

Investigation of Project Manager Role for Value Management in Project based Manufacturing Organisations

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Abstract: The present study aimed to examine the diffusion of evolving project management practices in context of value management, especially in Indian Project Based manufacturing industry. This paper aims to investigate for requirement of enhanced role of Project Manager in the context of establishing value management processes in organisation. With evolving research in project and simultaneously in value management, emerges with key recommendations for enhanced role of project manager. This paper attempts to identify and compile key research recommendations and put the two checks on it. One is whether project industry accept that these recommendations are required for their implementation or practicing and two, to what extent, these recommendations really implemented that means diffused in practice. These findings, presented statistically, give macro-view of acceptance of value management practices by practitioners and gap identification of more penetration of these practices into organisation is evident. This also indicates the strength of link in between researcher and practitioner and provokes for mutual dialogues for practicing value management.

Key words – Project Management, Internal Stakeholders Collaboration, Integrated Planning, Process Engineering, Design Review

1. Introduction

The existing literature revealed that project management practice must encompass value management and project manager has bigger role to connect value management to project as well as organisation strategy. Still this understanding remains less diffused in value management practice. Paul Chinowsky (2011) conventional practises of project-based organizations and project management are no longer adequate to address the challenges of the complex project environment.

Research in Project Management, proposes to define the new dimension of research that includes interdisciplinary perspectives while exploring macro and micro level value engineering opportunities. These largely comprise collaboration and adaption of wisdom, system and cultural integration which actually encompass the elements of value based strategic thinking. Laursen, M., & Svejvig, P. (2016). Sets future directions in his research in value management for innovative models and theories that acknowledge and illustrate the intricacies of project and project management at all levels, with extensive review of earlier literatures. Laursen, M., & Svejvig, P. (2015) recommends the movement of research journey, to influential model of projects and its management i.e., rather than just using the traditional lifecycle model of project management. Role of project management office and project manager is essential in the mechanism of value management for keeping the strategic focus of management on track for creating, capturing and connecting value with strategy.

According to Papke-Shields et al. (2010), project practitioners still primarily ignore a project's long-term effects and only take into account short-term perspectives of its value. The majority of research on the co-creation of value outcomes, however, is theoretical in nature. To determine how much it can be implemented in project settings, empirical evidence and analysis are required (Smyth et al., 2016). This article empirically investigates several value interactions, including problem-solving and co-learning with internal and external stakeholders, co-designing for the service experience, and others. Long-term value outcomes such as operational, experiential, and social value outcomes may be improved by these value interactions. These value interactions as a whole may inspire practitioners to follow a set of co-creation principles while developing projects as service delivery. Thus, the project business will gain a competitive advantage. (Wetter-Edman et al., 2014).

Importance of Role of Project Manager

- This emphasizes the need to recognise the role of Project Manager from only operational perspective to strategic involvement and see project management as holistic process of value creation. But at the core remains the significance of the Project Manager Role and Project Management proven practices which are appealing to upgrading, improving for enhancing the performance of Project. Vittal (2010) mentions that although there is vast research, specific roles and responsibilities of project manager towards project team members and their role in project success is not addressed in project management literatures. Vittal brings out importance of leadership role of Project Manager in coordination and collaboration as project Manager has role to play in matrix organisation where Unity of command is an issue. This underlines the need to coordinate the collaboration of stakeholders. It is important point to note, regarding organisational Knowledge Management that individuals in organisations may not be motivated, and need to do so, they cannot succeed without suitable tactics for promoting the sharing of valuable knowledge because they may even prefer not to share their expertise in order to retain their intellectual or private values in organisations.

2. Literature Review

We have reviewed xx articles in value management and project management domain to understand the recommendations evolving from research work. After scrutiny, five key roles of project manager are emerging which must be included in project manager's competency matrix by value driven, project based manufacturing organisation.

Those are -

1. Coordination for the smooth functioning of Value Processes (Value creation, capture and harvesting) across entire life-cycle of project]
2. Continuous strengthening of Value Management work culture
3. Involvement in Formulation of Project and Organisational strategy
4. Develop, Upgrade leadership competencies to drive value processes
5. Strengthen Learning and Training Mechanism for upskilling workforce to understand value based practices

This is explained with literature review in following part of the article –

1. Coordination for the smooth functioning of Value Processes (Value creation, capture and harvesting) across entire life-cycle of project]
 - With few exceptions (Artto et al., 2016; Laursen, 2018; Matinheikki et al., 2016) that concentrate on value-creating activities only in a single project phase at a time, less attention has been paid in the literature to how multiple actors coordinate together and jointly create value for many actors in megaprojects. Based on the foregoing, the challenge for various actors to perform cooperative activities over system lifespan that provide value for many actors is the obvious theoretical and practical problem for managing megaprojects.
 - The Value co-creation is based on value interactions that occur throughout the project lifetime and provide a platform for relevant actors to collaborate on improving the functionality of value results (Smyth, 2015). Therefore, the early identification and retention of the aspects of value that the initiative seeks to produce determines the success or failure of a project. (MacDonald et al., 2013).
 - Organizations seek to produce high value by establishing ambitious objectives and well-designed project delivery processes, but in unpredictable business contexts, this mission faces challenges of project uncertainties. Various challenges may complicate and challenge, value delivery throughout the project's lifecycle, necessitating integration across the multi-organizational system (Artto et al. 2016). 2008). Value interactions across the project lifecycle, which establish a platform for relevant actors to collaborate to enhance the functioning of the value results, are at the centre of co-creation of value (Smyth, 2015). Organisations must build a platform where relevant parties can communicate

to debate and improve the functionality of value outputs (Smyth, 2015) and work to achieve high value by setting ambitious goals and using project delivery methods that are well thought out.

2. Involvement at front end

- According to academic consensus (Kim and Wilemon, 2002; Williams and Samset, 2010; Edkins et al., 2013), the front-end is a crucial stage in configuring and designing project value. This unanimity, however, could not be mirrored in actuality.

Value Management Review at Project Front-End needs to be coordinated by Project Manager. The passive participation of Project Manager in Project is key challenge faced in Project Management environment and given emphasis on the requirement of effective communication across the relevant processes. As per Peter W.G and Morris (2013) project manager is required to influence the project culture; outline the involvement of stakeholders to build effective project strategy, introducing the professional insights for innovative, value-adding approach, getting the right technology, and selecting and getting the most out of the best people. But at the core remains the significance of the Project Manager Role and Project Management proven practices which are appealing to upgrading, improving for enhancing the performance of Project keeping value at core focus.

- Value expectation for project are set at the inception phase of Project with value interactions, with value creation by relevant stakeholders to gain it's benefits at later stage. (Artto et al., 2016). Organisation must demonstrate ability to conceptualise value (Kim and Wilemon, 2002 ; Williams and Samset, 2010 ; Edkins et al., 2013; Haseena V1, Shaheer K2 (2017) ; Lepak et al., 2007: 182).
- The necessity of the role of front- end-project Management for creating value while considering the interest of all stakeholders so that project does not suffer in the subsequent phase of executive. Andrew Edkins, Joana Geraldi, Peter Morris & Alan Smith (2013). Also resource optimisation (allocation /mobilisation/ exchange) of resources, at project front-end, may enhance the value outcomes for the client (Wetter-Edman et al., 2014). The subjectivity of deciding on leveraging value during interaction with consensus by all stakeholders is essential as value differs across stakeholders and it depends upon individuals or groups of individuals, as they perceive value.
- Project Operations create facts and figures at every stage of product completion stage. This includes data of Design Changes, Production rework, Quality Control Observations, Non-conformity reports, Changes requested by Customer, improvisations recommended by people from Shop floor and innovative ideas of improvisations from Production Engineering. While the distinction between value creation and value capture typically receives the most attention (Bowman & Ambrosini, 2010, 2000), (Lepak et al. 2007, p. 183) asserted that defining the source and targets of "value creation" is necessary in order to answer the question of how value is generated.

3. Continuous strengthening of Value Management work culture

- Project stakeholders are individuals or groups who will be affected by, or who can influence, the success or failure of the project's work and deliverables Stakeholders in a project can be actively participating in the entire process or only one step of the project lifecycle. (Lynda, Stakeholder Relationship Management, 2009). These are actively involved in the project and with value interactions at inception phase, they shall definitely benefit from the harvested value of previous projects, programmes. Simons (1994). (Ahola et al., 2008) Also, Value co-creation, which is functional and interactive process (Vargo and Lusch, 2016; Grönroos , 2017) with it;s primary purpose of improving the client's value outcomes (Grönroos, 2011. although can be realized at inception of projects, value is also continuously created during the project and we need value co-creation at Project inception to realize the benefits of Value Creation.
- Sherif M, Jantane D & Hassan S (2013) brings out very important aspect of organisational culture that the best practices although are proven requires strong organisational cultural support for effective sustenance. Rather, it is imperative to forge a new path that embraces interdisciplinary perspectives while exploring macro and micro level value engineering opportunities which largely comprise

collaboration and adaption of wisdom, system and cultural integration which actually encompass the elements of strategic thinking.

- Creation of new solutions generates new possibilities (Maxim Miterev, Anna Jerbrant, Andreas Feldmann) emphasise that using "trial and error" techniques to project management allows teams to find sudden and new-found values. Value interactions throughout the project lifecycle, which establish a platform for relevant actors to collaborate to enhance the functioning of the value results, are at the centre of co-creation of value. Organisations must set up a platform where relevant parties can communicate while being guided by a project manager to discuss and innovate the functionality of value deliverables (Smyth, 2015) and seek to produce high value by establishing ambitious objectives and well-designed project delivery processes.
- Key aspects of communication and collaboration for stating need of determining stakeholder's expectations in early project. In addition, despite the significant amount of money invested, the project's success has not been very successful due to insufficient stakeholder engagement, particularly the project's stakeholders, who were excluded from project planning, execution, decision-making, and evaluation. Project Manager can take one step further to contribute not only for effective systems, communications but effective culture of Project Management. Here Project Manager needs to play important role to motivate stakeholders to share their knowledge to create value. Jackson Mugabo1, Dr. Patrick Mulyung (2016) has strongly advocated the formal involvement of Project Manager with the Process Owners or Stakeholders in the inception phase of project.

4. Involvement in Formulation of Project and Organisational strategy

- In project management, It makes sense to take into account all of them when contemplating one project because decisions concerning one project are likely to have an impact on other projects, the programme, and possibly the overall strategy (Serra and Kunc, 2015). The same is true for projects; as Engwall states, "No project is an island" (2003: 789), they are influenced by the environment. This is especially true for programmes, which are regarded as collections of connected activities that support a common good or goal (Martinsuo & Hoverfalt, 2018; N  asholm & Blomquist, 2015; Pellegrinelli, 1997). Matinheikki et al. (2016) have discovered unique network management actions that may aid in the long-term shaping of inter-organizational networks.
- As per Peter W.G and Morris (2013) project manager is required to influence the project culture; outline the involvement of stakeholders to build effective project strategy, introducing the professional insights for innovative, value-adding approach, getting the right technology, and selecting and getting the most out of the best people.
- Gillier et al. (2015); Value management is primarily used to oversee a social process that keeps track of how various stakeholders gradually come to agree on the importance of a project's value and its results. Value Management, according to this viewpoint, no longer merely served the needs and expectations of engineering teams in R&D and end users, but also a wide range of internal stakeholders, including the marketing and strategy departments, external partners, including distributors and suppliers, and even employees. Thus, beyond engineering product development, the Value Management literature progressed towards a more comprehensive and upstream approach akin to strategic project management, the initial briefing stage of building project or programme management (Ellis et al., 2005; Thiry, 2002).

5. Develop, Upgrade leadership competencies to drive value processes

Management environment and given emphasis on the requirement of effective communication across the relevant processes. Project Manager can take one step further to contribute not only for effective systems, communications but effective culture of Project Management. In this digital era of communication and the cut-to-cut time management priorities, most of the communications are done over e-mail, cyber tools. The human intervention always takes backseat. This investigation has focus to propose formal human intervention for rigorous brainstorming as a part of formal system / culture of organisation. As per Madhu P. (2018) it is very important that the project managers need to be trained and developed for strategic orientation along with a clear and formal

communication of the strategic growth plans of the company to them. In research work, Madhu P. further highlights that PM involvement is conventionally not considered in formation and realisation of the organisational strategies is in general formulated by the Senior Management Cadre. Also, the performance of Project Manager is also not assessed based upon effective implementation of organisational strategies. Also existing cadre of project manager lacks training for competency up-gradation to handle strategic roles of organisation. It is imperative to work with internal process owners, collaborate to reduce communication barriers and proactively facilitate to build the communication bridges? This involved discussions of all stakeholders of Project / Programme at the inception phase of project.

Project manager needs to be groomed by organisation to understand the importance of value and it's strategic connect. Project Management can develop with his leadership role the coordination in difference functions of Projects for reducing uncertainties to large extent at Planning Phase only. Ngoc Se (2010) explains that it is imperative to work with internal process owners, collaborate to reduce communication barriers and proactively facilitate to build the communication bridges. Haseena V1, Shaheer K2 (2017) clearly mention that the passive participation of Project Manager in Project is key challenge faced in Project

Andrew Edkins, Peter Morris, Joana Geraldi & Alan Smith (2013) underline that irrespective of the known fact that value creation has great opportunity at project front end, the role of project managers is still not clear to the available Further it also emphasises on the necessity of the role of frontend project Management and have emphasised that the decisions which are formalised at the inception phase of Project has considerable possibilities of creating 'Value' which underlines the project success. This also further cautions that if stakeholder's interest are not considered for accumulating Project requirements, then project will suffer subsequently. Also, this work is recommended identify techniques and tools to manage "internal and external Stakeholders". In many role matrices the role of Project Manager to coordinate in early stages is not considered. Jackson Mugabo1, Dr. Patrick Mulyung (2016) has strongly advocated the formal involvement of Project Manager with the Process Owners or Stakeholders in the inception phase of project. By recognising diverse stakeholders, the idea of value capture may help project managers get a wider perspective. Project managers should be aware of the stakeholder negotiations for value that a project includes. Haseena V1, Shaheer K2 (2017) Project Management needs to develop with his leadership role the coordination in difference functions of Projects for reducing uncertainties to large extent at Planning Phase only.

6. Strengthen Learning and Training Mechanism for upskilling workforce to understand value based practices

Project system dynamics is complex M. Lyneis and D. N. Ford. (2007) and requires many proactive measures like identification of rework in advance, change management, risk management. The adverse impact of this phenomenon on project can be reduced with proactive feedback control from all project stakeholders. These process settings shall need for imparting education to all stakeholders for value management to understand system dynamics. This will also further require collaborating system dynamic models of value creation with traditional management tools. Projects that an organisation chooses to fund and manage have the potential to add value. If potential value is not taken into account during project appraisal, this could result in less advantageous strategic choices for the project portfolio. Establishing governance frameworks that facilitate these strategic talks on projects may help us recognise this, but organisations should also assure a certain level of project maturity, which may call for training the base organisation in project management and its relationship to strategy. (Mark Winter a,*, Charles Smith b, Peter Morris c, Svetlana Cicmil, 2006) endorse this finding. Also, Project manager must be groomed to understand the essence of value management and required leadership qualities to navigate this task, while manoeuvring project.

3. Research Methodology

Research Methodology is based upon majorly quantitative model of survey and analysis. This research investigates into existing literatures related to project and value management, pertaining to manufacturing industry to identify value process requirements and its interface with project manager which are further translated into structured questionnaire. The questionnaire is then given to focused group of participants pertaining to project industry to obtain quantitative as well as qualitative feedback to analyse two aspects – (1) do the stakeholders

agree to the theoretical recommendation of literatures regarding role of project manager (2) are these recommendations part of existing project management practice

In line with the above literature review, we raised following queries with stakeholders from selected sample, from project based manufacturing industry, with focus on construction equipment industry which is subset of heavy industries.

Format of Questionnaire

Table 1: Questionnaire for Survey

SN	Ref	(Enhanced) Role of Project Manager	This is essential process requirement and needs to be implemented	This requirement is Implemented in organisational practice	Remarks
A	a	Coordination for the smooth functioning of Value Processes (Value creation, capture and harvesting) across entire life-cycle of project]			
B	b	Regarding - Continuous strengthening of Value Management work culture	Fields for response		
C	c	Regarding - Involvement in Formulation of Project and Organisational strategy			
D	d	Regarding - Develop, Upgrade leadership competencies to drive value processes			
E	e	Strengthen Learning and Training Mechanism for upskilling workforce to understand value based practices			

Questionnaire is split into two parts. 1st part is for understanding the theoretical agreement of professionals from project industry for the requirements of advanced role of project manager for processes of value management. 2nd part if for understanding the actual implementation of these requirements of ground so that we can understand actual diffusion of these concept into the project management practice.

Options for response is based upon Likert 5- scale questionnaire. We asked the queries with questionnaire to 116 members from 26 companies. Questionnaires were shared on mail, what-up, social media and 116 responses were achieved. These responses are further analysed.

To make sure of the validity of the questionnaire, we initially discussed the people over phone, in person. Also detained explanatory note was prepared while sending this questionnaire to people, so that they can understand the intent behind the questions.

Sample Size –

We decided to select the segment of Heavy Industries with major focus of Construction Equipment Industries, Turnkey projects, Heavy duty Automobiles, Ancillaries to these Industries around Pune and Mumbai for sampling. Key focus is to take the feedback from Construction equipment industry and its ancillary support industry so that the sample size can be decided. We have key 61 construction equipment companies which we found from industry databased.

The companies were identified taking the sources from internet wherein total 61 companies were enlisted in the segment out of which 42 companies people (68%) responded. Questionnaires were extended to Project Managers, Designers, Production and Quality people to get the holistic perspective of process requirement. Also, we sent the questionnaire to the 56 companies in supply chain of Construction equipment industry i.e. automobile,

ancillary segment and similar Heavy Industry – projects. So we received feedback from 116 people from 98 companies.

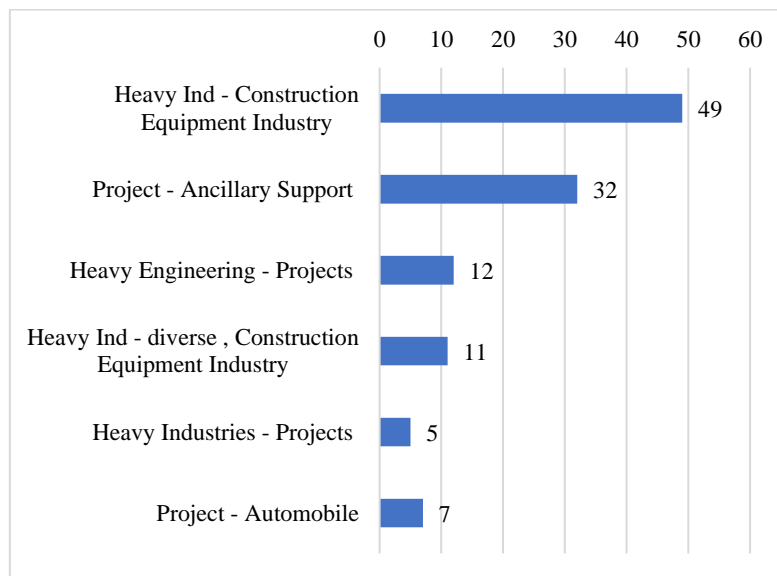


Fig 1: Feedback from different type of companies

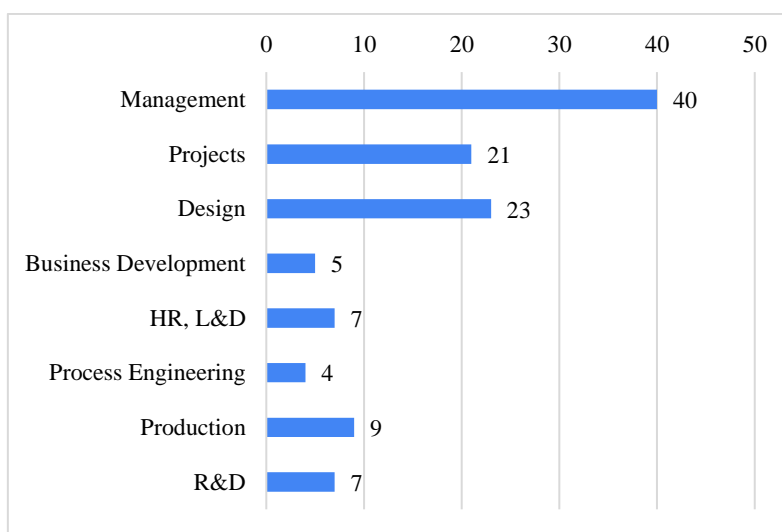


Fig 2: Feedback from different functions of operations

Feedback and Analysis

The feedback received for both parts is compiled as below –

1. **Theoretical** is for conceptual agreement in principle of professionals from project industry for the requirements of advanced role of project manager for processes of value management. This means, they feel that it is essential for organisation's operational mechanism to work upon these value managements related concepts and incorporate those in working processes within organisation for operational excellence.
2. **Actual** is the impression of the people regarding confirmation that, they have seen its actual implementation to the considerable extent. This also indicates the actual diffusion of the processes within organisational culture. This quantum also will advise the further efforts required, as a whole, for project industry to take necessary steps to gear-up and lay-down value based organisational parameters for establishment of value-

based processes wherein project manager will have say in not only projects but also in the discussions related to organisational strategy.

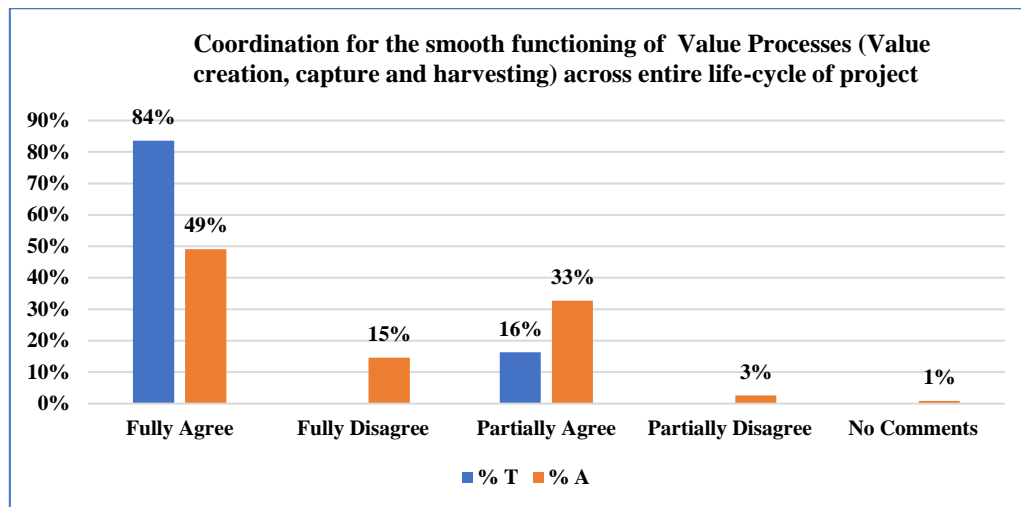
4. Results

QUE NO	Acceptance Count	Fully Agree	Fully Disagree	No Comments	Partially Agree	Partially Disagree	Grand Total
1	Theoretical	97	--	--	19	--	116
	Actual	57	17	1	38	3	116
2	Theoretical	68	--	--	48	--	116
	Actual	45	4	2	60	5	116
3	Theoretical	82	--	--	34	--	116
	Actual	49	2	2	58	5	116
4	Theoretical	85	--	--	31	--	116
	Actual	52	6	2	51	5	116
5	Theoretical	96	--	5	15	--	116
	Actual	50	6	2	53	5	116

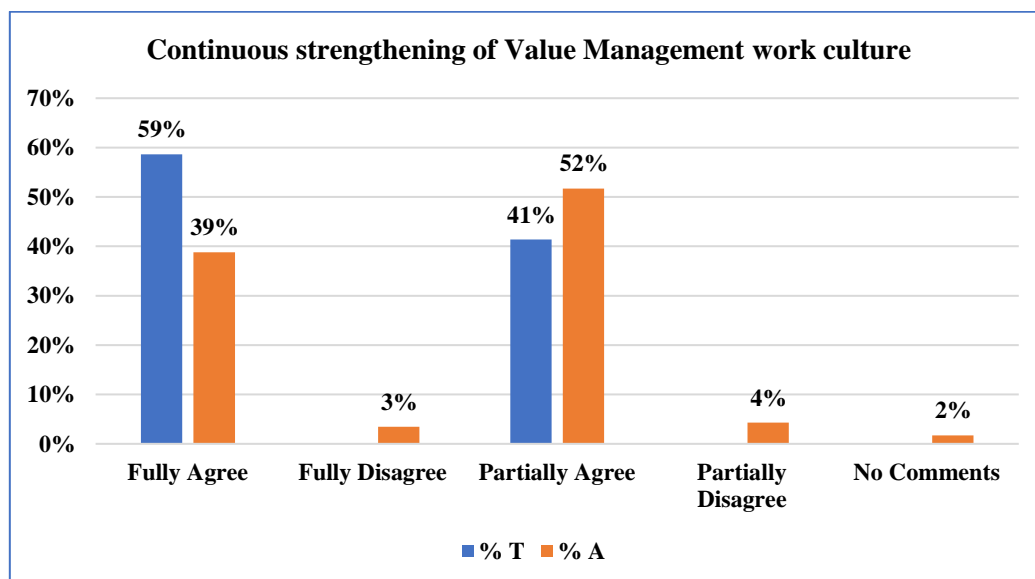
% Values of Feedback

QUE NO	Acceptance %	Fully Agree	Fully Disagree	No Comments	Partially Agree	Partially Disagree	Grand Total
1	Theoretical	84%	--	--	16%	--	100%
	Actual	49%	15%	1%	33%	3%	100%
2	Theoretical	59%	--	--	41%	--	100%
	Actual	39%	3%	2%	52%	4%	100%
3	Theoretical	71%	--	--	29%	--	100%
	Actual	42%	2%	2%	50%	4%	100%
4	Theoretical	73%	--	--	23%	--	100%
	Actual	45%	5%	2%	44%	4%	100%
5	Theoretical	84%	--	4%	13%	--	100%
	Actual	43%	5%	2%	46%	4%	100%

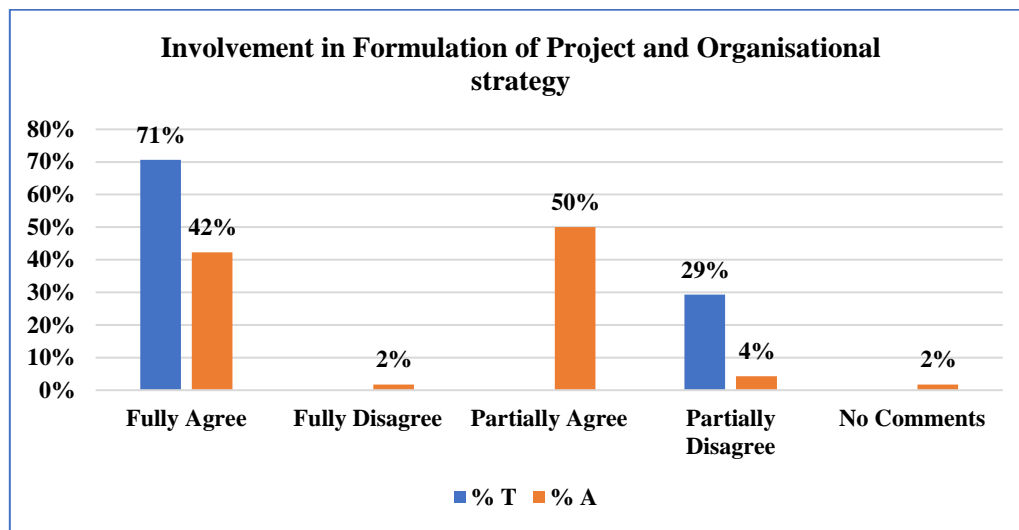
5. Discussion



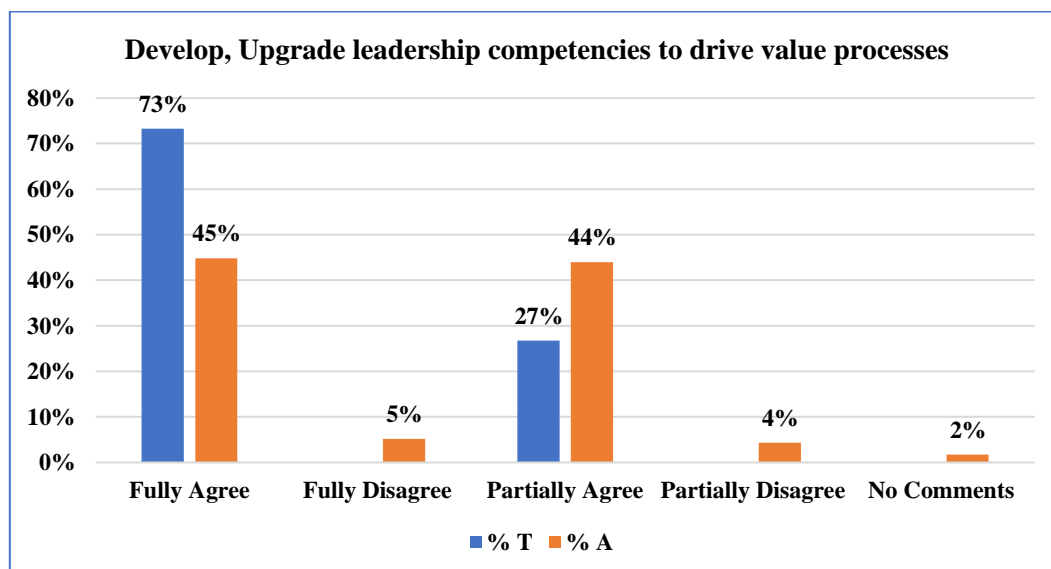
Analysis - Theoretical Agreement is extended by 84% people for the role of Project Manager to Coordinate Value Processes for Smooth functioning, across entire lifecycle of project. Although, only 49 % say that there is implementation of this requirement in operations. The scope of improvisations is evident wherein 15% Fully disagree the requirement and 36 % partially agree/disagree for implementation.



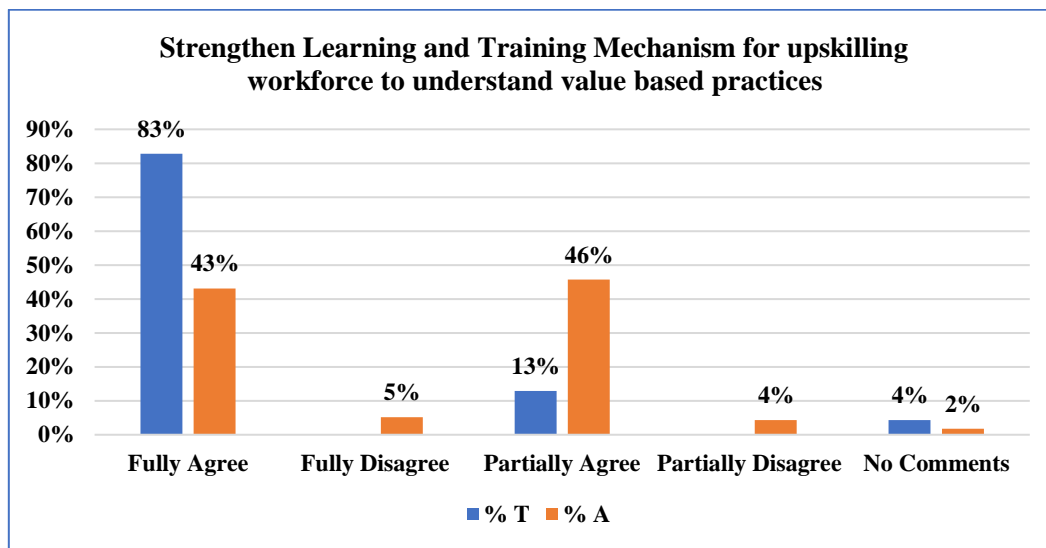
Analysis - Theoretical Agreement is extended by 59% people for continuous strengthening of value management processes. Although, only 39 % say that there is implementation of this requirement in operations. The scope of improvisations is evident wherein 3% fully disagree, 56 % partially agree/disagree it's actual implementation in operations.



Analysis - Theoretical Agreement is extended by 71% people on involvement of Project Management while formulation of organisational strategy. Although, only 42 % say that there is implementation of this requirement in operations. The scope of improvisations is evident wherein 2% Fully disagree the requirement and 54 % partially agree/disagree for implementation.

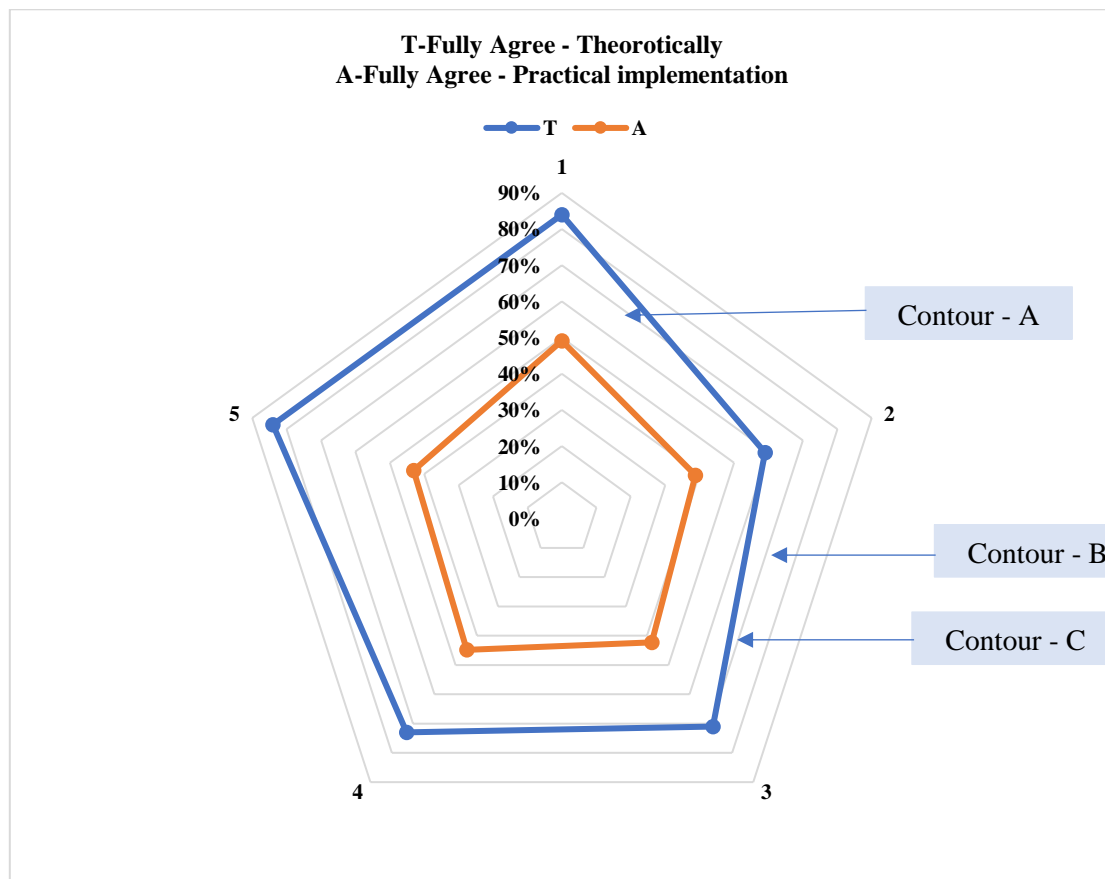


Analysis - Theoretical Agreement is extended by 71% people on involvement of Project Management while formulation of organisational strategy. Although, only 42 % say that there is implementation of this requirement in operations. The scope of improvisations is evident wherein 2% Fully disagree the requirement and 54 % partially agree/disagree for implementation.



Analysis - Theoretical Agreement is extended by 83% people Strengthening learning and Training Mechanism for upskilling workforce for understanding value based practices. So broadly there is good consenses on this requirement and we can say that, this activity is imperative in value management environment of project management. Although, only 43 % say that there is implementation of this requirement in operations. The scope of improvisations is evident wherein 5% Fully disagree the requirement and 50 % partially agree/disagree for implementation.

6. Conclusion



The above diagram shown broadly two aspects of analysis –

Contour A – shows 100 establishment of the process. Contour B shows the theoretical consensus on the involvement of project manager with his extended role for strengthening value management processes. The Gap between Contour A and B shows that still there is the scope of learning and development for stakeholders of the projects to fully accept the process. The acceptance of this requirement is good sign which indicates the evolution of conventional mind-set of project industry personnel for value-oriented approach.

Gap between contour B and C indicates the real challenge of translating the theoretical acceptance of enhanced role of project management in practice. This also indicates the scope wherein organisation will have to work with different tools and also with Learning and development process, to strengthen the role of project manager for value processes. This will also require buying of various stakeholders which is possible with top driven initiative.

Here we understand that 74 % personell from Project Management Industry agree for that the role of Project Manager is significant from value management perspective. Yet only 44 % people agree that there is diffusion of these practices in organisation. This indicates that there is 26% + scope of acceptance, 66% + scope for actual diffusion of these practices.

These process recommendations have their origin from reseach literature. Here, this is indicative the researchers and practitioners are not on same page. Also, researchers are limiting their discussions only to the booundaries of academics because, the people are ready to accept the change yet there seems no handholding for it's actual implementation on ground.

Learning and Development department of organsiations must bring reasarchers within the gammet of training programme and grab the wisdom of these processes. Also, researcher must go one step further to continously discuss with practitioners the huddles in the way of implementation and make these as the topics of further research for identification of imperative solutions.

7. Future Work

This research is for understanding the diffusion of value management practices related to the enhanced role of project manager in project based industry. The research has limitations of sample size. The sample taken is from state of Maharashtra, India mostly from the industry around Pune and Mumbai. This will be interesting to know the impressions of this understanding across country. Also, further the sample of specific category of company, for e.g. different segments of heavy engineer industry i.e. steel industry, fertiliser industry, mining, construction machinery, sugar industry, textile industry, agricultural machinery, tractors, pumps, diesel engines can be done on case to case basis.

This way, we shall understand the deeper perspectives of diffusion of value management and focus on making project manager / project management office much stronger to actively contribute to the value process and organisational strategy.

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