# Communities of Practice as a Knowledge Management Tool in Ghana's Telecommunication Industry: A Systematic Review

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Purpose/Background: Communities of Practice (CoPs) have emerged as a crucial mechanism for facilitating knowledge transfer within Ghana's telecom industry. Their significance lies in their role as a catalyst that empowers the telecommunications sector, which holds a central position on the developmental agendas of various African nations. The CoPs concept is instrumental in enhancing the competitive advantage of the industry and fostering innovation.

Study Design/Methodology/Approach: The study employs a systematic review methodology to comprehensively analyse the literature on Communities of Practice in the telecom industry context. This approach ensures a thorough examination of the subject matter and enables the presentation of well-informed conclusions. The research process involves meticulously examining relevant sources, followed by in-depth discussions and analysis of the findings.

Findings: The study's findings shed light on the substantial impact of Communities of Practice on the telecom industry. These CoPs have proven to be a powerful tool for strengthening various crucial competencies within the sector. By acting as conduits for disseminating information across a diverse spectrum of technical and operational domains within an organization, CoPs contribute significantly to enhancing the industry's collective skill set.

Originality/Value: The originality and value of this study lie in its comprehensive exploration of the role of Communities of Practice in Ghana's telecom industry. By employing a systematic review technique, the study not only presents a thorough overview of the existing body of knowledge but also offers novel insights into the dynamics of knowledge transfer within the industry. The study's findings and conclusions are of immense value to practitioners and researchers seeking to understand the intricate interplay between CoPs and the telecom sector's competitive advantage.

## Introduction

Knowledge management has been a key component in driving strategic imperatives in organizations seeking to gain a competitive advantage and drive growth, and further, become a catalyst for digital transformation. Managing organizational knowledge has earned credibility not only because of expanded research initiatives on the topic but also as a management tool in companies (Koenig, 2012 as cited in Dei & Van der Walt, 2020). According to Dei and van der Walt (2020), knowledge management (KM) is a valuable intangible asset crucial for decision-making and strategy formulation, and its proper utilization affects organizational performance.

Institutions are now seeking to manage knowledge more deliberately and efficiently to leverage and gain a competitive advantage. Furthermore, organizations utilize KM to stimulate knowledge production and sharing, which is supposed to boost productivity, creativity, competitiveness, and improved relationships among workers, as well as to provide valuable learning, problem-solving, and decision-making.

The technology and telecommunications sectors have been among the fastest growing industry in the last twenty years. It is the most vibrant and profitable in the last decade, according to the GSMA (2019). It is expected that 2025 will end with 495 million individuals, representing 46% of Sub-Saharan Africa's population (SSA), who would engage in mobile services, almost a 20 million increase over 2019. SSS has over 40% of its population below age 15. These potential young customers' desire for acquiring their first mobile phone will be the primary source of growth for the foreseeable future (GSMA, 2021). As economies recover and constraints loosen, mobile technology is expected to become increasingly important in how people live and operate businesses. This will allow for creative digital solutions for small and large organizations, as well as assist consumers in increasing their usage of online channels (GSMA, 2021).

Knowledge management strategies are being implemented to provide the necessary impetus for competitive advantage to further aid the industry's success. One significant step is the creation and implementation of a platform to promote knowledge creation, sharing, and dissemination among various industry experts and professional groups. This has developed in the establishment of communities of practice (CoP) to capitalize on experts' knowledge management capabilities and to advance knowledge management practices. The concept of CoPs is gaining traction in the industry to facilitate knowledge transfer. CoPs' primary goal is to create a framework for information sharing and transfer among diverse associates inside a specific subject. The CoPs perform a decisive role in managing the implicit and explicit knowledge that members of the university community have (Wenger, 2011). CoPs are a novel concept in the emerging telecommunications sector.

The purpose of this article is to examine COPs as a knowledge management strategic tool in Ghana's telecommunication industry with the view to identifying the challenges and making recommendations.

**The Concept of Communities of Practice (CoPs)**

The CoP was introduced in 1982 first at Institute for Research on Learning, financed by the Xerox Corporation (Daniel et al., 2013). Jean Lave and Etienne Wenger introduced the phrase Communities of Practice. They stressed that learning is more than just the acquisition of knowledge which occurs through many kinds of social co-participation and that it is situational and based on both a physical and social environment (Bloch et al., 1994). Whereas Lave & Wenger, (1991) are considered the progenitors of CoP studies, the concept was researched concurrently by Brown and Duguid (1991), but previously by Orr (1990), Constant (1987), and Lave (1991). Despite being a relatively modern phrase CoP has increased in popularity among establishments as a way of enhancing productiveness. A community of practice is sometimes acknowledged as a learning network, a targeted group, or a technology club (Wenger & Trayner-Wenger, 2015).

The concept of CoPs has been defined in a range of ways (CoP). Many researchers, academics, and practitioners have tackled the issue from various angles (Agrifoglio, 2015). Collier and Esteban (1999) describe CoP as a technique that relies on individual active involvement and outcome rather than the segregated decision-making that is frequent in conventional organisations.

Again, the US Agency for International Development (USAID) explains CoP as "informal groups organized around specific Agency functions, roles, or topics such as Program Planning and Strategic Planning, Contracting Officers, Gender) of USAID practitioners able to share the knowledge and expertise required to perform their jobs more effectively" (USAID, 2004). The CoPs Journal for Economic Development, Environment and People also added to the definition by indicating that it is a class of individuals who reveal a familiar quest, action, and

interest. The working definition for CoPs is a community composed of experts, and professionals with the common interest of sharing diverse knowledge among each other to implement a familiar agenda or action.

The CoPs are the total of relevant stakeholders and personal growth within the community. The term "community" denotes that the grouping is not bound by conventional territorial, functional area, or operational limitations, but by conventional tasks, perspectives, and values. Thus, a community may consist of members who share identical interests, objectives, and ambitions, and this type of group is considered to have 'fully accepted common meanings' as well as 'intangible and formal insights' (Allen et al., 2000). The term practice relates to knowledge in action, and it opines the effect of individuals' performance on their everyday activities, as contrasting to further rigid rules and norms that describe how tasks must be accomplished. The phrase CoPs are used commonly about a certain category of communal organization possessing a specified goal (Cuddy, 2002). Therefore, a community is made up of people who are friendly to one another and who share or tie their behaviours to shared norms (Morgan, 2011).

According to Wenger (1998), there are three basic types of CoPs, which include the capacity to possess all CoPs based on a certain criterion, such as mutual involvement, collaborative effort, and a shared repertory. Individuals in CoPs, according to Snyder et al. (2003), participate in a mutual engagement process that is recognized as the realm of connections and, finally, the sphere of social capital. Mutual engagement is determined by community characteristics such as member connections and the type of their interactions, as well as their degree of confidence, belongingness, and mutuality, among others.

Besides, the additional characteristic is based on joint enterprise. O'Donnell et al. (2003) postulated that CoPs are assemblies created around a common aim, with dialogues that focus on the members' ideals and motives. These interests, as well as the collective goals that stem from them, are communally discussed (Wenger, 1998). He opined that CoPs provide the opportunity for us to understand the world and our involvement in it as significant. Indigenous companies are the activities emerging after this mutual goal, and they are shaped by organisational, personal, historical, and societal contexts. Mutual responsibility is believed to keep a CoP's joint companies together, which is simply the level of reciprocity that occurs amid CoP associates.

According to Wenger (1998), the third criterion is the existence of a common capacity, which may be defined as the world of tools and procedures (Snyder et al., 2003). A CoP's common tools and techniques serve as a platform for communicating ideas and learning. A common repertory might encompass conventions of casual discourse to a structured process to drive debate and decision-making.
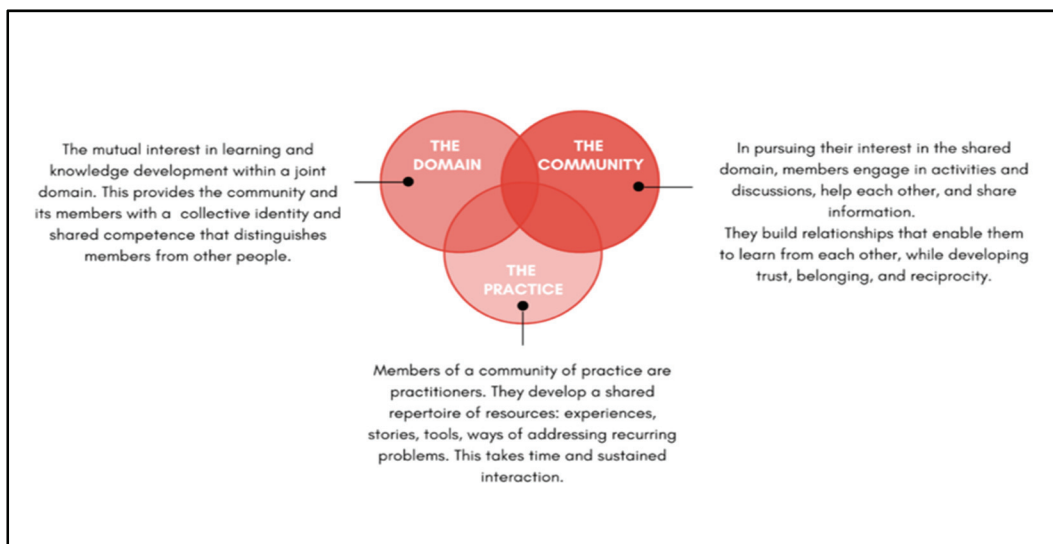
## Communities of Practice in Perspective

The world of knowledge has changed across all sectors and industries, Lesser and Stock (2001) emphasized that as organizations grow, geographically in scope and complexity; sponsorship and support of groups are very vital to organisational performance. In their view, a CoP provides a learning and a common interest approach in helping organizations with the need for support in knowledge management and development.

CoPs have been regarded phenomenologically as relational structures controlled through the social creation of knowledge (Buysse et al., 2003; Nicolini et al., 2016), as they provide an avenue for communicative activity (Polanyi, 2002; O'Donnell et al., 2003). They have also been thought of as a juncture of knowledge and social capital, with social systems serving as the foundation for knowledge-making and transmission (Lesser & Prusak, 2013; Daniel et al.,

2013; Snyder et al., 2003; O'Donnell et al., 2003; Preece, 2004; McNabb, 2007). Overall, they have become useful to firms because they help to build social capital, which is a fundamental requirement for organisational success. The CoP structure, according to Wenger (1998), is founded on three mechanisms: province, community, and practice, and the CoP integrates three elements: knowledge, people, and experience.

Wenger and Snyder (2000) agreed that the major goal of members is to improve their skills and capacities by accumulating and sharing collective knowledge. It is an important characteristic that, the communities are self-organizing groups of motivated and engaged practitioners that keep in touch for extended periods with no set end date. A community is always evolving, changing, and developing. In the view of Wenger (1999), these adhoc groups continue to exist because their members enjoy the benefits of belonging to such a community, such as developing their skills and competencies, becoming involved in new professional networks, developing their expert identity relative to that specific domain, accessing the community's resources among others.



The mutual interest in learning and knowledge development within a joint domain. This provides the community and its members with a collective identity and shared competence that distinguishes members from other people.

THE DOMAIN
THE COMMUNITY
THE PRACTICE

In pursuing their interest in the shared domain, members engage in activities and discussions, help each other, and share information.
They build relationships that enable them to learn from each other, while developing trust, belonging, and reciprocity.

Members of a community of practice are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems. This takes time and sustained interaction.

**Fig. 1- Characteristics of CoPs (adapted from Wenger, 1999)**

Schwen and Hara (2003) identified four design steps that must be followed to guarantee CoPs are suitably developed for organisational success. The steps of analysis, design, assessment, and revision are all included in these design interventions. Furthermore, Bonk et al. (2004) highlighted eleven important elements of a good CoP shared objectives, confidence and reverence, communal history, identity, common places for knowledge compromise, encouragement, independence, team cooperation, individual accomplishment, and events integrated into factual-world practices.

Lees and Meyer (2011) asserts that social systems are an important component of CoP frameworks, and that CoP may help with borderline trespassing and entree to other networks. Studies in the technology and telecommunications industries underline the relevance of inter-organizational networks and partnerships as a productive basis for applying CoP theory. The CoP may play an important role in explaining and assessing how knowledge management is carried out over relational dynamics in inter-linked environments (Gajda & Koliba,2008), as well as providing vehicles for companies to engage their stakeholders and enterprises (Snyder et al., 2003; McNabb, 2007).

According to Wenger (1998), all CoPs have certain traits, such as mutual involvement, cooperative organisations, and a common repertory. Persons in CoPs, considering this, engage

in a reciprocal engagement process, which is characterized as the domain of connections and, eventually, the domain of social capital (Snyder et al., 2003; Wenger, 2004). The idea of common commitment is dependent on the amount to which the community's qualities, such as member connections and the disposition of their relations such as the degree of confidence, belongingness, and mutuality to engage its stakeholders and companies (Snyder et al., 2003; McNabb, 2007).

The second characteristic of a CoP is that it engages in a shared endeavour, which Wenger and his colleagues refer to as the arena of purpose and domain, alluding to its mutual objective and the feeling of associates' connection with a subject or activity (Snyder et al., 2003). According to O'Donnell et al. (2003), CoPs are organisations created for mutual benefit in which conversation develops on the standards and intentions of their colleagues. These interests, as well as the common goals that stem from them, are collectively negotiated (Wenger, 1998). First and foremost, practice is a method of seeing the world and our involvement in it as significant. (Wenger, 1998). The activities that arise from this shared purpose, referred to as indigenous businesses are sculpted by organisational, individual, historic, and social circumstances (1998, p. 79). A CoP's collaborative ventures are thought to be kept organized by "mutual responsibility" (1998, p. 81), which refers to the amount of mutuality that occurs among CoP members.

CoPs, according to Van Soeren et al. (2005), are designed to meet eight objectives. These include: associating individuals who could not in any case have the option to connect, either oftentimes or by any means; giving a common setting to individuals to impart and share data, stories, and individual encounters such that encourages intellect and understanding; empowering discourse between individuals who meet up to investigate additional opportunities, address difficult issues, and make new, mutual prospects; and invigorating learning by filling in as a vehicle for valid correspondence, assembling and distributing existing information to help people in enhancing their vocation by Offering a stage for distinguishing Answers to normal difficulties as well as a system for gathering and assessing best works on; acquainting cooperative cycles with gatherings and associations, as well as between associations, to energize the free progression of thoughts and data trade; helping individuals in getting sorted out around deliberate activities that ensure concrete outcomes; and developing new information to help individuals in changing their training to oblige changes in requirements and advances.

According to Nickols (2012), the goal of all CoPs, as well as the desired outcomes, are primarily dictated by the subject, development, or practice area around which they are ordered and concentrated. Moreover, all CoPs are expected to arouse interaction, foster learning, create new knowledge, socialise new members, identify and share best practices (Nickols, 2012); address key strategic themes and validate knowledge assets (Sundrock, 2006); and hasten the sharing and flow of knowledge and proficiency (Sundrock, 2006; Van Wyk, 2006). McDonald and Star (2008) believe that CoPs are an ideal setting for technology and telecommunications companies to share and expand their skills in a supportive environment and safe environment.

Hinton (2003) contends that CoPs can emerge anywhere there is a desire to produce and exchange information and practices in a valuable and like-tended group. Denning (1997) stated that a class might form spontaneously because of the links to a shared interest in each area or region, or it can be formed purposefully to collect information relating to their profession. Due to the procedure of exchanging information and experiences with the assemblage, partners learn from each other and have the chance to grow individually and professionally (Wenger and Snyder, 2000). According to Hinton (2003), network participation is dynamic and necessary, and it may assist create connections and confidence

inside a group. Additionally, CoPs, according to Hinton (2003), could be virtual as proponents could be from varying geographic locations. Associates need not be members of the establishment to participate. As a result, CoPs may be created by like-minded individuals such as consultants, engineers, and technical personnel both inside and outside of the technological environment. They are formed for a specific goal and to obtain specified aims.

## Communities of Practice in the Telecommunication Industry in Ghana

The purpose and motivation of the telecommunications business or sector are primarily technical. It is extremely competitive and needs significant strategy and implementation skills. As a result, it is compatible with the systems that support CoP. In Ghana alone, the National Communication Authority (NCA), the country's telecommunications regulator, has a 134 per cent mobile phone penetration rate (NCA, 2020). Currently, there are four (4) telecommunication companies in Ghana. These are MTN Ghana, AirtelTigo, Vodafone Ghana, and Glo Ghana Limited. They have a flexible context in which the notion of CoPs will thrive. CoPs have been acknowledged as a useful arena for knowledge creation and sharing (Aljuwaiber, 2016). They promote the exchange and transfer of implicit information by persons and assemblages, and establishments benefit from novelty by allowing communal affiliates to enhance their knowledge via continual knowledge generation (McDonald & Cater-Steel, 2016). Hislop (2004), has stressed that Communities of Practice have evolved into channels for knowledge exchange and creation, as the mission is to develop and share knowledge while also developing discrete abilities.

The telecommunication sector lends itself to both explicit and tacit knowledge. It is therefore imperative that knowledge is created, codified, and disseminated to enhance advances in technological and strategic decision-making. The major consideration is the need for the experts and professionals in the areas to cooperate among themselves, help each other, and provide platforms for networking are all knowledge management practices. The industry has been the most enthusiastic about the concept because it views information as a critical asset that must be managed wisely. The first attempts at knowledge management depended on information systems, which produced unsatisfactory outcomes. As a result, CoPs delivered fresh viewpoints on individuals and the communal edifices which positions them to learn alongside and among one another.

## Communities of Practice and its Implication for the Technology and Telecommunications Industry

Globalization and the ever-changing organisational structures are certain to have an impact on how knowledge is generated and disseminated. As a result, in a medium where knowledge is the primary structural engine, preserving and continuously utilizing business intellectual capital has undoubtedly been a hard and struggling task (Nahapiet & Ghoshal, 1998). In such organisational contexts, the capacity to innovate and continually increase the ability to adapt to new issues and develop techniques to tackle them is critical. Acquiring technical and interactive capabilities is also important.

According to Saunders (2000), development-related evaluation may be seen as a sequence of knowledge-based processes. Furthermore, knowledge-based methods serve as the foundation of a community of training: a unit of professional assessors. One aspect of this is the concept of apprenticeship, in which apprentices are trained or mingled into a community of professional assessors. CoPs are particularly relevant to development, based on this example, because development is a succession of knowledge-based CoPs that perform an influential part in advancing the fundamental, interpersonal, and intellectual attributes of social capital in all organizations (Shaheen, 2017). He further stipulated that there are three dimensions of CoPs

that increases the effect of the creation and sharing of organizational knowledge. In his view, technology and telecommunication companies pursuing to improve the degree of social capital due to CoP must consider the following six (6) objectives to enhance their success and deliver the needed impact and knowledge transformation.

- **Technology organizations should focus on CoPs that impact key objectives and Goals.** Shaheen (2017) commented that organizations can find several existing CoPs in internal spaces within various divisions and departments. Many of these villages arose on their own. When deciding which CoPs to implement support and resources for, the company must choose CoPs that have a critical and direct effect on the business's core strategic goals. A case in point for telecommunication companies, a CoP deals with project implementation problems, new marketing products and services go to market approach. This might require a collaborative effort at inputting vital knowledge from other members of the communities to achieve the overall strategic company key performance indications.

- **Facilitate face-to-face meetings, workshops and learning sessions for different communities with different locations belonging to the same organization**. CoPs emerge in geographically scattered groups that lack direct links, allowing the establishment of the three aspects of social capital (Shaheen, 2017). Telecommunication companies facilitate face-to-face, monthly, and quarterly learning sessions, and knowledge-sharing-based workshops that will have a positive effect on building a network of contacts between individuals within the given CoP, foster interaction necessary for trust-building, and share information and knowledge, stories, and artefacts that allow building common context and understanding among individuals within a given community. A lack of face-to-face meetings will harm the process of growing a CoP as well as the lack of value from its existence inside the given organisation (Shaheen, 2017).

- **Creating tools that enable and assist the community of practice in identifying new actors and facilitating interactions among current ones**. According to Wenger (2011), numerous forms of technology play crucial roles in the CoP inside the technology and telecommunications landscapes, as well as in general. Websites, knowledge maps, and expert directories are examples of these. This allows members of the community to meet people who share their experiences and interests, so increasing the structural (network) component of social capital. Video conferences and chat rooms allow community members to continue conversations, develop connections that encourage trust, and communicate context. Knowledge repositories play an important task in the preservation and progress of community knowledge by allowing community members to access representations of the CoP memory readily and rapidly.

- **Identify important knowledge and technical specialists within the community of practice and invite them to share their knowledge and experience with other network members.** Diverse topics and expertise specialists are found in the technology and telecommunications sectors. These critical resources are critical to the business's long-term viability and the overall leveraging of competitive advantage. Wenger et al., (2002) argue that knowledge specialists are groups of persons who other less endowed resources in certain sectors of business, locally or internationally, in society to pursue their support and proficiency. They went on to say that knowledge specialists are critical to the community's success. They contribute to organisational knowledge and expertise. Their duty as mediators is to refer representatives to other members of the society with more appropriate data and understanding. It is crucial to highlight that, in most circumstances, knowledge specialists do not identify inside formal organizations since they execute this job in addition to their official profession. Organizations should

identify these experts and provide them with the necessary assistance, time, and assets to help them work competently in the practice of producing and communicating society information with other representatives of the organisation (Cohen & Prusak, 2001).

- **Technology and Telecommunication companies should focus on social capital that requires investments and expected returns.** According to Cohen and Prusak (2001), CoPs emerge naturally in all organizations. Organizations, on the other hand, require organisational support and resources to utilize the proper social capital for the generation, distribution, and application of organisational knowledge. Investments in organizations enable current CoPs to be more inventive, effective, and efficient. Investment in the development of CoP can take various forms, such as financial assistance for face-to-face meetings, technical requirements, particularly for dispersed communities, to allow knowledge brokers (experts) to assist other network members. Appropriately targeted tangible investments in existing communities inside organizations enable CoP to thrive and generate the necessary social capital.

**Methodology**

The study was carried out utilizing a systematic review approach that adhered to Tranfield et al., (2003). These are the review's preparation, execution, and reporting utilizing descriptive and thematic analysis. Because the meta-analytical process is built on nomothetic knowledge, it delivers generalised observations or principles based on a huge number of previous research done using varied methodologies and metrics in some common effect size measures.

To build a complete picture of the literature on the effect of CoP on the telecoms industry, all types of publications, both qualitative and empirical, were included. Papers with keywords such as "community of practice" "knowledge management and transfer", and "transfer of knowledge in the telecommunications industry" were chosen, and Forty-five (45) publications were obtained based on the study's search criteria. Twenty-two (22) of the publications were on CoP in technology and other professions including telecommunications, teaching, computer science, and management among others. Even though the emphasis was on the keywords of the articles, the content of the articles was not overlooked. These publications were studied, as well as those that particularly addressed the impact and techniques of CoPs in general and within the telecommunications sector.

The review examines CoP methodologies in general, as well as their implications in technology and telecommunications and other professional endeavours, as well as issues, challenges, and trends. Each article was examined and rated using the inclusion criterion during the screening process.

The primary components of the study aim for an article to be included in the study's COPs methodologies, with an emphasis on the ramifications and implications of each of the highlighted components. Furthermore, the concept of the CoP approach was examined from a completely different angle in numerous chosen works that had nothing to do with its strategy in telecommunications. As a result, numerous papers were left out of our analysis. This study looked at papers published between 1994 and 2021 that highlighted the methodologies, experiences, impacts, implications, or trends of CoP. All the selected papers were organized into a structured matrix that included the author's name, year of publication, work title, variables included in the study, and insights into the global telecom industry.

**Discussion**

The world's demands and interests, as well as the geography and seasons, are changing, which not only modifies the personalities of people outside of organizations but also limits

representatives' capacity to make such developments that are acceptable to clients and their organizations (Wild & Griggs, 2008). Telecommunications is regarded as the most inventive and dynamic technological sector. According to Ahmad and Shahid (2015), services and products in the telecommunications industry must not only be created regularly but also properly managed. One of the most important problems in the company is information management, which is closely followed by strategic decision-making. CoPs have been recognised as a critical component in leveraging success and competitive advantage within the local and global space, as well as in information technology and other organizations throughout the world (Coakes & Clarke, 2006). CoPs have existed for a long time in a wide range of areas. They provide effective methods for information exchange that enhance the skills of individual members as well as the domains in which they work when they are successful.

**Table 1. Summary of Reviewed Literature for Communities of Practice in the Technology and Telecommunications landscape.**

| Authors | Year | Issues | Trends | Country |
|---|---|---|---|---|
| Agrifoglio, R | 2015 | Knowledge and Communities of practice | Understanding of CoPs and knowledge transfer | UK |
| Aljuwaiber, A. Allen, B. S., Otto, R. G., & Hoffman, B | 2000 | CoPs and Organisations, | Impacts and Implications of CoPs on Businesses and the Public Sector | New York, USA |
| Bloch, M., Lave, J., & Wenger, E. | 2004 | Knowledge participation and Transfer | Knowledge transfer and organizational development | USA |
| Bryson, P. W. Daniels, N. Henry, and J. Pollard | 1994 | Knowledge economy and development | Leveraging knowledge management for competitive advantage | London |
| Daniel, G. R., Auhl, G., & Hastings, W. | 2013 | Education and CoPs, professional development | Managing CoPs and Professional Education | Australia |
| Dei, D.-G. J., & van der Walt, T. B. (2020). | 2020 | CoPs' impacts on universities | CoPs and Development at the University of Ghana | Ghana |
| Henschel, A. | 2001 | CoPs and Knowledge transfer | CoPs and Knowledge Transfer | German |
| Hislop, D. | 2004 | CoPs and knowledge transfer | Knowledge Transfer and CoPs, impacts and implications | UK |
| Lesser, E. and Everest, K | 2001 | CoPs and Social capital | Social Capital Investments and CoPs in organizations | Boston |
| O'Donnell, D., Porter, G., Mcguire, D., Garavan, T. N., Heffernan, M., & Cleary, | 2003 | CoPs and Intellectual Capital | Managing organizations using CoPs | UK |
| Snyder, W. M., Wenger, E., & de Sousa Briggs, X. | 2003 | CoPs and the Public sector | Managing governance with CoPs | UK |
| Storck, J., & Hill, P. A. | 2009 | Strategic Communities and Knowledge management | CoPs and strategic management | Luxembourg |
| Wenger, E. C., & Snyder, W. M. | 2000 | CoPs and organizations | Organisations and CoPs, development, and change | USA |

| Wenger, E., McDermont, R., & Snyder, W. M. | 2002 | Knowledge and CoPs | Knowledge transfer and CoPs | Boston |
|---|---|---|---|---|
| Shaheen, Omar | 2017 | CoPs and Impact of Social Capital | Using CoPs to the Impact of Social capital | Poland |
| Roberts, Johanne | 2006 | Limits to Community of Practice | Communities of practice approach to managing knowledge | UK |
| Luis Gonçalves | 2001 | Understanding the limitations of CoPs | Identifying the challenges and success factors related to CoPs | Munich, Germany |
| SJ Kerno Jr | 2008 | Limitations of communities of practice: a consideration | CoPs and challenges for organisational growth | UK |
| Katharine Vincenta, b, Anna Steynorc, Katinka Waagsaetherc, Tracy Culla | 2018 | CoPs and climate change | Impact of CoPs on environmental development | South Africa |
| Kimble, C | 2006 | Limits of CoPs | Dealing with CoPs in society | UK |
| Corso, M., & Giacobbe, A. | 2005 | Building Communities of Practice that Work | a case study based research. | Amsterdam |
| Coakes and Clarke | 2006 | Encyclopaedia of CoPs in information and knowledge management | Knowledge in CoPs | UK |

The goal of this systematic research is to investigate the trends, problems, and benefits of CoPs in the telecommunications industry. A thorough study of the twenty-two (22) selected research publications indicated a plethora of CoPs strategies in enterprises and professional organisations, particularly in telecommunications, education, professorships, and consultancy, among others.  It was discovered that CoPs are critical to the organization's knowledge management and overall performance. Organizations in the technology industry have embraced CoPs as vital tools for enabling project deliverables, models, and framework advice, and leveraging organisational performance throughout its footprints and global inclusion to gain a competitive advantage. Due to fast expansion, changing technology, diminishing margins, and a highly competitive industry, telecommunication businesses are fighting for any advantage, according to Saha (2018).

As a result, increasingly depending on knowledge management systems along the path of CoPs are used to extract the most value from their internal and external information. It has been used throughout all business areas, including customer service, sales and distribution, company-wide communications, and support teams, and it has even been used to recognise experts and share best practices.

**Impact of Communities of Practice in the Telecommunications Landscape**

CoPs have permitted industry experts to accept collaborative responsibility for managing the information they need, confident that they are in the best position given the structure. Internal and worldwide focus group discussions, technical idea exchange, and organisational issue networking are used to accomplish this. MTN Ghana, for example, has used strategies like monthly and quarterly knowledge-sharing concepts across its 21 multinational operations to ensure that various initiatives are successful by using examples from sister organizations.

Besides, CoPs have grown into vital instruments for providing context for the exchange of explicit information, such as that found in knowledge repositories, in the telecommunications sector (Henschel, 2001). They oversee a part of the company's information repository, ensuring that the contents are specified to satisfy the demands of the community in a variety of technical and problem-solving areas. Businesses in the telecommunications industry have responded to client needs faster and provide better product and service ideas as information transmission efficiency has grown (Lesser & Everest, 2001). In certain circumstances, the consequences may have resulted in the expansion and formation of new economic streams (Wenger & Snyder, 2000).

Consequently, several CoPs in the technological domain have become catalysts for business strategy execution in the telecommunications sector. The knowledge management strategy of the organisation has become the focal point of strategic business planning. The exchange of information across the organisation has aided in the resolution of significant difficulties affecting critical areas of business drivers. Diverse perspectives have been incorporated, and the dynamic adaptation of a plan to new developments, particularly in areas of technological advancement, is encouraged to guarantee that most sectors are not recreating the wheel. Communities may act as change agents in this circumstance, generating a desire that spreads throughout the organisation (Wenger & Snyder, 2000).

Additionally, the deployment and establishment of CoP in the telecommunications sector have facilitated learning and growth. In Ghana, the CoPs have infiltrated all project landscapes, accounting for the enormous success recorded in the digital journey. The communities were created to fulfil the needs of people, and participation is purely optional; its members are frequently tremendously motivated to learn from one another. It is based on a certain culture that encourages creativity, individual learning, and the development of personal skills and knowledge, resulting in deeper internalisation of learning.

The study revealed that the CoPs has fostered a culture of learning and information transfer. The technique of group learning is seen to be more successful than learning alone since learning is dependent on the availability of peers and their willingness to serve as mentors and coaches just as much as it is on masters (Storck & Hill, 2009; Wenger & Snyder, 2000). The capacity of a CoP to learn varies based on the community's variety, coherence, the intensity of engagement and communication, and identity (Henschel, 2001).

Likewise, indications are that CoPs have improved a range of critical skills in the telecommunications business. Knowledge from the company's technical and operational areas is spread throughout the organization's broad skill set. According to Dorigo, (2019), this has benefited the identification of necessary talents as well as the rapid diffusion of approaches. Allen et al. (2000) backed up this argument by suggesting that these communities contributed to the creation of common language methods and models based on core skills.

The CoP has grown into a virtual meeting place for persons in the telecommunication market who have common interests. Organizations have begun to utilise it to recruit new workers and retain highly trained personnel, as well as to provide a compelling factor for membership if the community has an exclusive image and potential employees are assured that they may join such an exclusive club, according to (Wenger & Snyder, 2000). Companies such as MTN Ghana and Vodafone have made social networks readily transferrable and have encouraged employees to join various institutions to gather skills and aid with information transfer for competitive advantage. However, because the knowledge is ingrained in a larger number of individuals, it has remained with the company and therefore preserved in the community, as no single individual is crucial to the community's existence (Coakes and Clarke, 2006). Employees who have left a company but continue to contribute to the organization's aims in certain

circumstances because the network is still operational have occurred in the technology sector. Consequently, the company has a competitive advantage in terms of generating growth and competitive leadership.

CoPs in the technology and telecommunications industries have been used to provide learning opportunities for new telecoms workers in Ghana. The requirement to swiftly boost the productivity of new employees, particularly those with technical competence, is a key concern for most firms in the telecoms industry (Lesser & Storck, 2001). As employee mobility grows in the organisation, the capacity to swiftly integrate workers into the processes, tools, and actions of a new role becomes increasingly crucial. The advantages of CoPs have made it simpler for new workers to learn how to apply the methodologies, models, and tools that will be used in the organisation. It also assists recruits in locating specialists who can respond to queries and direct them to professionals within the organisation. This is crucial since the new personnel will need to use efficiency and highly respected skill sets to promote strategic and competitive advantage. Portals are developed for this knowledge to be posted so that recruits may internalize it and be prepared for their new tasks and responsibilities (Alosaimi, 2019).

Furthermore, the evolution of telecommunications services has motivated many people to use them. According to the NCA (2020) study, 34 million Ghanaians utilise telecommunications services including phones, internet, and broadband to the home. Customer demand and expectations for services have increased, prompting the adoption of customer-service methodologies by firms. In this industry, CoPs are now being used to help in the quick transfer of information necessary to manage consumer problems. CoPs help telecom professionals discover client demands and provide the proficiency needed to deliver the best solution to the customer's dilemma. As telecom companies team up with different suppliers from Asia and Europe who have different time zones and unique expertise needed to solve customer issues, technical personnel will be required to tap into the expertise of the research community via dialogue panels to recruit people with the possibility of similar issues in other client locations. The capacity to recognize and find people with knowledge, according to Lesser and Storck (2001), is a critical source of competitive differentiation in the marketplace.

Telecommunication is highly technical, needing both inventiveness and repetitive operations and duties (GSMA, 2019). The capacity of representatives to effortlessly reprocess present knowledge assets has been one of the key benefits of adopting CoPs in this area. Maintaining organisational knowledge is a vital component in ensuring the organization's success. Because of their commitment to the community, the team has been able to identify, access, and implement present intellectual capital to novel issues. Users now have access to a virtual workspace where they may save, organise, and download exhibitions, apparatuses, and other things that other associates may find valued. Again, in Ghana, CoPs have served as a breeding ground for innovative product and service initiatives (Lesser & Storck, 2001). Telecommunications firms have always been at the forefront of producing products and services for their clients. Many of these items have been copied and deployed in other countries. The usage of CoPs has spurred debates about new goods, corrections for current products, and ideas for new software development. The introduction of new or different ideas and practices into the community has generated breakthroughs in the topic and provided new insights. This outer strategy has resulted in key discoveries and allowed wide thinking to achieve a competitive edge.

Finally, CoP has had a huge influence on helping individuals and professionals in the telecoms business to have access to new knowledge and skills. Brainstorming meetings, knowledge fairs, project steering committee sessions, collaborative sessions, project fieldwork and information sharing sessions, and secondments have all become forums for knowledge exchange and transfer in the interest of organisational development and overall innovation. It has given

participants access to global information resources, face-to-face encounters with professional specialists, and interaction with human mediators, allowing them to build critical connections for their future growth (Coakes and Clarke, 2006).

**Challenges of CoPs in the Telecommunications Landscape**

Despite their enormous contribution to the spirit of the technology sectors, CoPs have intrinsic problems that might impede their process and prevent organisations from reaping the advantages. One of the obstacles that are anticipated to develop is the problem of transmitting and synthesising information within the organization. Because of the handy connections to doing as well as cultural aspects, this may need unique explanations. For example, provisional cross-functional project teams may draw on experience from other areas, apply it, learn, and then reallocate the new knowledge back into the communities of the discrete associates (Mittal and Kumar, 2019).

Kerno Jr. (2008), has stipulated that despite the potential value and contribution that CoP may provide to organisations, numerous concerns and obstacles remain unaddressed. He contended that the identification of these challenges is meant to address structural, ecological, and cultural levels of organisational analysis. The need to deal with these challenges lends credence.

According to Wenger and Snyder (2000), CoPs should not be developed in a vacuum inside organizations. Most organizations already have informal networks of people who can and want to improve their core capabilities. The purpose is to find such organisations and help them develop CoPs. However, this is not the case. Organizations are developing new CoPs based on global appeal, which has a significant influence on resource restrictions from specific tasks. Overall, multinational telecom corporations that use pre-existing CoPs have integrated this into their local networks. The expected outcome is that the total resource group suffers and there are fewer overall chances.

Clarke and Cooper (2000) have indicated that personal challenges pose a weakness to the concept of CoPs in organisations such as those in technology and telecommunications. The challenge of ensuring that all personnel likewise contribute to the community. A CoP is beneficial to active practitioners but not to non-practising individuals. As a result, organisations have challenges in ensuring that all members of the community participate at the same level.

There is also a barrier to the managerial adoption of CoPs within the organisation. Lang (2001) contends that analysing CoPs in terms of financial measures is difficult. Organizational impacts and success are frequently unrelated to the tasks of the CoP and may be the result of other environmental factors. Because community outcomes are intangible assets, most of them must be measured. Second, determining the precise community expenses is difficult. They cover not only the cost of technological investments, but also the cost of community involvement, meeting expenses, technical framework maintenance fees, advertising materials, content publication, and so on. As a result, organisations in the telecommunications sector find it difficult to assess the efficacy of CoPs.

Furthermore, the challenge organisational hierarchies pose to CoPs is an area of concern. CoPs are commonly imagined, as well as inside established organisations, and as such must cohabit with an already established organisational hierarchy. In most cases, there are cases of serious internal conflicts. The rigidities of the organizational charts and structures sometimes do not provide CoPs with the needed flexibility. CoPs, on the other hand, are generally most beneficial when they connect individuals within an organization who are essentially equivalent or similar, with the size and extent of their collaboration being to resolve frequently experienced or reported difficulties, exchange concepts, share knowledge openly appropriate to everyday work, and improve and spread inventive practices (Kerno Jr., 2008).

## *Significance of the Study*

This review is significant in the following ways. It will guide policy on the development and use of COPs, it will add to knowledge in all sectors of national discourse, and it will set the tone for future research on the sustainability of COP practices as a catalyst for organizations to thrive and gain a competitive advantage.

Again, it provides a comprehensive knowledge and information tool for telecommunication experts and Information and Communication Technology specialists to determine the best way to incorporate COPs practices, principles, success stories, and recommendations into strategic imperatives for overall performance indicators.

Finally, the systematic review's findings set the tone for future research by providing a significant reference point for future studies on the significance of COPs as a driving force for local, global, and transnational tools for establishing strong organizations.

## Limitations of the Study

The study looked into Communities of Practice (COPs) as a method for knowledge management in Ghana's telecommunications industry. The study was to be limited to practical learnings from Ghana, with a few global perspectives thrown in for good measure. It also examined the policies that enable COPs and their overall influence on corporate team development, knowledge transfer, skills, and competencies.

## Future Direction

As Ghana strives to become a knowledge society and embraces digital technology massification and digitalization, there is an urgent need to establish CoPs among the most professional and technologically oriented organisations and communities. CoPs are a relatively new concept, particularly in developing countries like Ghana, and there is still much to learn about the strategic value and necessity to ensure organisational and national growth. Organizations must use effective CoP tactics to thrive in a global world. According to the study's results, CoPs are critical for knowledge transfer and sharing, which equips organisations with the skills and ability to gain a competitive advantage in their knowledge.

Regardless of the number of contributions and publications on CoPs that have been produced, there is still much to learn and improve in this field. Cops' procedures have primarily been studied in wealthier countries; nevertheless, comparable research in underdeveloped countries may be conducted. Simultaneously, there is little evidence of research into CoPs methodologies in the telecommunications business; as a result, this subject may be investigated more.

The challenges that a company is likely to face if CoP procedures are not properly utilised inside the company and its subsidiaries around the world may be thoroughly studied. The impact of a company's international nature and its impact on CoPs might be weighed alongside competitive advantage. Various formal and informal organisational strategies can also be investigated.

## Conclusion

It is without a doubt that CoPs are valuable resources for organisational development. According to Nagao (2017), the key aspects of a successful CoPs are ensuring that learning is a social force, knowledge is unified into the community's culture, standards, and language, learning and community affiliation are inseparable, knowledge and experience are indivisible, and authorization is essential to learning.

Throughout the last two decades and beyond, CoPs have been key resource platforms for the telecoms sector's ability to thrive and compete. Knowledge exchange and resource sharing have been advantageous in many technical, commercial, and corporate units to assure these companies' evolution to be key pillars in national growth and as engines for private sector led economies of scale.

Furthermore, it has proven to be a gold mine of opportunities for industrial businesses to acquire access to qualified and competent human capital and resources, allowing them to improve the excellence of their products and services, as well as other initiatives to satisfy strategic imperatives. MTN Ghana is well-known for its use of CoPs. Technical competency resources, in particular, have been critical in this area of attention. These skills are typically in great demand and do not circulate within the industrial structure. The application of COP techniques has made this knowledge available even across the borders of countries.

## Declaration of Interest

The authors report there are no competing interests to declare.

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