# **Exploiting Tacit Knowledge: A Review** and Possible Research Directions



Pawankumar Saini and Pradnya Chitrao

Abstract In the corporate world, tacit knowledge is becoming recognised as a differentiator. The value and necessity of focusing on leveraging tacit knowledge are highlighted via a literature study. The important themes covered in this review are the knowledge generation process, information sharing, behaviours that influence tacit knowledge sharing, sharing strategies, and so on. The research examines the different factors that lead to the industrial exploitation of tacit knowledge. To address the research gaps identified, the authors attempt to propose possibilities for future research in this area of discourse. The authors feel that the provided issues for future research will aid academics in further exploring the potential of tacit knowledge exploitation in the sectors, in addition to the research work done by many scholars in the tacit knowledge domain. The authors are conscious that this article has certain limitations because it focuses on tacit knowledge in the industry, although the impact of tacit knowledge in other sectors needs to be investigated as well. This study could lead to new approaches for businesses to tap into the potential of tacit knowledge held by their staff through knowledge production and sharing.

**Keywords** Knowledge management · Tacit knowledge · Explicit knowledge · Knowledge sharing · Knowledge creation

#### 1 Introduction

The markets are in a volatile state and everything, including the competition, is shifting [1]. Companies that continually develop new information, disseminate it extensively within the firm, and promptly incorporate it into new technologies and

P. Saini (⊠)

Symbiosis International University, Pune, Maharashtra, India

e-mail: pawankumarsaini09@gmail.com

P. Chitrao

Symbiosis Institute of Management Studies, A Constituent of Symbiosis International University, Pune. Maharashtra. India

e-mail: pradnyac@sims.edu

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products are successful. If companies want to improve the efficiency of their resource (input) utilisation and the productivity of their manufacturing processes, they must acquire knowledge [2]. The knowledge-based perspective of the firm sees a company as a knowledge-creating entity, arguing that knowledge, and the ability to develop and use it, is the most essential source of a company's long-term competitive advantage [3]. Employee participation, both willing and active, will determine the effectiveness of knowledge management methods [4]. A key element that we discuss in this review is tacit knowledge (TK) management which starts with creating TK and then sharing it for further use. Acquisition, management, and reuse of TK are more difficult than explicit knowledge (EK). While a lot of research has been done around EK areas, there is very little attention paid to TK [5]. This research will help people from the industry to apply the findings of the research.

#### 2 Literature Review

TK, according to Michael Polanyi, is knowledge that cannot be stated or verbalised. He went on to say that one of the most important aspects of TK is that "we know more than we can tell" [6]. There is the issue of difficulty in articulating what we know, but according to Polanyi, we may not even be aware of what we know or how our TK relates to what we can demonstrate. Because TK is such a personal knowledge, it is only shared when individuals meet face to face and take action. TK is converted to EK, which is then combined with experiences to revert to tacit. To develop new knowledge, there must be a constant upward spiral of information [6]. Nonaka stated that TK is difficult to codify, making it difficult to communicate with others [7]. Because of our deeply formed mental models, beliefs, and viewpoints, we take TK for granted. As a result, articulating TK is challenging [7]. TK can also be defined as a skill acquired by actions and experience, both formally and informally. The main challenges with TK diffusion, according to Haldin-Herrgard T, are the TK's unconsciousness and difficulty in utilising it [8]. As non-codified and disembodied know-how, Howells claims that TK can be obtained by informal take-up of learned behaviour and procedures [9]. Learnings in an unstructured or semi-structured manner characterise TK acquisition and transfer. According to Jones and Leonard, we must address various factors of transforming TK to organisational knowledge in order for many more people to gain and use the knowledge [10]. According to Paolino, Lizcano, Lopez, and Lloret, TK expands with use and so is limitless [11]. According to Mohajan, TK is a dynamic process that is heavily influenced by an individual's social ties and characteristics [12].

# 3 Objectives of the Study

The purpose of this study is to highlight the various aspects that are significant when it comes to exploiting TK for organisational economic growth. The goal of the research is to discuss the features of TK, TK in the context of organisations,

knowledge creation, sharing, and the challenges of managing TK in the workplace. The study's goal is to look at the many aspects of TK management in companies and to identify the practices that are currently being used to reap the benefits of TK. If organisations can fully utilise the potential of TK, they will benefit. We hope this article will help to open the possibilities of better TK management, its use, and to further the discourse of TK in industries.

## 4 Methodology of the Study

This is a review article and is prepared based on secondary data. A review of existing studies brings out the work that has so far been done and the gaps that remain in the literature on the role of TK in industries. This is followed by questions for future research.

## 5 Tacit Knowledge

There are two sorts of knowledge: EK and TK [3]. EK is a type of knowledge that includes facts, propositions, symbols, and so on [13]. TK refers to knowledge that is difficult to formalise, such as belief, viewpoint, mental models, concepts, and ideals [3]. While TK and EK are distinct, they are at opposite ends of a knowledge continuum and should not be viewed as antagonistic; rather, it is vital to recognise that we embrace them in various ways [14]. The shift on the spectrum happens based on the changes of the individual's ability to express and formulate knowledge tacitness [15]. Even if TK is embedded in the individual, EK, according to Polanyi, must be grasped tacitly. Polanyi concludes that there is no pure EK and that the tacit element is ingrained in all forms of knowledge [16]. When learning based on knowledge transfer takes place, both TK and EK are utilised. In this context, they are inextricably linked, and this is required to achieve specified learning outcomes [17]. There is a dynamic interaction with one another that allows for the creation of new knowledge and the development of creative individual and communal activity outcomes [18].

# 6 Knowledge Creation Process

Considering knowledge as a resource, it becomes important that organisations make optimum use of it. They must raise awareness of the process of knowledge generation and the importance of continual TK sharing among individuals, as well as assist in nurturing, articulating, and amplifying it [7]. Nonaka and Takeuchi proposed the SECI (socialisation, externalisation, combination, internalisation) four-step conver-

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sion model, which consists of a continuous process of knowledge creation spiral [1]. Socialisation (from TK to TK), externalisation (from TK to EK), combination (from EK to EK), and internalisation (from EK to TK) are the four modes of conversion between TK and EK [3]. At each level of the conversion, different stakeholders are involved. The organisation is responsible for developing knowledge visions, defining objectives, facilitating dialogue at the appropriate time and place, and ensuring a conducive environment for the SECI model's effective and efficient conversions [19].

## 7 Knowledge Sharing

Knowledge sharing is a critical link that allows new knowledge, products, and services to be created. This fact is only now beginning to be grasped by the organisation's people [14]. Other knowledge management (KM) processes and practises are brought to life by knowledge sharing [20]. When the agents share a same background and experience, mutual relationships make it easier for knowledge transfer to occur [21]. Organisations must create an environment that encourages social connections so that knowledge, experiences, and abilities may be shared across all departments [22]. Given the choice between TK and EK transfers, firms prefer TK transfers as it is difficult to replicate [23]. Knowledge is the engine that drives organisation's performance. Every organisation is trying to grow knowledge or acquire it if needed, and then work on transferring it [24, 25]. Firms that focus on knowledge transfer have a better possibility of developing more knowledge and, as a result, differentiators. These businesses are more likely to expand and become productive [26, 27].

# 7.1 Methods of Knowledge Sharing

TK could provide a vast array of chances and potentials for discovery and innovation. Regardless of whether it is TK or EK, firms are putting a renewed emphasis on knowledge exchange. As a result, businesses are devising new techniques to enhance knowledge sharing [14]. Some of the ways that TK can be or is being shared in organisations has been shared by researchers. Having co-working spaces can promote inter-domain learning by facilitating TK exchange, synthesising, and sharing of domain-related ideas [28]. Using metaphors and analogies can help individuals externalise their TK and convey it more easily, making it easier for the TK user [2, 29]. Having knowledge containers in place, which is the capture of knowledge in the documented form of values, rules, and procedures can help in knowledge sharing [30]. Knowledge sharing could be ingrained in everyday work routines and informal gatherings [20]. Sharing personal experiences with decisions made, difficulties addressed, and so on can help others to use the same [31, 32]. E-Mentoring (sharing TK through social media) is a great tool to pass on the tacit knowledge [33]. Putting

systems in place that allow for face-to-face contacts, like as coaching and mentoring, can considerably aid TK transfer [34]. The complexity of coding and recording is eliminated by bringing individuals together to share their experiences, narratives, stories, and observations [35]. New techniques are shared through demonstrating them in pilot training courses. This aids in the conversion of TK to EK [36]. Learning by emulating the activities of professionals is the simplest, most cost-efficient, and most effective method of passing on TK to others [36–38]. Using the right questioning technique to extract tacit knowledge and then codifying it for sharing with others is of great help [34, 39–42]. The method for conveying knowledge will be determined by the setting, audience, and learning domain, among other factors.

## 8 Tacit Knowledge in Industries

Because EK is knowledge that everyone knows and is public by nature, it is TK that distinguishes the organisation and offers it a competitive advantage [43]. Employee TK is used to drive service organisations, and TK becomes more strategic in terms of delivering performance [44]. Workers learn a lot of TK from their mentors and experienced employees by observing, mimicking, and practising, rather than through procedural manuals. This also aids in the preservation of knowledge within the organisation [1, 45, 46]. The mentor or the experienced individual plays a very important role in transferring the tacit knowledge to the newcomer and guiding him or her [47]. However, little is done to capture workers' TK, and there is a significant loss of skills when employees quit or retire [48]. It becomes vital to have a solid structure in place to capture organisational memory via KM systems, and a dedicated manager is required for this. The manager has operational experience as well as technical knowledge in managing the KM system [49]. Because TK is unevenly distributed, it is critical to set the stage and align collective action, all while looking for methods to improve the quality of TK on all levels [50].

# 9 Challenges in Managing Tacit Knowledge

The most difficult aspect of managing TK is keeping people who have acquired it because the TK is lost when they leave the company. The loss is further multiplied when the competitive edge is lost due to these individuals joining competing organisations. Previous study has shed light on the various problems that must be overcome. Organisations generally are not able to determine the sort of information leaving the organisation. Organisations are unable to appraise the importance and value of knowledge loss, and hence overlook the seriousness of the situation [51]. The increased use of online transactions is isolating workers who can only work with what they already know and are unable to learn new TK. It becomes challenging to share knowledge across many organisational units due to this [33]. When a large

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amount of TK is concentrated in the hands of a few individuals, the organisation becomes vulnerable [30]. Depending on people-based approaches alone will always pose a risk of TK loss [30]. When information is lost, it causes challenges such as duplication of effort, the need to find new qualified personnel, and the risk of not regaining all the lost knowledge [48]. When an individual departs the company, critical relationships created with external partner networks are damaged or lost [51]. When top executives leave an organisation, they take with them their working methods and knowledge of the procedures they oversaw. As a result of their lack of basic working expertise, the subordinates are susceptible [32, 48]. Because TK can only be shared through example, the number of possibilities to share it is limited [52]. Organisations are still not geared up to have a proper knowledge transfer and capture mechanism [15]. Organisations have focussed solely on EK, while TK management has gone almost unnoticed [53, 54]. There is a lack of knowledge sharing due to a lack of trust, social networking, self-awareness, and training [55].

#### 10 Research Directions

Future study can be focussed on some of the questions raised as a result of this literature review. Is it true that organisations lose money due to a lack of TK capture? Is it tough to draw top management's attention to TK because of its difficult to express nature? How high on an organisation's strategic objective is TK capture? To what extent does an organisation's TK be captured? When new experienced people join a business, to what extent does TK flow into the organisation? When an employee quits an organisation, how much of the tacit knowledge is lost? To what extent can TK be passed on from one person to the next? To what extent can TK to EK conversion be quantified? To what extent does TK transfer differ between online and in-person working systems? To what extent does tacit knowledge transfer get hampered when units are located geographically apart? To what extent can organisations become vulnerable because of individual TK accumulation? If individuals leave the firm, how will this affect business with external partners? What impact does the departure of a senior leader have on the organisation?

#### 11 Conclusions

One of the key duties of senior management in an organisation, according to researchers, is to create an environment in which people are motivated to share their tacit knowledge and convert it to explicit knowledge for the business's growth. Organisations are ignorant to the financial loss that results from a lack of proper TK management. There are not enough metrics for calculating the amount of TK and EK produced. For the institutionalisation of the knowledge generation process, organisations must create an organisational structure with clear duties. In organisations,

there is definitely a disparity in the level of information exchange. There are a lot of strategies for knowledge sharing that have been compiled that the organisation might apply. The literature review shows that businesses are still far from obtaining an ideal level of knowledge management. To complete the TK and EK KM realm, there is still a lot of study and implementation to be done, as well as a lot of questions to be asked and addressed.

#### References

- I. Nonaka, H. Takeuchi, Knowledge-Creating Company (Knowledge-Creating Company, 1991, 1995)
- J.G. Woods, From decreasing to increasing returns: the role of Tacit knowledge capital in firm production and industrial growth. J. Knowl. Econ. 10(4), 1482–1496 (2019). https://doi.org/ 10.1007/s13132-016-0351-2
- 3. I. Nonaka, R. Toyama, A. Nagata, A Firm as a Knowledge-creating Entity: A New Perspective on the Theory of the Firm (Japan, 2000)
- D. Chawla, H. Joshi, Knowledge management practices in Indian industries—a comparative study. J. Knowl. Manag. 14(5), 708–725 (2010). https://doi.org/10.1108/13673271011074854
- 5. J. Hao, Q. Zhao, Y. Yan, G. Wang, A review of tacit knowledge: current situation and the direction to go
- 6. M. Polanyi, The tacit dimension, knowledge in organizations, ed by L. Prusak (1966)
- 7. I. Nonaka, *The Knowledge-Creating Firm* (Harvard Business Review, 1991)
- 8. T. Haldin-Herrgard, Difficulties in diffusion of tacit knowledge in organizations. J. Intell. Capital 1(4.), 357–365 (2000). https://doi.org/10.1108/14691930010359252
- 9. J. Howells, Tacit knowledge, innovation and technology transfer. Technol. Anal. Strate. Manag. 8(2), 91–106 (1996). https://doi.org/10.1080/09537329608524237
- K. Jones, L.N.K. Leonard, From Tacit Knowledge to Organizational Knowledge for Successful KM (2009), pp. 27–39. https://doi.org/10.1007/978-1-4419-0011-1\_3
- 11. L. Paolino, D. Lizcano, G. López, and J. Lloret, A multiagent system prototype of a tacit knowledge management model to reduce labor incident resolution times. Appl. Sci. (Switzerland) 9(24) (2019). https://doi.org/10.3390/app9245448
- 12. H.K. Mohajan, Sharing of tacit knowledge in organizations: a review (2016). [Online]. Available <a href="http://www.openscienceonline.com/journal/ajcse">http://www.openscienceonline.com/journal/ajcse</a>
- 13. M. Polanyi, Tacit knowing: its bearing on some problems of philosophy. Rev. Mod. Phys. **34**(4) (1962). https://doi.org/10.1103/RevModPhys.34.601
- 14. M.A. Fauzi, N. Paiman, A critical review of knowledge sharing in various industries and organizations. Int. J. Sci. Technol. Res. 8 (2020) [Online]. Available www.ijstr.org
- C.H. Chuang, S.E. Jackson, Y. Jiang, Can knowledge-intensive teamwork be managed? Examining the roles of HRM systems, leadership, and tacit knowledge. J. Manag. 42(2), 524–554 (2016). https://doi.org/10.1177/0149206313478189
- 16. D. Lesjak, S. Natek, Knowledge management systems and tacit knowledge. Int. J. Innov. Learn. **29**(2), 166 (2021). https://doi.org/10.1504/jijil.2021.10034239
- J. Roberts, From know-how to show-how? Questioning the role of information and communication technologies in knowledge transfer. Technol. Anal. Strat. Manag. 12(4), 429–443 (2000). https://doi.org/10.1080/713698499
- I. Nonaka, G. von Krogh, Tacit knowledge and knowledge conversion: controversy and advancement in organizational knowledge creation theory. Organ. Sci. 20(3), 635–652 (2009). https://doi.org/10.1287/orsc.1080.0412
- 19. I. Nonaka, R. Toyama, T. Hirata, Managing flow a process theory of the knowledge-based firm-managing flow. https://doi.org/10.1057/9780230583702preview

- A. Abdelwhab Ali, D.D.D. Panneer Selvam, L. Paris, A. Gunasekaran, Key factors influencing knowledge sharing practices and its relationship with organizational performance within the oil and gas industry. J. Knowl Manag. 23(9), 1806–1837 (2019). https://doi.org/10.1108/JKM-06-2018-0394
- D.J. Teece, The market for know-how and the efficient international transfer of technology. Ann. Am. Acad. Polit. Soc. Sci. 458(1), 81–96 (1981). https://doi.org/10.1177/000271628145800107
- H.F. Lin, Knowledge sharing and firm innovation capability: an empirical study. Int. J. Manpower 28(3-4), 315–332 (2007). https://doi.org/10.1108/01437720710755272
- D.R. Williams, Knowledge transfers in the US biopharmaceutical market during a time of transition. J. Pharma. Innov. 15(3), 445–454 (2020). https://doi.org/10.1007/s12247-019-09395-3
- 24. R. Teigland, M. Wasko, Knowledge transfer in MNCs: examining how intrinsic motivations and knowledge sourcing impact individual centrality and performance. J. Int. Manag. **15**(1), 15–31 (2009). https://doi.org/10.1016/j.intman.2008.02.001
- 25. R. van Wijk, J.J.P. Jansen, M.A. Lyles, Inter-and intra-organizational knowledge transfer: a meta-analytic review and assessment of its antecedents and consequences (2008)
- T. Kostova, Transnational transfer of strategic organizational practices: a contextual perspective (1999)
- 27. A.C. Inkpen, E.W.K Tsang Wayne, Knowledge transfer (2005)
- R. Bouncken, M.M. Aslam, Understanding knowledge exchange processes among diverse users of coworking-spaces. J. Know. Manag. 23(10), 2067–2085 (2019). https://doi.org/10. 1108/JKM-05-2018-0316
- 29. P. Busch, Tacit Knowledge in Organizational Learning (IGI Pub, 2008)
- P. Wethyavivorn, W. Teerajetgul, Tacit knowledge capture in Thai design and consulting firms.
  J. Constr. Developing Countries 25(1), 45–62 (2020). https://doi.org/10.21315/jcdc2020.25.1.
- 31. B. Saeed, A. Mahmood, and A. Saeed, Tacit knowledge sharing in technology-based firms: role of organization citizenship behavior and perceived value of knowledge. Int. J. Sci. Technol. Res. (2020) [Online]. Available <a href="https://www.ijstr.org">www.ijstr.org</a>
- 32. P. Dogra, A.E. Sparkling, Supervisors' reliance on tacit knowledge and impediments to knowledge sharing in trades
- 33. Z. Chen, D. Vogel, T. Yang, J. Deng, The effect of social media-enabled mentoring on online tacit knowledge acquisition within sustainable organizations: a moderated mediation model. Sustainability (Switzerland) 12(2) (2020). https://doi.org/10.3390/su12020616
- K. Plangger, M. Montecchi, I. Danatzis, M. Etter, J. Clement, Strategic enablement investments: exploring differences in human and technological knowledge transfers to supply chain partners. Ind. Mark. Manag. 91, 187–195 (2020). https://doi.org/10.1016/j.indmarman.2020.09.001
- 35. A.C. Inkpen, A. Dinur, Knowledge management processes and international joint ventures. Organ. Sci. 9(4), 454–468 (1998). https://doi.org/10.1287/orsc.9.4.454
- 36. D. Asher, M. Popper, Tacit knowledge as a multilayer phenomenon: the 'onion' model. Learning Organ. 26(3), 264–275 (2019). https://doi.org/10.1108/TLO-06-2018-0105
- 37. A.S. Reber, An evolutionary context for the cognitive unconscious. Philosophical Psychol. 5(1), 33–51 (1992). https://doi.org/10.1080/09515089208573042
- 38. G. Csibra and G. Gergely, Natural pedagogy as evolutionary adaptation. Philosophical Trans. Roy. Soc. B: Biolog. Sci. **366**(1567). 1149–1157 (2011). (Royal Society). https://doi.org/10.1098/rstb.2010.0319
- M. Bhardwaj, J. Monin, Tacit to explicit: an interplay shaping organization knowledge. J. Knowl. Manag. 10(3), 72–85 (2006). https://doi.org/10.1108/13673270610670867
- 40. T. Gavrilova, T. Andreeva, Knowledge elicitation techniques in a knowledge management context. J. Knowl. Manag. **16**(4), 523–537 (2012). https://doi.org/10.1108/13673271211246112
- M. Sh, Al-Qdah, J. Salim, A conceptual framework for managing tacit knowledge through ICT perspective. Procedia Technol. 11, 1188–1194 (2013). https://doi.org/10.1016/j.protcy.2013. 12.312

- 42. M. Supanitchaisiri, O. Natakuatoong, S. Sinthupinyo, The innovative model for extracting tacit knowledge in organisations (2020)
- R. Seidler-de Alwis and E. Hartmann, The use of tacit knowledge within innovative companies: knowledge management in innovative enterprises. J. Knowl. Manag. 12(1), 133–147 (2008). https://doi.org/10.1108/13673270810852449
- 44. J.-N. Ezingeard, S. Leigh Ernst, Y. Rebecca Chandler-Wilde, J.-N. Ezingeard, S. Leigh, R. Chandler-Wilde, Knowledge management at Ernst & Young UK: getting value through knowledge flows (2000). [Online]. Available http://aisel.aisnet.org/icis2000/93
- 45. I. Nonaka and A. Y. Lewin, A dynamic theory of organizational knowledge creation
- P. Letmathe, M. Rößler, Tacit knowledge transfer and spillover learning in ramp-ups. Int. J. Oper. Prod. Manag. 39(9–10), 1099–1121 (2019). https://doi.org/10.1108/IJOPM-08-2018-0508
- 47. P.M. Hildreth, C. Kimble, The duality of knowledge (2002)
- 48. S.M. Ferdous Azam, J. Tham, A. Albattat, Psycho-social perspectives of knowledge sharing and job performance in Malaysia: conceptual articulation. [Online]. Available <a href="https://www.ijstr.org">www.ijstr.org</a>
- J.Cárcel-Carrasco, J.A. Cárcel-Carrasco, E. Peñalvo-López, Factors in the relationship between maintenance engineering and knowledge management. Appl. Sci. (Switzerland) 10(8) (2020). https://doi.org/10.3390/APP10082810
- 50. I. Nonaka, R. Toyama, Strategic management as distributed practical wisdom (phronesis). Ind. Corp. Change 16(3), 371–394 (2007). https://doi.org/10.1093/icc/dtm014
- A. Daghfous, O. Belkhodja, Managing talent loss in the procurement function: insights from the hospitality industry. Sustainability (Switzerland) 11(23) (2019). https://doi.org/10.3390/ su11236800
- 52. O. Ibert, Towards a geography of knowledge creation: the ambivalences between 'knowledge as an object' and 'knowing in practice'. Reg. Stud. **41**(1), 103–114 (2007). https://doi.org/10.1080/00343400601120346
- J.R. Gamble, Tacit vs explicit knowledge as antecedents for organizational change. J. Organ. Change Manag. 33(6), 1123–1141 (2020). https://doi.org/10.1108/JOCM-04-2020-0121. (Emerald Group Holdings Ltd.)
- 54. K.E. Sveiby, Disabling the context for knowledge work: The role of managers' behaviours. Manag. Decis. **45**(10), 1636–1655 (2007). https://doi.org/10.1108/00251740710838004
- R. Anwar, M. Rehman, K.S. Wang, M.A. Hashmani, Systematic literature review of knowledge sharing barriers and facilitators in global software development organizations using concept maps. IEEE Access 7, 24231–24247 (2019). https://doi.org/10.1109/ACCESS.2019.2895690