

Knowledge Transfer: A Multi-Domain Perspective

Fradreck Nyambandi, Andre Delaharpe and Job Dubihlela

*Faculty of Informatics and Design, Cape Peninsula University of Technology,
P.O. Box 652, Cape Town, South Africa 8000
E-mail: fradnyams@webmail.co.za*

*Department of Information Technology, Faculty of Informatics and Design (FID),
Cape Peninsula University of Technology, P.O. Box 652, Cape Town, South Africa 8000
E-mail: delaharpe@cput.ac.za*

*Department of Internal Auditing and Financial Information Systems,
School of Accounting Sciences, Cape Peninsula University of Technology, P.O. Box 652,
Cape Town, South Africa 8000
E-mail: dubihlelaj@cput.ac.za*

KEYWORDS Human Computer Interactions. Information Science. Knowledge Transfer. Social Media and Organisational Science

ABSTRACT Social Media platform within organisations illuminate the inefficiencies of information science, disrupts organisational science, knowledge management and human interactions. The key result of this disruptive context is fast-tracking the need for alternative technologies to compensate the knowledge, infrastructure inefficiencies. This manuscript explore the factors affect knowledge transfer when using social media and how social media platforms provide affordances to organisations to continue with the enterprise of knowledge transfer. Data was extracted and analysed using Haring's Publish or Perish and VOS Viewer software. The results end up with four major factors affecting knowledge transfer when using social media. The social media applications, at the first door, are affected factors which include personal capabilities, organisational context, environment through mainly information technology. More research is needed in determining the extent to which social media combined with other customary strategies facilitate knowledge transfer.

INTRODUCTION

This paper presents the theoretical foundations and context of a research question and helps to raise awareness of multidiscipline issues. There are different literature expressions related to Informatics and Information Science that regard the disciplines as similar in various nations (Paul et al. 2017). The information science discipline is faced with a variety of issues such as inefficiencies and ineffectiveness of systems such as books, libraries, knowledge management, Trust (Fell et al. 2020). Informatics encompasses a variety of activities which include information collection, selection, organisation, processing, management, and dissemination (Paul et al. 2017). The scientific research aims to explore, understand and how organisational life is like, influence organisational events, manage a business establishment (Aswathappa 2016). Organisational science is reflected in literature as interdisciplinary in focus, and may use pragmatic solutions to organisational issues. Information Technology as a domain understudy is faced with issues.

Bidgoli (2021) acknowledges that the Information Technology domain has the potential to improve organisational efficiency although it has inherent opportunities for unethical behaviour because of the ease of collecting and transfer of information, increase in cybercrime, cyber fraud, identity theft, and intellectual property theft. As a result, information science and informatics, organisational science, Information Technology, and Human Computer Interaction (HCI) are complex, misunderstood inter-disciplines where the rational human race should research more on the domains in face of global multi issues.

The key implication drawn from this is that practitioners need to be mindful of positive negative factors affecting the highlighted domains and raises questions: What factors affect Knowledge Transfer when using Social Media in an innovative business environment? There is a lack of effective approaches in the Knowledge Transfer of systems, business processes, deep, tacit knowledge (in the mind anchored in the mind) and organisational knowledge (Van den Berg and Verhoeven 2017; Wehn and Montalvo 2018; Ammirato et al. 2019).

The lack of effective approaches in Knowledge Transfer undermines some advantages such as competitiveness, innovative capacity, achievement of individual and organisational goals (Van den Berg and Verhoeven 2017; Wehn and Montalvo 2018). Other benefits denied by the lack of effective Knowledge Transfer approaches are the increase in product quantity and quality, technological progress, and cost reduction (Ahmad 2016; Fujiwara and Watanabe 2017). Other topics related to Knowledge Transfer are a mix of Information Technology, process, organisational and industry knowledge, integrated into information systems (Kowalska-Styczen et al. 2017). Knowledge Transfer remains a problem due to its complexity, dynamics, adaptation, including non-linearity, lack of diffusion, knowledge gain, and absorptivity. Additionally, it is difficult to transfer meta-knowledge (knowledge of who knows what, who knows who) and contextual knowledge (knowledge of others) via ICT-mediated collaborations. ICT-mediated interactions require ICT capabilities, Social Media, and physical face-to-face interaction, to transfer knowledge within organisations (Van den Berg and Verhoeven 2017). Other roles of ICT also upkeep knowledge application by entrenching knowledge into administrative routines. Procedures that are culture-bound can be embedded into Information Technology so that the systems themselves become examples of organisational norms. Murphy and Salomone (2013) found that in some environments with distinct cultures, Social Media can improve the extraction and utilization of tacit knowledge within organisations. Furthermore, Social Media reduces issues in collaboration across occupational boundaries. There is a lack of clear effective leadership approaches in KT of systems, business processes, deep, tacit (knowledge embedded in the mind) and organisational knowledge (Dalkir 2016). Consequently, Social Media use in organisational setups could provide a crucial requirement for effective Knowledge Transfer. Ghazzawi (2018) argues that future research on innovation should further investigate the extent of Social Media's role in the growth of a firm and whether the lack of innovation has a major impact on a firm's plunging corkscrew.

Information Technology can enhance communication and knowledge integration as well as an

application by facilitating the capture, updating, and accessibility of organisational directives (Alavi and Leidner 2001). There is an important aspect in the form of trust which lubricates effective communication and knowledge transfer. Trust is referred to as a self-motivated predictive interaction between expectations, where the expectation is mediated, and affected by the available information (Fell et al. 2020). Bernstein (2016) acknowledge that trust is an expectancy believed by an individual, assurance, stated or transcribed statement of another individual or group that can be depended on. Within human information interactions trust rests upon the relationship between two people, source, the person doing the trusting, personal expectations with respect to the information, the propensity to trust; features of the information itself. Features of information also include information truthfulness, authenticity, reliability, and integrity of the source (Fell et al. 2020). This is because prediction is an essential instrument involved in cognition, action and guarantee safety in somehow as predictable environment fosters a human subjective feeling of trust. In the information-saturated environment, trust has under no circumstances been more important because its lack results in substantial social issues like division in socio-political dialogue and widespread misinformation (Gwizdzka et al. 2019). Social issues and misinformation affect knowledge transfer and building trust. Trust is reflected as a major concern in the information-saturated environment on the same note, literature reveal that technology can facilitate Knowledge Transfer when specifically using Social Media. The question which arises is how can organisations improve trust in these information and knowledge saturated environments?

Pavan and Felicetti (2019) and Andrianina and Okle (2021) insightfully emphasise that SM offer different affordances or platform (part of political environmental impact) in form of material features embedded within contexts through specific concerns, strategies, and action possibilities. To add, for instance, Facebook affordances include the creation of unique contents, the opportunity to share links to existing online materials, construction of a change culture and collaborating knowledge contributions by advocates, the ordinary citizens and organisational performance. This highlights the importance of social media impact

and a need to be aware of the platform opportunity in the organisational business environment.

The scientific foundation of the manuscripts are contributions to support research on Social Media and Knowledge Transfer from a different domain perspective. Chen and Kuo (2017) argue that, although previous studies have examined the Knowledge Transfer process from a positivist psychological point of view, the effects of media tools on users are consistently overlooked. Furthermore, the literature on the behaviour of Knowledge Transfer is still limited and focuses on the use of Social Media and the modes of operation (Mount and Martinez 2014; Chen and Kuo 2017). The use of Social Media is also limited to collaboration, open innovation, the idea phase rather than Research and Development (R and D) and the commercialization phase of the innovation process according to Mount and Martinez (2014). There is still a lack of multidisciplinary research on Knowledge Transfer using Social Media.

The organisation should use more technology to survive in the modern business environment. The complex, uncertain, ambiguous and constantly changing business environment requires companies to be innovative, react to unexpected changes and remain sustainable (Lang and Lemon 2018; Wehn and Montalvo 2018). Contemporary organisations are more dependent on the use of information systems (IS) (Kowalska-Styczen et al. 2017; Cotten 2021). Lang and Lemon (2018) insist that organisations should consider Social Media as part of IS when generating and transferring knowledge because organisations do not get rid of the complex, uncertain, ambiguous and constantly changing need, the need for innovation, the need to react to unexpected changes. Globalization, the increased use of technology and the combination of technologies are important for innovative thinking (Min et al. 2017). Thus, most organisations using Social Media, for example, might be more agile.

Objectives

The broad objective of this manuscript is to explore and have broader understanding of the interlink, analyses the existing trends of IS, organisational science, Information Technology and HCI disciplines from a qualitative perspective. Organisational science is epitomized by Knowledge Management

and the Information Technology discipline has Social Media as the enabling innovation for Knowledge Transfer. Figure 1 shows the overlapping domains on the use of social media in knowledge transfer framework constructs. The framework reveals multiple overlapping domains. Organisations are systems because systems include first-hand knowledge bases and regulations, knowledge, people and technology that are considered “inputs”. Other outputs include changes in behaviour, communication, innovation, adaptability and sustainability. Communication and Knowledge Transfer using Social Media and the paper interpretation are considered as the “process” of the system. The results are the actual Knowledge Transfer, generalizations and changes in performance.

This manuscript specifically tries to: identify issues related to the domains, factors affecting Knowledge Transfer and propose the use of Social Media as part of Information Technology for effective Knowledge Transfer.

The manuscript is organized as follows: the next section presents literature on the three domains interlink, research method, discussions, conclusions, recommendations, limitations and references.

Background and Related Literature Review

The background for this manuscript is based on Information science and Informatics, organisational, Information Technology and HCI studies and for the data analysis of the manuscript.

Information Science and Informatics

Information science and Informatics disciplines are not well understood. Information science and Informatics are disciplines that are reflected as being used interchangeably. Information science encompasses the study of a variety of perspectives, people, processes, information management and contributions. Järvelin and Ingwersen (2004), observes that the interdisciplinary domain is concerned with cognitive psychology, psycho, social-linguistic, communication, graphic art, logic, operation research, library science, management, library-ship, social science or human race research and practical concepts. To add, the discipline incorporates technologies, laws, and

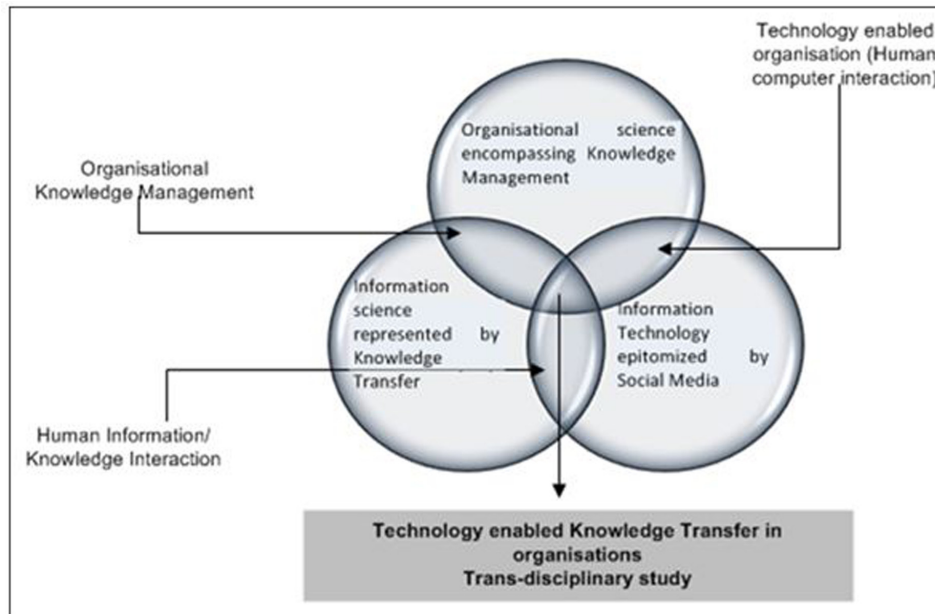


Fig. 1. Overlapping domains: Use of social media in knowledge transfer framework constructs

Source: Authors

industry dealing with Knowledge Transfer. The discipline also deals with free people (organic ISs) or machines (Inorganic ISs), aided understanding and cognitive process through communication and collaborations to enable Knowledge Transfer. The interdisciplinary focus assumes that there is no 'particular solution' answer to a problem, to contribute to organisational effectiveness and improvement. The domain additionally, concentrates on expertise, records origination, collection, organisation, storage, retrieval, interpretation, presentation, transmission, transformation and usage.

Paul et al. (2017) illustrate the information science discipline as also consisting of interaction with pure science and interaction with bio-science. The interaction with pure science subfields includes chemical information science, quantum information science, mathematical information science and computer information science. In contrast, interaction with bio-science is facilitated by medical information science, healthy information science, bio information science and geoinformation science. This typically spells the multi-facet nature of the discipline, including the

fact that it is still recent, and evolving, reflected by its use in different industry sectors. The information science domain represents analysis structure, institutions, actors and documentary structures. The different sources mean one should be aware of these sources when making decisions based on these sources. The different sources of information, information generation tools, transfer, storage and application could be motivating the changes in terminology. This is evidenced by Paul et al.'s (2017) use of the words documents studies around the 1950s and later information documentation. During 1960-1970 document studies was renamed to information studies, which became Information Psychology and Management. Developed during 1960- still in two emphases was Information Science, which was elevated to Information-Architecture and designing. Lastly, from the 2000s, the (i-school) virtual concept of Information Science and Technology was developed into people-information-technology interaction. These terms seem to be showing information generation/sources, technology use, storage and transfer methods (Paul et al. 2017).

Inefficiencies and Ineffectiveness of the Information Science Discipline

Information Science and informatics domains are highlighted as vital for societal upliftment and information system building and management. Kolin (2021) conclude that worldwide informatization is one of the leading trends in the socio, economic, scientific, technical and cultural development of society in the 21st century. Additionally, informatization is leading to the development of the level of information advance of the nation mainly defines the quality of life of the people, the advancement of science, learning and culture, and national security. Informatization (social informatics) refers to the studies of all types of information resources, processes, technologies, systems and communications that are of social significance for the life support and development of society (Kolin 2021). Kolin (2021) emphasize that informatization as the universal socio-technological occurrence is not yet adequately understood in organisational setups, the academic fraternity. Furthermore, the concept is affected by information inequality, information crime, cyberbullies, manipulation of consciousness, virtualization of society, as well as confrontation in the information sphere and information wars. Thus, trustworthy information sources could facilitate quality decisions when managers base upon these sources. Thus, the sources could facilitate knowledge transfer, facilitate innovation and sustainability although affected by people capabilities, organisation, content, and environmental factors according to the author of this manuscript.

Knowledge Transfer

Knowledge sources and the transfer process must be properly understood in enterprises. This is due to the fact that Knowledge has become critical to organisational competitiveness according to Bidgoli (2021) standpoint which is still supported by Bidgoli (2021). As a result, organizations are capitalizing on knowledge in the form of patents, processes, management skills, technologies, information about customers and suppliers, and core competency experience. The need for competitiveness and capitalising on different knowledge forms should motivate the management to champion

knowledge transfer. Knowledge Transfer is a complicated and hard system. Numerous big research together with that of Findlay (1978), Davenport and Prusak (1998), and Van den Berg and Verhoeven (2017) in addition to Chen and Kuo (2017) had been accomplished on Knowledge Transfer. The idea of understanding Knowledge Transfer was first proposed with the aid of using Findlay (1978) and has been interchanged as sharing, knowledge flow and acquisition. Knowledge sharing includes making explicit knowledge available to others, at the same time as understanding knowledge flow consists of the drifts in the IS/Information Technology understanding bases. Knowledge acquisition consists of internalising understanding (Becerra-Fernandez and Sabherwal 2010; Zhang and Jiang 2015; Szilágyi 2017). Knowledge Transfer is implicitly and explicitly affecting an entity by another resulting in modifications in performance, system, products, training, software and change of an understanding reservoir (Argote and Ingram 2000; Becerra-Fernandez and Sabherwal 2010). Knowledge Transfer is furthermore, described as the system or approach of facilitating conversation, understanding absorption, alternate of behaviour and alertness with the aid of the recipient, in a given context and a selected channel (Davenport and Prusak 1998; Murray and Peyrefitte 2007). This implies that without sensemaking, a recipient, a given context and a selected channel Knowledge Transfer is difficult. The Sensemaking concept emanate from communications and information science disciplines according to (Dervin 2003). Sensemaking theory reveal reality (at individual and organisational), causes, and how informed decisions are reached using information systems and technology (Namvar et al. 2018). Sandberg and Tsoukas (2015: 12) present five categories of events that activate sensemaking (i) major planned event such as any strategic change, (ii) major unplanned event for example a crisis situation, (iii) minor planned events such as meeting among group of experts (iv) minor unplanned event for instance misunderstanding between group members and (v) hybrid of triggering events. The events which trigger sensemaking necessitate understanding, sensemaking complexity and resultantly impact on KT.

Singh and Singh (2021) also found sensemaking as including the following aspects immanent, combined efforts to comprehend, represent, structure,

reduce confusion, vagueness and indistinctness. Singh and Singh (2021) add that sense making is a process of gaining insight, associated with cognitive processes such as comprehension, open-ended interviews, conversations, archival records, direct observation, personal experience, and real-time process data. Therefore, sense making include body-mind-heart-spirit unique experiences leading to understanding connections, structure, reduction in confusion, uncertainty, ambiguity and discovering gaps. Sense-making in relation to Knowledge transfer aspect will be explained in the following sections.

Knowledge Transfer process may be real-time (synchronous) or delayed (asynchronous). Liyanage et al. (2009) suggest a 6 Knowledge Transfer Process Model, were awareness of valuable knowledge is the first phase, followed by the second acquisition phase of knowledge from the source. The third phase is knowledge before being transferred using (Socialisation, Externalisation, combination and internalisation SECI) as explained by Nonaka and Takeuchi (1995). Association is the fourth phase where the transferred knowledge is linked with internal needs. The fifth phase is an application, where useful knowledge is put into practice by organisations in order to create value.

Feedback is the sixth phase which includes the build-up of capability from the transferred Knowledge. This means Knowledge Transfer tactics may be through understanding database elements, an excellent exercise workshop, technological know-how and generation, a cross-purposeful team, email and network software.

Classification of Knowledge Transfer, sharing, retrieval, access and searching of knowledge tools or technology include web technologies, enterprise information portals, groupware technologies, knowledge sharing tools, interface tools, internet and intranet search tools and intelligent agents. Knowledge access and transfer tools allow the integration of different representational and communicational media, stimulating the collaboration, communication and dissemination of knowledge (Antonova et al. 2006). The classification Knowledge Transfer and process provides a simple method to understand different IS tools, modules and technologies used for knowledge management in organisations.

Many academics in information science regard the discipline as one of vital importance. Examples

of academics include Mathur and Reichling (2016), Ghazzawi (2018), as well as Fell et al. (2020). This is because in the accumulation and knowledge transfer process knowledge is codified in books, while accumulated knowledge is taught in academic institutions. Libraries store and disseminate knowledge, as movies and television visually display knowledge, together with specialized journals and conferences transfer written and oral information and knowledge respectively. Although knowledge accumulation and transmission are significantly taking place through different systems, the systems are however inefficient in relation to the demanding contemporary innovative environments (Zhou et al. 2018). There are many elements inflicting the inefficiencies and ineffectiveness of structures, including books, libraries, schools, journals, and films. Some elements encompass person capabilities, progressive technological know-how, and a new era, fast out of date of technical expertise constantly desiring an update, multiplied medical expertise outputs, a brief cycle from studies and application. To keep away from the competition of the equal component, enterprises have to correctly talk and have expertise switch.

Organisational Science

Organisations are complicated, ever-dealing with modifications and need to constantly adapt to be powerful and efficient. Understanding corporation literature assists in Figuring out strategies to enhance organisational effectiveness and performance. Organisational effectiveness is known as the capacity to provide first-class goods/services that fulfil stakeholders at an affordable value and earn income at the same time (Aswathappa 2016). The improvement aspect comprises of a change in 'culture' and the 'leadership'. Leadership can be transactional or transformational. Transactional leadership assume efficiency by balancing between task and person in the relationship between leaders and led. Transformational leaders assess the context and lean on the contingency theory of leadership. Contingency theory of leadership stresses a balance of organisational tasks demands, members' needs, environment factors, proactivity, visionary leadership for change (Hoyle and Wallace 2014).

There are a variety of disciplines related to organisational science. Some major disciplines include psychology, sociology, social psychology, anthropology and political science (Aswathappa 2016). Organisational science also investigates the duality concept, organisational processes' aspect, Loosely-coupled systems, contingency theory in face of crisis, ambiguity theory status quo, and interactionism approaches, as per (Hoyle and Wallace 2014).

Psychology refers to the study of the behaviour of animals and humans. To add, intrapersonal behaviour covers such aspects as personality, attitude, perception, learning, opinion, motivation, job satisfaction, and stress management. Interpersonal behaviour consists of group dynamic forces, team dynamics, intergroup conflict, leadership, communication, transaction analysis, and, the study include formation, structures, effectiveness and formal study informal organisations. Anthropology studies the human race culture, which also influences human behaviour. Culture dictates what people learn and how they behave. To add, some organisations, for example, take employee welfare and social responsibility as their main goals. The culture of the organisation will have an influence on the employee. Political Science emphasises an understanding of the behaviours of individuals and groups within a political environment. Specific topics of concern to political scientists include conflict resolution, group coalition, allocation of power, and how people manipulate power in their self-interest, all to facilitate organisational sustainability. To add, Sociology: refers to the study of group behaviour and behaviour of people in relation to their fellow human beings. Sociology is the study of human social behaviour, society, patterns of social relationships, social interaction, and culture that surrounds everyday life (Wasserman and Faust 1994 quoted in Aswathappa 2016). Pereira and Goncalves (2017) in a study on Knowledge management in projects conclude and suggest that all level organisational Knowledge Transfer can be implemented through informal meetings, brainstorming's, workshops, team building, in order to identify modest effective approaches for efficiency and effectiveness, internal sharing networks and management of knowledge and implementation strategies. However, the author of the manuscript argues that the knowledge transfer strategies are also determined by resources' availability,

the sensitivity of the issue and knowledge source and destination. The use of internal sharing networks is also supported by Romanyshyn et al. (2021).

Thus, organisational science seeks to study how complex organisations can be effective, efficient to improve through balancing resources, individual, cultural, and environmental impacts.

Why Study Organisational Science and Knowledge Management

Studying organisational science implies attaining a variety of benefits. In understanding the world, a usable methodological approach best suited to organisational concepts, could be through interpretative qualitative case studies. Interpretative qualitative case studies treat organisations as social constructs. Studies that treat organisations as a social construct focus on differing or conflicting perceptions of members in different groups in an organisation. The approach allows for the uncovering of conflict rather than making a prior assumption of conflict existence. This reserves the duality model which allows for the structuring through the institutionalization of conflict as perceived by agents (Hoyle and Wallace 2014). People also study, organisational science to be knowledgeable, know the truth, and prevent errors as specified by David and Resnik (2011). Studying organisational science, therefore facilitate the ability to know the environmental status quo, predict the future, become agile, manage knowledge and sustain the organisation with employees' wellbeing. Understanding employee wellbeing may facilitate knowledge Management. Knowledge Management encompasses 5 core concepts: information acquisition, information organisation, information retention, information sharing, and information generation (Davenport and Prusak 1998). The writer of this manuscript support Zhou et al. (2018) on that Knowledge Management additionally acts as a strategic device for enhancing and reworking the knowledge and function of librarianship (data technological know-how). This is due to the fact that Knowledge Management is turning into extra applicable to 'traditional' library approaches throughout distinct sectors of financial systems. As a result, practitioners ought to now combine Knowledge Management into library programs. To add, the virtual repositories, open access innovations are

facilitating research activities and Knowledge Management (knowledge acquisition, organisation, retention, storage, sharing, and generation (Zhou et al. 2018).

A variety of factors impact the complicated Knowledge Management. According to Castro and Martins (2010) the organisational culture comprise of training and development, transformation and diversity, job satisfaction, leadership, employee wellness, communication, performance management, remuneration and reward, work environment and the image of the organisation.

This necessitates Knowledge Management through either only codification (explicit knowledge) or personalization (tacit knowledge embedded in the people's mind) (Hansen et al. 1999). Hansen et al. (1999) case study in a firm setup emphasized that organisations should choose to achieve the competitive advantage, use the economic model (create large teams for revenue or small team to charge high fees), Knowledge Management strategy (people record tacit knowledge or collaborate in a community of practice). Organisations can also choose Information Technology (invest, reuse knowledge and enable conversation), human resources (hire experts to train others) without spreading efforts on alternatives. Although the case study covered one domain (engineering), a multi-domain study could have produces a different result. Thus, the guide in understanding Knowledge Management pillars, knowledge transfers strategies, and the factors affecting Knowledge Transfer provide important insights.

There are many risks related to organisational science. Organisational science has not backed or enhanced enough worker administrative circumstances. Other problems in organisational technological know-how also include lack of trustfulness, undermining, intrigues, aggravation, and imbalances. The tendency of managers to assume quick-fix solutions from developmental programs, difficulty working conditions filled with pressure (Aswathappa 2016).

Bititci (2015) emphasizes the issue of performance measurement and management. Additional performance measurement and management include setting goals, developing a set of qualitative or quantitative assessments of the efficiency and/or effectiveness of an action, collecting, analysing, reporting, interpreting, reviewing, and acting on performance data (technical controls).

This implies that understanding reasons for studying organisations and approaches emphasize the significance of proactivity and integrating or adopting the correct, beneficial approaches, according to the author of this manuscript. With all the different approaches highlighted, the author of this manuscript accepts integrating the correct, beneficial aspects of different approaches depending on context. This is because some main focus of organisations is to improve performance, competitive advantage, production, employee wellbeing, innovation, the sharing of knowledge, lessons learned, and continuous improvement of the organisation. From all the system approach, the main focal point is echoed as the need for knowledge management. Understanding different organisational science theories are of vital importance to novice researchers. Additionally, understanding discipline issues, the applicable epistemology, ontology, theory in this uncertain environment is important.

A summary of the organisational science major disciplines, factors impacting, contributions, and current issues are illustrated on a Piktochart in 2. The discipline is impacted by individual, group, organisational, and inter-organisational factors. Contributions are in form of sustainability, competitiveness, non-stop improvement, advanced performance, know-how output, enhancing worker's morale, insight, enterprise development, and cooperate image.

Information Technology Discipline

There are various subfields in the Information Technology domain that affect organisational agility. Information Technology ought to be adopted because it has the capacity to power the financial system and enhance organisational performance and effectiveness. Many academics including Brynjolfsson and Hitt (2000), Wang (2009), and Bidgoli (2019) concede Information Technology as a rising and important in facilitating organisational sustainability and might leverage performance. "Information Technology is the study of systemic approaches to select, develop, apply, integrate, and administer secure computing technologies to enable users to accomplish their personal, organisational, and societal goals" (ACM 2017: 18). Information technology enables the information

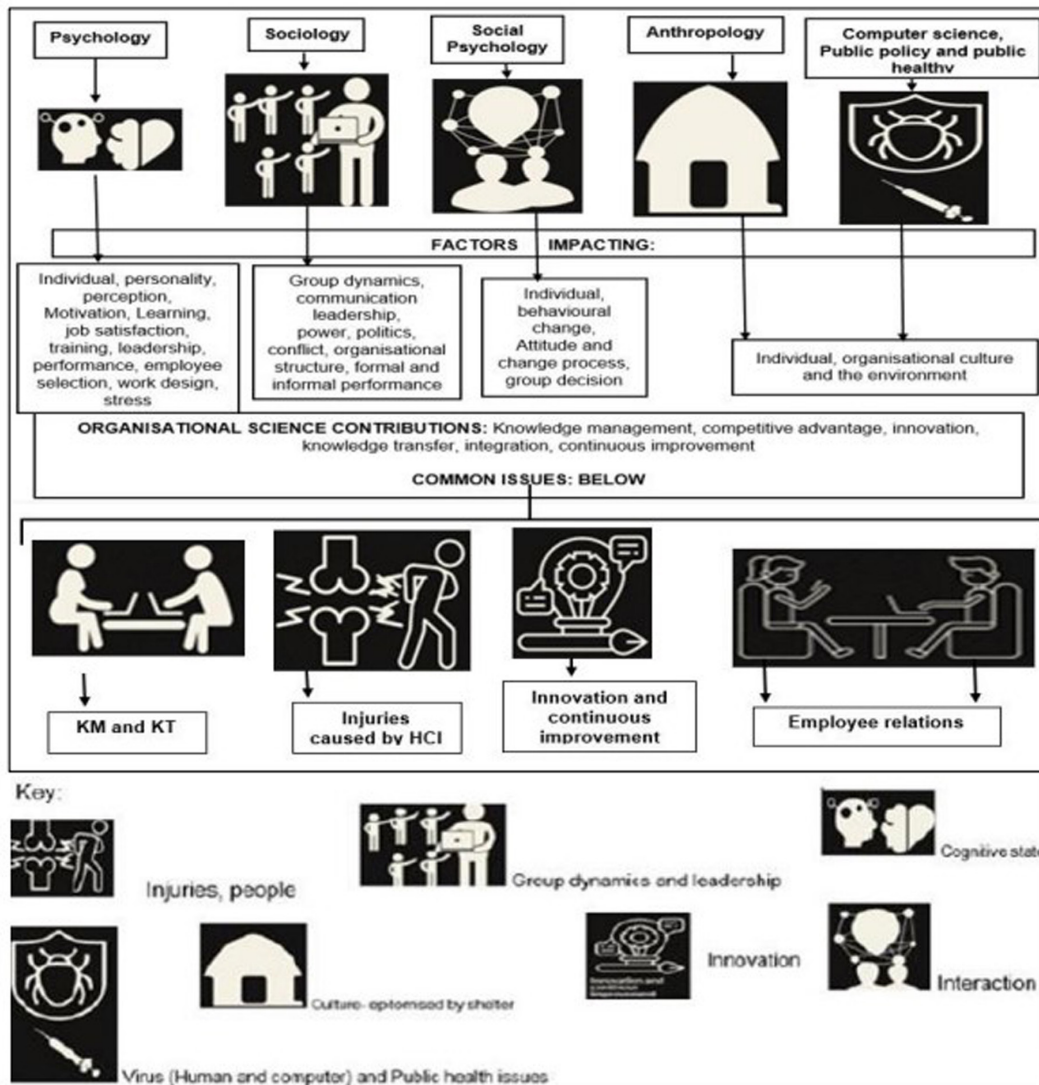


Fig. 2. Piktochart (Infor-gram Application): Summary of the organisational science major disciplines, factors impacting, contributions and current issues

Source: Authors

science discipline since Information Technology includes all the computing in the broadest sense, including hardware, software, applications, infrastructure, services, and resources (Wang 2009). According to ACM (2017), Information technology was born in 2008. 2008 was the year when the world had the explosion of web

services, mobile computing, Social Media, and high-speed wireless networks, data centres and now embedded in everything (Internet of Things-IoT) brought the industry 4.0 (4th Industrial Revolution).

The 4th industrial revolution was coined in Germany in 2011. 4.0 is a German government

scheme with the objective to stimulate the automation and revolution of manufacturing. To add, it is estimated that by 2020 at least 60 billion intelligent objects will be online, including the Internet of Things (IoT) and cyber-physical systems. Rusmann et al. (2015) view the 4.0 as becoming the icon of Smart Factory, Smart Manufacturing, Big Data, Internet of Things. Zhang et al. (2013) regard the 4th industrial revolution as the application of 9 foundational technologies which include: Autonomous Robots, Simulation, Horizontal and Vertical system integration, IoT, Cybersecurity, Cloud computing, augmented reality, and big data analytics. Given the reality of the knowledge economy, ICT, development of the world into more like one village, Information Technology is and will drive the economy and improve organisational efficiency and effectiveness. Lunt et al. (2008: 17) concede the following Information Technology subfield which includes: professionalism, information assurance, and security, Programming, networking, Human-Computer Interactions, databases, and Web systems. ACM (2017) identified five disciplines that are part of the overall scope of computing, professional organisations in terms of areas like publication, Computer engineering, Computer science (using machines and/or people for cognitive process, communication, interaction, and Knowledge Transfer), Information systems (applications), Information technology (using technology to achieve objectives), and Software engineering. Information Technology is a domain that is difficult to understand.

Contributions of Information Technology Innovations

Information Technology is important for this manuscript as it enables Knowledge Transfer, significantly determine economic growth, societal well-being, and politics globally. Knowledge Transfer embodies data (raw facts), information (processed data that provide meaning) in form of instructions, concepts, facts in the communication process (Avison and Shah 1997). Bidgoli (2019) believes that Information is the second most important resource (after the human element) in any organisation. As an instance, online knowledge (sourced from information) sharing can enhance work quality, improve decision-making skills,

problem-solving efficiency, and competency (Nguyen 2020). To, add, Information Technology can also facilitate the upkeep of the Knowledge reservoir, know-how, when, and what way to ask for the desired knowledge. More so, knowledge seekers do postpone asking for knowledge when they are uncertain they can effectively extract knowledge from the source, and that enterprise social networking site use can be a significant communication medium that enables knowledge-seekers to alleviate this uncertainty, or ambiguity, in specifically Knowledge Transfer (Leonardi and Meyer 2015). The organisational systems are not well researched as clarified by Hankel (2020). Hankel upholds that although Information Technology is an important strategy to efficiency, improve organisational competitive advantage, there is an issue in the discipline, hence it should be researched more. Some of the issues include the bias and identified gaps in areas of Green ICT and aspects of the organisational perspective not well explored. Green ICT refers to minimizing the problem of ICT and optimizing the benefits of ICT and the environmental impact (Hankel 2020). Aasi (2018) argues that although Information Technology adoption is increasing and beneficial to organisational efficiency and sustainability, most are still struggling in terms of governance and understanding the concept. Information Technology governance include insisting on accountability of demonstrating performance for value delivery, strategic alignment, risk management, resource management, performance measurement, the display of desirable behaviour, and understanding impacting factors like culture and structure (ITGI 2003) standpoint is supported by Pearlson and Saunders (2013: 79) and state that, “ideally, an organization structure is designed to facilitate the communication and work processes necessary for accomplishing the organization’s goals”.

Information Technology is therefore unique, should empower people toward digital entrepreneurship, considering the decline in the world economy and employment opportunities. Likewise, Information Technology should also mitigate against issues like the 4th industrial revolution risks (cybercrime, pollution, widening of inequality) and size the 4th industrial revolution associated opportunities. As a consequence, knowledge generation at different levels of knowledge (epistemological aspect) and ontological dimensions

should aim to improve knowledge value and integrate knowledge. Additionally, knowledge integration seems to emanate from experiential knowledge, conceptual, routine knowledge, and systemic knowledge.

Social Media (SM), Classification and Functions

A number of social media classification terminologies exist in contemporary literature. Social Media refers to “[. . .] a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content” (Kaplan and Haenlein 2010: 61). According to Jussila et al. (2014), Social Media refers to the use of social tools in the customer interface, internally and with partners using wikis, blogs, and discussion forums. Formally, social media is “any tool or service that uses the Internet to facilitate conversations” (Safko 2011). The definitions emphasize that the Social Media is current, use the internet, and has ICT aspect by actors or user to archive. Social Media includes publishing platforms such as WordPress, blogger, TypePad Wikis. Social Media also facilitates the sharing of Video (YouTube, Vevo, Vine), live streaming using Twitch or Periscope, Documents (Slideshare, scribed) Pictures (Pinterest, Fancy, Ello, Behance). Messaging platforms include WhatsApp, Facebook messenger, Snapchat, Kik. Conversation platforms include Github, Reddit, Disqus, Muut, Sina Weibo. Lastly, professional social networks include LinkedIn, Viadeo, Xing Plaxo, and others (Cavazza 2016). In contrast, Social Media is also categorised into egocentric, community, passion, media sharing, and opportunistic sites (Parent et al. 2011). To explain, Egocentric sites allow profiling and connections, whereas community sites imitate natural groups based on faith and interest. Media sharing sites aid in sharing content, while passion sites enable passion associations based on interest and leisure pursuit. Opportunistic sites also facilitate business collaborations.

Classifying existing social media tools is worthwhile given the numerous tools that exist, and it also allows one to gain insight into the way individual social media tools work. Social Media is also classified and based on theories and common. The theoretical classification of the Social Media tool by Kaplan and Haenlein (2010)

indicates Social Media as a tool mainly used by individuals than communities. The three Social Media classifications are Organisational blog, social communities, and virtual world. Social Media instant contact in organisational blogs is low, medium in Social communities, while high in the Virtual world. In contrast, Kietzmann et al. (2011:243) differentiate Social Media into seven honeycomb blocks of functions. Some functions are: to be present on Social Media to reveal the identity, privacy, social standings in form of reputation and create organisational groups (Parent et al. 2011). To add, sharing multimedia content, conversation and relationships are also some Social Media functions which (Parent et al. 2011) labelled as passion, media sharing, and opportunistic sites. The honeycomb functional blocks of Social Media by Kietzmann et al. (2011) in illustration presents a significant and universal challenge to organisational communication, Knowledge Transfer in terms of selecting how to select or design the platform for specific functions.

The honeycomb framework is a tool to understand and develop Social Media platforms and the Social Media landscape. Kietzmann et al. (2011) present a guideline relating to how firms should develop tactics for observing, understanding, and responding to different social media activities. The guideline includes 4 Cs which are: cognize, congruity, curate, and chasing. To cognize according to Kietzmann et al. (2011) is to understand the firm Social Media landscape, unveil the Social Media functionality, and the ability to react to customer’s needs. Congruity involves developing agile strategies which accommodate different Social Media functionalities and organisational goals. Curating includes the ability of a firm to know when to, who will communicate, portray an impression on a Social Media platform. To add, this also takes in measuring the effectiveness of organisational communication and the perceptions of the audience. An example of Social Media uses in communication is referred to as curation by Kietzmann et al. (2011). Lastly, an organisation must chase for employees who have the ability to mine information about Social Media activities since it is extremely time-consuming (Kietzmann et al. 2011). According to the author of this manuscript, chasing seem to be related to the educational motive for Social Media use (Safko and Brake 2009). As an instance,

learning about an organisation's products, business intelligence, aid employees who need the ability to mine information about Social Media activities. Mining the information need employees who can save resources since it is extremely time-consuming (Kietzmann et al. 2011). An example is in the communication of professionals who still face the issue of how to use the emerging digital tools effectively (Men and Muralidharan 2017). Social media is a source of innovation in organisational set ups.

Factors Affecting Social Media

Many factors impact the use of Social Media. Social Media is affected by other factors which include, context, Social Media content, individual, organisational, inter-organizational, and objectives. These factors need to be understood for use in instances such as Social Media management for effective Knowledge Transfer in an innovative business environment. McFarland and Ployhart (2015) maintain that Social Media decreases concentration, changes the socializing routines, ways of expressing opinions, weakened cognitive processes, mental vocabulary, obstructed reflection ability, critical thinking, fake news, and imagination.

Social Media also impacts the physical, political, social, technological, and economic environment by developing a negative environment where people can be rude, destructive in social networks, plagiarism, piracy, identity theft. Technology also includes principles, ethics, Social Media laws, and policies. The context in form of digital communication media (for instance, email) and physical (face to face), as well as politics and laws governing Social Media, use also affect Social Media (Elefant 2011; McFarland and Ployhart 2015). Age and gender can affect customer behaviour; for instance, people buy different goods and services over their lifetime (Kotler and Kotler 2012). Hofstede studied national culture using IBM employees in more than 50 countries. Hofstede's study showed that the values of employees differed more based on nationality, age, and education than on their membership in organisations (Hofstede 1980). Hofstede (1980:24) defines culture as "the collective programming of the mind which distinguishes the members of one human group from another".

Although Social Media is beneficial, there are harmful effects related to the use of computers, social media. This necessitate assessing social media applications usage, returns for organizations which remains lacking in present literature (Muhammad et al. 2019).

This denotes that staff may need to be sensitized to the benefits and potential hazards of using Social Media while putting in place enabling Social Media use policies.

On Social factors supporting Social Media, academics acknowledge group membership as one determinant factor for behaviours change. This is because people often act in accordance with the long-accepted and sound premise and frame of reference acts of groups to which they belong (Murell and Chatman 2001). Reference groups determine the behaviour to use Social Media. Social or subjective norms can be defined as "an individual's perception that people who are important to him or her think he or she should or should not perform a behaviour in question" Schultz et al. (2012: 177). Murell and Chatman (2001) importantly, consider reference groups as all the groups that impact the positive or negative feelings and behaviours between individuals' relationships. This means Social Media impact necessitates organisations to understand the individual, internal organisational factors, external factors like national culture, social, economic, technological, legal landscape, and the advantages of using Social Media to survive the innovative business environment.

Human Computer Interactions (HCI)

The HCI is a new and difficult-to-understand discipline. HCI concentrates on humans and computers (software and hardware), relation, usage, and the response of the computers to the user. HCI also aims to define the best comprehensible structure and design to solve problems making an allowance for all cognitive science to achieve product quality and Safety-Critical Systems. SCS ensures the safety of humans as a result of product usage. Safety-critical systems assess the causes of a loss (damage) in human life, health, or property when human error is not avoidable (Singh and Singh 2021). HCI system has four main components consisting of user, task, tool, and context (Gurcan et

al. 2021). HCI also comprises subfields which include human behaviours, psychology, sociology, cognitive science, anthropology, education, as well as computer science, software engineering, ergonomics, industrial design, and graphical design (Dix 2017). The necessity of HCI and SCS becomes obvious in organisational setups. In every second of a biological living thing, there is a variety of multi-dimensional information, seemingly important for survival hence the need for current and future interdisciplinary research (Fidel 2012). The research could study how human beings interact and relate with information (Human Information Interaction). HII research area is still new, problem-based, in the informative years, awaiting an initial consensus about its nature and attributes. HII aims to specify the principles and ways of presenting information to facilitate effective human information interaction. Presenting multidimensional information effectively is portrayed as important in face of big data, information explosion, the upsurge of technology-based systems, designed to solve problems (Fidel 2012). HCI hence for this manuscript, is the study of communication, sense-making, and unmaking of the computer user while considering safe, task execution and the context.

Castro et al. (2021) emphasise that developing interactive systems is a challenging undertaking that implicates distresses related to the HCI, such as usability and user experience. Therefore, HCI is a current issue in developing workable systems on which management should gunner supports from various departmental experts.

To sum, Figure 2 illustrate the exploration results meant to enhance a broader understanding of the interlink, a snap shot of analyses of the existing trends of IS, organisational science, Information Technology and HCI disciplines from a qualitative perspective.

The framework reveals multiple overlapping domains were organisations are systems embodying for example knowledge, people and technology that are considered “inputs”, with communication as processes while effectiveness, efficiency, or knowledge transfer becomes the outputs.

METHODOLOGY

This manuscript is primarily based totally on an exploratory approach in the systematic literature

review. The study used a variety of reviewed convention papers, books, and edited volumes in the open-source. The journals databases searched include Scopus and Google Scholar, in addition to handpicks from one-of-a-kind publishers. Also refereed are doctorate thesis, textbooks, and documentaries, which can be believed to symbolize contemporary studies outputs (Ngai and Wat 2002; Chan and Ngai 2011). Handpicks are peer-reviewed papers acquired from different researchers of the primary professionals within the one-of-a-kind domains. The key search phrases used are: (“understanding transfer” OR “Social Media” OR “Information System context”). Considering the scope of the manuscript, articles selected cut across many economic sectors such as education, healthy, research, and development. A flow diagram showing The inclusion and exclusion according to Pickering et al. (2015) demonstrate the scope of the literature across substantial and various studies through a process of extraction and synthesis, and thus highlight research gaps in the literature. According to Okoli (2015) a systematic review is unsuitable if the research question is too equivocal, if no one has previously investigated the topic or if the topic is broad or too narrow. Okoli outline elements of the inclusions and exclusion as including Identification, screening execution (illegality and inclusion) of articles from journal. The main manuscript selected a range of reviews of English papers published from 1999 to 2021 in five purposively selected databases. The scope of this manuscript is a limited time frame because this long period is still showing upward growth of the social media research. Data was extracted and analysed using Haring’s Publish or Perish, VOS Viewer software and www.connectedpapers.com.

RESULTS AND DISCUSSION

The research found that knowledge transfer involves the collection, filtration, processing, creation, and distribution of data, information and knowledge that can be enabled by the complementary network of hardware, software, people in organisations (Bostrome and Heinen 1977; Sajeve 2010). The Socio-technical theory insightfully reflects that organizations are information processing systems that embody the technical system which involves the processes,

tasks, structure, people, and technology required to convert inputs such as raw materials to outputs such as products (Bostrome and Heinen 1977). The theory also gave an insight into factors affecting knowledge transfer in organisations.

Individuals, Organisational Culture and the Environment

The key findings of this critical review on factors affecting KT can be categorized into Individuals, organizational culture, and environmental factors (Al-Shaigi and Al-Ashaab 2017). Srisuksa et al. (2021) regard vision, mission, and values that create a knowledgeable work environment to share knowledge and accumulate knowledge and behaviour of knowledge transfer through the collaboration of organization as factors affecting knowledge transfer. To add, Knowledge transfer is mainly affected by individual, organisational culture, content, external environment, technology, expert systems, and outputs (Bacon et al. 2020). Outputs can be in form of reduced mistakes, costs training time, increase quality of work processes, decision making speed and innovation (Meixell et al 2002).

People in organisational sensemaking process play various role and results in KT. Ncoyini and Cilliers (2020) express that Knowledge cannot be efficiently transferred if employees are not motivated to share it. The norm of reciprocity increases Knowledge Sharing (KS) behaviour. Employees improve their efforts at work to share knowledge when they expect that their work performance will be rewarded, and their success recognised (Liou et al. 2016). People or individuals as factors affecting organizations within the work system want to contribute to organizational goals and want to use skills, abilities, and become increasingly competent in mastering their environments (sensemaking / unmaking). These assumptions about people impact not only what the design should include, but how the design is derived (Bostrome and Heinen 1977). Bostrome and Heinen (1977) note that people remain deprived of the efficient capability to processors information about organizations, as per Systems designers, therefore the information should be flowing downward and should be controlled. The information control affects innovation strategies chosen.

Ghazzawi (2018) illustrate that organization decline emanate from strategy misfit, overpayment

of the leadership, work force age and size, bureaucracy, culture, organizational atrophy, environmental change, organizational inertia, leadership failure, lack of resources and innovation. An innovation is one of the main domain for this research. This reflect that innovation, SM design and KT are important aspect which may avert and solve organizational decline and the problem highlighted in the different domains.

Although Al-Shaigi and Al-Ashaab (2017) emphasised on three KT factors as consisting of before, during and after transfer some academics seem to include all of these factors under organisational. Yih-Tong Sun and Scott (2005), as well as Al-Shaigi and Al-Ashaab (2017) concentrate on individuals, organisational, industry and environmental KT. This means management must rethink about KT strategies and use innovative solutions such as the use of SM in KT. There are many complex KT barriers, which are phase related, affected by individuals, organisational, environment, and culture.

The author of this manuscript support Romanynshyn et al. (2021) who also maintain that information technology strategies support knowledge transfer. This observation show that a managerial commitment should aim to size for instance Social Media opportunities while being proactive on the negative effects of Social Media in Knowledge Transfer. The mainstream of the academic spheres still needs to address the lack of effective approaches in the Knowledge Transfer, of structures, business systems, from a multi-discipline perspective using case studies. Using the perspective of the different domains was insightful in identifying factors affecting the use of Social Media in Knowledge Transfer. Some of the identified factors include people information technology capabilities, attitudes, self-belief, improve staff morale, have insights, business development, performance improvement, leadership improvement (Wehn and Montalvo 2018).

There is a commonality among information science, organisational sciences, Information Technology, and HCI in form of technology-enabled organizations. Technology-enabled organisations use information technology as a link between organisational science and Information Technology disciplines. Stockman (2020) urges that there is a lack of research in HCI, how Information Technology improves societal well-being. This

implies that HCI remains unchallenged. This directs practitioners or researchers to challenge traditional Knowledge Transfer systems more.

To sum, the broad objective of this manuscript was to explore and have broader understanding of the interlink, analyse the existing trends of IS, organisational science, Information Technology and HCI disciplines from a qualitative perspective.

There are overlapping disciplines, subfields, and the associated common factors in Figure 3 are related to the technology-enabled Knowledge Transfer process in organisations. Common factors affecting different domains include individual, organisational, content, and environmental factors. IS comprise of subfields such as communication, computer science, has contributed through enabling human interaction, information research alternatives. Organisational science subfields examples include psychology, sociology, anthropology, political science, affected by problem such as lack of information access. IT also have subfields such as networking, software engineering, Web and Information systems. KM overlaps between the IS and organisational science and is affected by the lack of effective knowledge elicitation, collection, sharing, transfer, storage strategies. Technology enabled organisations use IT and IS although they face the issue of lack of comprehensible structure and design to solve problems such as human error, cognitive science to achieve product quality and safety. Overlapping between IT and organisational science are Human Information/ knowledge Interaction (HII). HII face issues like the lack of principles and ways of presenting information to facilitate effective human information and interaction. Overlapping in the three main disciplines is the technology enabled KT in organisations affected by the lack of effective approaches in KT of systems, business processes deep tacit organisational knowledge.

CONCLUSION

This manuscript concludes that individuals, organisational culture, environmental factors affect knowledge transfer. It is apparent that current exploration establishes that social media provide affordance for communication or organisational sense making, collaboration and knowledge transfer. It was revealed that the lack of effective approach, systems, knowledge

management is limiting effective knowledge transfer in organisational setups. It was found that the three domains are affected by people, organisational culture, structure, leadership, strategic intent, content, social media context, political, economic, social, and technological factors. This suggests that organisations need to understand the operational environment, situation, context, expected outcome to survive the dynamic complex environment. More so, organisations need to integrate platforms while using Social Media, implement policies and practices which seek to benefit from Social Media use opportunities. The results contribute to disciplines' sense-making, awareness of literature gaps and suggest proactivity to mitigate against the social media limitations to inform researchers and practitioners.

RECOMMENDATIONS

The manuscript recommends understanding the discipline issues related to Knowledge Transfer approaches and accepting the innovation in form of the use of Social Media, for sustainability and the ability to react to unexpected business environmental changes. This manuscript also recommends further research which could extract bibliographic data from databases other than Crossref, Web of Science, Scopus, using Harzing's Publish or Perish, connectedpapers.com and analyze trends of phenomena like Knowledge Transfer or Knowledge Management. It is recommended that future researchers should emphasize on the quantitative inquiry to assess strategies to manage social media for effective knowledge transfer using interviews. Knowledge elicitation, organisation, transfer and storage are issues, this means management may integrate technology such as different social media platforms or inter-discipline solutions to enhance efficiency and effectiveness.

LIMITATIONS

The manuscript limitations were the manuscript's data which was extracted from the Crossref, Web of Science, Scopus, using Harzing's Publish or Perish, connectedpapers.com only. As a result, the findings might not provide a complete overview of other domains which were not considered.

REFERENCES

- Aasi P 2018. *Information Technology Governance: The Role of Organizational Culture and Structure*. PhD Dissertation, Unpublished. Stockholm: Stockholm University.
- Ahmad F 2016. Knowledge sharing in a non-native language context: Challenges and strategies. *Journal of Information Science*, 1(1): 1-17. <https://doi.org/10.1177/0165551516683607>
- Alavi M, Leidner D 2001. KM and KM systems: Management Information Systems Research Center. *MIS Quarterly*, 25(1): 107-136. DOI: 107-36. <https://doi.org/10.2307/3250961>.
- Al-Shaighi H, Al-Ashaab A 2017. A Framework to Support Aerospace Knowledge Transfer to Developing Countries via Collaborative Projects. *International Journal of Economics and Management Systems*. From <<http://www.iaras.org/iaras/journals/ijems>> (Retrieved on 13 June 2018).
- Ammirato S, Felicetti AM, Gala MD, Aramo-Immonen H, Jussila JJ, Kärkkäinen H 2019. The use of social media for knowledge acquisition and dissemination in B2B companies: An empirical study of Finnish technology industries. *Knowledge Management Research & Practice*, 17(1): 52-69. DOI: 10.1080/14778238.2018.1541779.
- Andrianina R, Okle RAN 2021. Exploring the impact of enterprise social media affordances on work performance and knowledge transfer. *Research Square Platform LLC*, 21(1): 43-64. <https://doi.org/10.21203/rs.3.rs-380773/v1>
- Antonova A, Gourova E, Nikolov R 2006. Review of Technology Solutions for Knowledge Management. In: *2nd IET International Conference on Intelligent Environments*, Greece, 2 July, 2006. DOI: 10.1049/cp:20060676
- Argote L, Ingram PM 2000. Knowledge transfer: A basis for competitive advantage in firms. *Organisational Behaviour and Human Decision Processes*, 82(1): 150-169. <https://doi.org/10.1006/obhd.2000.2893>
- Association for Computing Machinery (ACM) 2017. *Information Technology Curricula 2017 Curriculum Guidelines for Baccalaureate Degree Programs in Information Technology-Report in the Computing Curricula Series Task Group on Information Technology Curricula Association for Computing Machinery*. ACM IEEE Computer Society (IEEE-CS) and Societal Goals, New York.
- Aswathappa K 2016. *Organisational Behaviour*. 12th Edition. Mumbai: Himalaya Publishing House Pvt. Ltd.
- Avison DE, Shah G 1997. *The Information Systems Development Life Cycle: A First Course in Information System*. London: Mc-Graw-Hill Organisations.
- Bacon E, Williams MD, Davies G 2020. Cooperation in innovation ecosystems: A comparative analysis of knowledge transfers configurations. *Journal of Business Research*, 115(1): 307-316. DOI: 10.1016/j.jbusres.2019.11.005B.
- Becerra-Fernandez I, Sabherwal R 2010. *Knowledge Management Systems and Processes*. London: M.E Sharpe.
- Bernstein ES 2016. Making transparency transparent, the evolution of observation in Management Theory. *Academy of Management Annals*, 11(1): 1-10. <https://doi.org/10.5465/annals.2014.0076>
- Bidgoli H 2019. *Management Information Systems*. Boston, MA: Cengage Learning.
- Bidgoli H 2021. *Management Information Systems*. Boston, MA: Cengage Learning.
- Bititci US, Bourne M, Cross JAF, Nudurupati SS, Sang K 2018. Editorial: Towards a theoretical foundation for performance measurement and management. *International Journal of Management*, 20(3): 653-660. DOI:10.1111/ijmr.12185
- Bostrome RP, Heinen JS 1977. MIS problems and failures: A socio-technical perspective. Part I: The causes. *MIS Quarterly*, 1(3): 17-32. <https://doi.org/10.2307/248710>
- Brynjolfsson E, Hitt LM 2000. Beyond computation: information technology, organisational transformation and business performance. *Journal of Economic Perspectives*, 14(4): 23-48. DOI: 10.1257/jep.14.4.23
- Castro ML, Martins N 2010. The relationship between organizational climate and employee satisfaction in a South African Information and Technology Organization. *S4 Journal of Industrial Psychology*, 36(1): 1-9. <https://doi.org/10.4102/sajip.v36i1.800>
- Castro MV, Barcellos MP, Falbo de AR, Costa SD 2021. Using Ontologies to Aid Knowledge Sharing in HCI Design. In: *Proceedings of the XX Brazilian Symposium on Human Factors in Computing Systems*. 18 to 22 October 2021, pp.1-7. From <<https://dl.acm.org/doi/pdf/10.1145/3472301.3484327>> (Retrieved 18 April 2021)
- Cavazza F 2016. Social-Media-Landscape. From <<https://fredcavazza.net/2016/04/23/social-media-landscape-2016/>> (Retrieved on 13 June 2018).
- Chan YYY, Ngai EWT 2011. Conceptualising electronic word of mouth activity. An input-process-output perspective. *Marketing Intelligence and Planning*, 29(5): 488-516. <https://doi.org/10.1108/02634501111153692>
- Chen PTA, Kuo SCB 2017. Innovation resistance and strategic implications of enterprise SM websites in Taiwan through knowledge sharing perspective. *Technological Forecasting and Social Change*, 118(2017): 55-69. <https://doi.org/10.1016/j.techfore.2017.02.002>
- Dalkir K 2016. The role of technology and social media in tacit knowledge sharing. *International Journal of E-Entrepreneurship and Innovation (IJEEI)*, 6(2): 40-56. DOI: 10.4018/IJEEI.2016070103
- David B, Resnik JD 2011. What is Ethics in Research & Why is it Important? National Institute of Health and Environmental Science, pp. 1-10. From <<http://www.niehs.nih.gov/research/resources/bioethics/whatis/>> (Retrieved on 8 January 2022).
- Davenport TH, Prusak L 1998. *Working Knowledge: How Organisations Manage What They Know*. Boston: Harvard: Harvard Business Press.
- Dervin B 2003. Sense-making's journey from metatheory to methodology to methods: An example using information seeking and use as research focus. In: B Dervin (Ed.): *In Sense-Making Methodology Reader*. New York: Hampton Press, Inc.
- Dix A 2017. Human-computer interaction, foundations and new paradigms. *Journal of Visual Languages and Computing*, 42: 122-134. <https://doi.org/10.1016/j.jvlc.2016.04.001>
- Elefant C 2011. The "Power" of Social Media: Legal Issues and Best Practices for Utilities Engaging Social Media. *Energy Law Journal*, 32(1): 1-56. From <https://www.proquest.com/citedby/MSTAR_869071042/747DAFB459524464PQ/1?accountid=26862>. (Retrieved 8 January 2022).
- Fell L Gibson A, Bruza P, Hoyte P 2020. Human Information Interaction and the Cognitive Predicting Theory of Trust. In: *Conference on Human Information Interaction*, Châircouver, BC, Canada. New York, NY, USA, March 2020, pp. 145-152. <https://doi.org/10.1145/3343413.3377981>

- Fidel R 2012. *Human Information Interaction: An Ecological Approach to Information Behaviour*. London: MIT Press.
- Findlay R 1978. Relative backwardness, direct foreign investment, and the transfer of technology: A simple dynamic model. *The Quarterly Journal of Economics*, 92(1): 1-16. <https://doi.org/10.2307/1885996>.
- Foreman-Wernet L 2003. Rethinking communication: introducing the sense-making methodology. In: B Dervin, L Foreman-Wernet, E Lauterbach (Eds.): *Sense-making Methodology Reader: Selected Writings of Brenda Dervin*. New York: N. Hampton Press, pp. 3-16.
- Fujiwara A, Watanabe T 2017. Knowledge management using external knowledge. *International Journal of Innovation Management* 21(2): 1–16. DOI: 10.1142/S1363919617500311.
- Ghazzawi I 2018. Organisational decline: A conceptual framework and research agenda. *International Leadership Journal Winter*, 10(1): 37-80.
- Gurcan F, Cagiltay NE, Cagiltay K 2021. Mapping human-computer interaction research themes and trends from its existence to today: A topic modelling-based review of past 60 years. *International Journal of Human-Computer Interaction*, 37(3): 267-280. DOI: 10.1080/10447318.2020.1819668
- Gwizdka J, Moshfeghi Y, Wilson ML 2019. Introduction to the special issue on neuro-information science. *Journal of the Association for Information Science and Technology*, 70(9): 911–916. <https://doi.org/10.1002/asi.24263>
- Hankel AC 2020. *Embedding Green ICT Maturity in Organisations. Adoption of Green ICT in Organisations*. PhD Thesis, Amsterdam: Vrije Universiteit.
- Hansen MR, Nokia N, Tierney T 1999. What's your strategy for managing knowledge? In: JW Cortada, JA Woods (Eds.): *The Knowledge Management Yearbook 2000-2001*. 1st Edition, London: Routledge.
- Hofstede G 1980. Culture and organizations. *International Studies of Management & Organization*, 10(4): 15-41. DOI: 10.1080/00208825.1980.11656300
- Hoyle E, Wallace M 2014. Organisational studies in an era of educational reform. *Journal of Educational Administration and History*, 46(3): 244-269. DOI: 10.1080/00220620.2014.919900
- ITGI 2003. Board Briefing on IT Governance 2006. From <http://www.itgi.org>. (Retrieved on 10 September 2019).
- Järvelin K, Ingwersen P 2004. Information seeking research needs extension toward tasks and technology. *Information Research*, 10(1): 1-16.
- Jussila JJ, Kärkkäinen H, Aramo-Immonen H 2014. Social media utilization in business-to-business relationships of technology industry firms. *Computers in Human Behaviour*, 30: 606-613. <https://doi.org/10.1016/j.chb.2013.07.047>
- Kaplan AM, Haenlein M 2010. Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(91): 59-68. <https://doi.org/10.1016/j.bushor.2009.09.003>
- Kietzmann JH, Hermkens K, McCarthy IP, Silvestre BS 2011. Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3): 241-251. <https://doi.org/10.1016/j.bushor.2011.01.005>
- Kotler P, Keller KL 2012. *Prentice Hall Video Library to Accompany Marketing Management*. New Jersey: Prentice Hall.
- Kolin K 2021. Social informatics: 30 years of development of Russian Scientific School. *Acta Informatica Pragensia*, 10(3): 289-300. DOI: 10.18267/j.aip.150
- Kowalska-Styczen A, Malarz K, Paradowski K 2017. Model of KT within an Organisation. From <https://www.arxiv.org/pdf/1704.07589.pdf>.> (Retrieved on 21 June 2017).
- Lang C, Lemon N 2018. Embracing social media to advance knowledge creation and transfer in the modernized university. *Student Engagement and Participation*, 667–687. doi: 10.4018/978-1-5225-2584-4.ch034.
- Leonardi PM, Meyer SR 2015. Social media as social lubricant: How ambient awareness eases knowledge transfer. *American Behaviour Scientist*, 59(1): 10–34. DOI: 10.1177/0002764214540509.
- Liou DK, Chih WH, Yuan CY, Lin CY 2016. The study of the antecedents of knowledge sharing behavior: The empirical study of Yambol Online Test Community. *Internet Research*, 26(4): 845-868. DOI 10.1108/IntR-10-2014-0256.
- Liyana C, Elhag T, Ballal T, Li Q 2009. Knowledge communication and translation a knowledge transfer model. *Journal of Knowledge Management*, 13(3): 118-131. DOI 10.1108/13673270910962914
- Lunt BM, Ekstrom JJ, Gorka S, Hislop G, Kamali R, Lawson E, LeBlanc R, Miller J, Reichgelt H 2008. Curriculum Guidelines for Undergraduate Degree Programs, ACM. From <https://www.dl.acm.org/citation.cfm?id=2593311>> (Retrieved on 4 August 2020).
- McFarland LA, Ployhart RE 2015. Social Media: A Contextual Framework to Guide Research and Practice. *Journal of Applied Psychology*, 100(6): 1653–1677. From <https://psycnet.apa.org/record/2015-24693-001>> (Retrieved on 11 February 2020).
- Mason J 2014. Does it Make Sense' or 'What Does It Mean'? In: Proceedings of the 22nd International Conference on Computers in Education. Japan: Asia-Pacific Society for Computers in Education, pp. 206-211. November, 2014. From <https://www.researchgate.net/publication/271138299>> (Retrieved on 29 September 2021).
- Mathur MB, Reichling DB 2016. Navigating a social world with partners. *Cognition*, 146: 22–32. DOI: 10.1016/j.cognition.2015.09.008
- Meixell MJ, Shaw NC, Tuggle FD 2002. The Use of Knowledge Management Methodologies to Improve the Practice of Supply Chain Management: The Case of the Bullwhip Effect, Gdańsk, Poland. ECIS, (1): 6-8. From <https://aisel.aisnet.org/ecis2002/125>> (Retrieved on 9 August 2021).
- Men LS, Muralidharan S 2017. Understanding social media peer communication and organisation-public relationships: Evidence from China and the United States. *Journalism and Mass Communication Quarterly*, 94(1): 81–101. <https://doi.org/10.1177/1077699016674187>
- Min, Q, Wu, G, & Liu N 2017. Developing an informal science education activity based on edmodo peer communication and organisation-public relationships: Evidence from China and the United States. *Journalism and Mass Communication Quarterly*, 94(1): 81–101. <https://doi.org/10.1177/1077699016674187>
- Mount M, Martinez MG 2014. Social media: A tool for open innovation. *California Management Review*, 56(4): 124-143. DOI: 10.1525/cmr.2014.56.4.124.
- Muhammad KI, Syed Muhammad J, Iqbal TF 2019. Does social media promote knowledge exchange? A qualitative insight, management decision paradigm shifts due to which the organizations are looking for innovative and efficient. *Emerald Insight*, 57(3): 688-702. DOI 10.1108/MD-05-2017-0477

- Murell DE, Chatman EA 2001. Reference Group Theory with Implications for Information Studies: A Theoretical Essay. *Information Research*, 6(3): 6-3. From <<http://InformationR.net/6-3/paper105.html>> (Retrieved on 9 August 2021)
- Murphy G, Salomone S 2013. Using social media to facilitate knowledge transfer in complex engineering environments: A primer for educators. *European Journal of Engineering Education*, 38(1): 70-84. DOI: 10.1080/03043797.2012.742871
- Murray SR, Peyrefitte J 2007. Knowledge Type and Communication Media Choice in the Knowledge Transfer Process. *Journal of Managerial Issues*, 111-133. From <Knowledge Type and Communication Media Choice in the Knowledge Transfer Process on JSTOR>. (Retrieved on 11 August 2020).
- Namvar M, Cybulski JL, Phang CSC, Ee YS, Tan KTL 2018. Simplifying Sense Making: Concept, Process, Strengths, Shortcomings, and Ways Forward for Information Systems in Contemporary Business Environments. *Australasian Journal of Information Systems*, (22): 1-10. From <<https://ro.uow.edu.au/eis/papers/1/1351>>. (Retrieved on 10 May 2020).
- Ncoyini SS, Cilliers L 2020. Factors that influence KM systems to improve KT in local government: A case study of Buffalo city metropolitan municipality, Eastern Cape, South Africa. *SA Journal of Human Resource Management*, 18: 1-11. DOI: 10.4102/sajhrm.v18i0.1147.
- Ngai EWT, Wat FKT 2002. A literature review and classification of electronic commerce research. *Information and Management*, (39)5: 415-429. [https://doi.org/10.1016/S0378-7206\(01\)00107-0](https://doi.org/10.1016/S0378-7206(01)00107-0)
- Nguyen TM 2020. A review of two psychological models in knowledge sharing: Current trends and future agenda. *Journal of Information and Knowledge Management Systems*, (51)4: 2059-5891. DOI 10.1108/VJIKMS-12-2019-0206
- Nonaka T, Takeuchi H 1995. *The Knowledge-Creating Company: How Japanese Organisations Create the Dynamics of Innovation*. Oxford: Oxford University Press. DOI: 10.1016/0024-6301(96)81509-3
- Parent M, Plangger K, Bal A 2011. The new WTP: Willingness to participate. *Business Horizons* 54: 219-229. <https://doi.org/10.1016/j.bushor.2011.01.003>
- Paul PK, Aithal PS, Bhuimali A 2017. Business informatics: A possible specialization of MSc-Information Science and Technology (IST): Challenges and opportunities in developing countries context. *International Journal of Recent Research in Science, Engineering and Technology*, 5(10): 2348-31005. DOI: 10.5281/zenodo.1038399
- Pavan E, Felicetti A 2019. Digital media and knowledge production within social movements: Insights from the transition movement in Italy. *Social Media + Society*, 5(4): 2056-3051. <https://doi.org/10.1177/2056305119889671>
- Pearlson KE, Saunders CS 2013. *Strategic Management of Information Systems*. 5th Edition. New Jersey: Wiley.
- Pereira L, Goncalves AF 2017. Knowledge management in projects. In: JP Mendonca, R Jardim, Goncalves, J Martins, A Zarli, M Marques, M Pallot (Eds.): *23rd International Conference on Engineering, Technology and Innovation, ICE/ITMC 2017*, IEEE, Funchal, pp. 21-28.
- Pickering C, Grigson J, Steven R, Guitard D, Byrne J 2015. Publishing not perishing: How research students transition from novice to knowledgeable using systematic quantitative literature reviews. *Studies in Higher Education*, 40(10): 1756-1769. DOI: 10.1080/03075079.2014.914907
- Romanyshyn Y, Bandura V, Melnyk V, Sheketa V, Pikh V, Pasicka M 2021. *Knowledge Transfer Routines in the Outlines of Web Based Education Management, 11th International Conference on Advanced Computer Information Technologies (ACIT)*, IEEE, pp. 460-464.
- Rusmann M, Lorenz M, Gerbert P, Waldner M, Justus J, Engel P, Harnisch M 2015. *Industry 4.0: The Future of Productivity and Growth in Manufacturing Industries*. Boston: Boston Consulting Group.
- Safko L, Brake DK 2009. *The Social Media Bible: Tactics, Tools, and Strategies for Business Success*. New Jersey: Wiley.
- Sajeva S 2010. The analysis of key elements of socio-technical knowledge management system. *Economics and Management*, 765-774.
- Sandberg J, Tsoukas H 2015. Making sense of the sense making perspective: Its constituents, limitations, and opportunities for further development. *Journal of Organizational Behavior*, 36(1): 6-32.
- Sandberg J, Tsoukas H 2020. Sense making reconsidered: Towards a broader understanding through phenomenology. *Organization Theory*, 1: 1-34.
- Schultz RJ, Schwepker Jr CH, Good DJ 2012. Social media usage: An investigation of B2B salespeople. *American Journal of Business*, 27(2): 174-194. DOI: 10.1108/19355181211274460.
- Singh P, Singh LK 2021. Reliability and safety engineering for safety-critical systems in computer science: A study into the mismatch between higher education and employment in Brazil and India. *IEEE Transactions on Education*, 64(4): 353-360. DOI: 10.1109/TE.2021.3057611.
- Srisuksa N, Wiriyapinit, M, Bhattarakosol P 2021. Factors Affecting Knowledge Transfer between Project Managers: A Conceptual Framework. In: *Proceedings of the 13th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K 2021)*, Bangkok, Thailand, Science and Technology Publications, 3: 211-218. DOI: 10.5220/0010710900003064
- Stockman C 2020. Can a technology teach meditation? Experiencing the EEG Headband Intera X on muse as a meditation guide international. *Journal of Emerging Technologies in Learning*, 15(8): 1-17.
- Szilágyi GA 2017. Exploration knowledge sharing networks using social network analysis methods. *Economics and Sociology*, 10(3): 179-191. DOI: 10.14254/2071789X.2017/10-3/13
- Van den Berg C, Verhoeven JWM 2017. Understanding SM governance: Seizing opportunities, staying out of trouble. *Corporate Communications: An International Journal*, 22(1): 149-164. DOI: 10.1108/CCIJ-06-2015-0035.
- Wang B 2009. Information science: The territory and relations to computing disciplines Bing Wang. *Journal of Library and Information Science*, 35(1): 4-22.
- Wehn U, Montalvo C 2018. Knowledge transfer dynamics and innovation: Behaviour, interactions and aggregated outcomes. *Journal of Cleaner Production*, 171: 56-68.
- Yih-Tong Sun P, Scott J L 2005. An investigation of barriers to knowledge transfer. *Journal of Knowledge Management*, 9(2): 70-90. DOI: 10.1108/13673270510590236
- Zhang D, Han S, Yingnong Dang Y, Jian-Guang Lou JG, Zhang H 2013. Software analytics in practice. *IEEE Computer Society*, (30)5: 30-37. DOI: 10.1109/MS.2013.94.

Zhang X, Jiang JY 2015. With whom shall I share my knowledge?
A recipient perspective of knowledge sharing. *Journal of
Knowledge Management*, 19(2): 277-295. DOI 10.1108/
JKM-05-2014-0184
Zhou L, Zijlstra T, Lu X 2018. Embracing knowledge management

as a new perspective for librarianship. *IFLAWLIC:XMUM*,
1-22.

Paper received for publication in October, 2021

Paper accepted for publication in May, 2022