KNOWLEDGE PRESERVATION AND CURATION

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Knowledge Preservation and Curation

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INVESTOR IN PEOPLE

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Introduction to the Series – Working Methods in Knowledge Management

Knowledge sciences as a discipline has a rich and diverse history dating back to the 1950s. In the past 70 years, the discipline has drawn theory and practice from economics, engineering, communications, learning sciences, technology, information sciences, psychology, social sciences, and business and organization management. To craft this discipline, we have developed our own language and terminologies, established our own peer-reviewed journals and built a rich research foundation, created a gray literature, and established a series of knowledge management networks and conferences. Over the decades, there have been many knowledge management education programs, but there is no consistent curriculum, and few have sustained. It has been challenging for new practitioners to gain an understanding of the field. And, while the practice of knowledge management is growing around the world it has not yet achieved the expected organizational stature. For knowledge management to rise to the stature of other business functions and operations, it must be able to speak the language of business, align with, and support the way the organization works.

This series is designed for business and knowledge management practitioners. *Working Methods in Knowledge Management* is a multi-year and multi-volume series designed to address each and all of the methods required to establish and sustain an organization-wide knowledge management function. The goal of the series is to provide a business perspective of each topic. Each book begins by grounding the method in the business context then translates established business models and methods to a knowledge management context. It is often the case that this translation expands and extends the business model and method.

The knowledge management literature is rich with introductory handbooks, guidebooks, cookbooks, toolkits, and practical introductions. This literature is an important starting point for anyone new to the discipline. We recommend any and all of these books as a way to build a fundamental understanding of the scope and coverage of the field. These texts will provide a good 10–20-page introduction to all of the key issues you need to be aware of as you embark on a new career in the field or have been assigned a new knowledge management role or responsibility. Once you have that grounding, though, we recommend that you look to the *Working Methods in Knowledge Management* texts as an intermediate source for understanding "What comes next? What now?"

Just as this series is not intended as a starting point for the field, neither is it an ending point. Each text is designed to support practical application and to foster a broader discussion of practice. It is through practical application and extended discussion that we will advance theory and research. The editors anticipate that as practice expands, there will be a need to update the texts – based on what we are learning. Furthermore, the editors hope that the texts are written in a way that allows business managers to extend their work to include knowledge management functions and assets. We will learn most from expanding the discussion beyond our core community.

Joint Enterprise, Mutual Engagement, and a Shared Repertoire

From the outset, the publisher and the editors have established a new and different approach to designing and writing the books. Each text is supported by a team of authors who represent multiple and diverse views of the topic. Each team includes academics, practitioners, and thought leaders. Every author has grappled with the topic in a real-world context. Every author sees the topic differently today than they did when the project began. Over the course of several months, through weekly virtual discussions, the scope and coverage were defined. Through mutual engagement and open sharing, each team developed a joint enterprise and commitment to the topic that is enduring. Every author learned through the discussion and writing process. Each project has resulted in a new shared repertoire. We practiced knowledge management to write about knowledge management. We "ate our own dog food."

Acknowledgments of Early Support

The series is a massive effort. If there is value in the series much of the credit must go to two individuals – Dr Elias Carayannis, George Washington University, and Dr Manlio Del Giudice, University of Rome. It was Dr Carayannis who first encouraged us to develop a proposal for Emerald Publishers. Of course, this encouragement was just the most recent form of support from Dr Carayannis. He has been a mentor and coach for close to 20 years. It was Dr Carayannis who first taught me the importance of aligning knowledge management with business administration and organizational management. Dr Del Giudice has been generous with his guidance – particularly in setting a high standard for any and all knowledge management research and practice. We are grateful to him for his careful review and critique of our initial proposal. His patience and thoughtful coaching of colleagues is rare in any field. The field will reach its full potential as long as we have teachers and editors like Dr Del Giudice.

Preface

Overview of the Subject Matter

- The focus of the book is a core topic in the field of knowledge sciences – the use, reuse, and repurposing of knowledge. This topic is central to theory and practice because the value of knowledge is realized not in its storage but in its circulation and flow. Static knowledge loses value whereas knowledge in circulation increases in value – exponentially rather than simply additive. Each of us engages in knowledge use, reuse, and repurposing every day. Knowledge use, reuse, and repurposing is as natural to people as is water to fish Lewis. Because it is natural, we often don't "see" it – and what we don't see we don't consciously memorialize or intentionally remember. These are everyday experiences. Consider, though, the implications of not "seeing" knowledge flows in business environments. What opportunity costs might result from a lack of awareness, a lack of memory, and the lost business value?
- Over the past 30 years, both the peer-reviewed and gray literatures have acknowledged the practical challenges of incentivizing and achieving knowledge use and reuse. Organizations have invested in sophisticated information technology applications to make business information and knowledge available and accessible for reuse. We have three decades of narrative about the importance of using existing knowledge and the many arguments advanced to encourage saving, storing, and preserving explicit institutional knowledge. Despite the literature, the narrative remains just that – talk, stories, rationales, and academic arguments. The literature fails to address the core challenges involved in preserving and using implicit, human-centric knowledge. It fails to address the reasons why finding and using both explicit and implicit business knowledge is difficult. A common and oft-repeated phrase heard at knowledge management conferences is that organizations may not know what they know – present tense. The solutions offered, though, are often time- and labor-intensive, take us out of the business environment, fail to look beyond tangible information, and presume that what we want to know exists and has been memorialized. It is time to move beyond expressions of concern to understand causes and effects. It is time to see the challenges from a business rather than an information or data management perspective.
- Knowledge use and reuse is predicated on business value and the useful business life of knowledge. In the book, the focus is on the use and value of

knowledge in the future. To shift to a future focus, the authors draw on groundbreaking work in the European knowledge sciences community. The community has shifted strategy from a simple linear, deterministic planning from the present day to five years hence of the industrial economy, to thinking strategically about the future in the knowledge economy. Thinking strategically means developing what the authors call a four-futures strategy. The authors translate the challenges of preservation and curation, and the opportunities of thinking strategically into a framework that any organization can adapt to suit their business needs. The framework also addresses the development of knowledge preservation and curation business capabilities, and the new and adapted roles, responsibilities, and competencies that support them.

- Two traditional fields are at the center of this new business perspective – preservation and curation. Both fields have deeply grounded historical theory and practice. Neither, though, focuses on the critical business perspective. To encourage and incentivize the business manager and workforce to use or reuse knowledge, it must have business value. Today we preserve information from information management, financial, and legal evidentiary reasons. Today, knowledge use focuses on using and reusing past raw *information* rather than knowledge. Today, the use of knowledge focuses on distinct information, records, and archives management systems – stepping out of the business environment. A shift is needed from past to future, from information management to business environment, and beyond tangible information to human knowledge.

- The authors conducted extensive reviews of the theory and practice of preservation and curation practices in a range of business contexts. They engaged in discussions of the current theory and practice in both public and private sector organizations. The authors walked through thinking strategically about preservation and curation in known and unknown futures. They reviewed both successful and failed strategies and policies and practices.

- The authors discovered that there is a rich emerging professional practice of curation. This practice can be found in many different professions and practices. It ranges from amateur and spontaneous practice to standardized professional practice. A contributing factor to the rapid growth and increased scope of curation is the development of smart technologies. What we can do with preserved content is expanding at a rapid rate. Increased curation, though, highlights fundamental limitations for curation – what has or has not been preserved to curate. The authors explore the limitations created by the policies that determine what is or is not preserved, how it has been preserved, where it is preserved, and when it is preserved. In the end, the authors reframe the popular characterization of knowledge curation from the acquisition, review, preservation, metadata creation, and storage of individual documents and records to creating new knowledge from a range of preserved assets. Curated knowledge is designed to fill a specific business knowledge need or gap.

- Based on this foundation, the authors take up the long-standing challenge – how to incentivize and encourage the use and reuse of existing knowledge. The

authors provide insights into the challenge and offer solutions. Their efforts have surfaced several challenges, including (1) extending the traditional practice of preservation to cover knowledge assets; (2) the need for intention and deliberate knowledge curation given the failed assumptions that individuals will seek out and use raw knowledge in information repositories and archived systems; (3) the fundamental assumptions of preservation pertain to legal and financial risks; and (4) that these policies and practices are focused on the past rather than the future.

- This book makes the case for a new knowledge preservation and curation strategy. First, it argues for proactive and deliberate knowledge curation capabilities, competencies, and infrastructures. Second, it argues for prioritizing future business needs on business stakeholders and retaining preserved knowledge in a business context or view. Third, it argues for putting technology and knowledge-savvy individuals in the "curation driver's seat" – working directly with the business to develop new knowledge objects from preserved assets. And it argues strongly for developing a state-of-the-art infrastructure and tool bench to support curating all types and formats of knowledge. Finally, it argues for expanding traditional preservation strategies and schedules to include all eight types of knowledge assets rather than the single traditional type of "explicit information" asset.

The authors highlight the need for an honest review of investments in current and traditional practices and a new vision of knowledge curation in known and unknown futures. They highlight the need for new institutional business capabilities, roles, and competencies to turn this vision into strategies and plans.

Where the Topic Fits in the World Today

Like the other books in the series, this text draws from and integrates research and practice from several disciplines. The primary goal of the series is to create stronger ties between the business management and knowledge management disciplines.

Both preservation and curation are mature topics in anthropology, ethnography, art, museum, and archival sciences. The mature treatment pertains primarily to tangible and physical objects rather than intangible knowledge assets. Similarly, applying preservation and conservation to physical and tangible information objects is well established in theory and practice. In contrast, though, knowledge preservation and curation are emerging and are thus relatively immature. The practice of knowledge preservation and curation is happening every day in every organization. There is much to draw from inductively, though a broad conceptual model and tactics have yet to emerge. That is the goal of this book.

This book aims to establish a working conceptual framework from which we can align and better understand current and emerging creative practices. While there are books and articles entitled knowledge preservation and knowledge curation, they focus on the well-established practices of information preservation and

curation. This book expands the scope of current and historical work to focus on the intangible nature of knowledge capital.

Where the Book Fits in the Literature Today

This book is the 12th in the *Working Methods in Knowledge Management* series. The text focuses on the decades-old concern about the failure of businesses to reuse existing knowledge and the challenges created by traditional archiving and preservation practices. It redefines the concept of knowledge curation from the narrower management and metadata creation to one of design and creation. The book draws from practical work done in cutting-edge organizations worldwide today.

There is significant literature on the topic of knowledge reuse in the peer-reviewed and gray knowledge sciences literature. The literature highlights the continued challenge of use, reuse, and repurposing. By and large, the applied and theoretical research has failed to develop a deep understanding of why we continue to face challenges with use despite all the good faith efforts. It focuses on the challenges created for discovery, access, consumption, and use faced by business stakeholders today. This book builds upon that literature but goes beyond simple raw knowledge use to new knowledge curation and recuration – creating something new for the future. This book fills a gap in the literature by suggesting that the scope of preservation be expanded from tangible information to intangible knowledge assets. Specifically, it argues for going beyond preserving encoded and packaged information.

The book focuses on developing knowledge curation as a business capability rather than continuing to place the burden on individual business managers or workers. Knowledge curation is a critical support capability for the organization and an essential partner for all business units. The authors argue for a future-focused institutional capability to curate new and augmented knowledge suited to business needs from preserved knowledge. This book provides an essential pivot from the perspectives of the past century – shifting the focus from preserving the past just in case it might be needed for legal or financial purposes to preserving and curating for the future in known and unknown futures. The shift in perspectives draws from historical theory and practice but moves the discussion out of traditional archiving and preservation of documents to addressing the gaps in business knowledge we are likely to encounter in the future.

The Intended Audience For the Book

This text is written for organizational executives and business managers responsible for developing strategies, capabilities, and competencies for organizations as they adapt to a dynamic knowledge economy. The book is written for knowledge management practitioners and professionals who face the challenges of creating, finding, interpreting, adapting, and using knowledge in everyday work and operations. The book is written for content designers and for artificial

intelligence practitioners who need to understand intangibles and how to work with them. The book is written for records and information managers who must continue to refine their current knowledge assets and knowledge practices. The book is written for custodians of knowledge assets that may be encoded in formats that often do not fall under standard preservation policies and practices, including visual, audio, artifacts, graphic and artistic forms, and realia. Finally, the book is written for human resource professionals responsible for creating and managing new roles and competencies for knowledge preservationists and knowledge curators.

Structure of the Book

The book is organized into three sections and ten chapters. The first section addresses the issue of preserving business knowledge. The authors review the fundamentals of traditional preservation, including the resulting challenges and opportunities. This section addresses immediate and long-term business needs by walking through known and unknown futures to understand better what future use of business knowledge might look like and what it might consist of. It speaks to the need to future-proof a knowledge preservation strategy and the focus we must adopt to keep a future focus. Finally, this section considers the primary challenge of preservation in the 21st century – channels and the increasingly complex environment they present for preservation.

The second section explores traditional and emerging curation practices from museums, special collections, archives, data curation, digital curation, and eScience and eResearch curation. The authors apply these practices to the entire landscape of knowledge assets, including human, structural, and relational capital. These assets' value for future knowledge asset design and use are discussed. This section also considers the infrastructure that the new characterization of knowledge curation may require, including high-level descriptions of processes, methods, and tools.

The third section explains how an organization might approach a knowledge curation strategy to suit its business needs. Next, it considers how an organization might define and develop a new knowledge curation business capability to provide services to the organization generally and specific business stakeholders. Finally, the section considers the new roles and responsibilities for the capability and the competencies that support those roles.

Each chapter is written like a project description. While the authors can explain how to establish the foundation for and how to conduct assessments, we cannot tell you what to do and what the result should be. Only each organization can make these choices and decisions. Each chapter provides background information on the topic and references additional resources– theory and practice. In addition, each chapter highlights the thought leaders and practitioners in that topic. Finally, the Appendices provide a high-level project plan that the reader can use to design their own approach. Each task and subtask in the project plan traces back to a chapter in the book.

Chapter Summaries

Chapter 1 explores the traditional and evolving practice of preservation throughout history. Current practice is described as a foundation from which to understand evolving practices. Traditional preservation has historically focused on tangible assets that take a tangible form we can all see and touch. The chapter examines why, what, how, when, where we preserve, and who preserves to understand the transition in progress today. The authors make the case that shifting the traditional focus from preserving for the past and evidentiary reasons to preserving for the future to support business challenges is crucial.

Chapter 2 makes the case that preserving and curating knowledge for the future involves more than changing methods and tactics or extending our current applications and technology to support knowledge capital. It means changing the way we think about the future. It means envisioning multiple futures where various elements may be known or unknown – a four-futures quadrant. The authors explain what it means to *think strategically* in multiple known and unknown futures. The chapter presents ideas for strategic thinking about future knowledge preservation and curation.

Chapter 3 defines the new business term, future-proofing, and applies it to knowledge preservation and curation. The fundamental principles of future-proofing and the challenges and mechanics are discussed. These challenges are discussed in developing future-proofed knowledge preservation, and a curation

strategy is identified. The authors identify four challenges to future-proofing a knowledge preservation and curation strategy – availability, visibility, accessibility, and consumability of knowledge assets. The chapter speaks to the critical importance of future-proofing the preservation of knowledge assets.

Chapter 4 defines channels and explains their role in creating and exchanging knowledge assets. Channels are where many of today's knowledge assets live. Knowledge is increasingly bundled with communication technologies in the chaotic and dynamic channel market. Knowledge preservation and curation strategies mandate that organizations make wise channel choices and manage knowledge assets in a channel-agnostic way.

Chapter 5 provides an overview of traditional curation theory and practice. The authors note that traditional curatorial practices have been a subset of preservation practices. Today draws heavily from traditional practices but expands the goal and purpose beyond simple preservation to storytelling, learning, creating new perspectives, interpreting the past and present, and creating new business knowledge. The chapter lays out the emerging spectrum of curation purposes and practices.

Chapter 6 makes a case for extending institutional preservation strategies to the entire landscape of knowledge capital. The authors define the three primary types of capital – physical, financial, and knowledge. Knowledge capital is further broken down into three categories – human, structural, and relational. Each type of knowledge capital is described, along with the preservation challenges and the curation opportunities.

Chapter 7 considers how to ensure that both knowledge preservation and curation are well supported in the architecture and infrastructure of any organization. Support at the enterprise architecture is critical if the business goals of use, reuse, curation, and recuration in the business context are to be achieved. Enterprise architecture is explained – its vertical and horizontal approaches. Preservation is aligned with the information and data architecture. Curation is defined as a new element in the business architecture layer. The authors explain how this approach supports variations in practice across the organization.

Chapter 8 applies strategic thinking and four-futures approach to developing a *knowledge preservation and curation* strategy. The authors explain how using the four futures as a baseline refocuses traditional strategy development from linear projections from the present to complex future situations, options, and choices. The refocus also shifts the end stage from evaluation and judgment to continuous assessments of activities, learning, and refresh. A baseline structure is presented as a model for readers. The authors also discuss operationalizing, assessing, and sustaining a knowledge preservation and curation strategy.

Chapter 9 focuses on organizational preservation and curation capabilities. The authors define capabilities and explain how they pertain to an enterprise architecture. The authors describe preservation as it is currently practiced in relation to information and data. They also explain how preservation should be expanded to cover knowledge assets. Knowledge preservation exists today as a support capability today, aligned with information and data management. Curation is described as an emerging but fragmented practice. It is modeled as a new business capability.

Chapter 10 identifies the five new roles that are critical to establishing and sustaining a knowledge preservation and curation practice. For each role, the authors describe fundamental responsibilities and competencies. Two of the roles support knowledge preservation, including business knowledge analyst and specialized knowledge preservationist. Three of the roles support knowledge curation, including business interlocutor/translator, knowledge curator, and knowledge asset developer. Each role faces peculiar challenges in a dynamic and chaotic knowledge economy.

How the Book Impacts the Field

The book fills a core gap in the knowledge management and knowledge sciences literature – repurposing and reusing knowledge to support business needs and enhance business performance in future, more complex business environments. The gap exists at the intersection of several disciplines, including archival sciences, records and document management, business risk management, strategic business thinking, information management, and curation sciences. It strives to answer the persistent question in the business literature – how do we know what we have known? It restates and extends this question into the future – how can we know what we need to know? The book repositions these age-old questions in knowable and unknowable knowledge and business futures. The authors hope the book will create a cross-disciplinary discussion about what each discipline contributes to the development of the new space of knowledge curation.

The authors hope the book shifts the discussion from preservation and curation from backroom operations to critical business considerations. The authors hope that by elevating knowledge curation to a professional practice and an enterprise capability, a clearer picture of business knowledge value, use, reuse, and repurposing will emerge. Additionally, the authors hope the book begins to dispel the myth that knowledge use and reuse is costly and exceeds its value. In fact, it is the current design and support for preservation and curation that increases cost and obscures the value.

Notes From the Authors

The book was both easy and challenging to write. The writing was easy because the authors were active practitioners in the field. The writing was easy because all authors were continuously innovative and creative in seeking new solutions and perspectives. And it is easy in the sense that authors had practical experience and advanced competencies working with sophisticated curation tools, well-developed competencies in training and teaching and could explain their advanced knowledge at an easy-to-understand level. It was challenging to write in the sense that all authors were carrying heavy daily workloads. The writing was challenging because the environment was continuously evolving and diverse. In the end, though, the book was primarily a learning experience. It was a series of conversations among a team of authors continuously learning from their work and from one another.