. These aspects are perpetuated through intelligence, responsibility, task competency, motivation, courage, resolution, trustworthiness, decisiveness, self-confidence, assertiveness, and adaptability which form the center of the leadership pillar of the model. This suggestion rests on evidence that a prescriptive and systematic approach to leadership and performance evaluation is more effective than sporadic or ad-hoc evaluation and increases the chance of high levels of leadership and organization performance.

The primary task of leadership in today's virtual organization environment is to lead change, quick change. The change environment creates a leadership dilemma for today's leaders, but this can be mitigated through innovation, knowledge development, and using the memetic process to the advantage of the organization. The memetic process functions in unison with information technology to facilitate knowledge use through self-managed team members. To lead effectively requires an advocacy and inquiry personal philosophy in which the leader displays a concrete and rationale approach to the process of leadership and knowledge development, management, and distribution. This approach must be shifted to meet environment needs. The leadership dilemma stems

from decline related issues such as increased global competition, restructuring downsizing, increasing virtual markets, and business failures in the organizational environment, which present many complex challenges to the organizational leader should a systematic approach to leadership not be facilitated [25].

11. Scanning and Predictive Process

According to Kouzes and Posner, people learn to be leaders by emulating behaviors observed by leaders they view as role models [27]. This involves the transfer of leadership knowledge or a leadership memetic bound process. Understanding leadership requires the evaluation of leadership behaviors as they work together to influence the outcome of leadership practices [28]. Evaluating leadership is driven in a large part by leadership's ability to divine what the future has in hold. Breadth of experience, span of knowledge control and knowledge feedback mechanisms, understanding organizational and community values, follower needs all contribute to improving the accuracy of forward-looking predictions. By contrast, attributes of pride, perceptions of having to stand alone and power issues all serve to cloud the vision to be communicated.

Prior to a vision being communicated to followers, reflection must give way to an analysis of where the organization needs to go and this involves continuous scanning and predicting actions. As an organizational guide, leadership must develop a strategy that defines the moral, ethics, and values of where the organization needs to be while at the same time being cognizant of the foundations of change and knowledge application which stakeholders will relate to in the here and now. In other words, the context of change in congruence with knowledge development and proliferation is as important as the end result. Scanning and predictive behavior are integral parts of the KFVSM and encompass both the needs of the followers, the organization, and all stakeholders.

Each element of a virtual organization strategy needs to be regularly checked against what leaders think they saw as part of their managerial crystal ball. In order to do this, a small but meaningful sample of measurable checks and balances need to be taken to ensure that what a leader thought was the future is in fact what transpired. It is here that the crux of evaluation, scanning, and predicting are especially important because without measurement, leaders cannot reflect; without reflection leaders cannot analyze; and without analysis, knowledge implementation and self-management within virtual work environments are scattered at best.

12. KFVSM Application

A leadership model for information technology driven virtual work groups and project teams should provide a methodology to visualize a process able to deal with the dynamic parameters and primary variables impacting the environment under review. The model must rest on the assumption that leadership is a trait which is trainable and

changeable and that this factor will allow for continuous leader, follower, and organization success. The memetic process lies at the development and dissemination of applicable, malleable, combinable knowledge, which fosters continuous change, self-management, and growth for the virtual organization. For the memetic process and the leadership process to function at their highest levels, quality information technology must be facilitated, properly trained, and continuously updated.

According to Ha and Stoele, information technology accounts for more than 50% of capital equipment investments within today's organizations [29]. Given such promise, organizations invest significant portions of their resources on technology acquisition and implementation only to achieve returns from these investments a minor 10% of the time [30]. The degree of compatibility between people and technology correlates to the degree of organizational leadership, strategic culture application, and applied employee reward system in place [31]. The goal of the KFVSM is to increase return on these organizational investments in virtual IT facilitation and team leadership and functionality.

Leadership forward vision is both figuratively and literally demanded by KFVSM if the greatest levels of virtual team leadership success are to be realized. The leader must literally, through scanning and predictive processes founded in metrics, evaluate the position of the organization relative to its objectives and the meeting of the needs of the followers to ensure that balance and forward progress are being maintained within both realms of the fulcrum of leadership resting in the center of the model. The leader must figuratively scan the organization playing field, the competition, markets, conditions, just as the captain of ship from the bridge, and make long-term decisions as to the course to be charted to enable the greatest levels of success. It is from this leadership position of vision, at the foundational pivot point of the model, that stability of all stakeholders, organization, and follower needs and processes are maintained while allowing for growth.

The virtual leader, just as with the traditional leadership role, must strive for the proper blend of supporting, coaching, advising, and delegating to members of the follower group. This can vary from follower to follower and project to project. Oftentimes virtual team members are transitory in that they quickly move from project to project and may participate on multiple virtual teams simultaneously. This moves the team leader from captaining a team ship to a team fleet where each member is an independent stand-alone vessel in the virtual realm. This factor also has impact on proper blend of supporting, coaching, communicating, rewarding, advising, and delegation to be applied by the leader.

Contextual factors pertain to certain circumstances and variables associated with a specific environment [32]. The primary contextual factors impacting the movement toward pre-set organization objectives for virtually operating organizations include metrics, processes, accountability, creating change, governance, internal communication, external communication, organization culture, gaining support, networking, and diversity. The primary contextual variables for virtual followers include training, counseling, listening,

rewarding, communicating, multi-tasking, job satisfaction, analyzing, follow-up, evaluating, and planning. These contextual factors must be balanced by the leader in conjunction with organization objectives, knowledge application, and dynamic markets through reactive adjustment of the KFVSM at the point of the fulcrum.

Leadership behaviors that will lead to effective change implementation and build sustained change capability include focusing on building the capability of organizational members to turn continuing change into an advantage and inspiring shared vision by engaging others with a vision of things which can be accomplished. Other essential behaviors include enabling followers to act by believing in their fellow members' potential and establishing conditions in which their potentials can be realized. This process encompasses acting as a role model and displaying integrity via coordination of words and actions while gaining a perspective of the needs and personalities of each follower [33]. Leadership behaviors which advance the objectives of the organization, stakeholders, and executive leadership allow for success and leader advancement within the organization. The KFVSM encompasses this advancement within an environment driven by contextual variables, guided through strategy driven business environment scanning, founded on time tested and new leadership practices, and facilitated via knowledge bound information technology based virtual work.

The model provides a soft system approach to virtual team leadership which serves as a qualitative methodology specifically to this soft system where advantage can be gained through the application of systems thinking to non-systematic scenarios [34]. As espoused by Couprie, Goodbrand, Li, and Zhu, "Soft problems . . . are difficult to define. They will have a large social and political component. When we think of soft problems, we don't think of problems but of problem situations" [35]. Soft systems specifically refer to systems, which can be very difficult to quantify such as those involving human beings or human beings interaction with other systems such as virtual team operations and this is the case with virtual teams and virtual team leadership. Quantified information and data can be coupled with soft systems thinking and a path to understanding motivations, viewpoints, and interactions among virtual organizations is facilitated [35].

A soft systems approach to virtual work leadership recognizes that the system is unstructured and the leader gains vision through expressing any problem situation through rich visuals. The KFVSM provides the ability to view the situation and produce root contextual definitions and allows the leader to decide from what rich visual perspectives to look at the virtual leadership environment. The result is the leader building conceptual models of what the system must do for each root consideration and compares the conceptual models with the real world while identifying feasible and desirable changes in developing recommendations for taking action to improve the virtual teaming leadership environment from both sides of the model; a soft-systems self-audit.

13. Conclusion

When leaders construct a new vision and communicate new meanings to followers, a common theme is facilitated and this provides strategy to the interaction of the team within, and with other teams. Bolman and Deal asserted, "Vision turns an organization's core ideology or sense of purpose, into an image of what the future might become" [36]. Virtual working individuals make up the fastest growing segment of the workforce and this is combined with the advancement of virtual project teams [37]. Because of these facts, importance is generated to gain a greater understanding of the dimensions of distance between virtual employees and leaders because of the impact the relationship between these two parties has on the function and performance of the organization.

Amalgamation of virtual follower readiness, transcendent leadership parameters, understanding of power and influence, application of project management concepts, knowledge and application of dynamic leadership styles provide a playing field where the greatest chance of success exists. Virtual team leadership enabling trust, project management skills, effective communication, a transitory perspective, expanding information technology, and proper team personnel through facilitation of an understanding of soft systems allows for virtual team members to experience self-management, leadership, power, growth, and success simultaneously. The KFVSM allows for a strategic approach to virtual team leadership and the flexibility to meet quickly changing operating environments. Multiple and changing variables involved within the virtual leadership equation might be managed effectively and increase leader performance.

Leaders that spend time exhibiting these behaviors may find that they have a more proactive workforce, with motivated and satisfied employees [38, 30]. Additionally, the shared knowledge and the ability to identify with the leader bring an increased level of confidence in both the leader and in themselves [40]. These outcomes are excellent foundations to make the organization more resilient for the long term within virtual work environments and reach greater levels of success.

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