LEARNING MADE EASY

# Decision Intelligence

for dummies®

A Wiley Brand

Be decision-driven instead of data-driven

Use AI as a tool, but not the only tool

Learn why data should not have the final say

**Pam Baker**

Professional AI wrestler and data tamer

# Decision Intelligence

by Pam Baker

for dummies®
A Wiley Brand

**Decision Intelligence For Dummies®**

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# Decision Intelligence For Dummies®

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# Introduction

Ready for a mind-blowing reveal on how to make great decisions, whether you're using your own brain or some supercharged artificial intelligence application? *Decision intelligence,* a methodology for forming a decision aimed at achieving a specific outcome, is here, and it's on track to change forever how businesses plan for their future.

Everybody would agree that the goal in all decision-making is to reap the best possible outcome. Decision intelligence helps you achieve that goal by requiring that you decide that outcome first and then work backward from there to identify the processes and information you'll need to make it happen!

Decision intelligence is built on science — several sciences, actually — but some of those scientific formulas can be grasped intuitively. The decision intelligence process is designed to improve your professional performance by a) ensuring that every business decision delivers the best possible outcome, b) pointing you toward innovations that are profitable, c) helping you become an industry mover by becoming a creative disruptor, and d) enabling you to flip failed AI projects into successful endeavors. What's more, decision intelligence can also be used to improve your private life via better decision-making, and you can often do it in your own head or on the back of a napkin or by using a simple table or spreadsheet.

The secret to success in decision intelligence lies in changing how you think about problem-solving and reordering your steps when it comes to the decision-making process. Ask yourself how much money, time, and effort your organization is willing to waste on yet

another bad business decision or one more failed AI project, and then ask yourself whether you can afford to ignore a better way to make decisions — especially when you already have on hand much of what you'll need to take advantage of a decision intelligence approach. It's not often that you can turn your business around at little or no additional cost to you.

# About This Book

The book you're holding in your hands is a guide primarily for you if you're a business or finance leader. The book aims to fill you in on decision intelligence, a new framework for making better, more profitable business decisions. It also serves as an introduction for artificial intelligence (AI) and digital decisioning practitioners to take a different approach aimed at making automated decision processes deliver desirable business outcomes. To top it all off, this guide shows you that decision intelligence is not merely a business approach — it's equally useful when making decisions about your personal life.

This book takes a studied approach to having you reimagine the decision-making, by focusing on a set of discrete tasks you need to accomplish. Here are those tasks, in no particular order:

- **Flip the data mining model from data first to data last.** You start with a decision aimed at the best possible business outcome and end with the data and the processes you need to bring about that outcome in the real world.
- **Rebalance human and machine roles.** Decision intelligence calls for a redirection from a data driven to a decision driven organization. This framework clearly

casts humans as decision-makers, where AI acts as sidekick, and where data is relegated to a supporting actor.

- **Map changes caused by putting the decision first in terms of**
  - *Business impact*
  - *Processes*
  - *Tools*
  - *Business and Ethical Principles*
  - *Teams*
- **Learn decision theory and a multidisciplinary approach to decision-making:** You learn which steps you must take in order to succeed with decision intelligence, from new perspectives on
  - *Business impact*
  - *AI projects*
  - *Upstream and downstream decisioning*
  - *Disruptive innovation*
  - *Job roles*

This book answers your questions about what decision intelligence is, which conditions must be created at your company in order for it to succeed, how you can plan a project, and how to implement it successfully. I've also made an effort to ensure that this book can be used in myriad ways and by anyone, from individuals to powerful leaders of huge organizations. As such, it offers these benefits:

- An overview of the steps involved in putting the decision before the data in the decision-making process

- A guidebook with practical suggestions for the various options, overall flexibility, and choices of implementations of a decision intelligence strategy
- A reference book divided into parts, chapters, and sections so that you can quickly find the content you're looking for when you need it

This book — designed so that you can swiftly get a grasp on everything — features many examples, instructions, checklists, illustrations, and tables. It's also structured systematically according to the decision intelligence framework and its many moving parts.

# Conventions Used in This Book

This book doesn't have many rules. The entire book is structured so that you can quickly find everything you need and get a grasp on the content. The detailed table of contents helps you jump right to the information you need, and each chapter begins with a brief and succinct description of the chapter's main topics. Whenever topics overlap or other chapters are mentioned, cross-references help you conveniently jump back-and-forth between the chapters. If you're interested in a particular term, you can look it up in the index.

# Foolish Assumptions

This book is not (only) for decision-makers in business or finance. Decision intelligence is too crucial for improving business outcomes to be contained only to the C-suite and data scientist levels. In organizations that practice or seek data- and AI-democratization, decision

intelligence should be practiced at every level of decision-making throughout the organization, even at the microdecision and mundane-decision levels. Whether you work at a company, an educational institution, a research institute, a public agency, or a nonprofit organization, you can benefit from the decision-driven approach that is at the heart of decision intelligence. Whether you have an education in the technical, economic, management science, or social science fields, this creative approach gives you new ideas on how to use what you know (and what you have to decide) more productively.

On an individual level, the following assumptions are made in this book about readers who will most likely gain the most from the information in this book:

- You're in charge of an organization or department and you want to be decision driven instead of data driven so that every decision is productive and profitable.
- You're trying to accelerate your career plans and you want to shine by making important decisions so that the best possible outcome is realized.
- You are applying, or you are planning to apply, AI or machine learning at your organization, and you need to know how to make projects succeed in terms of measurable business impacts.
- Your company is already working with data-driven methods and falling well short of your organization's goals and expectations. You want to enhance or replace your previous work with new methods, tips, and tricks for improving its implementation, and you want a guide on how to make it work and perform consistently well over time.

You don’t need to have any specific skills for this book — you only have to be curious and intent on making good decisions — every time.

## What You Don’t Have to Read

It’s worth your time to read the entire book. You can find important tips everywhere in it. Even if you can use only a few of its suggestions, the time and money you invest will be worth it. I guarantee that you’ll be able to use more than just a few elements of this information in your private life, your career, and your organization — regardless of your job role or your experience in decision-making. Some of the text in this book appears in a gray box, in order to highlight background information. You don’t absolutely need this info, but it’s always helpful.

# How This Book Is Organized

This book is organized into six distinct parts, as described in this section. The design is intended to help you break free of any brain ruts and consider new ways of thinking about making decisions based on a variety of perspectives.

## Part 1: Getting Started with Decision Intelligence

This section gives you an overview of the principles and methods in the decision intelligence framework. You can find out why being decision driven outperforms being data driven. You can also learn how to create the necessary conditions for decision intelligence projects to succeed at your organization, how to plan a project, and how to reinvent what it means to have an actionable outcome.

## Part 2: Reaching the Best Possible Decision

The first phase of the decision intelligence process is all about making the decision from which you build the steps and then choosing the tools and data to realize the result of that decision in the real world. Shaping the decision, mapping a path, and choosing the right tools are essential to creating the best possible outcome. At the conclusion of deciding the impact you seek lies the beginning of the questions to be answered.

## Part 3: Establishing Reality Checks

In the decision intelligence framework, you need to start with a decision, but that decision must be rooted in

reality, and it must be attainable. In other words, this isn't the place for pipedreams, even if profoundly creative disruption is your goal. To keep things grounded, you simply have to take the measure of job roles and team skill diversification, play to both human and machine strengths, ensure that decisions you intend to automate at large scales actually work at scale, among other reality checks. You can't manage — or make a reality — that which you can't measure. Be sure to measure the important things and skip the unimportant to ensure your decision (as well as its expected impact) is solid.

### Part 4: Proposing a New Directive

Decision intelligence has many uses and is heavily based on ideas tied directly to favorable outcomes. As such, it plays a significant role in the Idea Economy, in impacts on entire industries, and in building competitive advantage for organizations, governments, and economies. In short, disruption is the point, change is constant, and you can use decision intelligence to command or at least direct both.

Last but not least, the use of decision intelligence can also quickly build and accelerate career paths and turn decision masters into highly influential power brokers. All of these grand rewards come with varying degrees of risks, however.

### Part 5: The Part of Tens

No *For Dummies* book exists without The Part of Tens. In this part, you can read about ten (or so) steps to set up a smart decision and ten (or so) pitfalls to avoid in implementing decision intelligence projects.

## Icons Used in This Book

Now and then, you find symbols in in the margins of this book. Their purpose is to make you aware of important information, as described here.

TIP This icon points to tips and tricks that should be helpful when you apply and implement an idea. They show you how you can improve your project.

REMEMBER The Remember icon is used to highlight information that's particularly important to know or that can help clear up possible confusion later.

WARNING This icon makes you aware of potential stumbling blocks and warns you when to *not* do something. If you avoid errors that others have made before you, you'll save time, money, and effort.

# Beyond the Book

In addition to the text you're reading right now, this publication comes with a free, access-anywhere Cheat Sheet that offers a number of tips, techniques, and resources related to data science. To view this Cheat Sheet, visit www.dummies.com and type **decision intelligence for dummies cheat sheet** in the Search box.

# Where to Go from Here

You can start immediately by choosing one of these two strategies:

- Read the book straight through, from cover to cover.
- Find individual chapters that you want to read first. (Each chapter covers an entire subject area so that you can read and understand it independently of the other chapters.) If you have no experience with decision intelligence yet, I recommend starting with Chapter 1, which offers a crash course introduction to the concept.

My advice to you: Be aware that decision intelligence, though it has a firm definition, is used more loosely by several groups. For example, people working in AI most typically use it to mean putting the decision first in programming automation or training machine learning to make better automated decisions at scale. That's an application rather than a definition, but its common use as such can cause some confusion over the meaning of the term in general reading. For the purposes of this book, decision intelligence is meant by its broader definition and not a single application. However, given its prevalence in AI, the applications there are covered in more detail than other forms of decision implementation. Therefore, I recommend that you read the Parts 1 and 2 first to ensure that you have a good grasp of the framework overall before touching on related topics in other parts or chapters.

Otherwise, experiment with the reading strategy that works best for you. Jump to different sections while you read this book, if that makes sense to you. If necessary, reread a chapter multiple times or look up individual terms in the index. The idea here is for you to come up with your own way to read this book effectively. And

don’t forget to keep it nearby for quick-and-easy reference as needed while you work through your first few decision intelligence projects.

# Part 1

# Getting Started with Decision Intelligence

# IN THIS PART ...

Mining data verus minding the answer

Learn why math-only approaches are weak

Watching the details and missing the big picture

Discover the epiphany in the inverted V approach

# Chapter 1

# Short Takes on Decision Intelligence

## IN THIS CHAPTER

- **Becoming familiar with the decision intelligence approach**
- **Comprehending the method, principles, and priorities of decision intelligence**
- **Working your way from design to reality**
- **Seeing the difference an inverted V makes**
- **Implementing for the win**

Do you find yourself looking at a spreadsheet or viewing charts or gazing glassy-eyed at a fancy visualization that some bit of artificial intelligence magic has produced for you and wondering what you should do next? You're not alone. Millions of other business and finance people are doing the same thing. So are legions of leaders and decision-makers in other industries.

While you're trying to puzzle out which parts of those "actionable insights" being handed to you *are* in fact actionable and, if so, what action would apply, you've likely wished for something a bit more cut-and dried when it comes to determining what your organization would implement — and you certainly wouldn't mind being considerably more certain about what's going to happen post-implementation.

Would your best bet in such a situation involve letting the miracle of artificial intelligence (AI, for short) make your decisions for you? Well, it turns out that AI isn’t so miraculous. In fact, an estimated 80 percent of all AI projects fail, where *failure* here is defined in terms of failing to deliver a measurable business value. That means most AI projects end up on the trash heap for leaning too heavily on the experimental side and being useless on the applied side.

It is painfully (and expensively) obvious that this strategy isn’t quite working out the way everyone hoped. An alternative approach is needed to make data more helpful and better aligned with consistently delivering business value. One such approach flips the model from data driven processes to decision driven processes. Known as decision intelligence, human and machine decision-making skills are combined with decision theory, decision sciences, and data sciences in a customizable mix that pins decisions to a precise and expected business value.

The concept isn’t entirely new — one of its oldest published mentions cropped up in 2002 in Uwe Hanning's scholarly paper “Knowledge Management + Business Intelligence = Decision Intelligence” — but it has evolved over time, incorporating long-accepted scientific formulas from several well-established sciences. This means its inner workings are well known and tested. Switching over to a decision intelligence approach is therefore no gamble — it's simply a supremely logical way for you to achieve the business outcomes you desire. Decision intelligence leaves little to chance, in either its own construct or the value it consistently delivers.

What differentiates one decision intelligence project from another is the talent and acumen of the decision makers at the helm. They make the recipe that cooks the business value into the process. And they decide when and whether to invite data and machines to the planning table.

Decision intelligence is highly agile and versatile. Decision makers can use it to make decisions either on the back of a napkin or with the help of the most sophisticated AI on the planet.

# *The Tale of Two Decision Trails*

The business world has long been madly in love with the notion of being a data-driven enterprise, but it's also beginning to feel the pain of being in a bad relationship. Few actually want to break off their relationship with data entirely, mainly because most are loathe to ditch their significant investments in data, analytics, and related technologies. Add to this the fact that, for many, it would feel like a colossal failure and a huge embarrassment to fall short of becoming the data driven enterprise that all investors and stockholders expect these days.

Looking for a way forward, many started to ask themselves this question: “What can we do with all the data investments we've already made and already own in order to make better decisions?” In other words, folks realized that a *rethink* was needed rather than a *redo*. And many of those same folks decided that re-strategizing and restructuring how these same investments are used and aligning them with specific

business impacts was the answer to the questions that had been plaguing them.

REMEMBER A decision intelligence approach doesn't mean that there's no place for more traditional data mining tactics. Most organizations are using a combination of both, and it's already proving to be a winning play for many of them.

## Pointing out the way

AI and data analytics no doubt deliver real business value in some use cases. They're helpful when it comes to recognizing patterns in massive amounts of data and spitting out equations, scores, predictions, and estimates. The point is that such facts *point to* possible decisions but suggest none. (That's why I refer to the outputs from such tools as *pointers* in this section.)

These tools are also capable of automating certain decisions based on business rules that are determined and set by you or your organization. At its core, AI is automated decisions at scale. Traditional analytics must be integrated with automation software to cause an action to occur.

But before the various software — analytics, AI, and various forms of automation — begin their work in producing insights and automating your decisions, someone has to either program the analytics and automation software, and/ or train the AI. This group of data professionals often provide the interpretations of the outputs as well (usually as visualizations and/or automated AI-generated narratives).

In other words, people in specific job roles who do these tasks typically determine which insights — pointers, in

other words — are accessible to other people in the organization who either use the software in a much more limited way or only view the results on dashboards to consume the information. Given the high degree of data illiteracy throughout organizations and across countries and industries, this process is both logical and necessary.

The downside here is that it is also limiting what information end-users can access when it comes to their own decision-making processes and what prompts the direction their thinking takes. This is why data democratization and AI democratization — decentralization so that more people in the organization can use the tools — is so critical to businesses. By making these tools far more user-friendly, professionals in other disciplines and employees at all levels of the business can make better use of these resources.

However, both data and AI democratization still require data professionals to develop more intuitive and highly automated software to remove barriers before non-data professionals can use the tools in ways that bring their own talents and skill sets to bear. Think of this as very similar to the path other software has taken. For example, Microsoft Office enables people to create documents, notes, spreadsheets, and PowerPoint presentations without knowing how to write code, what keyboard commands to give, or anything at all about how the software works. This is the path analytics and AI software are headed down now.

So, who are these data professionals who are making and/or using analytics and AI to provide you with the pointers you’re currently getting from various analytics software?

Typical job roles in data mining and analytics are data scientist, business analyst, data mining specialist, and