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Knowledge management practices learned from the COVID-19 pandemic: a case of knowledge-intensive organisation

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Abstract: The COVID-19 pandemic has impacts on the working environment and cultures of knowledge-intensive organisations. This case study explores positive practices of knowledge management learned from the COVID-19 pandemic in three aspects. First, the COVID-19 pandemic has driven ‘smart working’ in knowledge-intensive organisations. Knowledge-intensive organisations can take advantage of the change in knowledge management through stimulating knowledge flows using information technologies. Second, transformational and transactional leaderships of knowledge management are the key to success of ‘smart working’ in the knowledge-intensive organisation. Third, full digitalisation in knowledge-intensive organisations using digitalised documents repositories and knowledge management enables the organisational learning to make remote work effective. The positive practices of knowledge management developed in response to the COVID-19 pandemic can continuously applied to knowledge management in the long-term of development of knowledge-intensive organisations.

Keywords: knowledge management; case study; knowledge-intensive organisation; higher-education; business education; smart working; COVID-19.

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1 Introduction

The COVID-19 pandemic has changed workplaces in many aspects, and remote working has been widely applied, especially, in knowledge-intensive organisations (Anser et al., 2021; Deng et al., 2022; Grassi and Fantaccini, 2022; Taylan et al., 2022). While long-term impact of this unprecedented remote working experiments on knowledge workers’

working styles and preferences is yet to be investigated, knowledge-intensive organisations are developing effective strategies for remote working during the COVID-19 pandemic (Wang et al., 2021). Organisations are continuously exploring positive effects of remote working for knowledge management after the COVID-19 pandemic.

Universities are knowledge-intensive organisations, and have experienced substantial digital transformation during the global COVID-19 pandemic (Watermeyer et al., 2021). While concerns of transformation of in-person courses into online courses have dominated the educational research topics, continuous improvement of organisational development in long-term after the COVID-19 pandemic has become an important item on the current research agenda (Haslam et al., 2021). This paper presents a case study to explain how it was possible for the business college at a university in the USA to undergo knowledge management process through an accelerated digital transformation as part of its strategic management approach to organisational improvement during the COVID-19 pandemic.

The paper is organised as follows. The next section is a review the literature of related subjects in the present context of organisational knowledge management. The subsequent section describes the case study which explores positive practices of knowledge management in the knowledge-intensive organisation during the COVID-19 pandemic. The final two sections present findings and conclusions of the case study.

2 Literature review

2.1 Universities as knowledge-intensive organisations

While the definition of knowledge-intensive organisations can be debatable, labelling an organisation knowledge-intensive implies that knowledge has more importance than other inputs to the organisation which is staffed with high-level knowledge workers (Starbuck, 1992; Peixoto et al., 2023). As knowledge-intensive organisations have been studied in various contexts of economics, social sciences, and management, wide-spread predispositions can be identified in the literature (Khadir-Poggi and Keating, 2013). Nevertheless, there is no doubt that information technology plays an important role in innovations of knowledge-intensive organisations.

Universities are knowledge-intensive organisations that create knowledge and disseminate knowledge (Jemielniak and Kociatkiewicz, 2009). The most valuable assets of universities are the knowledge embodied in the human capital of higher education. The challenges of innovative universities can be derived from the job market's needs for the next generation of workers, which usually cannot be met within a single discipline. The challenges faced by universities lie in creating environments that support knowledge creation, knowledge sharing, and knowledge dissemination. The ultimate goal of universities is to produce innovations for their students and their regions (Kettunen, 2009).

Universities are different from industrial knowledge-intensive organisations in that academic freedom is a moral and legal concept and is essential to the mission of the academy. University scholars have freedom to create and disseminate knowledge. Academic tenure systems protect academic freedom but might cause low productivities (Andreescu, 2009). Additionally, intellectual property issues at the universities are more

complicated than that in the governments or corporations (Halilem et al., 2017). On the other hand, universities must collaborate with the industry and society for innovation and co-creating knowledge (Lee and Miozzo, 2019). As professors are individual knowledge makers with high levels autonomy, the effectiveness of governance mechanism is the key to successful co-creation of knowledge at the university (Clauss and Kesting, 2017).

2.2 Effects of the COVID-19 pandemic

During the COVID-19 pandemic many organisations adopt the remote working modalities to request employees to work at home. While the long-term effects of work-at-home are yet to be investigated, there is no doubt that work-at-home could have either positive and negative effects on productivities depending upon many factors of human resource administration and information technology infrastructure (Bolisani et al., 2020).

The sudden need for work-at-home due to the COVID-19 pandemic drives the use of information technologies in the workforces as well as the evolution of the work environment at an unprecedented speed (Savic, 2020). The unprecedented impact of the pandemic on rapid demand for work-at-home would in turn push for the digital transformation especially in knowledge-intensive organisations. Digital transformation in a workplace is a continuous process to fully explore the opportunities of contemporary information technologies to make remote working to be ‘smart working’ for collaboration, engagement, personal learning, and organisational learning. ‘Smart working’ is a model of work that uses new technologies to improve both the performance and the employees’ job satisfaction. Effective ‘smart working’ fosters the demand for new cultural changes in organisations (Almeida et al., 2020; Dehaghi, 2022). In fact, the COVID-19 pandemic has accelerated the processes of digital transformation at not only the organisational level but also the individual level.

There is no doubt that the COVID-19 pandemic has changed higher education in many ways (Barnes, 2020). However, the recent research into impact of the COVID-19 pandemic on higher education has been focusing on remote teaching and students’ learning; yet few research papers in the literature discuss the impact of the COVID-19 pandemic on faculty development through organisational learning in higher educational institutions.

2.3 Organisational learning and the role of knowledge management

Learning is particularly important in knowledge-intensive organisations because knowledge is the most important resource, collective property, power and persuasion, and competition capability in knowledge-intensive organisations (Starbuck, 1992; Karreman, 2010). Learning takes place at the individual level and the organisational level. At the individual level, knowledge workers in knowledge-intensive organisations need to update their knowledge frequently. Self-directed learning, in addition to training and personnel change, can be an effective approach to learning. At the organisational level, organisational learning parallels individual learning and defines learning as

organisational change (Kim, 1993; AlMaian and Bu-Qammaz, 2023). Organisational memory is more than a static storage device, being collections of memories that guide responses and are interconnected around specific experiences in the organisation. Priority of learning and effective information distribution are the key elements of organisational learning (Fauske and Raybould, 2005). Resistance to learning can occur in knowledge-intensive organisations due to various reasons such as lack of motivations, lack of resources, or professional opinions (Secundo et al., 2017). Transformational leadership to foster collaboration and organisational culture of knowledge sharing can minimise resistance to organisational learning (Imran et al., 2016).

Knowledge management (Correa et al., 2023) allows rigorous and updated knowledge to become an open resource of the organisational memory for knowledge workers to share for successful organisational learning (Hutasuhut et al., 2021). At the organisational level, knowledge management is a part of organisational management and is a continuous process and involve concurrent knowledge activities of knowledge capturing, knowledge sharing, knowledge application in the organisation (Wiig, 1993; Heisig, 2009). At the level of projects or special tasks, knowledge management can also have a cyclical pattern to accomplish a certain business goal (Bukowitz and Williams, 1999; Pereira et al., 2022).

2.4 Knowledge management infrastructure

Knowledge management infrastructure refers not only to information technology applications but also to managerial issues related to the parameters of the socio-technical environment of the organisation (Becerra-Fernandez and Sabherwal, 2015; Gatiti, 2022). The major components of knowledge management infrastructure include knowledge management strategies, policies and procedures, information systems of knowledge bases, collaborative organisational networks, and knowledge sharing and socialisation forums (Lee and Hong, 2002; Lytras and Pouloudi, 2006).

As knowledge management is a part of organisational management, the knowledge management infrastructure must align with the organisational management infrastructure (i.e., organisational culture, organisational structure, and information technology) (Pandey and Dutta, 2013; Trevino et al., 2021). Transformational leaderships at the strategic level as well as transactional leaderships at the execution level strongly influence the alignment between the knowledge management infrastructure and the organisational management infrastructure (Novak et al., 2020; da Costa et al., 2022).

In summary, universities are knowledge-intensive organisations, and knowledge management can be an effective instrument to support organisational learning to achieve their goals. Leadership of strategic knowledge management, organisational culture (value of knowledge sharing, incentives, and working styles), information flows supported by information technology infrastructure are the key elements of knowledge management in the organisation. The COVID-19 pandemic has had great impacts on workplaces in these aspects and have effects on knowledge management in organisations. The literature review provides a foundation of conceptual framework for the present case study.

3 The case study

3.1 Overview of the case and the method of the case study

DCB is a college of business with about 2,500 BSA and MBA students and 45 full-time faculty members at a public university in the US. As a college of business, the Association to Advance Collegiate Schools of Business (AACSB) accreditation (Pringle and Mitri, 2007) is critical for the reputation of DCB. After earning the AACSB accreditation in year 2000, the business college undergoes a continuous improvement review process every five years. In Spring 2020, AACSB team visit was postponed due to the COVID-19 pandemic. During the Summer 2020, DCB changed the leadership, and the new dean received the AACSB team visit in November 2020 shortly after took the position. The virtual AACSB team visit was going smoothly, but the team visit report was not positive and requested for providing additional evidences of continuous improvement in one year. Among several suggestions, the major concern of the AACSB team was about assurance of learning (AoL) and curriculum improvement at DCB. Specifically, there was insufficient evidence of curriculum improvement for AoL. The root of the problem seemed to be clear; that is, for several reasons, only a few faculty members were working on AoL to prepare the AACSB team visit, but the majority of faculty members, including curriculum committee members, did not participate in the AoL process.

Since the accreditation in 2000, DCB had seven deans or acting deans. The side-effect of the high turnover rate of the deanship of DCB was a lack of engagement of faculty and students in tasks of AACSB accreditation process. After the AACSB visit team raised a red flag to request DCB to make improvement for AoL and curriculum design before a second team review in one year, the faculty of DCB, led by the new dean, revisited and revised the mission statement, redefined learning goals and objectives across the curricula, re-examined structure of AoL, identified weakness of the current structure of AoL and curriculum design, collected assessment data, demonstrated the improvement for AoL and curriculum design within the short-term, and generated a long-term plan of continuous improvement for AoL and curriculum. The second-round continuous improvement report had been accepted positively by the AACSB Continuous Improvement Peer Review Team in Fall 2021.

The case study explores knowledge management approaches to accomplishing a critical task of AACSB accreditation to make improvement in AoL and programs' curriculum improvement during the COVID-19 pandemic. It was conducted by one of the co-authors who participated in the committees and a task group for the process. Data were gathered through the observations of the entire process over the past year and analyses of organisational documents related to the AACSB accreditation task.

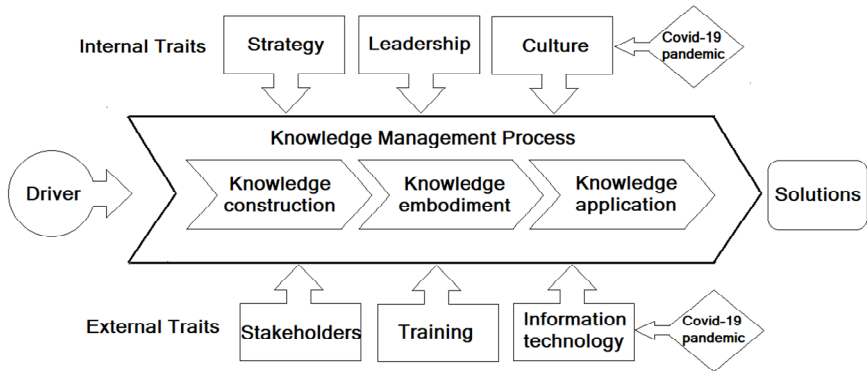
3.2 Research methodology

Case study has been a methodological approach used in management for decades (Eisenhardt, 1989). It applied a protocol (Yin, 2003) to guide the study, as shown in Table 1.

Table 1 Outline of the protocol used in the study

Protocol sections		Protocol components
1	An overview of the case	<i>Objective:</i> this case study explores positive practices of knowledge management in a knowledge-intensive organisation during the COVID-19 pandemic <i>Key issue:</i> impact of COVID-19 pandemic on the investigated knowledge-intensive organisation in knowledge management
2	Sources of information	Direct observations Documents Archival records
3	Case study questions	1 How COVID-19 pandemic has driven necessary changes in knowledge management? 2 What are the key to success of knowledge sharing in a knowledge-intensive organisation during the COVID-19 pandemic? 3 How knowledge-intensive organisations can take advantages of information technologies for knowledge management during the COVID-19 pandemic?
4	A guide for case report	The context of the case study is knowledge management in COVID-19 pandemic Format of case report

Figure 1 Conceptual framework of the case study



3.3 Conceptual framework

The above literature as well as a number of typical knowledge management models related to the present context of knowledge-intensive organisations (e.g., McAdam and McCreedy, 1999; Prichard et al., 2000; Nunes et al., 2006; Garcia, 2007) were examined to determine the most applicable traits for a conceptual framework of knowledge management for the present case study. The conceptual framework for this case study is depicted in Figure 1. It illustrates the case study in the form of task-execution in the context of knowledge management. The knowledge management process included three major phases: knowledge construction, knowledge embodiment, and knowledge

application. The internal traits of the knowledge management process were strategy, leadership, and organisational culture. The external traits were stakeholders, training, and information technology. Organisational culture and information technology are highly impacted by the COVID-19 pandemic. All arrow symbols in the conceptual framework indicate the inputs to the knowledge management process. Next, these influential traits and the knowledge management process are discussed.

3.4 Descriptions of the case

3.4.1 Strategy of knowledge management

The organisational strategy of DCB during the academic year was to increase the student enrolment and to demonstrate the continuous improvement in AoL, curriculum design, and faculty research impacts in response to the AACSB accreditation maintenance report. The knowledge management strategy was to demonstrate the continuous improvement in AoL and curriculum design at DCB within a year. It aligned to the organisational strategy. The following strategic considerations were included in the implement of knowledge management process.

- During the COVID-19 pandemic, DCB should take advantages of high information technology literacy level of employees in the knowledge-intensive organisation, and apply available information technologies fully during the knowledge management process.
- Learning from the lesson of the previous AoL cycle when only a few faculty members were involved, DCB should engage all faculty members and stakeholders for the preparation for the next AACSB Peer Review during a short time period.
- DCB should establish the leaderships for knowledge management to implement the AACSB task, and increase the visibility of the dean's transformational leadership role, as well as the committee chairs and key players' transactional leadership role.
- The AoL Committee and Curriculum Committee should arrange prompt information sessions through virtual meetings to increase faculty members trust and confidence through knowledge sharing.
- DCB should explore knowledge source to support the organisational learning by attending AACSB online workshops and inviting external experts for training for the AACSB AoL task as well as student groups.

3.4.2 Leadership

Right after the AACSB visit team released report, the new dean of DCB appointed a new AoL committee chair, and delivered clear message to the two curriculum committees (undergraduate and graduate) to work side by side with the AoL committee to address the issues raised by the AACSB visit team. The new committees had regular weekly meetings through Zoom to discuss actions, contribute assignments to individual committee members, and share the assignment results. The dean joined the two committees' e-mail lists, and attended every meeting to demonstrate the leadership. He often provided comments and suggestions or answered questions during the meetings, but

seemed to make thorough observations to know more about the DCB faculty. After a few months of observations, the dean decided to merge the two curriculum committees and re-organise a new curriculum committee. Then, the new curriculum committee chair and the AoL committee chair formed a Summer Working Group to work with all stakeholders in the summer to work on a plan for the college AoL actions in the fall semester before the second AACSB Peer Review and preliminary works. The Summer Working Group consisted of nine key players in core undergraduate courses and graduate programs related to AoL, including the dean and the associate dean. The preliminary works included drafts of new learning goals, learning objectives, rubrics, data samples, and AoL repository.

The Summer Working Group organised ten Focus Groups which represented DCB stakeholders including current students, alumni, part-time lectures from the local communities, and industrial guests to collect suggestions about the DCB's mission and curriculum design. It also held three informational sessions through Zoom to inform all DCB faculty members with the work progress and to collect feedbacks. As the university system does not require employees to report to work during the three summer months, the attendance rates of the faculty information sessions were about 70%. The dean has demonstrated strong transformational leadership during his first year at DCB. This transformational leadership has been sustained by the new committee chairs' transactional leaderships in the knowledge management process to accomplish the task of continuous improvement of AoL and curriculum design. The Zoom meetings and virtual working environment enabled the implementation of knowledge management process and helped the establishment of the leaderships during the COVID-19 pandemic.

3.4.3 Culture

Organisational culture plays a significant role in knowledge management and organisational learning (Sankowska, 2013). Organisational culture can be four basic types of culture: clan culture, adhocracy culture, hierarchy culture, and result oriented (Cameron and Quinn, 1999). The four types are an apparatus of cultural analysis, as the culture of an organisation can be a hybrid of the four basic types of culture. A culture analysis of the present case described below shows how the DCB's culture improvement influences the knowledge management process.

- *Development of clan culture:* During the initial AACSB accreditation process in 1998, DCB hired a significant number of new faculty members with well-established academic records. Since then, for a variety of reasons, personality clash among the faculty members was a serious issue for a long time. The contentious atmosphere made college 'unmanageable', as commented by two deans of the college before they left. Nevertheless, the faculty became cooperative and worked in teams for AACSB accreditation maintenance before every time of AACSB team reviews, indicating that AACSB accreditation can bring the faculty united. Resistance against AoL and other AACSB tasks has not been observed in the DCB history.
- *New hierarchy culture:* After years of turnovers of DCB faculty members and the university's structural reform that gave more power and responsibilities to the departments, DCB quickly developed strong department-oriented hierarchy culture. At the same time, AoL tasks were assigned to and conducted by a few faculty members organised by the college.

- *Implementation of adhocracy culture:* The DCB faculty members, higher-educational researchers and teachers, were capable to proactively adapt to changing circumstance in their fields. Over the years, they developed many new graduate and undergraduate programs, options, and contractions to catch the new wavers in higher education. However, the coordination between these programs and options for resource allocation and common goals at the college level was often missing.
- *Promotion of result-oriented:* The majority of DCB faculty members were active in research and teaching innovation for tenure and promotion evaluations and personal career development. Productivities at the individual level were a priority.

The improvement of organisational culture at DCB in the above four aspects assures the process of AoL knowledge construction, embodiment, and applications.

3.4.4 Stakeholders

Stakeholders provide valuable knowledge flows to DCB. As discussed earlier in this section, the Summer Working Group organised ten Focus Group meetings through Zoom to collect information from the current students, alumni, and industrial partners. The Focus Group meetings helped the Summer Working Group to generate directions for continuous improvement of AoL. Their collective suggestions of industrial engagement contributed to revision of the DCB's mission, modification of learning goals and learning objectives, and generation of master rubrics for the learning objectives. In September, the AoL committee and the college curriculum committee conducted online surveys to collect non-freshman students' opinions about revised learning goals and learning objectives across years and majors. The momentum of formation of meetings and the high attendance rates of these Focus Groups of stakeholders as well as the speed of surveys were unprecedented, as a result of the virtual knowledge exchange environment developed in the entire society during the COVID-19 pandemic.

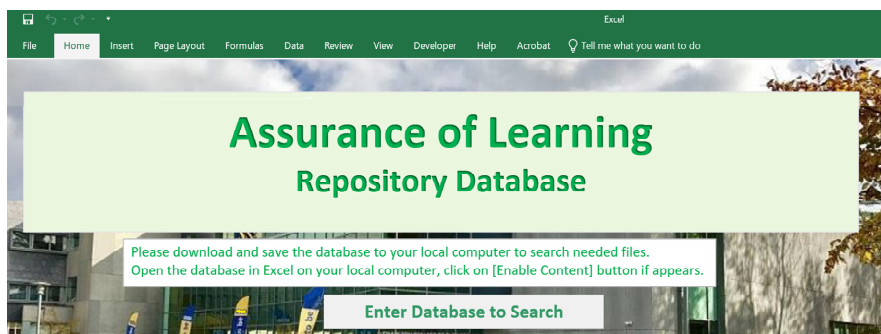
3.4.5 Training

DCB is a knowledge-intensive organisation and needs organisational learning to update its faculty members' knowledge. For the academic disciplines, the faculty members have the responsibility and ability to update their professional knowledge. However, for AACSB accreditation tasks, external training must be provided. An AACSB accreditation consultant was invited to hold five training sessions through Zoom for the DCB faculty members. The topics covered the AACSB AoL standards, AoL infrastructure, common issues of AoL in faculties, development of learning goals and learning objectives, writing rubrics, and others. Virtual workshops through Zoom breakout rooms were conducted after the training sessions. Before this training, about one third of DCB faculty members had not participated in any AACSB AoL activities. The dean, department chairs, and committee chairs attended every training session. The attendance rates of the training sessions for the faculty were above 85%. Apparently, the active faculty participations were driven by the leaderships as well as the virtual working environment during the COVID-19 pandemic.

3.4.6 Information technology

While the COVID-19 pandemic has changed work modalities, information transformation medias have shifted from the traditional papers to digitalised files. However, without a manageable repository, shared storages of massive e-mail attachments in the cloud eventually become trash cans. To implement a manageable AoL repository, the Summer Working Group initiated an AoL repository to allow all faculty members to share AoL documents and data. In the long-term, the AoL repository is a repository-based knowledge sharing system built to meet the needs of AoL and curriculum improvement. Applying the NoSQL database technology and end-users computing principles, an information systems faculty member developed the AoL repository shared on OneDrive for Business in the Microsoft Outlook platform. The AoL repository was supported by a search engine in the Microsoft Excel NoSQL database form because traditional relational database had limitations in this case. The attributes of the NoSQL database could be modified depending upon the needs. In addition to the traditional search functions in Excel, the NoSQL search engine provides multiple-attributes search functionalities to allow the user search needed documents quickly. In comparison with other NoSQL database systems platforms on the software market, the Excel-based NoSQL database was more user-friendly for end-users and maintenance. Figure 2 shows the Excel NoSQL database for the AoL repository. Technically, it was a combination of key-value and column-oriented NoSQL database techniques for flexible and scalable document management.

Figure 2 Database with search engine for the AoL repository (see online version for colours)



Logo Page of the AoL Repository Database

Excel											
File	Home	Insert	Page Layout	Formulas	Data	Review	View	Developer	Help	Acrobat	Tell me what you want to do
	A	B	C	D	E	F	G				
	Timestamp	Title	Subject	Contents	Author	Audience	Form	File Location			
1	1/10/2019	AACSB Report 2019	AACSB accreditation 2020 -	AACSB report 2019 for team Dean's off	All faculty		PDF	https://u-my.sharepoint.com/personal/...			
2	11/30/2020	AACSB Team Visit Report 2020	AACSB accreditation 2020 -	AACSB team visit report Novem	AACSB Tea	All faculty	PDF	https://u-my.sharepoint.com/personal/...			
3	3/10/2021	AACSB CIR Committee Letter	AACSB accreditation 2020 -	AACSB CIR2 team visit Fall 2021	AACSB CIR	All faculty	PDF	https://u-my.sharepoint.com/personal/...			
4	7/28/2021	AoL Demo Process and Assess	AoL & CCC working document	AoL process diagram and sched	J.	2021 SWG	PPT	https://u-my.sharepoint.com/p/r/pe...			
5	7/28/2021	Revamping	AoL System: 1 AoL & CCC working document	7-14-2021 SWG presentation	J.	2021 SWG	PPT	https://u-my.sharepoint.com/p/r/pe...			
6	7/28/2021	AoL SWG Meeting Minutes 7-7	AoL SWG meeting minutes	Rubrics, course alignment mat	J.	2021 SWG	Word	https://u-my.sharepoint.com/w/r/pe...			
7	7/28/2021	AoL SWG Meeting Minutes 6-3	AoL SWG meeting minutes	T workshop, learning goal	J.	2021 SWG	Word	https://u-my.sharepoint.com/w/r/pe...			
8	7/28/2021	AoL SWG Meeting Minutes 6-2	AoL SWG meeting minutes	T workshop, SWG assign	J.	2021 SWG	Word	https://u-my.sharepoint.com/w/r/pe...			
9	7/28/2021	AoL SWG Meeting Minutes 6-1	AoL SWG meeting minutes	First meeting of SWG, Dean's ch	J.	2021 SWG	Word	https://u-my.sharepoint.com/w/r/pe...			
10	7/29/2021	Course Alignment Matrix	AoL materials	Alignment of core business cour	C.	All faculty	Excel	https://u-my.sharepoint.com/x/r/pe...			
11	8/11/2021	AoL SWG Writing Rubrics Dem	AoL SWG working document	MGT writing assignments a	J.	2021 SWG	Excel	https://u-my.sharepoint.com/x/r/pe...			
12	8/11/2021	Written Communication Rubric	AoL SWG working document	Written communication review	J.	2021 SWG	Word	https://u-my.sharepoint.com/w/r/pe...			
13	8/11/2021	Written Communication Rubric	AoL SWG working document	Written communication rubrics	J.	2021 SWG	Word	https://u-my.sharepoint.com/w/r/pe...			
14	8/11/2021	MGT Strategy Project Grad	AoL SWG working document	MGT strategy project gradin	J.	2021 SWG	Word	https://u-my.sharepoint.com/w/r/pe...			
15	8/11/2021	MGT -05 Apple Inc. Strateg	AoL SWG working document	MGT strategy project exam	J.	2021 SWG	PDF	https://u-my.sharepoint.com/personal/...			
16	8/11/2021	AoL SWG Writing Rubrics Dem	AoL SWG working document	MGT writing assignments a	J.	2021 SWG	Excel	https://u-my.sharepoint.com/x/r/pe...			
17	8/11/2021	MGT -05 Netflix Strateg	Pr AoL SWG working document	MGT strategy project exam	J.	2021 SWG	PDF	https://u-my.sharepoint.com/personal/...			

The Excel NoSQL Database

3.4.7 Knowledge construction

The knowledge construction was a collaborative process to produce new understanding of actions for AoL and curriculum improvement at DCB. All DCB AoL committee members and curriculum committee members were required to attend two AACSB AoL online webinar workshops as well as five college-wide AoL training sessions through Zoom. The ten virtual Focus Group meetings allowed the Summer Working Group to collect external information for the knowledge construction process. The AoL committee, the curriculum committee, and the special Summer Working Group held weekly meetings through Zoom to explore, categorise, and construct working reports and artefacts to address the concerns raised by the previous AACSB visit team.

The Summer Working Group held monthly information sessions through Zoom to update the entire faculty with the progress of preparation for the new AACSB Peer Review. The information sessions explained the developed plan of AoL and curriculum changes for the fall semester, followed by discussions and negotiations. The university in the fall semester reopened in-person classes, requiring masks in classrooms. Nevertheless, all faculty meetings were conducted through Zoom. Right after the fall semester started, led by the AoL committee and curriculum committee, all faculty members discussed new sets of learning goals, learning objectives, master rubrics, and learning goal alignment matrix for their courses. The weekly college meetings devoted exclusively to preparations for the AACSB Continuous Improvement Peer Review Team in November 2021. AoL data were corrected from four core business courses for direct measures and other sources for indirect measures. The AoL committee and the college curriculum committee revised learning goals and learning objectives for both undergraduate program and graduate programs. Each of the three departments generated course learning goal alignment matrices to demonstrate how each course can meet the college-level learning goals. The knowledge artefacts were available for the AACSB Review Team.

3.4.8 Knowledge embodiment

The knowledge embodiment process was to convert the explicit knowledge artefacts (working documents and data) into individual and organisational tacit knowledge body. Tacit knowledge in this case was to address the 2020 AACSB visit team's concerns about the continuous improvement of AoL and curriculum design. At the organisational level, knowledge embodiment was indicated by the leaders' understanding of issues and actions for continuous improvement at the college level, department level, and the committee level. At the individual level, knowledge embodiment was indicated by curriculum changes, AoL activities, and students' learning improvement in each course.

The new AACSB Peer Review Team was actually an assessment of the knowledge embodiment process. The DCB's Report for the new AACSB Peer Review Team included explicit knowledge artefacts including collected data to make judgement of width and depth of knowledge embodiment for AoL and curriculum continuous improvement.

3.4.9 Knowledge application

The knowledge application process was to apply the available knowledge to the determination of the new direction and the guided actions of AoL and curriculum design for the new AACSB Peer Review. The new direction to address the issues raised by the previous AACSB team visit included simplifying the organisational structure related to AoL and curriculum changes, making cohesive learning goals and learning objectives, establishing clear administration schedules and deadlines to ensure timely AoL ‘close-the-loop’, and broadening data collection from more core business courses.

The knowledge application process had achieved the objectives of guided actions of AoL and curriculum improvement. The outcomes of this task include a new set of learning goals and learning objectives to better align the CCB mission in the industrial engagement and career path development, a new set of rubrics for the learning goals to make the data collection consistent, data of students learning outcome from four core business courses, and data of wide-ranging indirect measures.

3.4.10 Outcome of the knowledge management process

In November 2021, the AACSB Continuous Improvement Peer Review Team reviewed the DCB’s Continuous Improvement Report. The Report documented continuous improvement of AoL and curriculum improvement. The continuous improvement included revised learning goals and learning objectives, additional business core courses for assessment reports, college course learning goal alignment matrix, rubrics for learning objectives, data of student learning outcomes, five-year AoL data collection plan, and demonstrations of AoL activities after the previous AACSB team visit. The final report of the new AACSB Peer Review had very positive comments on DCB’s the improvement in the AoL and curriculum aspects since the previous AACSB visit. The AACSB Review Team has approved the extension of accreditation after a thorough review of the DCB’s Continuous Improvement Report. In February 2022, the AACSB board approved the extension of AACSB Accreditation for DCB.

4 Findings and reflection of the case study

This case study explores positive practices of knowledge management in knowledge-intensive organisations during the COVID-19 pandemic. Transformational and transactional leaderships of knowledge management are the key to success of ‘smart working’ in the knowledge-intensive organisation during the COVID-19 pandemic. Virtual synchronous meetings are more effective and efficient than physical face-to-face meetings or social media for information sharing in knowledge-intensive organisations. Digitalisation in knowledge sharing accelerates the organisational learning. The positive practices of knowledge management developed in response to the COVID-19 pandemic can continuously applied to knowledge management in the long-term to make effective and efficient knowledge sharing in knowledge-intensive organisations.

This case study reflects knowledge management in knowledge-intensive organisations during the COVID-19 pandemic. Knowledge management during the COVID-19 pandemic is an important for all organisations to aware of how knowledge management can increase the efficiency and efficacy of the task when the work

environment and workplace culture are changed. Reflection is imperative for organisational learning to map out the knowledge management process for similar tasks in the future. This study is employing the concept of reflection-in-action (Schon, 1983) to review the process of knowledge management thereby making the process explicit, examining the strategies, and exploring the factors for future situational responses.

This study is a qualitative research based on an in-depth investigation of a single organisation. The study has its limitations. Systematic numerical data collection was not a part of the present research method design. Thus, the case study is short of numerical or experimental illustrations. Furthermore, an experimental comparison with other approaches has not been established, given a limited case studies of knowledge management in context of COVID-19 pandemic.

5 Conclusions

This study presents a case study of application of knowledge process to accomplish a task of AACSB accreditation for continuous improvement of AoL and curriculum during the COVID-19 pandemic. It contributes to understanding knowledge management through ‘smart working’ which was developed during the COVID-19 pandemic. The case study reports best practices of knowledge management learned from the COVID-19 pandemic. First, the COVID-19 pandemic has driven ‘smart working’ in knowledge-intensive organisations. Knowledge-intensive organisations can take advantage of this change in knowledge management through stimulating knowledge flows using information technologies. Virtual synchronous meetings can be more effective and efficient than physical face-to-face meetings for information sharing. Second, transformational and transactional leaderships of knowledge management are the key to success of ‘smart working’ in the knowledge-intensive organisation. Third, full digitalisation beyond remote working, such as digitalised documents repositories and knowledge management tools, accelerates the organisational learning. The positive practices of knowledge management developed in response to the COVID-19 pandemic can continuously be applied to knowledge management in the long-term to make effective and efficient knowledge sharing in knowledge-intensive organisations.

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