Development of a Human-centric Systemic Interdisciplinary Approach to Enterprise Content Management Institutionalisation

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Abstract: Enterprise Content Management (ECM) solutions are essential for organisations aiming to enhance efficiency, effectiveness, and productivity in their information management endeavours. It is widely accepted that ECM solutions must be fully institutionalised, yet full institutionalisation is globally problematic. Internationally, even technologically advanced countries struggle to implement and maintain sound information management practices enabled by ECM solutions. Human dimensions are arguably the primary contributing factor for the perceived lack of full institutionalisation of ECM solutions, necessitating a deep understanding of human behaviour during the implementation and institutionalisation phases. The study strives to focus on the effect of knowledge-sharing, learning, sensemaking, and organisational environments on human behaviour during ECM-institutionalisation. This study proposes a systemic interdisciplinary approach to understand human behaviour during ECM-institutionalisation and offers a comprehensive lens through which the complex interplay of human behaviour, processes, information, and technology can be examined. A literature review, results from a maturity assessment and change adoption survey as part of an ethnographic study provided findings indicating a multifaceted, dynamic system, leadership support and fostering a learning culture to be pivotal. Skilled change agents balancing autonomy and cooperation are vital. Digital literacy encompassing sociological awareness and emotional intelligence part of customised training lead to information behaviour change. By enhancing collaboration through interdisciplinary methods, this approach provides valuable insights into the human dimensions of change, facilitating more effective institutionalisation of ECM solution. This study contributes a robust approach for understanding and managing the human dimensions of ECM-institutionalisation and enhances collaboration by bridging boundaries between disciplines, fostering a deeper understanding of the human dimensions involved in ECM-institutionalisation. The findings have significant implications for future ECM projects, enabling organisations to navigate the complexities of change management more effectively.

Keywords: Organisational change management, Knowledge management, Organisational culture, Enterprise content management institutionalisation, Learning culture

1. Introduction

"An empowered organisation is one in which individuals have the knowledge, skill, desire, and opportunity to personally succeed in a way that leads to collective organisational success" (Covey, 2024). This quote underlines the difference between implementing and institutionalising an enterprise content management (ECM) solution. Successful implementation only guarantees partial institutionalisation due to the ongoing challenges of assimilation and routinisation due to the human dimension of what is required for full ECM-institutionalisation (Venter 2025). Institutionalisation is regarded as the full adoption, diffusion, and entrenchment of organisational practices by organisations (Beddewela, Anchor & Warin, 2021:2791), as a long-term integration between people, process, technology, and information, especially after project implementation. There is a strong indication that ICT institutionalisation is problematic because insufficient attention is paid to the human side of technology implementations (Schabenberger 2020). ECM implementations are undertaken as part of organisations' digital transformation journeys, to enhance or comply with a range of legislative requirements. Digital transformation necessitates changing an organisation's business model, infrastructure, and culture. Many managers have a somewhat outdated view of data and information, and struggle to encourage employees to think differently about information, their work, and their role in the organisation (Schabenberger, 2020).

Changed information behaviours cannot be enforced (Delaney and D'Agostino 2015). Instead, it is a long-term process in which employees must be regularly updated on the reasons for the change. Integrating new technology and information practices disrupts established work routines and relationships, frequently changing job roles, which can threaten job competency and security. Employees often resist change because of the uncertainty and insufficient understanding of the need for change (Delaney and D'Agostino 2015). Resistance is heightened by management's behaviour, but when actively supporting change while addressing employees' concerns, transition will proceed more smoothly. Visionary leadership is crucial for implementing and sustaining transformation towards changed behaviour (Delaney and D'Agostino 2015). Managers who abandon institutionalising the solution before it is fully realised undermine the process.

ECM solutions are critical for organisations aiming to enhance efficiency, effectiveness, and productivity. The full benefits of these solutions can only be realised if they are thoroughly institutionalised (Alshammari, Mokhtar and Abdulmanap, 2025). In an ethnographic study spanning ten years (Venter 2025) human dimensions were observed as the primary contributing factor for the perceived lack of full institutionalisation of ECM solutions, which triggered the need to understand human behaviour during ECM implementation and institutionalisation. The results was the conceptualisation of a systemic interdisciplinary approach based on the observations and data collected during the study. The focuses of the approach is on how interdisciplinary methods enhance collaboration and offers a comprehensive lens through which the complex interplay of human behaviour, processes, information, and technology can be examined.

2. Research Methods

Findings from the ethnographic research (2014-2024) are based on active on-site involvement, using an observation schedule during the implementation and ECM-institutionalisation between 2014-2018. Observation continued from 2018-2024 with complete anonymity and confidentiality as agreed in the ethics application. From these observations an intensive literature review to confirm the observed phenomenon is broader in application than the observed cases only. Ethnography implies that the researcher is part of the participants' daily lives to observe and interpret their individual and collective behaviour, establishing a trust relationship with the participants and intermingling with them as an integral part of the socio-cultural dynamics of the group (Whitehead 2005). Descriptively analysed questionnaires from two groups (n=108 and n=296) informed individual unstructured discussions, formal interviews, and collaborative interaction over the ten year period, resulting in rich transcripts for this conceptualisation. Evidence captured participants' shared culture developing over time, as well as their reactions to changes in their new reality post ECM-institutionalisation.

3. Conceptualising a Systemic Interdisciplinary Approach to ECM-institutionalisation

The human ecological context affect ECM-institutionalisation. Humans naturally form cultures and communities with implicit rules for behaviour, which are crucial for managing transitions and achieving transformation (Islam, Furuoka and Idris 2021). Recognising the complexity of human behaviour and the necessity of a holistic approach that integrates various disciplines supports the argument that understanding and managing these human dimensions is essential for successful ECM-institutionalisation (Schmitt et al, 2023*)*. This fits into the broader human ecological context by showcasing how individuals' interactions and behaviours are shaped by their environment. Figure 1 provides a 3-dimensional concept view of how the interdisciplinary approach developed from this ethnographic study (Venter 2025).

3.1 The Three-dimensional Conceptual View of the Organisation During ECM-institutionalisation

The ECM environment is complex due to how the systemic whole behaves, interacts, and responds differently to stimuli in its individual parts and facets (Lawrimore, 2004). In the context of this study, complexity refers explicitly to the behaviour of people interacting with the ECM solution.

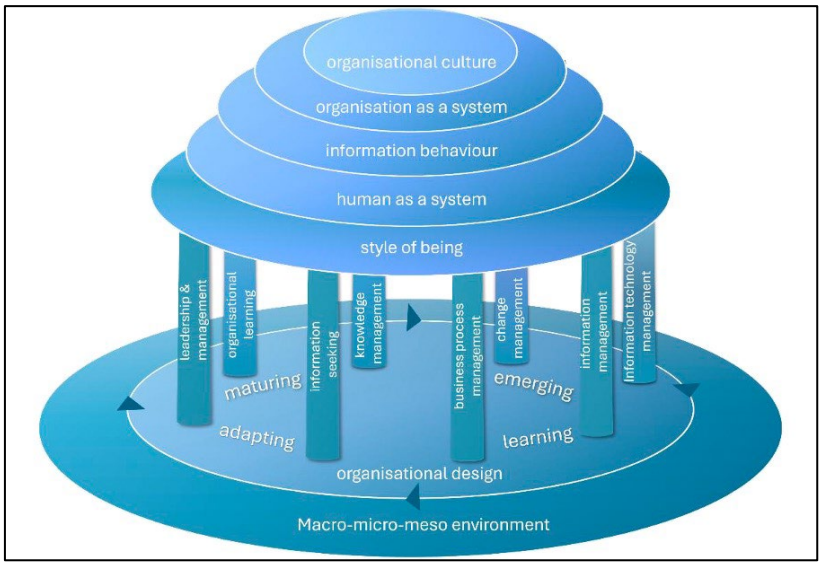

Figure 1: 3-Dimensional concept of Figure 2 (authors' own)

3.1.1 The macro-meso-micro environment

The macro-meso-micro environment describes an organisation's volatile and interactive nature with its environment (Dopfer, Foster and Potts 2004). This interaction is a complex system of emergent economic behaviour supported by a specific set of rules, structures, and processes. In the approach, “micro” refers to the internal carriers of organisational rules. “Macro” refers to the external forces that push the organisation to react to socio-economic and political changes. “Meso” refers to the interacting nature of the micro and macro environment using the exchange of knowledge about consumer/client/customer habits, behaviour and needs concerning environmental, socio-economic, and political changes (Dopfer et al., 2004:266-269).

The macro-environment manifests itself in the broader political, economic, societal, technological, legal, and ecological factors (PESTLE), that continuously fluctuate (Matovic, 2020:96-98). The meso environment manifests in “the connective structure of common knowledge”. Building a network of alliances, suppliers, customers/clients/consumers, distribution channels, and emerging businesses is critical to any organisation's survival. Organisations depend on building a knowledge base of other organisations competing for the same consumer base to remain competitive (Dopfer et al., 2004:266-267). ECM solutions that are implemented and not fully institutionalised will affect the meso environment, which relies heavily on information availability. The micro environment manifests in developing organisational structures, resourcing the organisations, dividing labour, developing capabilities, setting rules for engagement with clients and consumers, building alliances, and finding outlets for products and services supported by the growth of knowledge about the industry within which the organisation operates (Swartz, 2021). The adaptability of the micro environment is specifically important after the global COVID-19 lockdowns forced organisations to rapidly adapt to remote working and virtual collaboration (Kniffin et al, 2021, Nadkarni and Prügl, 2021). Client observations (2020-2024), affected by the episodic nature of lockdown-induced virtual collaboration, did not necessarily institutionalise good information management practises or meaningful digital transformation. Episodic change is defined as infrequent, intentional organisational shifts (Weick and Quinn 1999), that occur when an organisation must swiftly adapt to external environmental shifts. Examples such as remote work, dismantled information silos, and digitised resources during lockdowns were short-term, aimed at specific problems, broad in scope, and often not fully implemented. After the change period, inertia sets in until a new problem necessitates intervention. While episodic change rarely leads to profound systemic shifts, it frequently occurs during enterprise-wide IT projects (Venter and Mearns 2025).

3.1.2 Organisational design

Continuous change tend to be long-term, ongoing, evolving, and cumulative (Weick and Quinn, 1999) and results from continuous learning, knowledge-sharing, improvisation, and innovative thinking. Continuous changes frequently uncover and resolve deep-rooted systemic problems that hamper organisational progress. Continuous change exists because the organisational leadership sanctions continuous learning towards adaptive, innovative work practices. The organisation as complex adaptive system requires design in which every part contributes to its well-being and survival, using continuous improvisation, innovation, and learning to emerge and evolve into a progressively mature organisation on which the structure of the organisation is built. Transformational change is required to function optimally in a digitally transformed society. Employees do not change their behaviour because management wants them to, they change because they know the consequences if they do not change. When people change, organisations change, enabled through understanding the bigger picture and a shared vision (Nadkarni and Prügl, 2021).

3.1.3 Pillars of the interdisciplinary approach

In Venter and Mearns (2025) pillars are identified as foundational to the interdisciplinary approach. *Information technology management* representing the relationship between people, process, technology and the end-user. *Business process management* enhancing business processes with feedback from knowledgeable participants. *Organisational change management* based on interaction with people to understand, embrace and adopt change in the work culture. *Information Management* to manage information sources at object level as strategic asset of the organisation. *Knowledge management* with collaborative learning, knowledge-sharing and sensemaking. *Organisational learning* as a normal part of how the organisation innovate. *Information-seeking* through search, find and act on information as learning enabler and decision support. *Leadership and management* and their role to inspire learning behaviour. Once the pillars were established as foundational to the complexity of the human ecological dimension of the interdisciplinary approach, several lenses through

which a focussed view on the human as integral part of the ECM-institutionalisation process were conceptualised.

3.1.4 The lenses that forms the telescopic view

The lenses in Figure 1 rests on the pillars to stabilise a telescopic view progressively focusing through each lens. Viewing the human through the first lens, *styles of being* positions the human as part of a dynamic system that interact with information, technology and peers through inherent *styles of being*. Change impact employees on multiple levels, emotionally, psychologically, and socially, creating a sense of discomfort, identifying what drives and motivates employees to adapt to change. It recognises that understanding and managing human behaviour is an ongoing process requiring continuous adaptation and support. Personality styles of dominance, influence, steadiness and compliance (abbreviated DiSC®) help determine behavioural styles, as the "primary emotions" and associated behaviour with combinations of emotions (DiSC® Profile 2021, Alshehri et al, 2018).

DiSC® profiling enables employees to understand themselves and empowers them to adjust their behaviour to work successfully in collaborative teams (Alshehri et al, 2018). Understanding employee personality and behavioural styles is critical for successful change and transition of the organisation to function optimally in a complex, evolving environment (Avey, Wernsing and Luthans 2008). Personality and behaviour affect communication between members of collaborative teams (Khuong et al, 2016). Better understanding of being human during an ICT implementation should equip leadership to focus on the well-being of the employees in relation to the work (Bellis et al, 2022), helps address resistance and improve the adoption of new practices.

3.1.5 The human as a system

Seeing the human as a system acknowledges the continuous, cyclical process of information-seeking, knowledge-sharing, sensemaking, learning, and innovation as an ongoing process (Gaston 2017:7). Human adaptability is vital in these interactions to foster a learning organisation and culture. Employees' information behaviour is complex, and the foundation for organisational information behaviour (Sammut-Bonnici 2015). Successful ECM-institutionalisation depends on recognising the value of information and addressing record-keeping responsibilities. Viewing information as a strategic resource, management and leadership must pay closer attention to the users' information behaviour as part of a system that values information as a strategic resource and asset. Monetary value of information should be reflected on the organisation's balance sheet, with an information management function that is adequately resourced and strategically positioned to ensure information user performance in record-keeping reflect the value of information beyond merely "admin" that needs to be done by somebody else. Employees' own information behaviour influences how other humans in the system handle information, through technology, via processes, in entrenched cultures, across organisational structures (Meshkati et al. 2016).

3.1.6 Information behaviour

A third lens focus on information behaviour. Problematic information behaviour often signals deeper systemic organisational issues. Through analysing information behaviour, management can identify and address underlying problems. Feedback from the observations during the ethnographic study highlighted that understanding and managing information behaviour is vital to overcoming systemic issues towards successful ECM-institutionalisation. Collectively information behaviour constitutes either an organisational strength or a weakness. When organisations better managed the human dimensions of information use, adaptation to change was observed to be more swift (Venter 2025). When employees' needs and behaviours are understood and supported, they are more likely to be engaged, motivated, and productive. Essentially, this ensures that technology and processes align with the human element, leading to a more harmonious, efficient, and successful ECM-institutionalisation.

Collective information behaviour brings into perspective often overlooked challenges such as practices inadvertently encouraging information hoarding. Efforts to create structure and discipline through compliance for the sake of ticking boxes instead of changing practices can lead to inconsistent information behaviour, failing to protect information as a strategic asset. Management and leadership must clearly articulate what and why they have expectations, upskilling themselves to be transformational leaders and identify transformational leaders among the employees (Ackerman and Anderson 2019:1-10). Employees with transformational leadership abilities must be empowered to lead the change at all levels of the organisation and work towards stability during the ECM implementation, beyond the project to anchor solutions in daily operations. Empowered employees proved themselves to use information optimally. Such employees will also be valuable role-players, especially within the current hype to integrate artificial intelligence (AI) into information solutions.

Employees should be upskilled with the necessary information-seeking, analysis and synthesis skills to function optimally in a digitally transforming environment.

3.1.7 Organisation as a system

Employees tend to anthropomorphise the concept of the organisation, viewing it as "persons" (Martin 2022). Like a "parent," the organisation bears responsibility for employee well-being and safety. The fourth lens highlights the organisation as a system, with the intricate interplay of people, processes, technology, and information within the broader ecosystem. The art of management lies in aligning all these components with the organisation's vision to achieve specific goals, ensure competitiveness and sustainability, through external pressures and internal dynamics. The organisation navigate multiple simultaneous changes, from episodic, to continuous, developmental, transitional, and transformational change in different contexts, simultaneously. Not all change can be treated the same and ideally transformational change is what the organisation aspires to in ECM-institutionalisation (Venter and Mearns 2025).

The technostress, information overload, barriers to ECM-institutionalisation and cognitive dissonance typical to modern organisations cause psychological strain on employees. To address these challenges, placing the human central in the organisation as system, support is required on multiple fronts. Mindfulness techniques help employees develop non-judgmental awareness of their thoughts and emotions, reducing stress and promoting mental clarity (Tenschert et al, 2024). Cognitive behavioural training help employees identify and challenge negative thought patterns, reducing cognitive dissonance and improving decision-making (Hristov, Camilli and Mechelli, 2022). Digital detox programs encourage regular breaks from digital devices to help alleviate technostress and improve overall well-being. Stress management techniques, relaxation exercises and time management skills, can be beneficial (Lehmann et al, 2021). Support systems through peer support groups or access to mental health professionals create safe spaces to discuss challenges and seek guidance (Jolly, Kong and Kim, 2020). Technology training to use new technologies effectively and increase confidence and competence (Beer and Mulder, 2020). Flexible work arrangements and remote work options support balance and reduce stress and regular check-ins with managers regarding workload and wellbeing is encouraged (Garr, 2022).

Wellness unit staff equipped to recognise and address technostress proactively, rather than waiting for employees to seek help, can help improve decision quality and mental workload management towards greater job satisfaction. This understanding was observed during the study to help improve the institutionalisation rate of ECM by addressing the root causes of resistance.

3.1.8 Organisational culture

Organisational complexity in an ever-evolving environment influences employees' information behaviour, in turn affects organisational information behaviour and the entire organisation significantly. From the multiplicity of lenses discussed, it is essential to recognise that we are dealing with a system (environment) within a system (organisation) within a system (people), utilising systems (processes and technology). Each system's components impact the subsequent system and results in the entire ecosystem's equilibrium to be disturbed (Paris 2018). Such ripples can leave the organisation in a state of disruption rather than transformation. Interactive learning behaviours need to lead to emergence and progress into maturity. Emergent change behaviour refers to complex systems working synergistically to create new realities. Employee resistance diminishes when employees are cognitively absorbed in the change process, their attention shifts from apprehension to active participation (Agarwal and Karahanna 2000). Emergence applies to how employees adapt to new realities in a changing environment and how the organisation sustains itself amid ever-changing stakeholder demands. ECM implementation can support and encourage emergence, but only if fully institutionalised. Organisational maturity depends on employees collectively adapting to changing circumstances for the organisation's benefit. They must be willing to adapt to changes and fully institutionalise technology. The organisational culture, is seen as a single eyepiece for the telescopic view, through which to focus on human behaviour during the ECM-institutionalisation.

Changing the view from the 3-dimensional Figure 1 to a 2-dimensional perspective (Figure 2) offers a perspective from the top with the eye piece of organisational culture at the centre. Each lens circles out but are adjustable to manage the systems towards alignment for ECM-institutionalisation.

3.2 Systemic Interdisciplinary Approach to Understanding Human Behaviour During ECM-institutionalisation

Figure 2 is viewed through the eye piece of organisational culture. The complex adaptive organisational system needs adjustment on multiple levels, in increments at different points in time to absorb and institutionalise the disruptiveness of the ECM solution as it touches on all information, all systems, all processes and all users. New behaviours to adapt to new working methods needs to be embraced in a learning and innovative workspace towards emergent behaviour. This process is not linear but continuously interacts with the ecosystem in perpetual motion. The lenses are continuously adjusted to focus on what is needed at any point in time to facilitate the adaptation.

Collaborative learning behaviours foster innovative thinking, interactive learning and perpetual adaptation to realities, maturing to changing circumstances. The goal of the systemic interdisciplinary approach is to understand human behaviour during ECM-institutionalisation and embed systemic change in an organisation to enable inside-out transformation rather than outside-in changes. Change that is deeply rooted in the organisation's core transforms it from within, rather than imposing changes on it. Integrating behavioural assessments into the systemic interdisciplinary approach allow organisations to better gauge the complex interactions between people, processes, technology, and information towards the kind of lasting, meaningful transformational change.

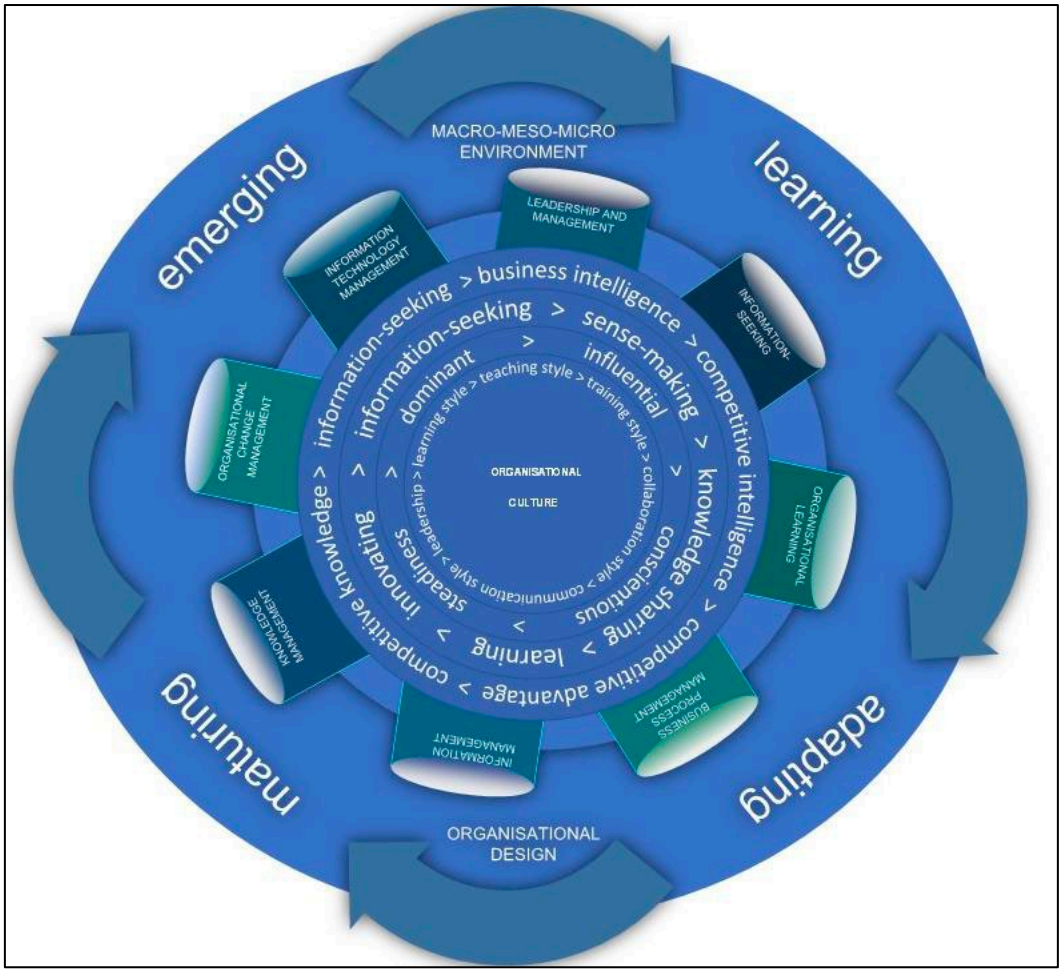

Figure 2: Systemic interdisciplinary approach to understanding human behaviour during ECM-institutionalisation (authors' own)

4. Positioning Knowledge Management as a driver in the interdisciplinary Human-centric Approach to ECM-institutionalisation

Having project change management activities as an add-on to an ECM implementation was observed to not necessarily ensure ECM-institutionalisation (Venter 2025). Such activities are short-term in nature and typically end with project sign-off, frequently leaving the organisation disrupted rather than transformed. ECM-institutionalisation requires transformation management as a strategic business function ensuring the change

becomes a part of the organisational culture. Transformation management often includes long-term monitoring, continuous improvement, and embedding new behaviours into daily operations, which is impossible if the change management activities are limited to the project duration. Transformation management is about re-inventing the organisation, not just about making superficial changes during ICT implementations.

The knowledge management function in the organisation is ideally positioned to accelerate the leadership required to support ECM-institutionalisation. Aligned to the interdisciplinary human centred approach of ECM-institutionalisation, knowledge management (KM) feeds off its multidisciplinary roots. Dalkir (2023) identifies organisational science, cognitive science, linguistics, information technologies, information and library science, among others, as a blend of expertise not previously seen, in which the human is at the centre driving towards organisational change. This perfectly mirrors the requirements that were observed during the ten-year ethnographic study.

Using the systemic interdisciplinary approach to understanding human behaviour during ECM-institutionalisation driven through the KM function as accelerator and leadership driver will assist with digital transformation, implementing and institutionalising ECM as part of the broader digital transformation journey. KM can support in managing the cultural change and impact and subsequent change, support the strategic framework for the business to align operational changes with strategic goals, measure maturity from current state, gaps, and future state goals and mitigate risk associated to knowledge loss in the transition stages of implementation.

5. Conclusion

The key contribution of the research is that it offers an insight into the reality of human dimensions in ECM-institutionalisation, occurring in an intricate environment characterised by complex human behaviour, as part of multiple complex systems. Change management best practices should be adapted to fit the specific context and environment of the organisation, tailoring these practices in a practical and relevant way to address each situation's unique challenges and dynamics. ECM initiatives often suffer from isolated efforts by various organisational functions. Information technology, records management, various business units and change management initiates are often siloed and disjointed due to the project-by-project approach. Instead, an interdisciplinary approach that conveys a unified change message and orchestrates cultural transformation is suggested that considers emotions, motivations, and social dynamics. This approach fosters change strategies towards greater employee engagement, already the mandate that KM brings to the organisation.

Interdisciplinary cooperation is particularly beneficial in complex digital transformation environments, as it helps achieve coherence and flow, which are challenging when disciplines work independently. The disciplinary backgrounds of role players in ECM-institutionalisation offers a multiplicity of perceptions that can be applied to handle new technologies, information behaviours, and the psychological effects of workplace changes (Syed 2020). Each discipline involved in ECM-institutionalisation should contribute to the training strategy, ensuring a comprehensive and effective programme. The KM team should facilitate change management with collaboration among the various disciplines to develop a shared understanding of goals and methods. Clear articulation of expectations and a unified approach to addressing behavioural issues are essential. Engaging experts from diverse fields, such as information science, business management, organisational behaviour, and technology, will help address ECM challenges collaboratively. Interdisciplinarity combines knowledge and techniques for effective problem-solving and, combined with orchestrated cultural transformation, offers a comprehensive approach to complex issues, a capability that KM already fulfils in practice.

Ethics Declaration: Ethical clearance was received in 2017 (EBIT/104/2017), which included the use of existing secondary sources (2014-2017) and primary data collected (2017-2024).

AI Declaration: None used.

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