



# **Organizational Intelligence and Knowledge Analytics**

# **WORKING METHODS FOR KNOWLEDGE MANAGEMENT**

Knowledge Economies and Knowledge Work

*Bill Lafayette, Wayne Curtis, Denise Bedford, and Seema Iyer*

Knowledge Assets and Knowledge Audits

*Pawan Handa, Jean Pagani, and Denise Bedford*

Critical Capabilities and Competencies for Knowledge Organizations

*Juan Cegarra-Navarro, Alexeis Garcia-Perez, Susan Wakabayashi, Denise Bedford, and Margo Thomas*

Designing and Tracking Knowledge Management Metrics

*Alexeis Garcia-Perez and Farah Gheriss*

Translating Knowledge Management Visions into Strategies

*Angel Williams, Monique Ceruti, and Denise Bedford*

Assessment Strategies for Knowledge Organizations

*Dean Testa, Johel Brown-Grant, and Denise Bedford*

Learning Organizations

*Malva Daniel Reid, Jyldyz Bekbalaeva, Denise Bedford, Alexeis Garcia-Perez and Dwane Jones*

Knowledge Networks

*Denise Bedford and Thomas W. Sanchez*

# Organizational Intelligence and Knowledge Analytics

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# Contents

Introduction to the Series	<i>vii</i>
Preface	<i>ix</i>
<b>Section 1. Knowledge and Intelligence</b>	
<b>Chapter 1 Intelligence in Knowledge Economies and Organizations</b>	<i>3</i>
<b>Chapter 2 Traditional Intelligence Work</b>	<i>21</i>
<b>Chapter 3 Intelligence Work for the Knowledge Economy</b>	<i>43</i>
<b>Chapter 4 Knowledge Capital as an Intelligence Source</b>	<i>53</i>
<b>Section 2. New Intelligence Capabilities</b>	
<b>Chapter 5 The Design Capability</b>	<i>75</i>
<b>Chapter 6 Analysis Capability</b>	<i>87</i>
<b>Chapter 7 The Automate and Operationalize Capability</b>	<i>99</i>
<b>Chapter 8 The Accelerate Capability</b>	<i>105</i>
<b>Section 3. Sustaining the Intelligent Organization</b>	
<b>Chapter 9 Capacity Building for Organizational Intelligence and Analytics</b>	<i>115</i>
<b>Chapter 10 Organizational Intelligence Roles, Responsibilities, and Competencies</b>	<i>125</i>
<b>Chapter 11 Crafting and Sustaining an Organizational intelligence Strategy</b>	<i>135</i>

<b>Chapter 12 Business Stories of Intelligent Organizations</b>	<i>141</i>
Appendix A. Pulling it all Together	<i>165</i>
Appendix B. Toolkit of Analytical Methods	<i>175</i>
Index	<i>203</i>

# 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. We developed our own language and terminologies to craft this discipline, established our peer-reviewed journals, built a rich research foundation, created gray literature, and established a series of 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 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 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 business context method – 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 of these books 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 critical 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 the practice expands, there will be a need to update the texts – based on our learning. Furthermore, the editors hope the texts are written to allow 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 enduring topic. 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 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 twenty 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 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 are rare in any field. The field will reach its full potential as long as we have teachers and editors like Dr Del Giudice.

*Dr Denise Bedford, Georgetown University*

*Dr Alexeis Garcia-Perez, Coventry University*

# Preface

## Overview of the Subject Matter

Organizations are intelligent when their leaders and employees behave intelligently, make intelligent choices and decisions. In this text, the authors argue that the twenty-first-century knowledge economy requires deliberate and intentional behaviors. In the twentieth century, organizations could treat intelligence as a specialized function performed by a few individuals – on demand – and as a support function for management. They could treat intelligence as a rare event rather than a core capability. In the twenty-first century, the economic environment is shifting. The economic environment is changing from the one where productivity is defined by the number of standardized products and services produced and delivered to one where productivity is defined by an organization's ability to innovate and continuously create new products, to customize products and services, and to respond to dynamic conditions in the business environment.

In the twenty-first century, business success – regardless of the sector or nature of the organization – is dependent upon an organization's ability to leverage its knowledge assets. Leveraging knowledge assets is no longer just the responsibility of managers. It is the responsibility of every employee to intentionally and deliberately make the most intelligent choice possible. In the knowledge economy, organizational intelligence covers knowledge sciences, intelligence practices, and data analytics. Organizational intelligence leverages all eight types of knowledge capital. Leveraging knowledge assets means deliberately and intentionally seeking out knowledge, creating new ideas, critically assessing existing knowledge, recognizing when knowledge has lost its business value, and when existing or traditional knowledge presents a risk.

Intelligence is dynamic. One approach, one tactic, is not a reasonable assumption. The new organizational intelligence means that every organization must develop a strategic approach to behaving intelligently. It means having a strategy in place for leadership, for operational managers, and every employee. The authors make a case for every organization to develop a strategy for intelligent behavior. An organization's intelligence strategy must align with its business goals and the business context. It means building intelligence decisions and actions into learning, training, decision-making, and performance management.

The new organizational intelligence builds upon but goes well beyond the traditional definition and practice. Rather than a dedicated and specialized function performed by a small group of highly trained analysts, intelligence is a general way of working. Intelligence work goes beyond a specialized domain or function.

In this text, the authors expand the definition of organizational intelligence to include how organizations behave. The organizational management and design literature describe these behaviors as organizational entropy and syntropy. Intelligent behaviors are grounded in the choices made by every employee, every day, in every operation. Intelligence is also dependent upon how these individuals create, share, and leverage their knowledge capital assets.

The shift from traditional intelligence work to intelligence for the twenty-first century is significant. It is a shift from tactical to strategic. Traditional intelligence work tends to focus on collecting data and the analysis of the available data. In only a few fields is intelligence strategic. Traditional intelligence work is not designed for repeated or sustained use. Traditional intelligence work is a project- and single problem-focused. It is often not extensible to other contexts.

Additionally, the surge in interest in data science, “big data,” and analytics have drawn attention away from intelligent behavior and choices. Organizational intelligence has tended to focus on data analytics. While data and analytics are essential elements of intelligence work, they do not affect employee behaviors. Marketing of data analytic tools and technologies leads us to believe that data holds hidden intelligence which only needs to be unlocked to be available to managers. Analytics is crucial, and the increased capacity gives us greater power and opportunity to mine our explicit sources. They do not, though, speak to the everyday choices and actions of employees and managers. This focus ignores the everyday decisions made by knowledge management practitioners.

## **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 different disciplines. Organizational intelligence as a discipline lives at the intersection of organizational science, market and business intelligence, analytics and data science, and knowledge sciences. The text expands the organizational design and management literature by providing deeper coverage and connections to knowledge capital. The text illustrates how human capital, structural capital, and relational capital contribute to intelligent behaviors. It makes a critical connection between organizational design and intellectual capital management literature. The intelligence literature has traditionally focused on specialized analytical techniques. Key researchers such as Wilensky, Halal and Kull, and Nevis, Muford, and Gustafson have attempted to shift the discussion of intelligence from a tactical to a strategic level. Their work has highlighted the need to define intelligence as an organizational capability and an organizational asset. The authors expand upon the groundbreaking work of these researchers.

The text anchors the discussion of organizational intelligence in the economics literature. Organizational intelligence is a determining factor in an organization’s ability to thrive in a dynamic and continually changing knowledge economy. The text also fills an essential gap in the knowledge economy literature by explaining the exceptional properties and behaviors of knowledge assets. The actions, choices, and behaviors of every individual in an organization can influence the organization’s success in the market.

The text fills an essential gap in the knowledge management literature. Historically, knowledge scientists have been concerned with the distinction between tangible and intangible assets. While these distinctions and their challenges persist, they should not impede a deeper understanding of the relationship between knowledge assets and intelligence. In this text, the authors provide a foundation for extending the discussion of knowledge and its relationship to intelligence as a thing and intelligence as a process.

Finally, the text clarifies the treatment of analytics and data science, and intelligence. Intelligence is a discipline that leverages all forms of knowledge, including structured data and explicit information. Greater emphasis has been placed on structured data and explicit information in the past 10 years due to the simple increase in computing capacity. We have the power to more efficiently and effectively manipulate data stores in 2020. We can more quickly derive insights from large stores and sources. But this increased capacity does not diminish the value of human intelligence. Ultimately, it is human actions and behaviors that determine whether an organization is intelligent. This text provides an overview of analytic methods and explains their role and purpose in the new intelligence framework. What should be analyzed is defined by humans. An analysis is undertaken to build human understanding. Analytical results are validated and verified by humans.

In the twenty-first century, there are two primary sources of intelligence literature: gray literature, which includes guidebooks and procedures manuals used by intelligence analysts, and the training materials developed for use in selected education programs. Both sources have relatively limited exposure and availability. Both sources are tactical in nature rather than strategic. Traditional intelligence literature builds upon the intelligence life cycle, which is process and tactical in nature. Much of this literature is older and is available only in unique print copies. It is not readily available for discovery. It has been developed within specialized domains for training analysts for practical roles. The authors build on but expand the early life cycle models to a strategic and adaptable framework.

## **The Intended Audience for the Book**

This text is written for organizational executives and business managers interested in preparing their organizations for the challenge of working in a knowledge economy. It means developing new organization-wide ways of thinking and working to ensure every activity and every choice is intelligent. The books are intended to guide managers who want to make sure their knowledge assets are fully leveraged to achieve business value. The book is written for knowledge management practitioners and professionals charged with ensuring those knowledge assets are well aligned with business operations to ensure they are available when needed. Perhaps most important, though, the book is written for intelligence professionals and practitioners interested in exploring how intelligence methods and models can be leveraged across economic sectors and types of organizations.

## **Structure of The Book**

The book is organized into 3 sections and 12 chapters. Section 1 sets a context for understanding the nature of intelligence and intelligence work. The chapters in this section examine the idea of intelligence, its relationship to knowledge, and the role of intelligent organizations in the knowledge economy. This section also considers the traditional approach to intelligence work and how and why the approach should change. Finally, this section relates knowledge capital to intelligence work. Section 2 focuses on a new framework for doing strategic intelligence regardless of organization or the economic sector. This section explains how to approach intelligent work behaviors and activities, select and conduct intelligence analysis, automate and operationalize intelligence solutions, and accelerate those solutions for more excellent business value. The chapters in Section 2 include practical business stories drawn from real-world organizations. Finally, Section 3 focuses on building intelligence capacity across the organization, assessing current intelligence functions, and establishing a roadmap to the future.

Each chapter is written like a project description. While the authors can explain how to establish the foundation for and how to do intelligence effectively, each organization must define what intelligence looks like for them. Only an organization can make these decisions. Each chapter provides background information on the topic and references to additional resources – both theory and practice. Each chapter highlights the thought leaders and practitioners in that topic. Finally, the Appendix provides a high-level project plan that the reader can use as a template for designing their approach. Each Task and Subtask in the project plan traces back to a chapter in the book.

### **Section 1. Knowledge and Intelligence**

Chapter 1. Intelligence in Knowledge Economies and Organizations

Chapter 2. Traditional Intelligence Work

Chapter 3. Intelligence Work for the Knowledge Economy

Chapter 4. Knowledge Capital as an Intelligence Sources

### **Section 2. New Intelligence Capabilities**

Chapter 5. The Design Capability

Chapter 6. Analysis Capability

Chapter 7. The Automate and Operationalize Capability

Chapter 8. The Accelerate Capability

### **Section 3. Sustaining the Intelligent Organization**

Chapter 9. Capacity Building for Organizational Intelligence and Analytics

Chapter 10. Organizational Intelligence Roles, Responsibilities, and Competencies

Chapter 11. Crafting and Sustaining an Organizational intelligence Strategy

Chapter 12. Business Stories of Intelligent Organizations

## **Chapter Summaries**

Detailed summaries of the scope and coverage of each chapter are provided below.

Chapter 1 introduces the concept of an intelligent organization in the context of the twenty-first-century knowledge economy. An intelligent organization is one in which individuals behave intelligently, work is grounded in intelligent methods and choices, there is the intelligent and proactive management of intelligence sources across the organization, and there are rich stocks of intelligence in the form of knowledge capital intelligence work and choices. Intelligence is defined as both a thing and attribute and behavior and way of working. The chapter also highlights examples of intelligent behaviors and or organizational pathologies. The chapter also highlights the importance of becoming aware of intelligent and unintelligent choices.

Chapter 2 reviews traditional intelligence work, primarily how intelligence was perceived and conducted in the industrial economy. The review includes economic sectors with dedicated intelligence functions such as military, law enforcement, and national security. The review also includes secondary intelligence work in all other economic sectors. Looking across all these examples, the authors present a traditional life cycle model of intelligence work and highlight this traditional view of intelligence's tactical and reactive approach. The chapter details the historical evolution and common intelligence elements in military, business, law enforcement, judicial forensics, national security, market, financial, medical, digital, and computer forensics.

In Chapter 3, the authors build upon the value and the gaps of the traditional model to propose a more strategic and comprehensive framework for designing and conducting intelligence work. The future of intelligence work in the knowledge economy requires a new approach. The new framework includes four primary intelligence capabilities, including design, analysis, automate and operationalize, and accelerate. The framework applies to any organization operating in any economic sector.

Chapter 4 fills a significant gap in the intelligence literature and the knowledge sciences literature by aligning definitions and characterizations of knowledge capital as an essential intelligence source. The chapter also explains how knowledge capital might be leveraged in each of the four capabilities. The chapter presents a well-researched characterization of knowledge capital drawing from international scholars and practitioners' work. The value of human capital, structural capital, and relational capital in intelligence work is explored.

Chapter 5 focuses on the design capability. The authors draw from the work of design models to define design for intelligence work. Design is presented as both a way of thinking and a way of working. This chapter breaks the design capability down to several critical activities, including environmental scanning, problem detection, discovery, problem decomposition and recomposition, brainstorming, critical thinking, problem definition, factor identification, hypothesis development, model building, source identification blueprinting.

Chapter 6 provides a detailed review of the Analysis capability. The authors draw from several disciplines to provide a definition and characterization of

analysis suited to intelligence work. This chapter distinguishes clearly between analysis as a capability and analytics as a tool or a method. The distinction is essential for seeing and leveraging all of the activities involved in analysis, including Blueprint Interpretation, Analytical Method Selection, Model Construction, Source Collection, Source Organization, Source Curation & Cleaning, Testing, Interpretation, Results Assessment, and Model Documentation & Formalization. The chapter highlights the importance of analyzing the whole landscape, seeing all factors, and thinking strategically. This chapter also includes business stories and scenarios from the real world.

Chapter 7 focuses on automating and operationalizing the intelligence models and solutions developed through design and analysis. The authors draw from project management, planning, and implementation practices to identify the activities involved in this capability. Automating is defined more broadly than simply adding technology to a solution. Instead, it includes all aspects of operationalizing a solution for business use, including establishing a business model, building an operating model, operationalizing and deploying the solution in business operations, monitoring the solution, reviewing feedback and anomaly detection, and finally training for sustainability. This capability focuses on deriving the maximum business value from a solution and taking steps to ensure that there is an excellent long-term business return on investment. This chapter also includes practical business stories.

Chapter 8 focuses on accelerating the adoption and promotion of the solution across the organization. The authors define acceleration as achieving the maximum effective and appropriate use of the solution across the organization. This capability is strategic – it ensures that any new intelligence solution or activity is part of its business product line. The initial focus is on internal business products, but organizations are also encouraged to see new solutions as potential external products. To ensure the product is strategically leveraged, business managers, designers, and analysts must work with leaders to socialize solutions and encourage their adoption. It also means being open to adapting and calibrating the solution over time. This chapter also includes practical business stories.

Chapter 9 explains how organizations can build intelligence capacity into their everyday working environments. The definition of capacity building builds upon the organizational management and the strategic workforce development literature. This chapter also derives essential guidance from another series focused on critical capabilities and capacity building. The authors highlight the role of a strong intelligence culture and learning in building intelligence capacity. Capacity building is achieved through short- and long-term efforts. This chapter also highlights the importance of balancing capacity building across everyday business operations and specialized intelligence functions.

Chapter 10 focuses on the types of roles, responsibilities, and competencies essential to organizational intelligence. The authors draw upon earlier series authors' important work (Garcia-Perez et al., 2019) to define competencies. The authors define four categories of intelligence competencies, including those suited to strategic roles, those that support specialized intelligence work, those that support embedded intelligence roles, and universal competencies that apply to everyone.

Chapter 11 lays out a strategic approach that an organization might follow to grow its intelligence capacity and competencies. The authors identify the elements of a strategy, explain how the strategy might be translated to a plan, and finally aligned with specific methods. This chapter intends to help an organization shift from the traditional tactical and reactive approach to doing intelligence to a more forward-looking, proactive, and strategic approach. This chapter also calls out specific factors to address in drafting an organizational intelligence strategy.

Chapter 12 focuses on common business challenges where intelligent choices and behaviors may lead to new and different outcomes. The business stories represent a wide range of economic sectors, types of organizations, and challenges. Each story highlights the role the framework plays in deriving and realizing an intelligent solution.

## **How the Book Impacts the Field?**

The authors hope the book will contribute to business management literature by expanding the discourse about intelligent business choices and actions from the traditional organizational management literature to include essential new knowledge from the fields of intelligence. The book anchors the discussion of organizational intelligence and knowledge analytics in a business context and interprets intelligence work to create a close alignment with knowledge sciences.

Ideally, the book adds rigor to the discussion of organizational intelligence and knowledge analytics and creates an extended body of knowledge grounded in practice. The authors hope the book will increase knowledge sciences' visibility across the intelligence community by portraying knowledge capital as important sources essential to intelligence capabilities. The text also attempts to refocus the discussion of intelligence work from the tactical and technology-based approach of the past century to more strategic and long-term. The authors hope to shift the approach from sporadic, fragmented, and incident-specific initiatives – to a sustainable organization-wide intelligence capability.

## **Notes from the Authors**

The authors have collaborated on this text during a period of significant change. Our working environments changed from rich in-person physical interactions – at a local and international level – to sequential virtual activities. Zoom became our window to the world, and all of our networks were deliberate, intentional, and structured. Rather than serendipitous conversations and communications, our worlds became more deliberate, intentional, and scripted. We were forced to redesign kinds of events that had become commonplace (e.g., conferences, office hours and meetings, hallway conversations, brainstorming around a whiteboard, happy hours, and collegial dinners) to something entirely new.

These changes may be attributed to the lack of strategic foresight and surveillance of public health, disease transmission, and essential hygiene. The need for intelligence – and strategic intelligence in particular – is apparent in today's complex and dynamic environment. The value of intelligent choices and actions



of leaders and individuals is evident. Every individual is a source of knowledge and an intelligent agent. We are more aware of the need for intelligence and the need to make intelligent choices as a result of the COVID-19 pandemic. The pandemic has accelerated the pace of economic transformation. This dramatic change brings the economic changes into a clearer focus. The shift continues – we may not know the current situation’s actual effect for several years to come. We hope that the way we have framed this topic has value as we all navigate this shift.

The authors would also like to acknowledge the innovative ideas and contributions of Martin Getzendanner. Martin’s ideas and critical questions were instrumental in formulating the conceptual framework.

## **Reference**

Garcia-Perez, A., Gheriss, F., & Bedford, D. (2019). *Designing and Tracking Knowledge Management Metrics*. Bingley: Emerald Publishing Limited.