

# Impact of Digitalization in Knowledge Transfer and Performance in Wipro, Kochi

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**Abstract:** The notion, “Knowledge is power” get replaced by, “Sharing Knowledge is power” and it is the innate conscience that differentiate human beings from animals. It is the possession which is innate and inborn, and it cannot be stolen by robbers. Knowledge get widened while sharing it with others. We are living in a digital age, we should get tremendous volume of information at our finger tips and artificial intelligence and developments in Robotics and genetics should create a generation with core competencies. Every organisation trying to develop its core competencies, for achieving this, profound transfer of knowledge is very important. These digital technologies playing a crucial role in the transfer of knowledge. We are moving to an economy in which knowledge get obsolete within seconds and our focus just shifted from normal transfer of knowledge through books, is replaced by tech terms such as e-books, digital libraries and Smart Class. Our whole world is discussing and conducting research on concept like augmented reality, virtual reality, block chain, internet of things and artificial intelligence, and how this knowledge get applicable in day to day life. This journal focused on how digitalization helps in imparting knowledge transfer and should increase organizational performance.

**Key Words:** Knowledge, Sharing, Virtual reality, Internet of Things, Performance.

## I. INTRODUCTION

From prehistoric era onwards human beings strive for knowledge, it is their innate passion to learn new things, to study the unknown, leads to the development in new knowledge branches such as artificial intelligence, genetics, space science and cyber technology. Now a days the concept of Knowledge management is gaining momentum. Here, discussing the role of digitalization in knowledge management and transfer. Davenport defines Knowledge management as, “the exploitation and development of knowledge assets of the organisation with a view to achieve organizational objectives”. There are two types of knowledge (i) Explicit and (ii) Tacit Knowledge. Explicit Knowledge is the coded knowledge and it is conscious and it is expressed in words. Wide array of paper works, books, libraries, digital information banks all these act as the platform of explicit Knowledge. In sharp contrast to explicit, there is Tacit Knowledge, difficult express, formalize and share. We feel Tacit knowledge as some kind of intuition, rather than facts which can be expressed in words. An organisation potential is to harness tacit knowledge and transform it into explicit knowledge which should deliver immense success to the organisation. Here we discuss the role of digitalisation in transferring knowledge that would ultimately result in profound organization performance.

## II. LITERATURE REVIEW

Vidu Christian, Zebuchea Alexandra(2018), authors focused on knowledge management, that i.e. the creation, transfer and dissemination of knowledge and also analysing the impact of digital technology in transferring knowledge. Author analyses the digital technology interventions and the role of big data analytics, Artificial Intelligence, apps, and smart technologies in knowledge creation and transfer. Author concluded with, information Technology and Communication (ITC) infrastructure is very necessary for effective knowledge management. ITC helps, not only Knowledge storage and sharing but also the latest digital technologies and intelligent devices foster creativity and innovation and the exploitation of knowledge for the sake of organisation and its stakeholders.

Vladova Gergana, Ullrich Andre and Bahrs Julian(2018), here the authors analysed the effect of Enterprise Social Media(ESM)on effective and efficient knowledge management efforts. ESM helps in collaboration, learning, search, communication, knowledge sharing and creation, and social networking. Authors also examined the financial impact of knowledge creation, modification, distribution and usage. The efficient and effective handling of employees, their knowledge and their competencies leads to potential financial benefits, this had an overall effect on economic perspective of an enterprise such as the ability to innovate faster, to learn and adapt faster to changes. Author

concluded with, the implementation of ESM need investment, and the investment returns on the basis when technology accepted and implemented.

Sachar Dimpy, Kaur Hashmeet (2017), author examine, Information Technology as a key enabler and a source of competitive advantage, and its role in determining the performance of the organisation. Author analyse the impact of knowledge management initiatives on firms performance. Selder-de Alwis Ragna and Hartmann Evi (2008), examined the use of tacit knowledge within innovative organisation. They found out that knowledge sharing is very necessary to create successful innovation. Authors analysed the link between tacit knowledge transfer, Innovation and competitive advantage. Authors discussed the technical and cognitive dimensions of tacit Knowledge. Authors also give importance to the origin and vitalisation of Tacit Knowledge. Author also defines the S-curve of Tacit Knowledge which project Development on the X-axis and performance on Y-axis. Author analysed the impact organisational structure in creating innovation and also analysed the barriers of Tacit Knowledge transfer.

Terhorst Andrew, Lusher Dean, Bolton Dianne, Elsum Ian and Wang Peng (2018) analysed the influence of Tacit Knowledge in Open Innovation Projects. Author used exponential Random Graph modelling to examine both tacit and explicit knowledge. Author analysed the impact of Autonomous Motivation and Knowledge Brokerage in facilitating tacit Knowledge exchange among firms. Author identified Trust, Motivation and power are the key determinants of knowledge sharing behaviour. Author concluded that actors with high trust, participants with autonomous motivation, Knowledge brokerage and Organisation with high collaborative experience would facilitate Tacit Knowledge transfer and there by fostering innovative capability of the firm.

Cavusgil S Tamer, Calantone J Roger and Zhavo Yushan (2003), author analysed the relationship between Tacit Knowledge Transfer and firm innovation capability. He conducted the study in manufacturing and service sector. Authors trying to prove a set of hypothesis concerning the relationship between inter-firm relationship strength and tacitness of knowledge transfer, extent of tacit knowledge transfer and innovation capability, and innovation capability and innovation performance based on the theory of Knowledge. Collaborative experience and firm size influencing the inter-firm relationship and tacit Knowledge transfer and thereby affecting the innovation capability.

In this Study, on the basis of this four steps, identified digital software typologies in the company, for the creation and conversion of knowledge.

Author identified sources of individual Tacit Knowledge- Employee's Schemes, Skills, habits and Abstract Knowledge. Collective Tacit Knowledge can be found in Top Management Schemes, Organisational Consensus on past collaborative Experiences, Firm routines, Firm culture and Professional Culture. The study concluded by proving the influence of inter-firm relationship strength and close relationship between partners influence Tacit Knowledge Transfer.

**OBJECTIVES OF THE STUDY**

1. To study how digitalization technology helps in knowledge transfer and increase performance.
2. To study the demerits of digital Technology.

**SCOPE OF THE STUDY**

Scope of the study is limited to Wipro employees in the Kochi area, analysing how digitalisation helps in transferring their knowledge to other employees, increase the output of the employees, increase efficiency and reduce time and thereby increasing the performance.

**III. RESEARCH METHODOLOGY**

The study uses both primary and secondary data. Primary data is collected by mailing well framed questionnaire to the employees. Convenience Sampling is used for collecting data. Researching design adopted for the study is exploratory. Secondary data is collected from research journals, books, working papers Thesis reports, magazines and newspapers. Correlation and Descriptive Statistics is used for analysis purposes.

**THEORETICAL FRAMEWORK**

Generally knowledge is created, when people or group of people came up with new ideas, concepts and novel product or processes. Research activities, innovative projects, Experiment and observation also foster the creation of knowledge. Firestone says that, knowledge production begins with the need for knowledge in sufficient area, followed by learning activities by individuals, information acquisition and evaluation of knowledge result in organizational knowledge.

According to Nonanka and Takeuchi's organisational knowledge creation and conversion has two dimension, (i) individual create knowledge (ii) Interaction between Explicit and Tacit Knowledge. On the basis of this two dimension, Nonanka and Takeuchi developed four steps in the creation and conversion of knowledge- Socialization, Externalization, Combination and Internalisation.

<p><b>SOCIALIZATION (Tacit → Tacit)</b></p> <ul style="list-style-type: none"> <li>• Face to face communication</li> <li>• Video conferencing Tools</li> <li>• Web cams</li> </ul>	<p><b>EXTERNALIZATION (Tacit → Explicit)</b></p> <ul style="list-style-type: none"> <li>• Process Capture Tools</li> <li>• Traceability</li> <li>• Reflective peer to peer networks</li> </ul>
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<ul style="list-style-type: none"> <li>• Virtual Reality Tools</li> </ul>	<ul style="list-style-type: none"> <li>• Expert Systems</li> <li>• Discussion Platforms</li> </ul>
<p><b>INTERNALISATION(Explicit → Tacit)</b></p> <ul style="list-style-type: none"> <li>• <b>Collective Knowledge Networks</b></li> <li>• <b>Notes database/Org.memory</b></li> <li>• <b>Neural Networks</b></li> </ul>	<p><b>COMBINATION(Explicit → Explicit)</b></p> <ul style="list-style-type: none"> <li>• <b>Collaborative Computing Tools</b></li> <li>• <b>Intranets, Groupware</b></li> <li>• <b>Discussion Lists</b></li> <li>• <b>Web Forums</b></li> <li>• <b>Best Practice Database</b></li> <li>• <b>Systematic Knowledge Tools</b></li> </ul>

SECI Model by Nonanka and Takeuchi (Digital Tools Used In Knowledge Conversion)

- Socialisation- In socialisation, tacit to tacit knowledge conversion is possible, using tools such as face to face communication, Web cams, Video Conferencing tools and virtual Reality Tools.
- Externalisation-In this phase, tacit knowledge is converted into explicit Knowledge, using Process capture tools, Reflective peer to peer networks, Expert Systems and Discussion Platforms.
- Combination-In this phase, explicit knowledge is converted into explicit using Collaborative Computing Tools, Intranets, Groupware, Web Forums and Systematic Knowledge Tools
- Internalisation-In this case Explicit Knowledge is converted into Tacit Knowledge using Tech tools such as Collective knowledge Networks, Notes Database and Neural Networks.

Nonanka Says, the model is like a spiral, and it has no beginning and end. Knowledge creation is a continuous and dynamic process, people’s behaviour act as a platform for the creation of knowledge.

Alavi and Leidner (2001) identified Four Knowledge Management Processes:

1. Knowledge Creation- By creating new and or replacing existing Content.
2. Knowledge Storage and Retrieval-Knowledge can be stored in document form and in Electronic Databases, explicit Knowledge can be stored in Expert Systems, Documented Organizational Procedures and Processes and Tacit Knowledge can be acquired by interacting with individuals and group of individuals.
3. Knowledge Transfer-Identify the possible location for transferring Knowledge.
4. Knowledge Application- Apply Knowledge in different areas and foster innovation and create value by inculcating core competencies.

Gold and et al (2001), Mills and Smith (2011) also stresses the role of Technology in Knowledge Transfer. They identified three Knowledge Infrastructural components that increases organisational Performance.

- Technology- Technology means Information Technology that has doing a tremendous role in Knowledge creation, Storage, Transfer and safe keeping of a firm’s knowledge resource. Technology is the supporting function help in knowledge transfer
- Organisational Culture –Culture is the complex home, which consist of values, beliefs, patterns,

tradition, behaviours, myths, taboos, as we shared as the member of a society.

- Organisational Structure- Encompasses hierarchy, rules, regulations and reporting relationship co-ordinate together to increase the performance of the organisation.

#### IV. THEORETICAL APPLICATION

On the basis of Alavi and Liedner (2001) model, Knowledge acquisition and Creation is the first step- Acquisition, Merger and Take Over by a company by another company result in Knowledge and technology Transfer. This the Three process which result in Knowledge Creation and Transfer. Intercompany and Intra Company training also act as a platform for Knowledge sharing and transfer.

Adopting Nonanka and Takeuchi’s SCEI Model, Continuous interaction between individuals and continuous conversion of tacit to explicit by individuals result in creation and conversion of Knowledge. On the basis of the model, identified Software Typologies of Knowledge Conversion, this include,

- Intranet Based Systems-These are Private networks. It is a kind of local environment that facilitate the sharing of dynamic and linked information. It is also Known as internal information systems that create links among employees and organisation. In most firms, it is used for basic information access and retrieval of documents. Eg.Microsoft Internet Information Server
- Electronic Document Management (EDM)-EDM act as a Knowledge bank to store important corporate documents. It is represented as explicit knowledge stores. It helps in reducing office work by

cataloguing, indexing, coding, tabulating and storing information for future use, thereby reducing the paper work of the organisation. Content Management Tool is the another name for EDM. Eg. Excalibur Retrievalware and File Net

- Groupware-This is designed for geographically disbursed employees who need to work together. It's a blend of synchronous (chat), asynchronous (E-mail) and community focused tools (E-Groups). Informal communication is the peculiarity of groupware system in most of the companies. Discussion Groups and chats are groupware, make possible articulation of tacit knowledge and socialisation. In future groupware should incorporate visual, sound interaction and face to face conversation leads to externalisation of Knowledge. Eg. Microsoft Exchange and Lotus Notes.
- Workflow-It regulates the flow of information from person to person, place to place, task to task, in processes that require ordered and structured information. Main goal is to accelerate the process flow by tracking each activity. Work flow incorporate externalisation and combination steps of Nonanka and Takeuchi's model. Eg. Aris tool Set from IDS Scheer.
- Artificial Intelligence Based: Artificial Intelligence in 1980s was failed to produce results. Expert Systems, Case Based Reasoning (CBR) and Neural Networks are Artificial Intelligence based Systems. Here the Tacit knowledge is converted into Explicit Knowledge Using Software. CBR is used in Call Centre and Help Desk Operations. In CBR, Externalisation of Explicit Knowledge is Taking Place. Neural Systems are Statistical Instruments to predict cause –Effect relationship in the Solutions of a problem using values derived out of it. Eg. Neural agents.
- Business Intelligence- These are instruments use to manipulate a mass of operational data and extract essential business information out of it. Two types of BI's Front End Systems and Back End Systems. Front End System include, Decision Support Systems, Executive Information Systems, and Online-Analytical Processing. Back End System include Data mining, Data Mart and Data warehousing. BI Systems helps in decision making. Mostly doing activities such as Categorizing, Sorting and structuring Information, facilitating the reconfiguration of existing information and creation of new one. BI's support Combination process of Knowledge Transfer.
- Knowledge Map Systems- It is a software it contains, 'who knows what list' and it works like Yellow Pages. It does not store knowledge, it act as a navigator and points out who possesses which information and creating opportunities for knowledge exchange. It provides locator feature that helps users to find out experts with excellent subject Knowledge

in a specialised area. Constructing Knowledge Trees also compliment in harnessing talent in specialised area used by Human Resource Personnel's for training activities. Nonanka and Takeuchi's Socialisation Process can be applied in this Software. Eg. Lotus Discovery Server and Trivium Gingo.KM system provides exchange of Tacit Knowledge.

- Innovation Support Tools- These are software that helps in knowledge generation process and helps in the discovery of innovative products using this software. This Software is mostly used in the area of Research and Development. Include features such as Technical Database where patents, articles and research projects are added. R&D professionals uses existing Explicit Knowledge to create innovative research ideas through the process of innovation. Graphic Simulation Tools and Combinatory Tools accelerate the process of innovation and uses Internalisation process for the Transfer of knowledge. Eg. Tech Optimizer
- Competitive Intelligence- It mostly concentrates on the collection and analysis of qualitative information and it helps to take better decisions. Nonankas Combination process of Knowledge Transfer is applied here. Eg. Vigi Pro by Centre for Recherche Industrielle du Quebec.
- Knowledge Portals- Act as a pool of Storing Information. Mostly contain codified knowledge. Knowledge Portals suffered by personalisation issue. It is the one and only drawback of KP. Eg. Microsoft Digital Dashboard, Lotus-k-station and Sopheon.

## V. ANALYSIS AND INTERPRETATION

### Analysis Using Correlation

Variables	Organisational Performance	Implication
Merger and Acquisition	.623	Positive Correlation
Digital Training	.582	Positive Correlation
Digital Gadgets	.426	Positive Correlation

### Interpretation

The factors such as merger and acquisition, Digital Training and digital gadgets should increase the performance level of the organisation. Here the three variables shows a high positive correlation with organisational Performance. So implementation of digital technology and merger and acquisition should result in knowledge transfer and thereby increasing performance of the firm.



**Analysis Using Descriptive Statistic**

Acquisition, merger and take over results in transfer of technology. Among the respondents, 30% strongly agree to the statement, 65% provide agree answer. This indicates that acquisition, merger and, takeover result in technology transfer.

Intercompany and Intra company training act as a platform for technology transfer. Among the respondents, 30% strongly agree to the statement and 70% agree to the Statement.

In Wipro, 70% conduct digital technology enabled training and it creates more impact among the audience and 30% conduct normal training. Among the respondents, 100% of people answered that MS Office Package is used for Training activities. Digital gadgets and Digital Technology imparts Knowledge Transfer, 45% strongly agree to the statement, 55% agree to the Statement and 5% remained neutral. Among the respondents 85% are using Lap top and PC's as digital tools used for Knowledge acquisition and transfer,15% are using tab. Among the respondents, 100% agree that Google is the Search Engine used for Technology acquisition and transfer.

Most of the companies provide digital gadget for employees, as a specific aim to impart and transfer knowledge and thereby increasing the performance of the company, 70% totally agree to the Statement and 30% remained neutral. Digital simulation to conduct training, 10% strongly agree to the Statement,85% agree to the statement.

Nonanka and Takeuchi's Knowledge Conversion model, Company officials answered,

Software Typology	Implemented	Not implemented	Future Implement
Intranet	Implemented		
EDM	Implemented		
Groupware	Implemented		
Workflow	Implemented		
Business Intelligence	Implemented		
Competitive Intelligence		Not Implemented	Should Implement
Knowledge map		Not Implemented	Should Implement
Knowledge Portals		Implemented	
Innovative support tools		Not Implemented	Should Implement
Artificial Intelligence		Not Implemented	Should Implement

While ranking these typologies, 100% of the respondents give first rank to Intranet, EDM, group ware Typology .It is the basic technology needed for the organisation to flourish. Second they give preference to artificial Intelligence, most of the changes in the world are articulated to the use of new

technology. Third they give preference to Workflow, Business intelligence and Innovation Support Tools, Fourth position on Include Knowledge Map Systems, competitive intelligence tools and Knowledge portals.

**Impacts of Digital Technology**

1. Online Fraud and Cyber Crime- 95% affected
2. Slander and Online bullying- 35% Affected
3. Identity theft-100% affected
4. No respect for Privacy-30% affected
5. Stigmatization-65% affected
6. Loss of money and Good-40% affected
7. Monetization of free services resulting in exclusion or getting locked-55% affected
8. Terrorism and security concern-100% affected
9. Monopolistic practice and commercial exploitation of open data-85% affected
10. Too much online activities leads to depression and death-15%affected

**PERFORMANCE ANALYSIS**

The financial and non-financial performance of the company was improved due to the intervention of improved digitalized gadgets, fully automation is enabled, highly equipped training lab, innovation center, updated software packages, a center for cultural and holistic development are attached to it, thus high performance standards are maintained to meet competitive challenges.

**VI. FINDINGS AND SUGGESTIONS**

1. Acquisition, Merger and take over result in Technology transfer
2. Intercompany and intra company training act as a platform for technology transfer
3. Employees are using MS Office tools to conduct Training.
4. Manager are using digital gadgets for knowledge transfer
5. Google is the most widely used search engine among employees
6. Employees use digital simulation to conduct training
7. Among employees Skype and YouTube are used for gaining and transferring Knowledge.
8. In the company all employees are using SAP as office automation software and it is very useful.
9. Employees did not use Whatsapp for knowledge sharing, it's a chat software
10. Company Uses Sensoring Technology and Biometric Machines for fingerprint recognition as password.
11. Company believe in innovation and got patents
12. Employees using Cloud computing for Storage purposes.
13. They have a digital library in the company for knowledge acquisition and sharing
14. Employees did not availing the services of Block chain Combined with Big data Analytics.

15. Software Package is used for Protecting Information from Cyber-attacks.
16. Employees disagree that too much online activities leads to depression and death.
17. Company now concentrates on acquiring digital skills.

## VII. SUGGESTIONS

1. Company should implement artificial intelligence technology for Better Performance
2. Provide Digital Skill Acquisition Training to increase the performance of the employee
3. Conduct seminar and discussion on new digital technologies
4. Provide career development opportunities.

## VIII. NEW DIGITAL THINKING

**Golden Hour-**It is the doctor's word that, if you come early, we can save that lives. It is the interconnected devices that should transfer data to the human beings, provides Golden Hour. It the technology that reduce the chance of death, i.e., the Golden Hour. Wearable Devices which is connected to internet of things reduce accidental death. It helps to know blood pressure. Heart beat and body emotions. So that we can predict heart attack and other disease.

**Diminishing Brand Loyalty-** Brand loyalty diminished and brand comfort should rule the world by combining the feature of big data Analytics with customisation. They should give customised services for each individuals.

**IOT in voting-** Time should come, we should sit at home and cast vote in the parliamentary elections. In future, Technology partners should develop Biometric Finger print enabled voting machine.

**3D Printed Shoe-** Sport Company Adidas manufactured these type of shoes using 3D printing manufacturing technology.

**Making medicines at home-** 3D printing technology helps in achieving this things. IOT enabled machines helped to detect our body temperature. On the basis, digital reactor should provide combination of medicine.

**Human Empathy-** Even if most of the employment sectors were conquered by Robots, the job which need human empathy did not perish.

**Develop Digital Games that impart societal well-being-** Developing digital games that transform societal thinking.

## IX. CONCLUSION

Technology has its own pros and cons, but using wisely is the big motto of this time. So many researches happening in this field to conquer space and time utilities. We witness a world ruled by robots and artificial intelligence. Technology increases the performance of the organisation and we cannot live without this for a pin drop second. Wipro is a company focusing change and innovation. To

cope up with the challenges of environment, the new digital technological interventions are needed to the transfer and dissemination of knowledge. The company should focus on implementing AI and block chain technology to counter competitive threats happening in this field. Innovation at Wipro takes place at the intersection of technologies, industries and geographies. It involves collaboration with customers, partners, employees, consortia, academia and the crowd to build new and relevant solutions. It also involves co-innovation with customers with service such as gain share labs, labs-on hire and elements, which impact development and innovation. All these technologies provides knowledge addition and transfer thereby bringing a new horizon with new possibilities.

## REFERENCES

- [1] Knowledge Management Theory and Practice by Kimiz Dalkir
- [2] Knowledge Management and Software Development Organisations by Bhaskar raju
- [3] Knowledge Management and Organisational learning by William .R .king
- [4] Laurence Prusak , "Principles of knowledge management, Journal of knowledge management, Volume 1, Number 1 ,September 1997
- [5] Nonaka and Takeuchi (1991), 'The knowledge creating company'
- [6] Davenport and Prusak (1998), "Working knowledge", Harvard Business School Press
- [7] Jennifer Rowley, "Library Management", Volume 20, Number 8 1999
- [8] Laurence Prusak, Principles of Knowledge Management
- [9] Fred Nickols, "The Knowledge in Knowledge Management" 9. Mike Bagshaw, 'Why Knowledge management is here to stay', Industrial and commercial training, volume 32- Number 5, 2000
- [10] Atefeh SadriMcCampbell et all ,'Knowledge Management : the new challenge for the 21st century', Journal of Knowledge Management Volume 3 – Number 3 1999 ,Rodney Mcadam Sandra McCreedy - Critical review of knowledge management models .
- [11]Vidu Christian, Zebuchea Alexandra(2018), " Knowledge Management in the Digital Era", Strategica
- [12] Vladova Gergana, Ullrich Andre and Bahrs Julian(2018),' Digitalisation and Enterprise Knowledge Networking", Proceedings of the 51st Hawaii International Conference on System Sciences.
- [13] Selder de Alwis Ragna, &Hartmannn Evi(2004), " The Role of Tacit Knowledge in Innovation Management", Annual IMP Conference in Copenhagen.
- [14] Cavusgil S Tamer, Calantone .J Roger and Zhavo Yushan(2003), " Tacit Knowledge Transfer and firm Innovation Capability", Vol.18, Journal of Business and Industrial Marketing, DOI 10.1108/08858626310458018.
- [15] Terhorst Andrew, Lusher Dean, Bolton Dianne and Elsum Ian and Wang Peng (2018), "Tacit Knowledge Sharing in Open Innovation Projet", Vol. 49(4) 5–19, Project Management Journal, DOI: 10.1177/8756972818781628.