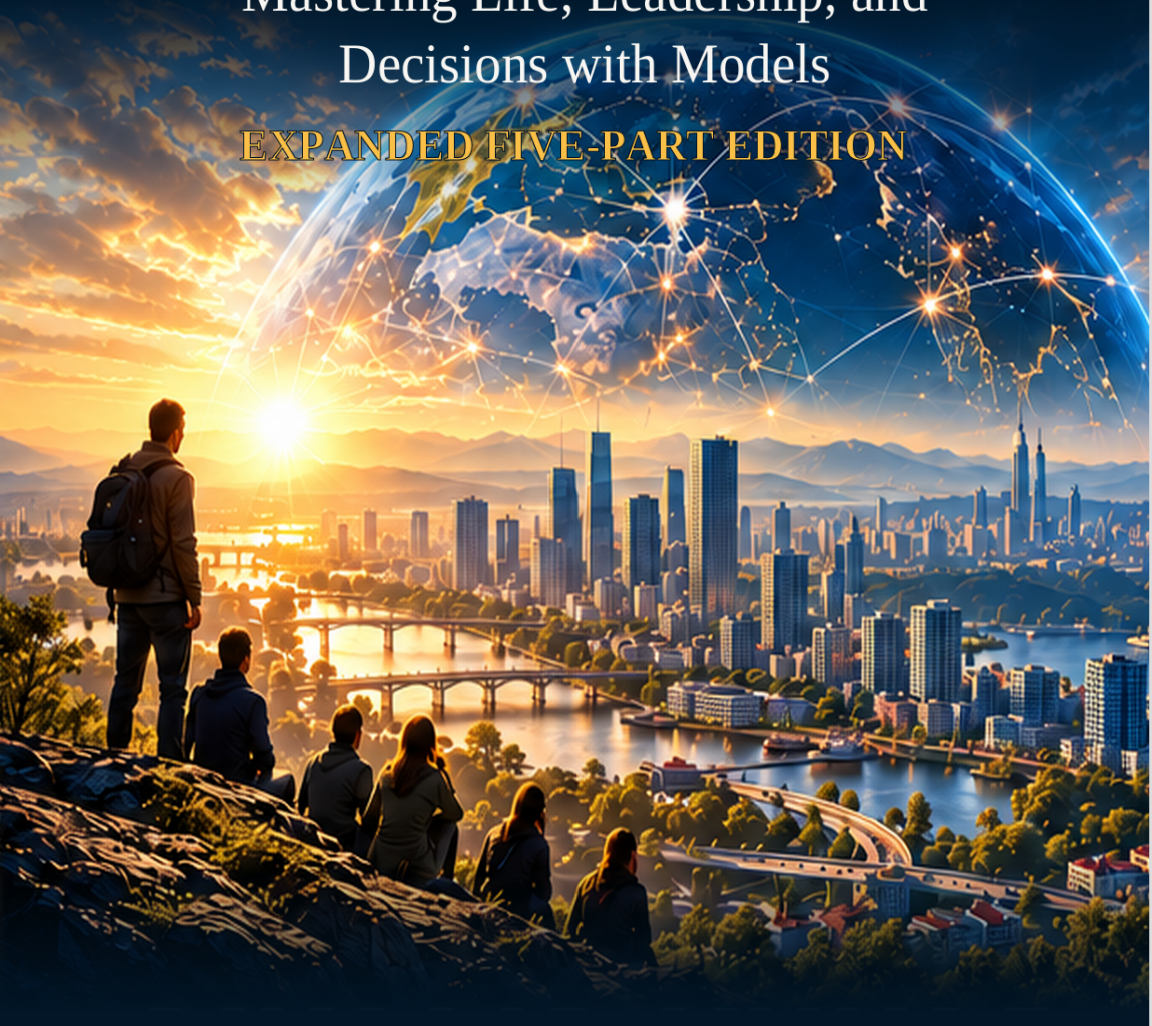
MODEL THINKING

Mastering Life, Leadership, and Decisions with Models

EXPANDED FIVE-PART EDITION



FREE PREVIEW • ONE PAGE FROM EVERY CHAPTER

OPENING

Introduction to the Expanded Edition

Models are not confined to laboratories, spreadsheets or technical drawings. We use them whenever we simplify a complicated reality sufficiently to understand it, make a decision or act. Some models are deliberate and explicit; others operate quietly through habit, convention and institutional routine. Model Thinking begins with the proposition that recognising these structures gives us a better chance of improving them.

The framework running through this book is deceptively simple: inputs, processing and outputs. Inputs describe what a model receives. Processing describes how those inputs are interpreted or transformed. Outputs are the results. The usefulness of the framework lies not in its simplicity alone but in the discipline of applying it: identifying the components, examining the relationships between them, testing fitness for purpose and learning from feedback.

This expanded edition examines four domains in which models operate. Personal Models address the individual: the information, habits and choices that shape a life. Group Models examine the interactions of people, teams and organisations, distinguishing their visible sub-models from the wider macro models that enable them. Thing Models consider tangible and intangible systems, including the external processes that govern their operation. Society Models extend the enquiry to institutions and nations, exploring alignment, drift, corruption, fragility, collapse and renewal.

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Introduction to the Expanded Edition — continued

The fifth part, Action Models, brings the framework into motion. It considers change through successive states, showing how decisions, interventions and feedback can be represented and assessed over time. It is placed last deliberately: action modelling is a tool that can be applied to individuals, groups, things and societies alike.

Fitness for purpose is a recurring test throughout the book, but it requires care. A system may efficiently achieve a stated objective without that objective being just, legitimate or desirable. Measuring effectiveness and judging the worth of an objective are related but distinct tasks. Good model thinking makes both questions visible rather than allowing one to stand in for the other.

The purpose of this book is therefore not to promise a universal formula for every problem. It is to offer a common language for seeing structures, identifying weaknesses, comparing alternatives and making better-informed decisions. As the scale of the model changes, the questions become more complex. The underlying discipline remains the same: understand the inputs, examine the processing, assess the outputs and refine the model.

A note on artificial intelligence: This edition updates examples across all five parts to reflect the wider use of AI systems. AI appears here both as a subject to be modelled and as a tool that can assist modelling. The principles of inputs, processing, outputs, feedback, alignment and fitness for purpose remain the organising framework; AI does not replace them.

READER'S GUIDE

How to Use This Book

Model Thinking is designed as a connected reference work, not a book that must always be read from beginning to end. Its five parts examine different domains through a common language of inputs, processing, outputs, feedback and fitness for purpose.

Readers new to the framework will benefit from starting with Personal Models, which introduces its essential vocabulary. From there, the other parts can be approached in the order most relevant to a particular question, project or decision.

Group Models explores collective coordination; Thing Models considers physical and digital systems; Society Models examines the structures and behaviour of entire societies; and Action Models provides practical ways to understand change over time.

The most useful reading habit is to move between the parts. A problem that appears personal may involve group incentives, technological constraints or wider institutional structures. The framework is intended to make those connections easier to see.

As you read, ask three questions: What is this model intended to achieve? How do its inputs and processing produce the observed outputs? What evidence would show whether it remains fit for purpose?

PART 1

Personal Models

Imagine trying to navigate life without a map. You're faced with countless decisions, from the mundane to the monumental— what to eat for breakfast, how to plan your workday, and even whether to reach out to an old friend. Each choice you make carries weight and can shape the trajectory of your life. But what if I told you that beneath every decision, every problem you solve, and every path you take lies a hidden structure—a framework that can make sense of it all? Welcome to the world of models.

What's a Model, Anyway?

When we hear the term "model," we might think of something abstract or mechanical—a blueprint for a building or a complicated mathematical equation. But in reality, a model is something we all use every day, often without even realizing it. At its core, a model is a simplified representation of reality. It's a way to distill the complex, messy world around us into something understandable and actionable. Think of it as a mental tool—a framework that helps you make sense of things, predict outcomes, and guide your actions.

Models can be as simple as a decision-making tree you use to weigh the pros and cons of a choice or as complex as an economic model used to forecast market trends. Whether you're

Chapter 1: Model Thinking 101 – The Basics Without the Boredom

When you hear the word “model,” your mind might jump to something complicated—like a financial spreadsheet, a scientific diagram, or maybe even a miniature version of the Eiffel Tower. But here’s the thing: models are far more fundamental to your life, and they’re also way more useful than you might think. You’re using them every single day, even when you’re just deciding what to wear or how to plan your weekend.

So, what exactly are we talking about when we say “model”? At its simplest, a model is a way to make sense of the world. It’s a framework that helps you understand, predict, and make decisions. Think of it like a mental tool that strips away the messy, complex details of life and leaves you with the essentials —the things you actually need to focus on. And once you get the hang of it, Model Thinking can become your secret weapon for making life a whole lot easier.

What Is a Model, Anyway?

Let’s start with the basics. A model is a deliberate simplification of reality, constructed to help us interpret and respond to it. It’s like taking all the complexity of the world around you, distilling it down, and organizing it into something that makes sense. A good model doesn’t try to capture everything—it focuses on the important bits. And this is exactly what makes models so powerful. They help you see the bigger picture without getting bogged down by all the noise.

Chapter 2: Smart Inputs – The Art of Getting the Right Stuff

Gathering inputs is the first essential step in any model-thinking process. Without accurate, relevant, and well-considered inputs, even the best model will crumble. Think of inputs as the raw materials you're working with—like the ingredients in a recipe. You wouldn't want to bake a cake with spoiled milk or flour, right? The same goes for decision-making. If your inputs are faulty, your outputs will suffer, no matter how well you process them.

The goal of this chapter is to teach you how to gather the right inputs. We'll cover what makes an input valuable, how to avoid the classic trap of "garbage in, garbage out," and how to cultivate an input strategy that sets you up for success, no matter what you're trying to achieve.

The Power of Inputs: Why They Matter

When you're about to make a decision, it's easy to get overwhelmed by the amount of information out there. Whether you're trying to decide on a business strategy, buy a new home, or even choose what to eat for dinner, you're constantly bombarded with data, opinions, and sometimes unsolicited advice. The challenge is knowing which inputs to consider and which to ignore.

Why do inputs matter so much? Because they set the stage for everything that comes afterward. Think of inputs as the foundation for your entire model. If the foundation is shaky, the whole structure is at risk of collapsing. When you feed your brain (or your business model) bad data, it doesn't matter how sharp your processing skills are—the output will be flawed.

Chapter 3: Processing Power – Turning Data into Decisions

Now that we've gathered all our inputs—those essential bits of information that we need to make a decision—it's time to put them to work. This is where processing comes in. Think of processing as the brain of the operation: it's the stage where you sift through all that information, make sense of it, and figure out what to do next.

But processing isn't just about data or facts—it's about connecting the dots, recognizing patterns, and transforming the raw stuff of life into meaningful action. Whether you're deciding where to go on vacation, how to navigate a tough relationship, or what your next career move should be, your ability to process information well can make or break your decision.

Processing is a critical part of Model Thinking because it's the middle piece of the puzzle that links your inputs (what you gather) with your outputs (what you do). Think of it as the kitchen where you take all the ingredients and actually start cooking. You don't have to be a chef, but you do need to know how to combine things in the right way to get something delicious.

Why Processing Matters: From Input to Insight

Here's a scenario we all understand: you're getting ready to make a big decision—let's say it's deciding whether to move to a new city. You've gathered all kinds of inputs: cost of living, job opportunities, housing options, weather reports, even insights from friends who live there. That's a lot of information. But it's not enough to just have the data—you've got to know what it all means. That's where processing comes in.

Chapter 4: Outputs That Matter – Making Your Models Work for You

We've talked about gathering inputs—the stuff you use to make decisions—and processing them into something meaningful. But we're not done yet. The final, and arguably most important, part of Model Thinking is the output. After all, the whole point of gathering and processing information is to actually do something with it, right?

An output is the result of all your thinking. It's the decision you make, the action you take, and ultimately, the outcome you get. Think of it like baking a cake. The inputs are your ingredients— flour, sugar, eggs—the processing is how you mix and bake them, and the output is the finished cake. The quality of the cake (or output) depends on how well you've chosen and processed your ingredients.

In this chapter, we'll explore how to ensure your outputs are effective, meaningful, and aligned with your goals. We'll cover how to check your outputs to make sure they hit the mark, how to adjust when things go wrong, and how to keep refining your approach over time.

The Power of Clear Outputs: Know What You're Aiming For

The first rule of getting good outputs is knowing what you're aiming for. It sounds simple, but you'd be surprised how often people make decisions or take action without really being clear about what they want. If you don't know what a "good result" looks like, how will you know when you've achieved it?

Chapter 5: Life is Layers – How Models Build on Each Other

Life isn’t just a series of isolated decisions and problems. In reality, it’s more like a complex web where each choice, each problem solved, and each action you take creates ripples that affect other parts of your life. It’s all interconnected. And this is where Model Thinking really shines—because models aren’t just tools for solving one-off problems. They can be stacked, layered, and intertwined, forming a cohesive system for navigating all aspects of your life.

This chapter is all about understanding how models build on each other, how seemingly simple decisions can lead to complex outcomes, and how to use this knowledge to break down daunting challenges into manageable layers. By recognizing the layered nature of life and applying the right models at each level, you’ll be able to approach even the most complex situations with clarity, structure, and confidence.

The Russian Doll Effect: Models Within Models

Think of a set of Russian nesting dolls. You’ve seen them—each wooden doll fits perfectly inside the next, forming a nested system of layers, one inside the other. This is a perfect metaphor for how models work in real life. Each model you use can fit inside or outside of another, creating a sequence of decisions, actions, and outcomes that build upon each other.

Let’s take a simple example: planning a vacation. It might seem like a straightforward decision, but in reality, it involves layers of smaller models working together.

Chapter 6: Adapting Your Model – Flexibility is Key

If there’s one thing life constantly reminds us, it’s that change is inevitable. No matter how well you plan, no matter how perfectly your model seems to work at one point, something is bound to shift—a new challenge arises, an opportunity appears, or circumstances change unexpectedly. When life throws you these curveballs, you need more than just a solid model; you need a flexible model. That’s the focus of this chapter: the power of adapting your models to changing conditions and staying flexible in an unpredictable world.

We’ve talked about how models help you make decisions and navigate life’s complexities, but the truth is, no model is perfect forever. Circumstances change, new information becomes available, and what worked yesterday might not work tomorrow. The key to thriving in an ever-changing world is adaptability— the ability to tweak, adjust, and even overhaul your models to fit new realities.

The Only Constant is Change

One of the most famous quotes you’ve probably heard is, “The only constant in life is change.” It’s a simple truth that can sometimes feel frustrating. Just when you think you’ve figured something out, life throws you a curveball, and suddenly, your old model doesn’t fit anymore. Maybe you’ve created a budget that’s working perfectly, but then an unexpected expense pops up. Or maybe you’ve built a great career strategy, but a new job offer makes you rethink everything.

Chapter 7: Intelligence as a Process, Not a Destination

When we think about intelligence, it's often imagined as a fixed trait—something you're either born with or you’re not. But in reality, intelligence isn't about how much knowledge you have or how many facts you can recall. Instead, intelligence is a process —a way of continuously learning, adapting, and improving. It’s about how you use the knowledge you have, how you apply it to solve problems, and how you refine your understanding over time.

In this chapter, we’re going to explore how intelligence, when paired with Model Thinking, can become an ongoing journey of growth and learning. By treating intelligence as a dynamic process, you’re not just aiming to “be smart”; you’re cultivating the ability to think more effectively, solve problems with greater clarity, and adapt to new challenges in ways that continually expand your capacity.

Intelligence Isn’t What You Know—It’s How You Use What You Know

We all know that person who seems to have an endless number of trivia stored in their head, yet they might struggle when it comes to making decisions or solving real-world problems. They’re full of facts but short on practical application. Why is that? It’s because knowing something isn’t the same as being able to use it.

Chapter 8: From Daily Life to Big Decisions – Applying Model Thinking Everywhere

At this point, we've explored how models work, how they help you think more effectively, and how you can adapt them to life's complexities. Now, it's time to put everything together. In this chapter, we'll focus on the practical application of Model Thinking in everyday life and how you can use it to tackle both small, routine tasks and major, life-altering decisions. We'll explore how Model Thinking becomes a universal tool that can be applied to anything—from the decisions that seem insignificant in the moment to the ones that shape your future.

The true beauty of Model Thinking is its versatility. It doesn't just help you solve problems or make decisions in one area of life— it's a framework that can be used everywhere. Whether you're figuring out what to make for dinner, deciding on a major career move, or navigating complex relationships, models provide a way to approach problems with clarity, structure, and confidence.

Model Thinking as a Universal Tool

We often think that complex problems need complicated solutions. However, one of the strengths of Model Thinking is that it allows you to approach both complex and simple problems in a systematic way. A good model provides clarity by breaking problems into smaller, manageable parts and guiding you through them step by step. This can be applied to nearly any area of lifework, relationships, personal development, finances, or health.

Chapter 9: Model Scoring – Measuring the Success of Your Models

In life, we are constantly measuring success. Whether it's through personal achievements, professional milestones, or even daily tasks, we're always assessing how well things are going. But when it comes to models, how do we know if they are truly working? How can we assess their effectiveness, refine them, and ensure they are helping us make better decisions?

That's where model scoring comes into play. Model scoring is a way to evaluate the effectiveness of the models we use to solve problems, make decisions, or predict outcomes. It gives us a framework for understanding where a model excels and where it might need improvement. Just as an athlete tracks performance metrics or a business monitors key performance indicators (KPIs), scoring your models allows you to see how well they are serving you and where they can be optimized.

In this chapter, we'll break down how to apply a scoring system to your models, using different approaches depending on the complexity of the problem and the model's purpose. This scoring system not only provides clarity on how well a model is working but also guides you in refining it to produce better results.

Why Score Your Models?

When you rely on models to navigate complex decisions— whether personal, professional, or financial—you need a way to measure how effectively they're guiding you. Just as a chef tastes their dish while cooking to adjust flavors, model scoring allows you to adjust the "recipe" of your models in real-time.

Chapter 10: Action Models – Tools for Managing Change in Your Personal Life

As we move through life, one thing is constant: change. Whether it’s a shift in your career, a change in your relationships, or a major life event, change is inevitable. While change can be exciting, it often comes with uncertainty, and navigating that uncertainty can be challenging. That’s where action models come in.

An action model is different from the decision-making models we’ve discussed so far. Instead of focusing on evaluating options and making choices, an action model helps you manage change by providing a clear framework for taking specific steps. Think of it as a blueprint for navigating transitions, ensuring that you don’t just adapt to change, but actively shape it in a way that aligns with your goals.

In this chapter, we’ll explore how to create and apply action models to manage personal change, allowing you to take control of life’s transitions and turn uncertainty into opportunity.

What is an Action Model?

At its core, an action model is a structured approach to managing change by identifying specific actions you need to take to achieve a desired outcome. It’s built around the idea that, when faced with change, you need more than just a decision—you need a plan that guides you through the execution phase.

Chapter 11: Conclusion – Bringing It All Together

As we near the end of our journey into Model Thinking, it’s important to pause and reflect on how far we’ve come. From the basics of understanding what models are and how they work, to applying them across everyday decisions, complex challenges, and major life transitions, you’ve gained a powerful set of tools to help you navigate life’s complexities.

At its heart, Model Thinking is about more than just decision- making. It’s about developing a mindset that allows you to approach problems with clarity, structure, and purpose. By recognizing that every decision, problem, or challenge can be broken down into a model, you’ve unlocked a new way of seeing the world—one that makes even the most daunting situations more manageable.

So, let’s take a moment to tie everything together. In this conclusion, we’ll revisit the key concepts we’ve explored, reflect on how they fit into the bigger picture, and look ahead to how you can continue to refine your models as you move forward.

The Power of Models: A Recap

At the start of this book, we introduced the idea that models are simplified representations of reality that help us understand, predict, and navigate the world around us. They’re mental frameworks that strip away unnecessary details and allow us to focus on the essential factors that drive our decisions.

We explored how every model is built on three core components: inputs, processing, and outputs. Whether you’re deciding what to eat for breakfast or navigating a complex life decision, these components remain the same:

1. Inputs: The raw data or information you gather.

PART 2

Group Models

Personal Models examined how an individual interprets information, makes decisions and acts. Group Models asks a different question: what happens when individuals, functions and resources must work together towards a shared purpose? The result is not simply the sum of individual capabilities. Coordination, dependencies and competing priorities can magnify strengths—or frustrate them.

Consider a capable team that repeatedly misses deadlines. The immediate temptation may be to blame its members. Yet the difficulty could lie in unclear handovers, conflicting objectives or decisions made too late. Looking at the group as a whole directs attention to the relationships between its parts, rather than only to the performance of each part. It helps explain why a group of talented people can underperform, and why a well-organised group can achieve more than its members could accomplish separately.

The chapters that follow provide a practical way to examine groups of different sizes and purposes. We begin by defining the group, then explore its structure, resources, processes, results, feedback, adaptability, sustainability, complexity and alignment. Read the chapters in sequence, or return to a particular topic when examining a real team or organisation. The aim is to ask better questions about how groups work—and what it would take to improve them.

Chapter 1: Defining a Group – Assemblages of Sub- Models

When we talk about groups, the first thing that comes to mind is a collection of people working together—whether it's a team of employees, a group of students, or even a neighborhood association. But groups are more than just collections of individuals; they’re structured systems with distinct parts working toward shared goals. This structure, or group model, is what allows the group to function cohesively, balancing the unique contributions of its members while keeping everything aligned with the group’s purpose.

At the core of every group model is the inputs-processing- outputs framework—the basic architecture that governs how groups operate. Every group has inputs, processes that transform those inputs, and outputs that reflect the group’s success. Whether you’re managing a national sales organization or leading a football team, this framework serves as the foundation for how sub-models (the smaller parts of the group) interact and contribute to the overall purpose of the group.

What Is a Group?

A group is more than just the sum of its parts. In practical terms, a group is an assemblage of subgroups or sub-models, each playing a distinct role in helping the group achieve its goals. These sub-models are responsible for specific functions—like the defense, midfield, and attack in a football team, or the sales, marketing, and HR departments in a company. The key is that these sub-models don’t operate in isolation; they interact and influence one another, much like how gears in a machine work together to keep it running smoothly.

Chapter 2: The Two-Layer Structure of Group Models

In the previous chapter, we explored what a group model is—an assemblage of sub-models working together to achieve a group's purpose. Now, let's dive deeper into the two layers that make up every group model: the visible layer of sub-models that manage the group's day-to-day operations and the underlayer of macro models, which provides the alignment, cohesion, and support that keep everything running smoothly.

This two-layer structure is what allows groups to be both flexible and efficient. Sub-models, representing the more visible and functional aspects of the group, handle specific tasks and processes. Macro models, sitting beneath the surface, create the environment that ensures all sub-models are aligned with the group's goals and purpose. Together, these layers form a powerful system that helps groups navigate complexity, adapt to change, and remain focused on their goals.

The Visible Layer: Sub-Models and Group Operations

At the heart of every group's day-to-day operations are its sub- models. These are the individual parts of the group, each responsible for a specific function or purpose. In any group, whether it's a school, a business, or a sports team, sub-models carry out the actions that lead to the group's success.

Chapter 3: Inputs in Group Models – Managing Resources and Information

Every group model starts with inputs. These are the resources, materials, information, and people that feed into the group's processes and ultimately produce outputs. Without the right inputs, even the best-laid plans can fall apart. Whether we're talking about a national sales organization, a football team, or a boarding high school, the success of a group depends heavily on how well it manages its inputs.

In this chapter, we'll explore the types of inputs that different groups rely on, how these inputs are managed within sub- models, and how the group's macro models support effective input management. By understanding how inputs are processed and transformed into outputs, we can begin to see how each component of a group's model contributes to its overall fitness for purpose.

The Role of Inputs in Group Models

Inputs are the fuel that keeps a group running. They provide the raw materials, information, and energy needed to carry out the group's processes and produce outputs. In any group model, inputs are the starting point for action. These inputs can be tangible, like money, equipment, or personnel, or intangible, like data, expertise, or creativity.

For example, in a national sales organization, inputs might include customer data, marketing resources, and the skills and knowledge of the sales team. These inputs feed into the sales sub- model, where they are processed into outputs like closed deals, increased revenue, and customer retention.

Chapter 4: Processing in Group Models – Transforming Inputs into Outputs

In the previous chapter, we explored the essential role that inputs play in group models. But inputs alone don’t produce results—it’s what happens to those inputs that determines the success of the group. The way a group processes its inputs is at the heart of its ability to transform resources into valuable outputs. Whether in business, education, or sports, processing is the engine that drives a group’s activities toward achieving its goals.

Processing is the internal work that happens within sub-models. It’s where plans are executed, tasks are carried out, and ideas take shape. Without effective processing, even the best inputs won’t lead to the desired outputs. This chapter will dive into how processing works within different sub-models, how macro models support this processing, and the challenges groups face in optimizing their processes.

The Role of Processing in Group Models

Processing is the transformation of inputs into outputs. It’s the core activity that takes place within a group, turning raw materials, information, or effort into something valuable. Processing happens at multiple levels—within each sub-model, and with the support of the macro models that provide the structure and resources to make processing efficient.

Chapter 5: Outputs in Group Models – Achieving the Group’s Goals

Every group is formed with a purpose, and that purpose is often defined by the results it produces. These results, known as outputs, are the measurable outcomes of a group’s efforts. Whether it’s generating revenue in a sales team, improving academic performance in a school, or winning matches in a football team, outputs are what ultimately determine the success of the group.

Outputs are the final stage of the inputs-processing-outputs framework. Once inputs have been processed through the group’s sub-models, the results are realized as outputs. Understanding how outputs are generated and how to measure them is critical for evaluating the fitness for purpose of any group model. In this chapter, we’ll explore how different groups produce outputs, how macro models support this process, and how outputs can be evaluated and scored to assess group performance.

What Are Outputs in Group Models?

Outputs are the tangible or measurable results that a group produces as a result of its processes. They represent the group’s achievements and are often the key indicator of whether the group is meeting its goals.

For example, in a national sales organization, the most obvious outputs are revenue, closed deals, and market share. These outputs are the result of the sales team’s efforts to process inputs (leads, customer data, and marketing resources) through their daily activities like outreach, negotiation, and follow-up.

Chapter 6: Feedback Loops in Group Models – The Power of Feedback in Groups

If inputs are the fuel that drives a group, then feedback is the vital data that helps the group adjust its course and improve over time. Feedback loops provide groups with the information they need to monitor their performance, identify weaknesses, and refine their processes to produce better outputs. Whether in a national sales organization, a boarding high school, or a football team, feedback plays a central role in maintaining and improving group performance.

Feedback loops work by taking the outputs of a group model and using them as inputs for further refinement. This ongoing cycle of feedback and adjustment is what allows groups to remain adaptive, continually improving their processes, aligning sub- models, and staying fit for purpose. In this chapter, we'll explore how feedback loops function within group models, how they impact both sub-models and macro models, and how feedback can be leveraged to enhance group performance.

What Are Feedback Loops?

A feedback loop is a system where the outputs of a process are used as inputs to adjust and improve that process. In the context of group models, feedback loops allow groups to take the results of their efforts (outputs) and analyze them to make improvements in their processes. By doing this, groups can ensure that they are constantly refining their operations and staying aligned with their goals.

Chapter 7: Flexibility and Adaptability in Group Models – How Groups Respond to Change

No matter how well-designed a group model is, it will eventually face the challenge of change. Whether it’s a shift in the external environment, new goals, or internal developments, groups need to be flexible and adaptable if they want to remain successful. The ability to respond to change is a critical factor in a group’s long-term survival, and it’s often the difference between a thriving group and one that struggles to stay afloat.

Flexibility and adaptability don’t just happen by chance—they’re built into the structure of effective group models. In this chapter, we’ll explore how groups can build flexibility and adaptability into their sub-models and macro models, how the inputs- processing-outputs framework supports change management, and how groups can evaluate their ability to adapt to new challenges.

Why Flexibility Matters in Group Models

Flexibility in group models is the capacity to respond to unexpected changes or challenges without losing sight of the group’s purpose. It allows groups to adjust their processes, shift resources, and modify their strategies as circumstances evolve.

For example, a football team that suddenly faces injuries to key players needs to be flexible in adjusting its line-up and tactics. The team’s training sub-model must adapt by focusing on developing other players or adjusting strategies to accommodate the changes. If the team is rigid and unable to adapt, it risks underperforming in upcoming matches.

Chapter 8: Sustainability of Group Models – Building Long-Lasting Group Models

Sustainability is about more than just the ability to adapt—it's about ensuring that the group model can continue to function effectively over time, even in the face of challenges. For any group, the key to long-term success is not just producing results in the short term, but maintaining performance, cohesion, and alignment with goals in the long run. Whether it's a national sales organization, a boarding high school, or a football team, building a sustainable group model is essential for ongoing success.

A sustainable group model is one that is resilient, capable of withstanding change, and adaptable to evolving circumstances without losing its core purpose. In this chapter, we'll explore what it takes to build a sustainable group model, how sustainability is supported by both sub-models and macro models, and how groups can evaluate their sustainability using the inputs-processing-outputs framework.

What Does Sustainability Mean in Group Models?

In the context of group models, sustainability refers to the group's ability to maintain performance and alignment with its goals over time. It's about ensuring that the group model remains resilient, even as conditions change, and that it can continue to operate efficiently without burning out resources, overloading its sub-models, or losing cohesion.

Chapter 9: The Evolution of Group Models – How Groups Grow and Change

Groups, like living organisms, don’t stay the same forever. Over time, they evolve. Whether through growth, shifts in goals, or changes in external conditions, every group model must adapt to stay relevant and functional. Evolution in group models refers to the ways in which groups modify their sub-models and macro models to remain aligned with their purpose as they develop and mature.

This evolution is a natural process that ensures a group doesn’t just survive, but thrives in the face of changing environments and challenges. From a national sales organization responding to market shifts to a boarding high school adjusting to new educational trends, the ability of a group model to evolve determines its long-term success.

In this chapter, we’ll explore how group models evolve, how growth impacts sub-models and macro models, and how groups can intentionally manage their evolution using the inputs- processing-outputs framework.

Why Groups Evolve

Groups evolve for many reasons. Sometimes it’s a natural response to growth—more people, more resources, and more complexity mean that the group must adjust its model to stay effective. Other times, evolution is driven by external factors, such as shifts in the marketplace, regulatory changes, or societal expectations. And sometimes, evolution happens because the group’s internal goals or priorities change, requiring a realignment of sub-models and processes.

Chapter 10: Managing Complexity in Group Models – Navigating Multiple Layers of Interaction

As groups grow and evolve, complexity inevitably increases. What starts as a simple model with a few sub-models and straightforward goals can quickly expand into a multi-layered system with numerous sub-models, each interacting with one another and supported by macro models. Managing this complexity is critical to ensuring that the group continues to function efficiently and remains aligned with its overarching goals.

In this chapter, we'll explore how group models handle complexity, how the inputs-processing-outputs framework helps manage interactions between sub-models, and how macro models provide the support needed to keep the group's processes running smoothly. We'll also discuss the challenges that arise from increasing complexity and how groups can score and evaluate their ability to manage these complexities.

What Is Complexity in Group Models?

Complexity in group models arises when multiple sub-models interact with one another in ways that affect the group's overall performance. As groups grow, they add new layers of interaction, bringing in additional sub-models, resources, and goals. This can make managing the group more difficult, as leaders must balance competing demands, ensure alignment between sub-models, and maintain efficiency across all levels of the group.

Chapter 11: Alignment in Group Models – Ensuring Cohesion Across Sub-Models

A group’s success depends not only on the individual performance of its sub-models but also on how well those sub- models work together. Ensuring alignment between sub-models and macro models is what keeps a group cohesive, focused on its goals, and capable of delivering consistent results. Alignment ensures that every part of the group is working toward the same overall objectives, with each sub-model supporting the others to create a unified, efficient system.

In this chapter, we’ll explore the importance of alignment in group models, how misalignment can disrupt group performance, and how to ensure that sub-models and macro models remain cohesive. We’ll also examine how the inputs- processing-outputs framework supports alignment by providing a structured way to evaluate how well the group’s components work together.

Why Alignment Matters in Group Models

Alignment is the glue that holds a group model together. When all sub-models and macro models are aligned, they work in harmony to achieve the group’s purpose. This alignment is critical for maintaining cohesion, preventing inefficiencies, and ensuring that the group can respond to challenges and opportunities as a unified entity.

Chapter 12: The Future of Group Models – Navigating Change and Achieving Long-Term Success

Group models are not static entities. As we've seen throughout this part, they evolve, grow, and adapt in response to both internal dynamics and external changes. The future of any group depends on its ability to manage these changes effectively, stay aligned with its goals, and remain resilient in the face of challenges. Whether it's a national sales organization expanding into new markets, a boarding high school adapting to new educational trends, or a football team preparing for a changing competitive landscape, the future of any group model is shaped by how well it navigates these transitions.

In this final chapter, we'll explore how group models can continue to evolve, the key factors that will shape their success, and how the inputs-processing-outputs framework can guide groups through the changes ahead. We'll also look at the role of leadership, technology, and adaptability in ensuring that groups remain fit for purpose over the long term.

The Ongoing Evolution of Group Models

The future of any group model is defined by its ability to evolve. As we've discussed in previous chapters, evolution occurs in response to growth, changes in external conditions, and shifts in the group's internal dynamics. But evolution isn't just about reacting to change—it's about proactively shaping the future by anticipating challenges and opportunities.

PART 3

Thing Models

In this part, we continue our journey into the world of Model Thinking, exploring how the foundational principles we've established apply to a different domain: the modelling of things. Whether we're talking about physical objects like cars or intangible systems like artificial intelligence (AI) and software, the same underlying structure applies. Every model—tangible or intangible—is governed by the inputs-processing-outputs framework.

This framework, introduced in the preceding parts of Model Thinking, helps us break down complex systems into their core components: the resources or data that flow in (inputs), the mechanisms that transform those resources (processing), and the results that are produced (outputs). This book extends that thinking into the world of things, where both tangible objects (like machines and 3D-printed products) and intangible systems (like AI algorithms and software applications) follow the same fundamental structure.

But here's where things get interesting: processing in thing models is typically controlled externally. Unlike group models, where the processing often takes place within the group itself, thing models rely on external forces—whether it's humans, machines, or algorithms—to drive their transformation from inputs to outputs. This external control adds a unique dimension

Chapter 1: The Basics of Thing Models – Inputs, Processing, Outputs

In the world of things—whether tangible or intangible— everything follows a structured model. From the simplest object to the most complex digital system, they all operate within a familiar framework: inputs, processing, and outputs. This framework provides the foundation for understanding how things are modeled, designed, and optimized.

At first glance, it might seem like the inputs-processing-outputs model is only for tangible objects—after all, physical products like cars or 3D-printed objects rely on clear inputs (materials, designs) and outputs (finished products). But intangible models, like software, artificial intelligence (AI), and algorithms, also follow this exact same framework. Regardless of whether something is a physical object or a digital product, the way it works, how it’s transformed, and what it produces can be explained by this universal model.

What Is a Thing Model?

When we talk about thing models, we’re referring to the idea that every object—whether tangible or intangible—operates through a structured flow of inputs, processing, and outputs. In its simplest form, a thing model breaks down how an object functions, what it requires to work, how it transforms those requirements, and what it produces as a result.

Chapter 2: Tangible Models – Physical Objects and Their External Processing

Tangible models are at the heart of how we interact with the physical world. Every day, we rely on objects—cars, phones, tools, machines—that follow a structured system of inputs, processing, and outputs. These physical objects, or tangible models, have clear inputs like materials and energy, and their processing is often controlled externally by humans or machines to produce useful outputs.

In this chapter, we will focus on how tangible objects fit into the inputs-processing-outputs framework and explore how external control influences their function. By breaking down a range of examples—from cars to 3D printing to industrial machines—we will see how physical objects are modeled and how understanding this structure can improve design, functionality, and performance.

What Are Tangible Models?

A tangible model refers to any physical object that operates through a system of inputs, processing, and outputs. Unlike intangible models (such as software or digital systems), tangible models are defined by their materiality. These are objects we can touch, see, and interact with in the real world.

What sets tangible models apart is that their processing is controlled externally. Whether through machines, human input, or automated systems, the processing phase requires external intervention to transform inputs into outputs. For instance, in manufacturing, raw materials (inputs) are processed by machines (external control) to produce a finished product (output).

Chapter 3: Intangible Models – Software, AI, and Digital Products

While tangible models focus on physical objects, intangible models deal with systems and products that have no physical form but are just as integral to our daily lives. Software applications, AI algorithms, and digital platforms follow the same inputs-processing-outputs structure, but their inputs are typically data, their processing is driven by algorithms, and their outputs are often predictions, actions, or digital content. In this chapter, we explore how intangible models operate within the inputs- processing-outputs framework and how external control shapes their processing.

As we dive into intangible models, we will focus on software systems, AI models, and digital products, using examples like large language models (LLMs), predictive analytics, and software-as-a-service (SaaS) applications to illustrate how these models are structured and function.

What Are Intangible Models?

Intangible models refer to systems that process non-physical inputs—such as data or user inputs—and generate digital outputs. These models are typically found in the digital world, powering the software and systems we interact with daily, from the apps on our smartphones to the AI systems that help us make decisions.

Just like tangible models, intangible models follow the inputs-processing-outputs framework. However, in intangible models, the inputs are often data, commands, or user interactions; the processing is controlled by external algorithms or computational systems; and the outputs are digital in nature, such as predictions, visual content, or digital actions.

Chapter 4: The Role of External Control in Thing Models

One important characteristic of a thing model is that its purpose and operating constraints are specified through design, programming, configuration or human use. That does not mean every step of processing is directed from outside. A thermostat regulates temperature automatically; a robot responds to sensors; an AI agent may select permitted actions. The useful distinction from a group model is not a simple opposition between external and internal processing, but the nature of the components, the location of decision authority and the way the whole system is governed.

This chapter will dive deeper into the role of external control in both tangible and intangible models. Whether we’re dealing with manufacturing machines, 3D printing systems, or AI algorithms, understanding how external control influences the processing stage is crucial to optimizing performance and achieving the desired outcomes.

What Is External Control?

External control refers here to the people, rules, programmes and supporting systems that establish what a thing is for and how it is allowed to operate. Operational processing may then occur inside the thing, across connected systems or through a combination of the two. In analysing any thing model, ask who sets its objectives, where processing occurs, what it can do without intervention and who is accountable when the output is wrong.

Chapter 5: Inputs in Thing Models – Gathering Resources, Data, and Materials

In every model, whether tangible or intangible, the starting point is the input phase. This is where a model receives the resources, data, or materials it needs to function. Inputs are essential because they determine the quality and type of processing that will occur, ultimately influencing the outputs of the system. In thing models, the inputs might range from physical materials like steel or fuel in tangible objects, to data and user commands in intangible systems like software or AI models.

This chapter will explore how inputs are gathered, managed, and optimized in thing models. We'll look at examples from both tangible and intangible models, showing how the right inputs are critical to the overall success of the system.

What Are Inputs in Thing Models?

Inputs refer to the materials, energy, data, or information that a model requires to operate. In tangible models, inputs might include physical resources, such as raw materials, energy, or parts. In intangible models, inputs are often data, user commands, or other forms of digital information.

Regardless of the type of model, the quality and availability of inputs play a significant role in determining how well the model can process them into desired outputs. Poor-quality inputs can lead to inefficiencies or subpar outputs, while well-managed and high-quality inputs can optimize performance and deliver better results.

Chapter 6: Processing in Thing Models – Transformation and External Control

After inputs are gathered, the next phase in a thing model is processing—the transformation stage where inputs are converted into outputs. In tangible and intangible models alike, processing is key to determining how effectively a system can produce its intended results. What distinguishes thing models is that processing is typically externally controlled. Machines, algorithms, or human interventions manage how inputs are transformed, and optimizing this external control is crucial to improving efficiency, accuracy, and quality.

This chapter explores how processing works in thing models, breaking down the role of external control and examining how processing differs in tangible and intangible models. By understanding how external systems shape the transformation of inputs into outputs, we can better optimize models for performance and adaptability.

What Is Processing in Thing Models?

Processing refers to the stage where inputs—whether they are raw materials, data, or user commands—are transformed into outputs. Processing is the core function of any system, determining how effectively inputs are utilized and converted into results. In thing models, processing is usually managed by external systems, such as machines, algorithms, or operators.

For example, in a car assembly line, processing involves machines and robots that take raw materials and components, and through a series of actions, transform them into a finished car. In a cloud-based AI model, processing happens through algorithms that analyze data inputs and generate outputs like predictions or recommendations.

Chapter 7: Outputs in Thing Models – The Final Product or Result

The final phase of the inputs-processing-outputs framework is the most visible: the output. Whether it’s a physical object, a result, or a digital product, the output reflects the culmination of all inputs and processing efforts. In tangible models, this might be a car rolling off an assembly line, a 3D-printed object, or a batch of brewed beer. For intangible models, it could be a piece of software, a digital report, or an online service.

This chapter will focus on understanding the outputs in thing models, how they are measured, and how to optimize them. We’ll explore the role that external control plays in ensuring the outputs meet the intended goals, and discuss the importance of aligning the final product with both expectations and performance metrics.

What Are Outputs in Thing Models?

Outputs are the final results of the processing phase. They represent the product or service that the model is designed to produce, based on the inputs and how they’ve been processed. Outputs vary widely between tangible and intangible models, but they share one key trait: they are measurable. The success of a thing model is typically judged by the quality, accuracy, or performance of its outputs.

In tangible models, outputs are often physical products. For example, a car produced in an auto manufacturing plant is an output, as is a 3D-printed prototype or a batch of beer from a brewery. These physical outputs are easily evaluated by criteria such as quality, durability, or functionality.

Chapter 8: Feedback Loops in Thing Models – Learning and Improvement

In any successful model, feedback loops play a crucial role in ensuring continuous improvement. Feedback loops allow thing models to adapt, learn from their outputs, and refine their processes to achieve better results over time. Whether it's a machine learning system adjusting its algorithms based on performance data or a manufacturing process tweaking its operations after quality checks, feedback loops create a cycle of learning and optimization.

This chapter focuses on how feedback loops are integrated into both tangible and intangible models, showing how systems can monitor their own performance and make necessary adjustments. We'll explore the different types of feedback, the role of external control in managing these loops, and how they drive innovation and refinement in thing models.

What Is a Feedback Loop?

A feedback loop occurs when the outputs of a system are reintroduced into the model as inputs, allowing the system to adjust its behavior based on the results it has produced. Feedback loops are essential for learning and improvement because they enable the model to refine its operations and correct inefficiencies.

Feedback loops can be both positive and negative:

Positive Feedback amplifies the changes in the system, often accelerating growth or performance.

Negative Feedback counteracts changes, helping to maintain stability or correct errors.

Chapter 9: Flexibility and Adaptability in Thing Models

One of the greatest challenges in designing thing models— whether tangible or intangible—is ensuring they are flexible and adaptable. In a rapidly changing world, models must be able to respond to new inputs, adjust their processes, and still produce high-quality outputs. Flexibility allows thing models to handle unexpected conditions or disruptions without breaking down, while adaptability ensures they can evolve in response to long- term changes.

In this chapter, we'll explore the concepts of flexibility and adaptability in both tangible and intangible models, looking at how they respond to external forces and how they can be optimized for resilience. We'll examine how thing models can be designed to handle sudden changes and unexpected inputs, and how external control systems can help them adapt and improve over time.

What Is Flexibility in Thing Models?

Flexibility refers to a model's ability to handle unexpected inputs, conditions, or disruptions without failing. A flexible model can continue functioning even when the inputs are not exactly what was expected or when external factors cause deviations in the process.

In tangible models, flexibility might mean a machine's ability to process different materials without requiring a complete system overhaul. In intangible models, flexibility could involve software that can handle a wide range of user commands or changing data without crashing or slowing down.

Chapter 10: Sustainability of Thing Models – Long- Term Performance and Fitness for Purpose

As models are built to last, ensuring their long-term sustainability becomes paramount. A model that is efficient today may not remain fit for purpose if it fails to account for changing conditions, resource constraints, or evolving objectives. Sustainability in thing models refers to the ability of these systems to maintain high performance, reliability, and alignment with their goals over time.

In this chapter, we will explore what it means for a thing model to be sustainable and how this concept ties into fitness for purpose. By understanding the key attributes that contribute to sustainability, both in tangible and intangible models, we can develop strategies to extend the lifespan of these systems while ensuring they continue to deliver value.

What Is Sustainability in Thing Models?

Sustainability in thing models refers to the ability of a model to perform efficiently and effectively over an extended period. It involves not just maintaining the technical performance of the model, but also ensuring that the model aligns with broader goals, adapts to resource availability, and remains responsive to external changes.

A sustainable model is one that can continue to deliver the desired outputs while minimizing waste, maximizing resource efficiency, and adapting to new conditions. This can apply to both physical systems, such as manufacturing plants, and intangible models, such as software systems.

Chapter 11: The Role of External Systems in Supporting Thing Models

In the journey of developing and maintaining thing models, the support of external systems is critical. Whether we are working with tangible models such as machinery and production lines, or intangible ones such as software or AI applications, these models don’t function in isolation. They rely on external systems for resources, monitoring, optimization, and sometimes even decision-making.

This chapter will explore how external systems provide the backbone for thing models, ensuring their performance, resilience, and adaptability. We’ll examine the different types of external systems that play a role, how they integrate with models, and how their influence is pivotal to achieving sustained success.

What Are External Systems?

External systems refer to the processes, infrastructures, or platforms that support thing models from outside their core functionality. These systems can include anything from external data sources and monitoring platforms to energy grids, cloud computing infrastructure, or human oversight. They serve as an external resource to facilitate the internal processes of a thing model, optimizing performance, correcting errors, or providing necessary inputs.

In tangible models, external systems may include power grids, water supply systems, or material delivery mechanisms. For intangible models, external systems may involve cloud services, external APIs, or large databases that provide information and computational resources.

Chapter 12: Innovation and the Future of Thing Models

As we arrive at the conclusion of our exploration of thing models, we turn our attention to the future. Thing models, both tangible and intangible, are not static entities. They evolve, driven by innovation, new technologies, and shifting societal needs. In this final chapter, we will explore how innovation shapes the future of thing models and what role thing models play in enabling new breakthroughs and driving technological progress.

We'll also discuss how the concepts explored throughout this book—such as external control, feedback loops, sustainability, and adaptability—are essential to fostering innovation. By understanding how models evolve and incorporating mechanisms for continuous improvement, organizations can remain at the cutting edge of their industries.

The Role of Innovation in Thing Models

Innovation is the driving force behind improvements in thing models. Whether it's a new material for manufacturing, a cutting-edge algorithm for data processing, or a novel way of structuring software systems, innovation pushes thing models to new heights of efficiency, performance, and functionality.

Incremental vs. Disruptive Innovation: There are two types of innovation: incremental and disruptive. Incremental innovation refers to small, continuous improvements to existing systems, while disruptive innovation represents a complete overhaul or the introduction of an entirely new model.

PART 4

Society Models

Chapter 1 — What Is a Society For?

A society is the most complex model human beings ever construct, yet it is the one most people examine the least. Since we are born into societies and shaped by them long before we develop the ability to question their structure, we often take their existence for granted. Their systems become the background of daily life, their institutions become the assumed mechanisms of order, their routines become the rhythms through which we move without conscious scrutiny. A society appears natural because it is omnipresent, but a society is not a natural phenomenon. It is a deliberate human invention, a layered model designed to fulfil a purpose through the coordinated interaction of internal structures. It is assembled over generations, maintained through collective behaviour, and modified by the interplay of incentives, norms, constraints, and expectations. To understand a society through the lens of Model Thinking is to recognise it as a purposeful system whose behaviour can be explained, predicted, critiqued, and improved by examining its structure.

In the preceding parts of Model Thinking, models were shown to be simplified representations of reality that guide behaviour. They exist because the world is too complex to navigate without structure. A model allows us to reduce complexity, operate consistently, and generate predictable outputs. A thing, an action, or a group behaves coherently only when its internal model fits its purpose. The same principle applies to a society. A society is an arrangement of institutions, norms, and systems organised in a way that reflects its intended function. It accepts inputs, processes them, and produces outputs. Its outputs reveal its purpose. The purpose of a society is not defined by its slogans or formal declarations but by the behaviour it consistently

Chapter 1 — What Is a Society For?

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Chapter 2 — The Anatomy of a Society

A society reveals itself most clearly when we examine the structures that sustain it. Its surface—its institutions, routines, and everyday functions—may appear diverse and complex, but underneath that diversity lies a consistent logic. Just as a model becomes understandable once its internal components are exposed, a society becomes intelligible when we consider its underlying anatomy. This anatomy is not metaphorical; it is literal within the framework of Model Thinking. A society is a model composed of models. The visible institutions are its operational components, and the deeper enabling structures are its stabilising frame. Understanding how these layers interact is essential for understanding how societies behave, why they succeed or fail, and how their morality—understood structurally as fitness for purpose—is maintained or lost.

In the previous chapter, the notion of a society as a purposeful model was introduced. A society has an intended function: to process the complex interactions of human life into stable, predictable, and coherent forms. It accepts inputs from millions of lives, processes these inputs through its internal systems, and produces outputs that define the lived experience of its citizens. These outputs—predictability, fairness, opportunity, order, trust, or their absence—reflect the degree to which the internal structures align with the society’s purpose. But purpose alone cannot stabilise a society. The internal structures must be fit for the task; this is where the anatomy of a society becomes central; it reveals how purpose is translated into capacity.

Chapter 3 — Processing: How Societies Interpret Reality

A society's structure becomes meaningful only when we consider how it processes the vast complexity that flows through it. Purpose, sub-models, and macro-models form the static architecture of the societal model, but processing is the dynamic mechanism that animates the structure. Without processing, a society is nothing more than a set of inert institutions and dormant infrastructures. With processing, it becomes an active system capable of transforming the complexity of human life into organised outcomes. Processing is therefore the essential activity through which the internal model of a society becomes real. It is the point at which purpose encounters inputs, where structure meets reality, and where outputs emerge that reveal the society's true state. A society's morality—defined as its fitness for purpose—is visible most vividly in its processing.

In the previous chapters, we examined the anatomy of a society in terms of sub-models and macro-models. Sub-models perform discrete tasks. Macro-models provide the enabling environment. Both are required for functionality; But neither layer alone determines how a society behaves in practice. What determines behaviour is how these layers interact to interpret and transform inputs. Processing acts as the translation interface between structure and experience; it is the mechanism by which physical systems, technological systems, governance systems, competence systems, and value systems come together to act upon reality. A society is therefore best understood not only by the architecture of its components but by the quality of the processing that occurs between them.

Chapter 4 — Alignment: When a Society Fits Its Purpose

Processing reveals how a society interprets reality, but interpretation alone cannot guarantee coherence. A society may possess numerous institutions, extensive infrastructure, and elaborate governance frameworks, yet still fail to deliver on its purpose if the internal structure is not aligned. Alignment is the structural condition in which a society's sub-models and macro- models reinforce one another consistently. It is the state in which purpose becomes operational, processing becomes predictable, outputs become coherent, and the society behaves as a unified model rather than as a collection of fragmented components. Without alignment, even the most ambitious societal purpose dissipates. With alignment, even complex challenges can be processed without destabilising the model. Understanding alignment is therefore essential to understanding societal morality, stability, and longevity.

Alignment emerges when the society's internal structures work in concert; this does not mean uniformity or rigidity. It means coherence. The sub-models responsible for processing the concrete tasks of daily life must rely on macro-models that provide stability, clarity, competence, and standards. When macro-models are strong and consistent, sub-models interpret inputs similarly even across diverse contexts. The society does not depend on the discretion of individual institutions; it depends on shared structural conditions. Alignment creates the conditions under which processing converges toward the society's purpose; it enables institutions to act with confidence because the systems that support them behave predictably.

Chapter 5 — Drift: The Slow Separation of Structure and Purpose

A society does not fall in a single moment. Collapse is not the sudden rupture it often appears to be in retrospect. The trajectory toward failure begins long before the visible decline; it begins quietly, almost imperceptibly, in the gradual separation between a society's purpose and its internal structure. This separation is drift. Drift is the slow, cumulative process through which a society's internal models lose alignment with its intended function. It is the steady erosion of coherence within the system; it emerges not from dramatic failures but from small inconsistencies that accumulate over time. Drift is subtle at first, but its consequences are profound; it is the earliest structural signal that a society is beginning to lose its fitness for purpose.

In previous chapters, we examined how a society's purpose is made real through its sub-models and macro-models. We saw that processing transforms inputs into outputs, and alignment ensures that this transformation remains coherent. Drift is the opposite of alignment; it is not merely a lack of coherence; it is the progressive weakening of coherence. Drift represents the point at which the society begins to interpret reality in ways that contradict its purpose. It is a structural tension that, if left unaddressed, expands into systemic malfunction. Drift is not the end of a society; it is the beginning of the end.

Chapter 6 — Structural Immorality: When Society's Systems Fail Their Purpose

Drift marks the beginning of a society's separation from its purpose, but drift alone does not determine a society's fate. Societies experience minor misalignments regularly and continue functioning with only limited disruption. Drift becomes dangerous only when it accumulates beyond the system's capacity to self-correct. There is a threshold beyond which drift stops behaving as a collection of small deviations and becomes something qualitatively different. When drift persists long enough, spreads wide enough, and affects deep enough structures, it undergoes a structural transformation. It ceases to be a symptom and becomes a condition; it becomes structural immorality—the point at which the society's internal models no longer merely misalign with its purpose but actively undermine it.

Structural immorality is not about ethical failings; it is not about personal wrongdoing or cultural decay; it is a structural property of the societal model. Structural immorality occurs when the system's architecture—its macro-models and sub-models—has drifted so far from alignment that its outputs consistently contradict its purpose. At this stage, failure is not an anomaly; it is a feature. Structural immorality is the condition in which the society reproduces failure more reliably than success. This transformation does not happen suddenly; it is the culmination of drift that has solidified into a new equilibrium.

Chapter 7 — Corruption: When Structural Failure Shapes Behaviour

Corruption is often described in moralistic terms, as a reflection of personal failure or ethical collapse. In the context of Model Thinking, such interpretations are insufficient; they obscure the structural mechanisms that produce corruption and mischaracterise it as a deviation from the system, rather than a predictable expression of it. Corruption is not primarily the result of individual choices; it is the behavioural manifestation of structural immorality; it emerges when drift has hardened into a stable misalignment that shapes how institutions function. In a structurally immoral society, corruption becomes the consistent behavioural adaptation through which institutions compensate for systemic contradictions. It is not the cause of decline; it is the symptom of a deeper structural condition.

To understand corruption structurally, we must trace its origins in the internal logic of the societal model. Drift begins when macro-models weaken or contradict one another. Structural immorality emerges when drift stabilises into a new equilibrium that operates according to its own logic. Corruption arises when that equilibrium requires behaviours that deviate from the society’s declared standards but conform to its structural reality. These behaviours are not arbitrary; they are rational adaptations to misaligned systems; they are predictable, repeatable, and structurally reinforced. In a structurally immoral society, corruption becomes a means by which institutions navigate inconsistent macro-models and compensate for inadequate infrastructure, fragmented information, unclear governance, declining competence, and eroded values. It is the behavioural strategy that allows the system to function despite its own contradictions.

Chapter 8 — Systemic Inefficiency: The Operational Cost of Misalignment

Structural immorality transforms the internal logic of a society. Corruption expresses this logic through behaviour; But corruption alone does not define the functional state of a declining society. What emerges next is systemic inefficiency— the persistent operational drag that arises when misaligned structures, improvised behaviours, and eroded standards accumulate into a self-reinforcing condition. Systemic inefficiency is not simply slow performance or bureaucratic delay; it is the predictable operational outcome of structural immorality; it represents the point at which the society's internal contradictions begin to consume its functional capacity. The system still operates, but it expends increasing amounts of energy merely to maintain minimal performance. Systemic inefficiency is the operational cost of drift.

To understand systemic inefficiency, we must begin with the cumulative nature of drift. Drift introduces variability into processing. Structural immorality stabilises this variability into a new equilibrium. Corruption operationalises the equilibrium. Each stage increases the gap between purpose and behaviour. Systemic inefficiency is the first stage at which the cost of this gap becomes visible in the day-to-day functioning of the society. Inefficiency is the structural friction created by misalignment; it is the reduction in the society's functional bandwidth caused by contradictions in macro-models. As sub-models attempt to navigate these contradictions, their outputs slow, degrade, or require excessive effort. The society begins to experience friction for reasons that appear invisible from the surface but are deeply embedded in the structure.

Chapter 9 — Unpredictability: When Institutions Become Unreliable

A society can tolerate drift, structural immorality, corruption, and systemic inefficiency for a considerable time, but it cannot remain stable once unpredictability takes hold. Unpredictability marks the moment when outputs become unreliable, when institutions no longer behave consistently, and when the structural logic of the society loses its ability to anchor expectations. It is the stage at which the model ceases to make sense even to those operating within it. Unpredictability is not simply a symptom of decline; it is the culmination of sustained misalignment; it represents the structural collapse of coherence, the loss of interpretive stability, and the breakdown of trust in the model's capacity to function.

To understand unpredictability, we must trace its structural origins. Drift introduces variability. Structural immorality stabilises misalignment. Corruption operationalises misalignment. Systemic inefficiency slows the system and reduces functional bandwidth. Each stage weakens the society's capacity to interpret inputs consistently. Eventually, this weakening reaches a point where institutional behaviour becomes dependent on local conditions, internal contradictions, or arbitrary factors rather than systemic logic. When institutions cannot reliably interpret reality, outputs become inconsistent; this inconsistency is unpredictability.

Chapter 10 — Fragility: When a Society Loses Its Capacity to Absorb Shock

Fragility is the phase in which a society loses its capacity to absorb and recover from shocks. It emerges not from a single failure but from the cumulative effects of drift, structural immorality, corruption, inefficiency, and unpredictability. Fragility marks the point at which the internal model of a society becomes so weakened, so inconsistent, and so structurally compromised that even minor disruptions produce disproportionate effects. A fragile society is not necessarily one facing immediate collapse; it is a society operating at the edge of its structural limits, where any additional pressure can trigger cascading disturbances. Understanding fragility is essential, because it explains why seemingly small events can destabilise systems that once appeared robust.

The origins of fragility lie in misalignment; when a society is aligned, its macro-models interact coherently. Infrastructure provides physical stability. Technology ensures informational coherence. Governance provides direction. The people model provides competence. The values model provides standards; these macro-models reinforce one another, giving the society the bandwidth to manage disruptions, adapt to change, and maintain stability. In an aligned society, shocks are absorbed because the system has structural coherence. Institutions behave predictably. Processes remain intact. Standards remain intact. Coordination remains intact. The society bends but does not break.

Chapter 11 — Fragmentation: When a Society Breaks Into Divergent Models

Fragmentation is the point at which a society ceases to function as a single, coherent model. It marks the structural dissolution of collective identity, unified purpose, and shared behavioural logic. Fragmentation does not occur suddenly; it emerges gradually as the cumulative expression of drift, structural immorality, corruption, systemic inefficiency, unpredictability, and fragility. Each of these conditions weakens the coherence of the societal model. Fragmentation is the moment when coherence collapses entirely. The society divides into numerous sub-systems, each operating according to its own internal logic, standards, incentives, and behaviours. At this stage, the notion of a single “society” becomes structurally inaccurate. What remains is a cluster of competing, loosely connected, or entirely disconnected models.

To understand fragmentation, we must first understand what it means for a society to be unified. Unity is not merely cultural affinity or political stability. Unity is structural coherence; it means that sub-models and macro-models across the society interpret reality according to the same fundamental purpose, rely on shared standards, and connect their outputs to one another through predictable processes. Unity requires alignment. Alignment requires coherent macro-models. Coherent macro- models require stable processing. Fragmentation emerges when these requirements are no longer met; it is the phase at which the structural preconditions of unity have been eroded beyond repair.

Chapter 12 — Collapse: When the Societal Model Fails

Collapse is the terminal stage of structural misalignment; it represents the point at which the societal model can no longer sustain even the minimum coherence required to behave as a functioning system. Collapse is not the dramatic event that histories often emphasise; it is not defined by the appearance of crisis, conflict, or disruption; those phenomena are merely external expressions of a deeper structural reality. Collapse occurs when the internal architecture of a society—its macro- models, sub-models, processing logic, values framework, and structural coherence—falls below the threshold necessary to maintain its identity as a single model. Collapse is the structural death of the societal system.

To understand collapse, we must trace the structural pathway that leads to it. Alignment first establishes coherence, but drift gradually weakens it; structural immorality then normalises the resulting misalignment, while corruption expresses it through behaviour. As inefficiency introduces operational drag and unpredictability undermines consistent action, fragility strips away resilience and fragmentation dissolves the remaining unity. Collapse follows when the fragmented parts can no longer function as a societal whole.

Chapter 13 — Renewal: How Societies Rebuild Coherence

Renewal begins where collapse ends, not because collapse guarantees transformation, but because collapse reveals the full extent of structural misalignment. A society cannot renew itself from within a partially coherent system, because partial coherence allows misalignment to persist beneath the surface. Renewal becomes possible only when the internal contradictions of the system have been exposed to the point where incremental adjustment is no longer viable. Renewal is therefore not a return to former stability; it is the construction of a new structural coherence capable of supporting purpose again. Renewal is not the restoration of what was lost; it is the formation of a new model.

To understand renewal, we must begin with collapse. Collapse is the point at which the societal model ceases to function as a coherent system. The macro-models have lost their enabling capacity. The sub-models have lost their integrative logic. Processing has lost its interpretive coherence. Purpose has lost its structural relevance. Collapse is not the destruction of a society but the cessation of its structural identity. Renewal begins not as an improvement of this state, but as a redefinition. Renewal is the process by which the society constructs a new identity from structural first principles.

Chapter 14 — Realignment: Re-Synchronising Structure and Purpose

Realignment represents the point at which renewed structure becomes synchronised once again with purpose. While renewal reconstructs the macro-models, restores processing capacity, stabilises values, and rebuilds coherence, these conditions alone do not guarantee alignment. A society may be structurally functional yet directionally unfocused. Realignment is the structural integration of purpose into the renewed system; it is the process through which purpose ceases to be an external aspiration and becomes the organising principle of the societal model once again. Realignment is therefore the structural culmination of the entire renewal arc.

To understand realignment, we must recall what alignment truly means within Model Thinking. Alignment is not harmony, agreement, optimism, or political unity; it is the structural condition in which the society's macro-models support purpose consistently, its sub-models process inputs coherently, and its outputs reflect the intended direction of the system. Alignment requires structure that is capable of executing purpose, purpose that is operationally defined, and processing that transforms inputs into outputs according to that purpose. Drift moves a society away from alignment. Realignment is the structural return.

Chapter 15 — Sustaining Alignment: The Future of Society

The future of a society depends not on its resources, its size, its geography, or its historical inheritance, but on its ability to sustain alignment. Alignment is the structural condition that allows a society to translate purpose into behaviour consistently over time. It is the state in which macro-models support purpose, sub-models interpret inputs coherently, processing reflects structural intention, and outputs reinforce collective identity. The decline sequence shows how societies lose alignment. The renewal sequence shows how they can regain it. The future of morality and society lies in understanding how alignment can be sustained rather than merely restored.

Sustaining alignment begins with recognising that alignment is not a static state but a dynamic equilibrium. It requires continuous calibration across all structural layers. Drift is always possible because systems operate in changing environments. The task of sustaining alignment is therefore not to prevent drift entirely but to detect it early, correct it rapidly, and prevent it from hardening into structural immorality. Sustaining alignment is the structural discipline of maintaining the synchronisation between purpose and structure.

PART 5

Action Models

Change is central to every model examined in this book. Individuals develop, groups reorganise and things evolve, yet a description of any one state tells us little about the journey between states. Action models provide that missing dimension: they help us examine transitions over time, understand how change occurred and consider how it might be directed.

An action model is not another object to be described. It is a way of following an individual, group or thing through a sequence of states. Each state snapshot captures the relevant inputs, processing and outputs at a particular point, while the timeline reveals the relationships between past conditions, present performance and possible futures. In this way, action models turn isolated observations into a basis for informed decisions.

Consider a professional planning a career transition, an organisation undertaking restructuring or a software team improving a product. Each begins with an existing state and a desired direction of travel. By recording meaningful snapshots, comparing actual developments with expectations and revisiting assumptions, each can distinguish movement from genuine progress. The method is flexible enough to accommodate different kinds of change without pretending that every transition follows the same path.

Chapter 1: Understanding Action Models – Tools for State Capture

We live in a world of constant change. Whether managing the personal growth of an individual, the dynamics of a group, or the evolution of a system, the ability to track and manage change is vital. Action models stand at the heart of this process. They are the tools that allow us to capture and analyze the state of a model—whether it's an individual, group, or thing—over time. Unlike other models that focus on a static state, action models are dynamic, giving us the ability to visualize, measure, and score how a model transitions from one state to another.

This chapter will break down the core principles behind action models, showing how they help us understand the nature of change, track state snapshots, and use scoring to evaluate progress. We'll explore examples from personal, group, and system contexts to illustrate how action models can guide transitions and ensure that we stay on course toward achieving our goals.

Action Models as Tools, Not Objects

At their essence, action models are tools—they do not represent the object (like an individual or group) itself, but rather how that object changes over time. Think of action models as lenses that capture different stages in the life of an object model. Whether we're tracking the growth of a startup, the development of a skillset, or the refinement of a manufacturing process, action models provide a structured way to evaluate and guide change.

In the earlier Model Thinking books, we explored how models help us understand states—the inputs, processing, and outputs that define a group, individual, or system at any given moment.

Chapter 2: The Mechanics of Capturing State Snapshots

In the previous chapter, we explored the purpose of action models as tools for managing transitions in object models— whether they're individuals, groups, or things. Now, we'll dive deeper into the mechanics of capturing state snapshots, understanding how these snapshots provide the foundation for managing change effectively.

State snapshots allow us to pause time at a specific point in the timeline, assess where the model stands, and evaluate what is needed for the next phase. Action models make it possible to track how an object model changes over time and to ensure that each transition is intentional, measurable, and directed toward achieving a defined goal.

This chapter will break down how state snapshots are captured, how they are used to review the past and plan for the future, and how scoring adds an essential layer of analysis to each state. We'll also look at real-world examples to see how action models can be applied in different contexts, from personal development to organizational change.

Capturing Backward-Looking State Snapshots

Backward-looking snapshots provide a way to review past changes and analyze the journey of an object model. By capturing historical states, action models help us learn from what has already happened, identifying both successes and mistakes. This is particularly important in situations where hindsight reveals key insights that can improve future decision- making.

Chapter 3: Scoring Systems in Action Models

At the heart of every action model lies the concept of scoring. Scoring transforms subjective observations into measurable data, allowing us to evaluate transitions in a structured way. It brings clarity to the process of change by offering a set of metrics that can be applied consistently across individuals, groups, and things. In action models, scoring isn't just about tracking progress; it's about understanding how well each state transition aligns with the goals of the object model, ensuring that change is intentional, effective, and in line with long-term objectives.

In this chapter, we'll explore how scoring systems are developed, how they can be applied across different contexts, and how they offer invaluable insights into the fitness for purpose of each state transition. By quantifying transitions, we can compare past, present, and projected future states, allowing us to evaluate both the efficiency of the change process and the quality of the outcomes.

The Importance of Scoring in Action Models

Scoring is the cornerstone of action models because it provides a common language for evaluating state transitions. Without scoring, it would be difficult to objectively assess how well an individual, group, or system is performing as it transitions from one state to another. Scoring provides the following benefits:

Objectivity: It removes subjectivity by quantifying performance, giving us clear metrics to work with.

Comparability: Scoring allows us to compare different states along the timeline, showing us where improvements have been made and where challenges remain.

Chapter 4: Forward-Looking Action Models – Defining Future Change

One of the most powerful aspects of action models is their ability to project into the future. Forward-looking action models help us define, plan, and guide change before it happens. By capturing future state snapshots, forward-looking action models allow us to anticipate challenges, set goals, and develop strategies to achieve our desired outcomes. Whether planning for personal development, organizational growth, or system upgrades, forward-looking models give us a roadmap to move confidently into the future.

This chapter will explore how forward-looking action models are developed and applied across different contexts. We'll also look at the role of scoring in projecting the impact of future changes, ensuring that each state transition is measurable and aligned with long-term goals.

Why Forward-Looking Action Models Matter

In a world of constant change, the ability to anticipate and plan for the future is essential. Forward-looking action models provide the tools needed to predict future states and guide decisions that will shape those states. These models allow us to:

Set clear goals: By defining the desired future state, we can set clear and measurable goals for what needs to be achieved.

Identify obstacles: Forward-looking models help us foresee potential challenges and develop strategies to overcome them.

Plan transitions: With a clear picture of where we want to go, we can map out the steps required to transition from the current state to the future state.

Chapter 5: Backward-Looking Action Models – Reviewing Historical Change

While forward-looking action models focus on defining and guiding future transitions, backward-looking action models help us analyze and learn from the past. They allow us to capture and evaluate historical state snapshots, providing a comprehensive view of how an object model has evolved over time. By reviewing these snapshots, we can identify key moments of success, challenges that were overcome, and mistakes that should be avoided in the future.

Backward-looking action models are essential tools for learning from past transitions. Whether applied to personal development, group dynamics, or system performance, these models offer invaluable insights into the factors that influenced change, the decisions that shaped the outcome, and the lessons that can be applied to future transitions.

Why Backward-Looking Action Models Are Important

In the process of managing change, it’s easy to focus entirely on the future, forgetting to reflect on what came before. However, reviewing past transitions can provide critical insights into what worked, what didn’t, and how decisions

shaped outcomes. Backward-looking action models allow us to do exactly that. By capturing and analyzing historical state snapshots, we can:

Identify patterns: By reviewing past transitions, we can spot recurring patterns that may either enhance or hinder progress.

Understand cause and effect: By linking decisions to their outcomes, backward-looking models help us understand the relationship between actions and results.

Chapter 6: Action Models and Fitness for Purpose

One of the primary goals of action models is to ensure that each state transition is aligned with the fitness for purpose of the object model. Fitness for purpose is a way of evaluating how well an object model is suited to its intended function or goal. It’s not just about completing transitions—it’s about ensuring that every change brings the object model closer to being more effective, more efficient, or more aligned with its core purpose.

In this chapter, we’ll explore how action models help evaluate fitness for purpose, looking at how scoring systems can be applied to assess whether a model is achieving its goals. Whether we’re tracking the personal development of an individual, the performance of a group, or the functionality of a system, fitness for purpose provides a benchmark for success, ensuring that each state transition is contributing meaningfully to the object model’s overarching objectives.

What Does Fitness for Purpose Mean?

Fitness for purpose refers to how well an object model is performing in relation to its intended goals. It’s a holistic measure of whether the model is achieving what it was designed or expected to do. When applying action models, fitness for purpose allows us to evaluate whether each transition is truly effective in moving the object model toward its desired outcomes.

Fitness for purpose can be assessed by answering questions such as:

Is the model meeting its stated objectives?

Are transitions adding measurable value?

Is the model efficient in its use of resources?

Chapter 7: Action Models in Individual Transitions

Personal transitions are a natural part of life. Whether it’s advancing a career, developing new skills, or navigating personal growth, individuals constantly move through states of change. Action models provide a structured way to capture these transitions, allowing individuals to plan for the future, reflect on the past, and measure progress along the way.

In this chapter, we’ll explore how action models are applied to individual transitions, providing tools to manage and evaluate personal growth over time. By capturing state snapshots, scoring transitions, and defining fitness for purpose in personal contexts, individuals can ensure that each stage of change brings them closer to their goals.

The Importance of Managing Individual Transitions

Individuals undergo transitions in various aspects of life, from career progression to skill development and personal growth. Managing these transitions effectively is key to achieving personal goals and improving overall well-being. Action models provide the framework needed to capture state snapshots, track progress, and ensure that each transition is aligned with long- term objectives.

Action models help individuals:

Set clear goals: By capturing state snapshots, individuals can define where they are now and where they want to be.

Evaluate progress: Scoring systems allow individuals to measure how well they are progressing toward their goals.

Chapter 8: Action Models in Group Dynamics

Groups are complex systems where individuals collaborate, share resources,

and work toward common goals. These groups, whether they are teams, organizations, or communities, must navigate constant transitions as they respond to internal needs, external pressures, and evolving objectives. Action models provide an effective framework for managing these transitions by capturing state snapshots, evaluating group performance, and ensuring that each change aligns with the group's goals and purpose.

In this chapter, we'll explore how action models are applied in group dynamics, providing tools to manage group transitions, assess group performance, and maintain alignment with overarching goals. Whether applied to corporate teams, sports clubs, or community organizations, action models help groups navigate change with clarity, structure, and measurable outcomes.

The Role of Action Models in Group Transitions

Groups, by their nature, involve multiple stakeholders, differing perspectives, and shared resources. This complexity makes managing transitions more challenging than in individual contexts, as changes often involve coordination, communication, and the balancing of competing interests. Action models provide a way to:

Capture the current state of a group's dynamics, resources, and performance.

Define future goals for the group and map out the transitions needed to achieve them.

Chapter 9: Action Models in Thing Models

While much of our focus has been on how action models apply to individuals and groups, they are equally powerful tools for managing transitions in thing models. Thing models refer to tangible and intangible objects—such as products, systems, technologies, or even concepts—that undergo changes over time. Whether it’s upgrading a physical product, implementing new software, or adapting a complex system like a supply chain, action models help capture state snapshots, track progress, and ensure that changes are aligned with the object’s intended purpose.

In this chapter, we’ll explore how action models are applied to thing models, providing a structured way to manage changes in both tangible and intangible objects. We’ll dive into examples ranging from physical products like cars and 3D-printed objects to intangible systems like software and artificial intelligence. By applying the same principles of capturing state snapshots and scoring transitions, action models ensure that thing models remain fit for purpose as they evolve.

Why Thing Models Require Action Models

Thing models often face external controls over their processing, unlike individual and group models, where processing may be managed internally. As products, systems, or technologies transition through different states—whether due to upgrades, modifications, or external influences—tracking these changes is essential to ensure that they are delivering value and remaining aligned with their original purpose.

Chapter 10: Action Models and Feedback Loops – Driving Continuous Improvement

One of the most powerful features of action models is their ability to incorporate feedback loops, which drive continuous improvement. Feedback loops provide an ongoing mechanism for capturing insights from previous transitions, making adjustments, and refining future actions. By using feedback loops, individuals, groups, and thing models can stay adaptable, responsive, and aligned with their long-term goals.

In this chapter, we'll explore how feedback loops are integrated into action models, focusing on how they enable constant learning and improvement. Whether used in personal development, organizational change, or system upgrades, feedback loops ensure that each new state snapshot is informed by past experiences, leading to smarter decisions and better outcomes.

What Is a Feedback Loop?

A feedback loop is a process in which the outputs of a system or model are fed back into the system as inputs, influencing future behavior. In the context of action models, feedback loops allow us to continuously evaluate past transitions, learn from outcomes, and make adjustments to improve future states.

There are two types of feedback loops commonly used in action models:

Positive Feedback Loops: These loops amplify the effects of a transition, reinforcing success and accelerating progress toward the desired goal.

Chapter 11: Managing Change Across Multiple Models

In complex environments, transitions don’t occur in isolation. Multiple models—whether individual, group, or thing—often need to undergo simultaneous changes, creating interconnected systems where the performance of one model impacts the others. Managing these transitions across multiple models can be challenging, but action models provide the tools needed to coordinate, align, and monitor these changes effectively.

In this chapter, we’ll explore how action models are applied to manage change across multiple models simultaneously, ensuring that transitions in one model don’t disrupt the overall system. We’ll look at examples where action models help coordinate individual, group, and thing models, ensuring that each model’s transitions are aligned with the larger system’s goals.

The Complexity of Multiple Model Transitions

When managing change across multiple models, we must consider the interdependencies between them. A change in one model can have a ripple effect, influencing the performance of other models and the overall system. This complexity requires a coordinated approach to ensure that transitions in one model don’t negatively impact the others. Action models provide the framework for capturing state snapshots, scoring transitions, and maintaining alignment across all models.

Examples of Multiple Model Transitions:

A company implementing both a leadership change (group model) and a technology upgrade (thing model).

Chapter 12: The Future of Action Models – Navigating Change in a Dynamic World

As we reach the conclusion of this exploration into action models, it’s clear that the power of these tools lies in their ability to manage and navigate change across a wide range of contexts. Whether applied to individuals seeking personal growth, groups aiming for organizational success, or systems undergoing technological upgrades, action models provide a structured approach to capturing transitions, scoring progress, and ensuring that each change is purposeful and aligned with long- term goals.

In today’s rapidly evolving world, the ability to adapt, evolve, and manage complexity is more important than ever. From the rise of new technologies to shifting social dynamics and global challenges, change is constant. Action models offer a way to not only respond to these changes but to shape and manage them effectively. As we look ahead, the use of action models will become even more critical in helping individuals, organizations, and systems thrive in an unpredictable environment.

The Increasing Importance of Adaptability

The world is becoming more interconnected and dynamic, with constant shifts in technology, markets, and societal expectations. As these changes accelerate, the ability to remain adaptive and responsive to new information will be a key differentiator for success. Action models offer a structured way to manage these changes by continuously capturing state snapshots and adjusting transitions in real-time. This adaptability is essential not only for reacting to external pressures but for proactively shaping the future.

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